

ANNOTATED BIBLIOGRAPHY

OF RECENT RESEARCH ON POPULATION AGEING AND SOCIAL PROTECTION IN MALAYSIA

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Population
Studies Unit



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PREFACE FROM SOCIAL SECURITY RESEARCH CENTRE (SSRC)

The Social Security Research Centre (SSRC) in collaboration with the Population Studies Unit (PSU), Faculty of Economics and Administration, University of Malaya has developed and compiled an annotated bibliography of recent research on ageing population and social protection in Malaysia. This annotated bibliography encompasses a broad selection of work that examined various indicators that assessed ageing population with regards to financial literacy, retirement and healthcare in Malaysia. While it contains some references on indicators that were employed at the national and regional level, the major focus, however is on issues relating to the ageing population in Malaysia.

This annotated bibliography is initiated to support current and future researchers who are interested in examining the issues on ageing population and social security in Malaysia. We have gathered and compiled a list comprising more than 650 articles/journals. The list is by no means exhaustive but we hope it would serve as a platform for researchers to formulate and develop research frameworks. It also provides a perspective for researchers to have an overview of work accomplished in the field of social security in Malaysia. This, in turn would assist researchers to identify gaps and enable them to conduct research to bridge those gaps. Besides, this initiative would further enhance the knowledge base that could assist policy makers in formulating policies on the aged in Malaysia.

In addition, the bibliography includes a number of other bibliographic works and is presented in full (incorporating authors, sources) with abstracts of each work.

This bibliography is arranged in alphabetical order according to the name of the authors.

We would like to express our gratitude to the writers, researchers and academicians who have worked on ageing population and social protection in Malaysia. We would like to acknowledge especially PubMed, ISI, JSTOR, SCOPUS, SCIENCE DIRECT database for including journals related to the ageing population in Malaysia. Last but not least, we wish to thank Ms Tan Lih Yoong for her assistance in compiling the articles and formatting the book.

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PREFACE FROM POPULATION STUDIES UNIT (PSU)

Population ageing is a relatively new phenomenon in Malaysia. However, with fertility level plummeting to below replacement level and life expectancy increasing to about 75 years, the pace of ageing will be accelerating. Malaysia will become an ageing nation in 2030 when 15% of the population will be aged 60 and over. Population ageing has gained increasing attention from policymakers and researchers. The Institute of Gerontology was set up at University Putra Malaysia in 2002 to spearhead gerontology research. The institute was upgraded to become the Malaysian Research Institute on Aging in 2015. The Social Security Research Centre was established at the University of Malaya in 2011 to conduct research on social security and old age protection. With funding support from the government, there has been a proliferation of research on the health and socio-economic aspects of ageing.

This annotated bibliography consists of more than 650 articles, 15 Ph.D. theses and 3 Master theses on ageing research in Malaysia. Most of these were published within the last ten years. The abstracts of these articles were accessed from the internet and the databases of the library of the University of Malaya. Nearly three-quarters of the published papers dealt with various aspects of health and healthcare. Many studies on ageing also cover socioeconomic and psycho-social aspects, care and support, and the general wellbeing of older adults. The published articles and reports were based on cross-sectional data which preclude an analysis of the causal effects of factors affecting conditions in old age. There is a dearth of multidisciplinary research on the inter-related aspects such as economics, health, legal and psychological aspects, as well as many age-related disorders such as dementia and falls.

This annotated bibliography, the first of its kind in Malaysia, will be of great help to those undertaking research work on ageing. Findings from these publications can be used by the researchers to develop their research design and conceptual framework.

The Population Studies Unit, with financial support from United Nations Population Fund (UNFPA), has been supporting research on various emerging population issues. Research on ageing is a priority area that will be further promoted. Policy briefs based on the research findings will be prepared to inform policy, so that appropriate programmes can be formulated for the benefits of the older population.

We would like to thank Ms Tan Lih Yoong for her assistance in compiling the articles and formatting the book. We would like to acknowledge the various databases especially PubMed, ISI, JSTOR, SCOPUS, SCIENCE DIRECT and Google which provide the abstracts of the articles.

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The Annotated Bibliography

Abbas M., & Saruwono M. (2012). Our “Golden” citizens with “Golden” facilities? *Procedia Social and Behavioral Sciences*, 49, 127–146.

Malaysia is currently facing the problem of "population ageing". This paper attempted to gauge the status of facilities and provisions of the outdoor environment for older people in the Klang Valley. The strategy for the research design was surveys, while the data collection involved focused group interviews upon 25 older persons, 133 questionnaire respondents either accommodated in their own homes or institutions and personal observations. Despite provisions of existing facilities, there remained rooms for improvement in ensuring the outdoor environment to be more barrier-free and inclusive towards the creation of a healthier ageing environment, 'golden' enough for our 'golden' citizens.

Abd. Aziz, N. A. S., Teng, N. I. M. F., Abdul Hamid, M. R., & Ismail, N. H. (2017). Assessing the nutritional status of hospitalized elderly. *Clinical Interventions in Aging*, 12, 1615-1625.

The increasing number of elderly people worldwide throughout the years is concerning due to the health problems often faced by this population. This review aims to summarize the nutritional status among hospitalized elderly and the role of the nutritional assessment tools in this issue. A literature search was performed on six databases using the terms “malnutrition”, “hospitalised elderly”, “nutritional assessment”, “Mini Nutritional Assessment (MNA)”, “Geriatric Nutrition Risk Index (GNRI)”, and “Subjective Global Assessment (SGA)”. According to the previous studies, the prevalence of malnutrition among hospitalized elderly shows an increasing trend not only locally but also across the world. Under-recognition of malnutrition causes the number of malnourished hospitalized elderly to remain high throughout the years. Thus, the development of nutritional screening and assessment tools has been widely studied, and these tools are readily available nowadays. SGA, MNA, and GNRI are the nutritional assessment tools developed specifically for the elderly and are well validated in most countries. However, to date, there is no single tool that can be considered as the universal gold standard for the diagnosis of nutritional status in hospitalized patients. It is important to identify which nutritional assessment tool is suitable to be used in this group to ensure that a structured assessment and documentation of nutritional status can be established. An early and accurate identification of the appropriate treatment of malnutrition can be done as soon as possible, and thus, the malnutrition rate among this group can be minimized in the future.

Abdul Aziz, A., & Loh, C. L., Jaafar, M. (2014). Malaysia’s my second home (MM2H) programme: an examination of Malaysia as a destination for international retirees. *Tourism Management*, 40, 203–212.

Malaysia was recently ranked fourth highest as a retirement destination by one established magazine. This warrants examination of the Malaysia My Second Home (MM2H) Programme which targets retirees, and more recently, high net worth foreigners. Data was collected using postal questionnaire survey and follow-up interviews. By virtue of the entry requirements, the retirees were well-to-do. The application process for the MM2H visa did not pose much difficulty. Malaysia was chosen because of fond memories from earlier trips. Satisfied MM2H stayers inadvertently promoted the MM2H Programme when they narrated

their positive experiences in various media. If the various country-specific and locality-specific charms that drew foreigners to Malaysia altered deleteriously, even bona fide retirees who had made Malaysia their only home would migrate elsewhere. Malaysian policy makers need to adopt cogent actions to attract more fresh retirees while retain those already in the country.

Abdul Aziz, A., Tah, J., Lim, J., & Loh, C. (2015). Government initiatives to attract retired migrants: An analysis of Malaysia's my second home (MM2H) programme. *Tourism Management Perspectives*, 16, 58–66.

International residential retirement programmes as a policy tool to attract mobile retirees have thus far been under-studied. Malaysia's programme that is nearly three decades old was investigated. Drawing data from interviews and secondary data, it charts the evolutionary changes that the programme underwent. The latest iteration signifies an attempt to target wealthier retirees, no longer the mass market. Using the Rowles Watkins Model as the theoretical lense, it points out that Malaysia's current policy direction, whether by design or otherwise, is sensible as it ensures that Malaysia avoids reaching the saturation stage whereby the disbenefits outweigh the benefits. The paper concludes by recommending certain changes, some of which can be implemented without having to wait for the next iteration. Other destination countries can draw lessons from Malaysia's foreign residential retirement initiative, in particular the initial effort to gain popularity and subsequent use in moderation to stimulate economic growth.

Abdul Manaf, M. R., Mustafa, M., Abdul Rahman, M. R., Yusof, K. H., & Abd Aziz, N. A. (2016). Factors influencing the prevalence of mental health problems among Malay elderly residing in a rural community: A cross-sectional study. *PLOS ONE*, 11(6), 1–12. <https://doi.org/10.1371/journal.pone.0156937>

Mental health problems are common in old age, but frequently remain undetected and untreated. Mental health problems in the elderly are the result of a complex interaction of social, psychological and biological factors. The aim of this study is to determine the prevalence of mental health problems (depression, anxiety, and emotional stress) and their associated factors among the Malay elderly in a rural community of Perak, Malaysia. It was a cross-sectional study. The Malay elderly aged 60 years and above were selected through convenient sampling to give a total of 230 respondents. The Depression, Anxiety, and Stress Scale (DASS-21) was used to assess the symptoms of depression, anxiety, and stress. Bivariate analyses were performed using chi-square tests and multiple logistic regression analyses were conducted to determine the association between the factors and each of the mental health statuses assessed. The results showed that the prevalence of depression, anxiety, and stress among the elderly respondents was 27.8%, 22.6%, and 8.7%, respectively. The significant factors for depression were single elderly (Adjusted OR = 3.27, 95%CI 1.66, 6.44), living with family (Adjusted OR = 4.98, 95%CI 2.05, 12.10), and poor general health status (Adjusted OR = 2.28, 95%CI 1.20, 4.36). Living with family was the only significant factor for anxiety (Adjusted OR = 2.68, 95%CI 1.09, 6.57). There was no significant factor for stress. Depression and anxiety among the Malay elderly in the rural community were very worrying. More equity in health should be created or strengthened in order to intensify the opportunity to identify, diagnose, and treat those with mental health problems. Living arrangement in the rural community was an important factor that had influenced depression and anxiety.

Therefore, further research is recommended for more comprehensive information, as a result of which appropriate intervention can be made.

Abdullah, L. M., Azuddin, M, Malik, S. A., & Mahmud, M. (2017). Rising ageing population: A preliminary study of Malaysian older people expectations in information and communication technology. In Saeed F., Gazem N., Patnaik S., Saed Balaid A., Mohammed F. (Eds.), *Recent Trends in Information and Communication Technology*. (pp. 796-803). IRICT 2017. Lecture Notes on Data Engineering and Communications Technologies, vol 5. Springer, Cham.

The older people population in the world is showing a steady increase and Malaysia is projected to having an ageing population in 2025 as the percentage will reach over 7.1% (an indicator of an ageing population) of the total population. Information and Communication Technology (ICT) offers opportunities to create conducive environment for older people, but there may be a significant number of older people particularly in Malaysia who are not informed, astute, and learned consumers with respect to ICT and so could be denied many of the technology potential benefits. Drawing upon data from group sessions held with 51 participants of various age groups, this paper reports on a preliminary study to explore the current state of Malaysian older people interaction with and expectations in ICT including mobile communications in aspects of their everyday life. Comparison in terms of mobile device usage among participants was also presented. The study has highlighted (1) ways in which ICT has supported and can support older people and (2) mobile usage patterns of younger and older users.

Abu Bakar, S. H., Weatherley, R., Omar, N., Abdullah, F., & Mohamad Aun, N. S. (2014). Projecting social support needs of informal caregivers in Malaysia. *Health and Social Care in the Community*, 22(2), 144-154. doi: 10.1111/hsc.12070

This article presents the findings of a self-report study of the consequences of being an informal caregiver in Malaysia. The aim of this exploratory study was to examine Malaysian efforts in assisting informal caregivers, based on an analysis of the issues and concerns raised by the caregivers themselves. Data were obtained from a cross-sectional survey of informal caregivers in 2009. This sample comprised parents, spouses and/or adult siblings, and adult children, caring for their children, spouses or siblings and parents who were chronically ill and/or had a disability. Of 300 prospective participants, only 175 could be located (58%), but all those contacted agreed to participate. Respondents were randomly selected and interviewed using a structured questionnaire to identify the emotional, financial, social and physical issues consequent upon being a caregiver. Most respondents reported that their care-giving responsibilities had impacted their emotional, financial, social and/or physical well-being. Inadequate and/or uncertain income was by far the greatest concern followed in descending order by social, physical and emotional consequences. The one-way analysis of variance showed significant differences among the three categories of caregivers with respect to physical and emotional consequences. The findings show that care-giving has detrimental effects on the lives of informal caregivers, and that they are in significant need of social support to help them deal with care-giving tasks and responsibilities. Based on the findings, an integrated social support programme is proposed, tailored to the needs of informal caregivers.

Adam, D., Ramli, A., & Shahar, S. (2016). Effectiveness of a combined dance and relaxation intervention on reducing anxiety and depression and improving quality of life among the cognitively impaired elderly. *Sultan Qaboos University Medical Journal*, 16(1), e47–e53. <https://doi.org/10.18295/squmj.2016.16.01.009>

Cognitive impairment is a common problem among the elderly and is believed to be a precursor to dementia. This study aimed to explore the effectiveness of a combined dance and relaxation intervention as compared to relaxation alone in reducing anxiety and depression levels and improving quality of life (QOL) and cognitive function among the cognitively impaired elderly. This quasi-experimental study was conducted between May and December 2013 in Peninsular Malaysia. Subjects from four government residential homes for older adults aged ≥ 60 years with mild to moderate cognitive function as assessed by the Mini-Mental State Examination were included in the study. Subjects were divided into an intervention group and a control group; the former participated in a combined poco-poco dance and relaxation intervention whilst the latter participated in relaxation exercises only. Both groups participated in two sessions per week for six weeks. Anxiety and depression were self-assessed using the Hospital Anxiety and Depression Scale and QOL was self-assessed using the Quality of Life in Alzheimer's Disease questionnaire. A total of 84 elderly subjects were included in the study; 44 were in the intervention group and 40 were in the control group. When compared to control subjects, those in the intervention group showed significantly decreased anxiety ($P < 0.001$) and depression ($P < 0.001$) levels as well as improved QOL ($P < 0.001$) and cognitive impairment ($P < 0.001$). Dance as a form of participation-based physical exercise was found to reduce anxiety and depression levels and improve QOL and cognitive function among the studied sample of cognitively impaired elderly subjects in Malaysia.

Adznam, S. N. A., Shahar, S., Rahman, S. A., Yusof, N. A. M., Arshad, F., Yassin, Z., Salleh, M., Samah, A. A., & Sakian, N. I. M. (2009). An action research on promotion of healthy ageing and risk reduction of chronic disease: A need assessment study among rural elderly Malays, care givers and health professionals. *The Journal of Nutrition Health and Aging*, 13(10), 925–930.

Prior to the development of a healthy ageing and risk reduction of chronic diseases intervention package for older people in Malaysia, a need assessment study was conducted to identify nutritional knowledge status and information needs, as part of an action research process. A cross sectional study was conducted among 267 elderly people, 54 care givers and 66 health professionals in two rural areas of Peninsular of Malaysia (i.e Sabak Bernam, Selangor and Kuala Pilah, Negeri Sembilan). Information on nutritional knowledge was obtained from an interview based questionnaire for older subjects and caregiver and through self-administered questionnaire from the health professionals. Anthropometric and functional measurements were also conducted among elderly subjects. It was found that the elderly subjects had poor nutritional knowledge with 43.8% of them classified as having unsatisfactory nutritional knowledge, followed by moderately satisfactory (33.7%), very unsatisfactory (15.7%) and good (6.7%). Talks, counselling sessions with health professionals and electronic media such as television and radio were the most preferred nutrition education sources among elderly subjects and their care givers. The majority of health professionals studied (98.5%) had good nutritional knowledge. Although most of them (93.6%) were involved in management of the elderly, only 45.5% incorporated nutritional information component in this activity. Most of the health professionals used the guidelines for management of elderly patients (63.6%). However, nutritional knowledge was very minimal

in these guidelines. Multiple regression analysis indicated that 'level education', involvement in 'social activities', presence of 'hearing problems', the Instrumental Activities of Daily Living (IADL) score, having previous 'nutritional information' and 'participation in healthy eating programme' were the major predictors of nutritional knowledge score among elderly subjects. Based on the above findings it is thus, imperative that an appropriate nutritional intervention package and programme be developed so as to help improve nutritional knowledge and subsequently the nutritional status of the rural elderly Malays.

Ahmad, W. I. W. & Ismail, Z. (2011). Population ageing and religious participation among rural elderly in Terengganu, Malaysia. *Journal of US-China Public Administration*, 8(9), 968–977.

The purpose of this paper is threefold: first, is to describe the global scenario of population ageing; second, is to analyze the phenomenon of population ageing in Malaysia; and finally, the paper shall explore the extent to which the elderly people are involved in the religious activities in their daily life. Utilizing data from a face-to-face interview with 160 Malay rural elderly in Terengganu, Malaysia, aged 60 years and older, this study investigated the extent to which the elderly people are involved in the religious activities in their daily activities. Results revealed that the elderly people in this sample have fairly participated in the underlying activities. About 77 percent of the respondents participated in religious and social activities during the past three months before the survey. Visiting the sick, tahlil recitation, giving alms and attending social functions appeared to be the most popular activities. They participated in these activities because they wanted to dedicate the last years of their life to their God.

Ahmad, W. I. W., Ismail, Z., & Rahman, A. H. A. (2011). Aging and economic participation of older population in rural Malaysia. *International Journal of Humanities and Social Science*, 1(9), 128–133.

One of the most significant demographic changes of the twenty first century is the aging of the world's population. Population ageing or the increasing proportion of older population has become a challenge not only for developed countries but developing ones as well. The purpose of this paper is to analyze the participation of the older population in rural Malaysia in the economic activities. This paper also seek to analyze reasons why some of the older population in the area do not want to continue working. The design used in this study was a combination of the sociological method of face-to-face interviews, and the anthropological method of participant-observation. Results show that nearly half of the respondents still involve in economic activities whilst majority of them do not work because they feel no strong desire for working and are not physically capable.

Ahmad, Z., & Ghazali, S. S. (2012). Physical activity and older Malaysians. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 145–157). Universiti Putra Malaysia: Institute of Gerontology.

Physical activity has significant health benefits for older adults. In Malaysia, the prevalence of physical inactivity is high and increases with age. This study provides a review of literature on physical activities in relation to the profile of older Malaysians. This study includes the barriers to and motivation of physical activities, types of physical activities

preferred by older adults, benefits of regular physical activities and prevalence of physical activities in chronic diseases such as diabetes, hypertension and obesity among adults.

Ahmed, A., Choo, W. Y., Othman, S., Hairi, N. N., Hairi, F. M., Mohd Mydin, F. H., & Illiani Jaafar, S. N. (2016). Understanding of elder abuse and neglect among health care professionals in Malaysia: An exploratory survey. *Journal of Elder Abuse & Neglect*, 28(3), 163-177. doi: 10.1080/08946566.2016.1185985.

Elder abuse and neglect (EAN) is a hidden public health challenge for Malaysia. This cross-sectional survey studied the awareness of EAN among 148 doctors and nurses from two neighboring states in Malaysia using a self-administered questionnaire exploring their knowledge, perceptions, practices, and experience concerning EAN. Both doctors and nurses demonstrated poor understanding of signs of EAN and exhibited misperceptions on reporting requirements. Both groups perceived EAN as a national burden and reporting it as their responsibility; but most felt they had not been trained to diagnose it. Many were unsure of procedures and whether their own intervention could be effective. Only four (nurses) of 41 participants who suspected abuse during the past year reported the cases. Targeted education and uniform protocols are mandatory to ensure best practice with regards to EAN. Further research is crucial to extend this inquiry into the broader health care workforce.

Aini, A. M., Nor, W., Wan, A., Aziz, A., & Zulkifli, N. F. (2017). Middle adults' housing expectations for old-age : A study of urban area of Greater Kuala Lumpur. *Journal of Design and Built Environment*, 150–165.

As Malaysia is becoming an ageing nation, it is important to examine the housing needs of the retiring age group in order to provide adequate retirement housing. The study examines the middle adults' housing expectation which will affect their housing preferences and decisions upon retirement. A face-to-face survey was conducted on 464 respondents aged 40 and above living in the urban concentrated areas of Greater Kuala Lumpur. Most of the respondents indicated that they have a strong willingness to continue to stay in their current homes and their opinions on the satisfaction level of comfort were evaluated in this survey. Though certain groups have their own preferences for their future housing plan, the findings revealed that most of the middle age adults have strong desire to age in place, surrounded by family members, friends as well as suitable facilities. This suggests that to a certain degree, the current housing will not be their desired retirement home. It is recommended that the housing policy should integrate the expectation and needs of the ageing population of the nation.

Ainoriza, A. M., Murni, N., & Aziz, W. N. A. W. A. (2016). Housing aspirations of the elderly in Malaysia: A comparison of urban and rural areas. *Journal of Design and Built Environment*, 16(2), 30-43.

Recent population censuses in many advanced industrial countries have highlighted the growing number of elderly in the rural areas. Additionally, industrialisation in the urban areas of developing countries has, to a certain degree caused significant changes of traditional family structure and has resulted in nuclear conjugal families. Likewise, the ageing phenomenon in Malaysia is inevitable due to the exponential increase in the elderly population. Furthermore, rapid urbanisation and out-migration of rural young generation, has

had a significant impact on the population of Malaysia. This is reflected by the high proportion of elderly and high dependency in the rural areas. The issues and demographic pattern of the elderly are divergent and varies from the urban to the rural setting. This article looks at the housing implications of the ageing population in Malaysia in general, and in the rural and urban setting specifically. The study examines the housing aspirations of the elderly living in the urban and rural areas in Malaysia. Future housing plans and the kind of living arrangement the Malaysian elderly seek are explored based on the urban-rural locational aspect. In the effort to provide better quality housing for urban and rural elderly, a face-to-face survey interview was conducted on Malaysian aged 50 years and older living in the Kuala Lumpur (urban) and Kelantan (rural) areas. The findings indicate that most elderly in the urban and the rural areas prefer to age-in-place and stay in a familiar environment. The rural elderly has a stronger preference to ageing in place. A majority of the elderly also indicated a preference to live close to their children, which suggests strong family values amongst Malaysians. The study further revealed that the elderly are more likely to either renovate or improve, especially, the bedroom and bathroom areas to avoid accidents. The elderly in the rural area preferred landed housing in the form of either a single or double storey bungalow, whilst, the elderly in the urban area are more open and willing to move to other housing options, for example, strata housing, and other forms of landed housing, for example, terrace house and bungalow. It is recommended that a policy be introduced to promote ageing-in-place and takes into account the aspirations, preferences, behaviour and opinions of the elderly in Malaysia.

Akil, S. M. S., Abdullah, S., Ghani, S. A., & Othman, K. (2013). Developing quality care facilities and programs for elderly people: A Malaysian experience. *Global Journal of Sociology*, 3(1), 1-8.

It is estimated that the proportion of people aged 60 years and above in the world will double between 2000 and 2050. This is very much due to modernization and new technologies developed which make living standards and behavioural patterns of the population changed and continuously changing. The urban families on the other hand are very busy working for survival leaving less or no time to cater for the aged parents. In response to this situation, different sectors such as government agencies, non-governmental organizations, and religious organizations have developed programs and services to address the needs and concerns of the elderly people under the support and supervision of the concerned ministries or organizations. Many programs and activities have been developed to cater for the elderly and it becomes more challenging if the aged population are of different backgrounds with different cultures, values and belief systems. This situation raises the question of how the programs and activities are conducted by the concerned organization for the elderly and to what extent the programs and activities fulfil the needs and expectations of the old aged especially in a multi-cultural background. Qualitative descriptive research method is used in the study using survey questions, interviews, observations and documented materials. The result of the study shows that there are differences in the needs and expectations of the elderly towards the services rendered by the organizations and people's core beliefs and traditional cultural values have become the main concerns of the elderly and should be incorporated in the programs and activities prepared. Hence, results of the study are aimed at policy makers and other organizations to ensure preparedness in management and program needs of the aged population.

Al Aqqad, S., Chen, L., Shafie, A., Hassali, M., & Tangiisuran, B. (2014). The use of potentially inappropriate medications and changes in quality of life among older nursing home residents. *Clinical Interventions in Aging*, 9, 201–207.

Nursing home residents are mainly older people with multiple diseases and taking multiple medications. The quality use of medication and its association with health related quality of life (HRQoL) have not been reported in Malaysia. This study aims to investigate the association between the use of potentially inappropriate medications (PIMs) and the changes observed in the HRQoL among older nursing home residents. A prospective follow up study was conducted at four nongovernmental organization nursing homes in Penang, Malaysia. Older residents (≥ 65 years old) taking at least one prescribed medication were included. Residents with PIMs were identified by using Screening Tool of Older Person's potentially inappropriate Prescriptions (STOPP) criteria. HRQoL was assessed using EuroQol-5 dimension (EQ-5D) and EuroQol-visual analog scale (EQ-VAS) at baseline and after a 3-month follow up. The association of PIMs with HRQoL was analyzed using Mann-Whitney U test. The median age of the 211 participants was 77 years (interquartile range 72-82 years) and the median number of prescription medicines was four (interquartile range three to six). The prevalence of PIMs was 23.7% and 18.6% at baseline and 3 months later, respectively. The most commonly prescribed PIMs in decreasing order were first generation antihistamine, prescriptions of duplicate drug class, glibenclamide with type 2 diabetes mellitus, and anticholinergic to treat extrapyramidal side effects of neuroleptic medications. At baseline, there was no significant difference among residents with or without PIMs in each bracket of EQ-5D, EQ-5D index, or EQ-VAS scores. Comparison of the differences in the mean score index of EQ-5D between baseline and after 3 months also showed no statistically significant differences. PIMs were found to be relatively common among older nursing home residents. However, no significant changes were observed in HRQoL among these residents. Further studies with a bigger sample size and longer follow up period are required to establish this association.

Alaudin, R. I., Ismail, N., & Isa, Z. (2017). Determinants of retirement wealth adequacy: A case study in Malaysia. *Institutions and Economies*, 9(1), 81-98.

This paper aims to study the demographic and socioeconomic determinants of retirement wealth adequacy in Malaysia, and further investigates the effects of Employees Provident Fund (EPF) contribution rate and income replacement ratio on the retirement wealth adequacy. The retirement wealth adequacy is estimated using the Malaysian Household Income Survey (HIS) 2009 data which is based on 5881 sample households that contains information on income, demographic and socioeconomic characteristics of each household. The adequacy of retirement income is assessed by comparing the accumulated projected wealth of an individual's work life at retirement age with his/her total consumption (needs) during retirement. The Ordinary Least Squares (OLS) and logistic regression models are then performed to determine the demographic and socioeconomic determinants of retirement wealth adequacy. The results from the projection of wealth-need ratio showed that 69% of households in the sample have adequate retirement income. The OLS model showed that Region 4 (P. Pinang, Selangor, Kuala Lumpur, Putrajaya), urban strata, married status, college graduate, government servant, younger respondent (age 30-34), and average annual income (RM25,000 -RM40,000) were positively associated with retirement wealth adequacy. On the contrary, the results from the logistic model show that only strata (urban) and marital status

(single-female) were positively associated with retirement wealth adequacy. This paper further discusses the study implications.

Alavi, K. (2008). *The experience of caring for elderly parents among low-income Malay adult children in Kuala Lumpur (Doctoral dissertation)*. Universiti Putra Malaysia, Malaysia. Retrieved from <http://psasir.upm.edu.my/5440/>

The main purpose of this study was to understand the nature of adult children caregivers' experiences and how they manage their daily living activities while caring for older parents. The study was carried out to answer three research questions: i) what is the experience of adult children in taking care of elderly parents? ii) how do they manage their careers, own family and parents? and iii) what is the Islamic perspective on filial responsibility towards elderly parents in a challenging family and modern social environment? A case study guided by phenomenology was chosen as an approach in this study. Selected respondents were Malay adult children caring for elderly parents aged 60 and above, in low income families in Kuala Lumpur. Eight respondents were interviewed twice in a six month interval. Interviews were conducted and recorded using an IC recorder, transcribed verbatim and then analyzed using the constant comparative method. Analysis of authorized JKMM (Welfare Department of Malaysia) documents and systematic observation were used as focal points on physical facilities such as the housing environment. A round table discussion with policy makers, front liners/implementers, two respondents representing adult children, dissertation supervisor and committee members, and the researcher was conducted to validate the data of the study. The findings encompassed two major experiences among adult children, which include their experiences before (pre experience) and while (actual experience) taking care of elderly parents. The findings indicated that the adult children are overwhelmed by time constraints as well as financial, health, physical and socio-emotional stress. In managing caregiving, adult children caring for frail and disabled elderly parents face multiple burdens, challenges and problems in balancing their careers, own family and filial obligations, according to the Islamic perspective. Islamic teachings emphasizing the divine favour and honour associated with caring for parents were identified as a coping strategy to overcome their burden. Study respondents also received support from other family members, government agencies and non-government agencies in the process of taking care of their elderly parents. Strategic planning and program development recommendations for government, non-government, public higher education and local community institutions were put forth to help overcome the challenges and problems faced by adult child caregivers. Finally, the study concludes by emphasizing that one can learn much from his or her own experiences, but it is better to acquire knowledge through the experiences of others.

Alavi, K., & Mahbob, M. H. (2017). *Effective communication with senior citizens: A social work intervention perspective*. *Malaysian Journal of Communication*, 33(4), 21-37.

Communication is important in maintaining a harmonious relationship among elderly living in institutions, hospitals and care homes. The elderly requires more attention to allow them to feel that they are valued by the community. This article allows social gerontology students to learn effective communication techniques when conducting social work intervention on individuals, groups and communities especially in handling case management among the elderly. This article focuses on interpersonal communication strategies to accelerate smooth handling process of senior citizen case management. Interpersonal

communication skills is defined as the ability to listen, communicate verbally and non-verbally, as well as writing reports effectively. The main purpose of this article is to discuss interpersonal communication between caregivers and the elderly, guided by literature review on barriers of communication among caregivers, as well as formal and informal approaches to social work intervention. This study shows that communication barriers among the elderly are contributed to age, illness, disability and environmental factors. The intervention of social work practice has a positive effect in addressing interpersonal communication barriers among formal and informal caregivers with elderly who has multiple problems. The implication of this study suggests for more research on interpersonal communication in Malaysia to improve communication skills among formal and informal caregivers. This provides a strong influence in helping to improve wellbeings of the elderly in institutions, hospitals and communities.

Alavi, K., & Rahim, M. S. (2010). Roles of Malay women in the process of caring for elderly parents: Dilemma and challenges in the era of globalization. *Kajian Malaysia*, 28(2), 71–105.

This article discusses the experience of adult children (daughters) who are taking care of their elderly parents by using role theory. The data collection was done using in-depth interview method on 8 respondents and the survey method on 399 respondents both of which were conducted by enumerators. The survey and in-depth interview results show that daughters are more involved in caring for their elderly parents. The elderly parents also expect help and support from their daughters more than from their sons. This phenomenon will have negative implications on women's career, family and nation development. This article concludes that employers should take into consideration more flexible hours, increase formal and informal support for the working women who are caring for their elderly parents and family in achieving our goal as a caring society in a developed nation.

Alavi, K., Sail, R., Idris, K., Samah, A., & Omar, M. (2011). Living arrangement preference and family relationship expectation of elderly parents. *Pertanika Journal of Social Science and Humanities*, 19(S), 65–73.

Family support is essential for sustainability of elderly living arrangement. The main purpose of this study is to identify the living arrangement preference and family relationships expectation of elderly parents. An approach guided by grounded theory was chosen. Selected 15 elderly participants of Malay, Chinese and Indian ethnic, aged 60 and above were interviewed. The findings showed that most elderly parents preferred living with their children or family members than living alone. They also expected material assistance and social support from their adult children, relatives, neighbours and friends. Elderly men turned to their spouses for assistance where as widowers expected their sons to take care of their well-being. Almost all elderly parents expected their children to care for them, due to the affectionate and obligatory ties between elderly parents, their children and in-laws. The implication of this study is that family support and care in enhancing the well-being of elderly parents is very important.

Alavi, M. K., Sail, R. M., Mohamad, M. S., Oma, M., Subhi, N., Chong, S. T., Sarnon, N., Fauziah, I., & Lukman, Z. M. (2011). Exploring the meaning of ageing and quality of life for the sub-urban older people. *Pertanika Journal of Social Sciences & Humanities, 19*, 41–48.

A quality of life which includes psychological well-being, good physical functioning, relationships with others, health, and social activity is very important to the aged. The main purpose of this descriptive and exploratory case study was to analyze the meaning of aging and perceived quality of life among the elderly in sub-urban communities. Participants were 15 Malays, Chinese and Indians, aged 60 and above. In-depth interviews with the participants were conducted to gather the data. The findings indicated that aging brought a lot of shortfall, especially in terms of health and physical strength to the elderly. They were pleased to see the development of families, children, and grandchildren as a quality of life. Respondent are contented living with their children and grandchildren. The implication of this study is that there is a need for more gerontological social workers with adequate training and skills to provide services for the elderly.

Ali, A. N. M., Yeon, A. L., & Hussain, M. A. (2016). Private retirement scheme in Malaysia : Legal analysis. *International Journal of Economics and Financial Issues, 6*(7), 290–295.

The Government recognizes the significance of savings to guarantee sufficient savings after retirement. In this regard, the Malaysian Government established the Private Retirement Scheme (PRS) in 2012 as a complementary scheme to the existing pension schemes. PRS seeks to provide alternatives for employed or self-employed Malaysian citizens, to enhance a well-structured and regulated scheme. By using a legal research approach, this study seeks to analyse the existing legislations governing PRS in Malaysia. The study found that the PRS is mainly regulated by Capital Markets and Services Act 2007 and other legislations. There are several legal challenges that can be observed in PRS system. Among them are PRS Guidelines 2012 only provide a minimum standard in relation to the governance policy of PRS providers and CMSA is silent in the matters regarding PRS scheme based on Shariah principles to be offered by the providers.

Ali, N. M., Shahar, S., Kee, Y. L., Norizan, A. R., & Noah, S. A. M. (2012). Design of an interactive digital nutritional education package for elderly people. *Informatics for Health and Social Care, 37*(4), 217–229.

Designing a system for the elderly is crucial, as aging is associated with physiological changes that may impair perception, cognition and other social aspects; therefore, many aspects need consideration, especially in interface design. This study was conducted to develop a digital nutritional education package (WE Sihat) by following appropriate guidelines for elderly people to achieve better design interface and interaction. Touch-screen technology was used as a platform for user interaction. The nutritional content was based on previous nutrition studies and a lifestyle education package on healthy aging, which contains four modules. The questionnaires were distributed to 31 Malay subjects aged 60-76 years old, containing an evaluation about the overall content, graphics, design layout, colour, font size, audio/video, user-perceived satisfaction and acceptance levels. The findings showed positive feedback and acceptance. Most subjects agreed that the digital nutritional education package can increase their nutritional knowledge for a healthy lifestyle and is easy to use. The touch-

screen technology was also well accepted by elderly people and can be used as a kiosk for disseminating nutrition education for healthy aging.

Ali, T. B. T., Raja Jalalluddin, R. L., Razak, I. A., & Zain, R. (1997). Prevalence of oral precancerous and cancerous lesions in elderly Malaysians. *Asia Pacific Journal of Public Health*, 9(1), 24–27.

A house to house survey on elderly subjects aged 60 years old and above was undertaken in a large district in Malaysia. A total of 486 subjects in randomly selected Enumeration Blocks were interviewed and examined. The prevalence of oral precancerous lesions was recorded at 3.3%, of which leukoplakia was the most common. When the ethnic distribution of these oral precancerous and cancerous (OPC) lesions was compared, 72% of those inflicted were Indians. Oral cancer was detected in two subjects (0.4%), both of whom were of Indian origin. Among subjects with OPC lesions, 4.2% were smokers, 12.7% were betelquid chewers, and 11.8% had indulged in both habits, whilst one subject had not practised any of the oral habits of interest (0.4%). The findings suggest the occurrence of OPC lesions to be related to betelquid chewing.

Ali, T. B., Razak, L. A., Latifah, R. J., & Zain, R. B. (1995). An epidemiological survey of oral mucosal lesions among elderly Malaysians. *Gerodontology*, 12(1), 37–40. <https://doi.org/10.1111/j.1741-2358.1995.tb00128.x>

A house to house random survey on elderly subjects was undertaken in the District of Klang in Malaysia. The objective of this study was to investigate the prevalence of oral mucosal lesions (OML) among the elderly in this area. The primary units in the sampling frame were the Enumeration Blocks (EBs) as defined under the population census. All households of the selected EBs were considered as sampling units and members aged 60 and above were considered as respondents. There was a slight preponderance of females, with the Malays comprising the majority of the subjects. Of the 486 respondents, mean aged 69.1 +/- 7.3 yr, 111 had at least one oral mucosal lesion, a prevalence of 22.8%. A total of 145 lesions were detected. The prevalence of OML was highest among Indians and least among the Chinese. The most common finding was tongue lesions, recording a prevalence of 10.7%, followed by oral pigmentation (4.9%) and white lesions (4.3%). Denture related lesions were comparatively low at 2.5%. Two cases of oral cancer if representative would give a relatively high prevalence of 0.4%

Al-Jawad, M., Rashid, A. K., & Narayan, K. A. (2007). Prevalence of undetected cognitive impairment and depression in residents of an elderly care home. *Medical Journal of Malaysia*, 62(5), 375–379.

The elderly population in Malaysia is growing rapidly. Some of the most vulnerable are in residential care. Research is needed into the characteristics of this population to aid clinicians and policy makers in addressing the needs of this group. This observational, cross-sectional study aims to determine prevalence of undetected cognitive impairment and depression in elderly care home residents in Malaysia. One hundred and sixty-seven people over 60 years of age living in a state run residential home were interviewed. Validated assessment tools were used to measure dependency, cognitive impairment and depression. The prevalence of probable dementia is 36.5%, with increasing prevalence with age and level

of dependence. Prevalence of depression is 67.0% (major depression 13.2%), with more depression in males and in the Indian population. None of the identified cases had been previously investigated or treated for dementia or depression.

Al-Naggar, R. A., & Chen, R. (2011). Stress and coping strategies among retired people in Malaysia: A qualitative study. *ASEAN Journal of Psychiatry*, 12(2), 143–147.

This study explored the stress and coping strategies among retired people in Malaysia. In-depth interviews were conducted with 36 elderly Malaysian subjects. This protocol was approved by the Ethics Committee of the Management and Science University. The data obtained were sorted into various categories. A total number of 36 retired elderly people participated in this study. The majority of them was in the age group of 55-59 years old, females, Malay and married. The majority defined stress as pressure or tension. Financial difficulties, family and work problems were the main causes of stress in the majority. Also, the majority of respondents mentioned that they coped with stress by sharing problems with others, by resting and relaxing, and/or by doing housework during their free time. A few of them coped with stress by hanging out with friends, going shopping, doing photography, travelling, going fishing, and doing sports. Financial difficulties, family and work problems were the main causes of stress among elderly people. They coped with stress by sharing problems with others, resting and relaxing, and/or doing housework during their free time.

Al-Naggar, R. A., Al-Kubaisy, W., Yap, B. W., Bobryshev, Y. V., & Osman, M. T. (2015). Attitudes towards colorectal cancer (CRC) and CRC Screening tests among elderly Malay patients. *Asian Pacific Journal of Cancer Prevention*, 16(2), 667–674.

Colorectal cancer (CRC) is the third most common malignancy in Malaysia, where data are limited regarding knowledge and barriers in regard to CRC and screening tests. The aim of the study was to assess these parameters among Malaysians. The questionnaires were distributed in the Umra Private Hospital in Selangor. The questionnaire had four parts and covered social-demographic questions, respondent knowledge about CRC and colorectal tests, attitude towards CRC and respondent action regarding CRC. More than half of Malay participants (total n=187) were female (57.2%) and 36.9% of them were working as professionals. The majority of the participants (93.6%) never had a CRC screening test. The study found that only 10.2% of the study participants did not consider that their chances of getting CRC were high. A high percentage of the participants (43.3%) believed that they would have good chance of survival if the cancer would be found early. About one third of the respondents did not want to do screening because of fear of cancer, and concerns of embarrassment during the procedure adversely affected attitude to CRC screening as well. Age, gender, income, family history of CRC, vegetable intake and physical activity were found to be significant determinants of knowledge on CRC. The major barriers identified towards CRC screening identified in our study were fear of pain and embarrassment. The findings have implications for understanding of similarities and differences in attitude to CRC amongst elderly patients in other cultural/ geographic regions.

Ambigga, K. S., Ramli, A. S., Suthahar, A., Tauhid, N., Clearihan, L., & Browning, C. (2011). Bridging the gap in ageing: translating policies into practice in Malaysian primary care. *Asia Pacific Family Medicine, 10*(2), 1–7.

Population ageing is poised to become a major challenge to the health system as Malaysia progresses to becoming a developed nation by 2020. This article aims to review the various ageing policy frameworks available globally; compare aged care policies and health services in Malaysia with Australia; and discuss various issues and challenges in translating these policies into practice in the Malaysian primary care system. Fundamental solutions identified to bridge the gap include restructuring of the health care system, development of comprehensive benefit packages for older people under the national health financing scheme, training of the primary care workforce, effective use of electronic medical records and clinical guidelines; and empowering older people and their caregivers with knowledge, skills and positive attitudes to ageing and self-care. Ultimately, family medicine specialists must become the agents for change to lead multidisciplinary teams and work with various agencies to ensure that better coordination, continuity and quality of care are eventually delivered to older patients across time and settings.

Ameer, M. W., & Mohd, S. (2012). *Retirement programs in Malaysia*. Paper presented at the USM-AUT International Conference on Sustainable Economic Development - Policies and Strategies, Malaysia, 17-18 November 2012 (pp. 765–770).

The world wide ageing population has called for a more comprehensive retirement program to protect the elderly against loss of income during retirement. Malaysia currently has two major retirement programs available that are the pension scheme and the Employee Provident Fund for the civil servants and the private workers respectively. Another retirement program that has a limited coverage is the Army Forces Fund that is for the armed forces of different rank. The informal sectors; workers outside the formal sector, employed in small often family-based enterprises, owner of own business (self-employed), workers affected by the informalization of labor relations with their employers, self-employed and those engaging in the primary sector (agriculture and fishery) are often not covered by any formal retirement scheme. The aim of the paper is twofold: to evaluate the coverage and benefits of the current retirement program in Malaysia and to investigate the role of the newly introduced private retirement scheme (PRS). The study finds that there Malaysia's retirement program is not a universal coverage, in which the protection does not cover the entire population. The upcoming Private Retirement Scheme is a good opportunity for the informal sector workers to save for their old ages through fully governed-mechanism. Nevertheless, the success of the program to include the informal sector include proper planning in addition to better coverage and thorough understanding of the schemes by the recipients.

Amin, R. M., & Jaafar, N. (2011). Elderly diabetic patients' perception on family support and glucose control. *International Journal of Public Health Research, 1*(1), 7–12.

Elderly are often associated with multiple social and health problems. Family members are important in helping them doing their daily activities. For elderly diabetics, family support has a role in diabetes management and glucose control. The aim of this study is to explore the perceptions of elderly diabetics regarding the role of family support on their glucose control. This qualitative technique was a part of the study on glucose control and its associated factors among elderly diabetics. It was conducted from February until May 2009

in Kulim. Ten respondents were purposively sampled based on their glucose control. HbA1c 6.5% or less was considered as good glucose control. In depth interview, using semi-structured interview guide was used in this study. The conversation had been taped, transcribed to verbatim and analyzed manually using thematic analysis. All ten respondents perceived that family support did not play a role on their glucose control. They believed that self-awareness and self-determination were important to control the glucose level. Those with good glucose control practiced healthy diet, and not affected by food prepared by their family members compared to those with poor glucose control. However, both groups claimed that, they did not receive much advice from their family members and no special food was prepared for them. Elderly diabetics should be motivated on self-determination and focusing on good glucose control. Health education should be given to patients and their family members to increase their diabetes knowledge especially on useful advice and proper food preparation. It could motivate the elderly diabetics to control their glucose level.

Andrews, G. R. (1987). Ageing in Asia and the Pacific. A multidimensional cross-national study in four countries. *Comprehensive Gerontology C, 1*, 24–32.

Although ageing is not yet a high priority issue for health planners, policy makers and clinicians in most developing countries, there will be a growing need in coming years to pay more attention to the important health issues associated with population ageing in the developing world. This paper reports some of the relevant findings of a cross-national study (sponsored by the World Health Organization) of the health and social aspects of ageing in four developing countries: Korea, the Philippines, Fiji and Malaysia. The key findings are compared and contrasted with those of a similar 11-country WHO study in Europe. In broad terms, the overall demographic, physical, mental health and social patterns and trends associated with ageing as demonstrated by age group and sex differences were consistent throughout the four countries studied. Comparisons with European findings in other similar studies underlined the fundamental universality of age-related changes in biophysical, behavioural and social characteristics. The importance of the family in developing countries was evident with about three-quarters of those aged 60 and over in the four countries living with children, often in extended family situations. Levels of adverse health-related behavior and the prospect of changing patterns of morbidity with further increases in the total and proportional numbers of aged persons point to a need for emphasis on preventive health measures and programs directed to the maintenance of the physical and mental health of the ageing population.

Andrews, G. R., Esterman, A. J., Braunack-Mayer, A. J., & Rungie, C. M. (1986). Aging in the Western Pacific: A four-country study, 1986 [Fiji, Korea, Malaysia, the Philippines].

This study is concerned with demographic aging and its health and socioeconomic consequences in selected Asian and Pacific countries, namely, Fiji, Malaysia, the Philippines, and the Republic of Korea. The primary objectives were to provide recommendations for actions in the area of health and social care for the elderly. Comparisons are made with a similar study undertaken for selected European countries.

Ang, B. H., Chen, W. S., Jamalludin, S., & Lee, S. W. H. (2017). Comparison of injury patterns in road traffic accidents for elderly and very elderly trauma patients in Malaysia. *Journal of Clinical Gerontology & Geriatrics*, 8(1), 9-16.

To examine the difference in injury patterns between elderly (aged 60-74 years) and very elderly (aged 75 years and above) groups from road traffic accidents. A total of 362 geriatric patients (aged 60 years and above) with major trauma following road traffic accidents in Malaysia extracted from the National Trauma Database (NTrD) from 2007 to 2011 were included in this study. Median age of the geriatric patients was found to be 67 years, with majority male patients (85%), of Malay ethnicity (48%) and sustained blunt injury (99.7%). Most of them had low injury severity, hemodynamically stable and more than half sustained injuries to head and neck region (54.7%). Very elderly group had significantly higher mortality rate than elderly group ($P < 0.001$) with the increase in odds of mortality persisted even after adjustment for physiological status and injury severity (Odds Ratio, OR: 2.75, 95% Confidence Interval, CI: 1.51-5.05, $P = 0.001$). Injury patterns from road traffic accidents and its associated fatalities involving older people had emerged to be public safety concerns in Malaysia. Findings suggested extra attention was recommended especially in the care of very elderly patients.

Ang S. W., & Zaitun Y. (2008). Skeletal muscle mass and its relationship with physical activity and functional status among institutionalised elderly aged 60 and above in Penang. *Malaysian Journal of Nutrition*, 14(2 (supplement)), S17.

The objective of this study is to determine the skeletal muscle mass (SMM) and its relationship with physical activity and functional status among elderly subjects, aged 60 years and above in the Home for the Infirm and Aged, Penang. A face-to-face interview questionnaire was used to collect the information on personal background and health-related characteristics. Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) and the International Physical Activity Questionnaire (IPAQ) were used to assess the functional status and physical activity. Anthropometric measurements (weight, height, waist, hip, calf and thigh circumferences, body fat mass, body fat percentage and handgrip strength) were measured using appropriate instruments and standard procedures. The anthropometric SMM prediction equation by Lee et al. (2000) was used to determine the SMM value. $SMM (kg) = 0.244 \times \text{body weight (kg)} + 7.80 \times \text{height (m)} - 0.098 \times \text{age (y)} + 6.6 \times \text{sex (1= male; 0=female)} - 1.2 \text{ (Asian)} - 3.3$. A total of 61 elderly (males=47.5%; females=52.5%) participated in this study and their age ranged from 61 to 87 years. Weight (55.28 ± 10.47 kg vs 50.56 ± 10.52 kg), height (162.07 ± 6.48 cm vs 152.34 ± 7.74 cm), and SMM (21.17 ± 2.98 kg vs 12.59 ± 2.78 kg) were significantly higher in males than females. According to age groups, younger respondents (60–69 years) had significantly higher weight (54.27 ± 9.59 kg), Body Mass Index (BMI) (22.12 ± 3.65 kg/m²), and Waist-Hip-Ratio (WHR) (0.90 ± 0.11) compared to older respondents (>70 years). There was no significant association between SMM and ADL scores, IADL and level of physical activity. However, SMM was significantly correlated with handgrip strength ($r = 0.637$, $p < 0.01$). Age was not significantly associated with ADL score, IADL score, level of physical activity, SMM and handgrip strength. In conclusion, males and the younger age group had higher SMM, functional status, physical activity, BMI, WHR and other anthropometric measurements. With increasing age, there will be further changes in body composition, decline in functional and physical ability thus affecting health of the elderly. Therefore, the elderly who are at increased risk need to be identified and provided with appropriate intervention programmes or activities.

Apsani, R. C., Chandran, S., Tieng, S. T., & Devi, B. C. (2012). First Asian congress on cancer in older patients Kuching, Malaysia 22–23rd January 2011. *Journal of Geriatric Oncology*, 3(1), 68–75. <https://doi.org/10.1016/j.jgo.2011.11.003>

SIOG 2011-First Asian Congress on Cancer in Older Patients organized by Sarawak Hospice Society, was held in Kuching, Sarawak, Malaysia from 22 to 23rd January 2011 under the chair of Riccardo A. Audisio and Matti A. Apro. The meeting was accredited by ACOE and ESMO and endorsed by UICC and ESSO and first to be held in Asia. The congress was well attended with 500 participants from 16 countries. The participants included doctors, nurses, pharmacists and X-ray technologists. The topics included the global and South East Asian perspective on older patients, under treatment, clinical assessment tools, surgical treatment of breast, lung and esophageal cancers, supportive care for breast cancer, cultural barriers in Malaysia, newer radiotherapy techniques that can be used in older patients, targeted treatment of lung, colorectal cancers and hematology. Preliminary findings of using the Groningen Frailty Index in an Asian oncology patient population were presented. An interesting topic on the cultural barriers to cancer care in the elderly from the three ethnic groups in Sarawak was presented. The findings revealed the challenges faced by the public as well as the healthcare professionals. The topics discussed were relevant to the local needs of the participants so that they could apply the knowledge when they returned home. The Meeting Highlights collect the views of the panelists: to update on the cutting edge of present knowledge, in order to improve our understanding of the malignant disease affecting the senior patients and its implication in the Asian setting and to optimize the management.

Areff, N. A., & Lyndon, N. (2015). Meanings of old age to the elderly in pondok living arrangement in Malaysia. *Mediterranean Journal of Social Sciences*, 6(4), 32–38.

Previous studies have focussed on the meaning of old age as conducted from the quantitative approach. Thus the primary emphasis of this article is the perception of elderly individuals who resided in Pondok Jeram, an alternative congregated living arrangement which was established for the propagation of Islamic teaching and learning on old age. The employment of abductive research strategy based on idealist ontology and social constructionist epistemology gave the perennial importance to the elderly's point of views. The use of in-depth interviews yielded social actors' meaning and interpretation of old age in their everyday experience. The findings revealed 7 important themes in relation to understanding old age; old age as a natural life cycle, old age is normal, feeling about old age, old age and physical changes, old age and religion, old age and health and old age and pondok. Finally, the interpretations of elderly residents' meaning of old age would give a clearer understanding of their needs from the local socio-cultural environment for future policy planning and implementation concerning them.

Ariffin, J., & Tey, N. P. (2008). Country studies Malaysia: Social services policies and family well-being in the Asian and Pacific Region. In *Asia Pacific Population and Social Studies Series No. 165*. Economic and Social Commission for Asia and the Pacific. Bangkok: ESCAP, United Nations. .

The first part of the paper discussed the impact of socio-economic development on the family. It also covered statistics and issues on the care of young and old, challenges of social changes and emerging issues for the implementation of social protection policies for the families, supportive legislation programs for the poor, policies for women, youths and old

people. The second part dealt with social protection and social services policies from a family perspective. It then described the EPF, pension, SOCSO and Workers' Compensation Scheme, followed by a discussion on the family support programs and services of the relevant ministries. The paper concludes with some recommendations for strengthening family wellbeing through improved social services policies.

Aris, M. A. M., Draman, S., Rahman, J., & Shamsuddin, N. (2009). Functional disabilities and its associated factors among elderly patients in primary care clinics. *International Medical Journal*, 16, 251–256.

Identification of risk factors associated with functional disability among elderly population is important in order to improve their quality of life. To study the functional disability among elderly population in primary care clinics and its relation to their socio-demographic and health related risk factors. A cross sectional study was conducted among elderly in three primary care clinics in Kuantan, Pahang Malaysia in assessing the functional disability and its associated risk factors. The respondents were selected through convenient sampling technique and interviewed them by using reconstructed standardized questionnaire which includes social-demographic background, medical illness, ability to perform basic activities of daily living (ADL), cognitive function and depression assessment. Out of 600 elderly that attended the clinics from 1 st December 2006 to 31st January 2007, 182 (30.3%) respondents agreed to be enrolled in the study. The respondents were Malay (93.4%), females (54.4%) and married (71.4%) elderly. Most of them were living with their family (92.3%), received formal education (64.8%) and had no past history of recent hospital admission (81.3%). Their average monthly per capita income was RM 250. Most respondents (90.7%) suffered from chronic illness, 19.8% were functional dependent (according to Barthel index), 15.4% had cognitive impairment (according to ECAQ) and 17.0% had depression (according to GDS-14). The most common functional dependence was climbing stairs (45.6%). This study revealed that functional disabilities were found significantly associated with increasing age {OR: 1.139, 95%CI (1.043, 1.244)}, females {OR: 3.366, 95%CI (1.239, 9.141)}, living alone {OR: 8.039, 95% CI (2.002, 32.277)}, history of hospital admission {OR: 8.889, 95%CI (3.145, 25.127)} and depression {OR: 6.017, 95%CI (2.222, 16.298)}. The elderly patients with increasing age, females, living alone, history of recent hospital admission and depression tend to have a high risk to suffer from functional disabilities.

Aris, N., & Rahman, S. A. (2009). Relationship of anaemia with cognitive and functional status of elderly in Rembau, Negeri Sembilan. *Sains Malaysiana*, 38(6), 953–958.

The prevalence of anaemia and nutritional status was evaluated among 88 Malay elderly (20 men and 68 women) aged 60 to 85 years (mean age 69.8 ± 6.0 years) from four villages in Rembau district, Negeri Sembilan. In addition, the relationship between hemoglobin with nutrient intake, cognitive and functional status of the elderly were also investigated. Subjects were interviewed to obtain information on demographic and nutrient intake. Cognitive status was assessed using Elderly Cognitive Assessment Questionnaire (ECAQ) while functional status was measured using Instrumental Activity Daily Living (IADL) and hand grip measurement. Hemoglobin level was determined using HemoCue method. The findings indicated that the prevalence of anaemia was 22.7%. Prevalence of anaemia for male subject was 30.0% with mean of hemoglobin as 11.7 ± 1.0 g/dL while 20.6% of female subject was anaemic with mean of hemoglobin was 11.2 ± 0.5 g/dL. As much as

21.6% of the subjects have cognitive impairment with the prevalence is high in old-old age group (57.9%) compared to the young-old age group (11.6%). Results from functional assessment showed that mean for IADL score as 11 ± 3 . The IADL score was lower in old-old age group (9 ± 4) compared to the young-old age group (12 ± 2). For hand grip measurement, overall mean was 16.8 ± 8.7 kg (14.2 ± 8.4 kg for old-old age group and 17.6 ± 8.7 kg for young-old age group). Nutrient analysis showed that the mean calorie intake for men (1310 ± 448 kcal/day) and women (1180 ± 300 kcal) were lower than the RNI. However, only intakes of iron, niacin and vitamin A achieved the Malaysian Recommended Nutrient Intake (RNI). Correlation between hemoglobin and nutrients was only showed with calorie intake ($r=0.486$, $p=0.048$) and not with other nutrients. Besides that, there was no correlation between hemoglobin with ECAQ and IADL scores but hemoglobin was correlated with hand grip strength ($r=0.265$, $p=0.013$). As a conclusion, 22.7% case of anaemia was reported in this study. However, correlations were only formed between hemoglobin with calorie intake and hemoglobin with hand grip. Anaemia in elderly increases the inability of the elderly to live independently.

Arokiasamy, J. T. (2011). Looking beyond a seven billion population – excitement or trepidations? (Commentary). *Medical Journal of Malaysia*, 66(4), 286–287.

It is widely recognized that the elderly face multiple health problems that are non-communicable, degenerative and debilitating in nature. These problems require long term care, expensive resources, and adequate supportive equipment and services. Consequently the concept of compression of morbidity is more vital now than ever before as are also health promotion and wellness initiatives that target individuals from ‘womb to tomb’. The concerns would be about how to keep our ageing population healthy as long as possible so that the period of morbidity that they experience is limited to the least possible period. Disability free years including disability adjusted life years need to be paid attention to. Malaysia in recognizing the challenges of an aging population has a national policy on caring for the elderly in place since the mid-90s and efforts have been underway to meet these challenges in the future. The concern here would be as to whether these are adequate and accessible to those who need them most and how much of the future needs are being recognized and being planned for. The problem of ageing and its impact on society and Malaysia’s resources cannot be ignored nor given a lesser priority on the assumption that there is time to handle this problem. It cannot be denied that the elderly themselves need to be empowered to keep healthy and contribute economically in tangible and non-tangible ways for the benefit of society and the nation.

Arokiasamy, J. T. (1999). Malaysia’s ageing population: challenges in the new millennium (Editorial). *Medical Journal of Malaysia*, 54(4), 429–432.

Malaysia, in the last decade has seen an increasing interest on care of older persons. This is reflected by the elderly themselves acting as an important pressure group, increased programs and activities, and an increase in research on older persons. Undoubtedly, further research will be increasingly required in the future in this area, While the results of these may provide new recommendations, the existing recommendations of research efforts carried out as early as in the mid 80s are worth revisiting regularly to assess our progress in implementing them. Some potential areas for further research on older persons have been cited earlier, while others could include community based research; cultural based studies due to the multiethnic

characteristic of our nation; health economics including health care expenditure studies; and research relating to the psychological aspects of aging. The results of these will no doubt assist the relevant agencies cope with issues facing older persons and ensure that their quality of life is assured in the coming millennium.

Arokiasamy, J. T. (1997). Malaysia's ageing issues. *Medical Journal of Malaysia*, 52(3), 197–201.

According to United Nations' estimates, the population of the elderly who are 60 years and above would reach 1.2 billion by the year 2025 with the majority in the developing countries. A major factor that affects the ageing of a population is fertility decline. Statistics indicate that fertility rates for Malaysian females have been declining. The implementation of development and health programmes along with the general improvement in the standard of living has also brought about remarkable decline in mortality which also contribute to the aging population. The study discusses the common conditions and problems of illnesses that exist in the elderly. In order to address the illnesses, healthy lifestyles programme have been introduced to benefit the elderly. Besides, several of the factors such as socioeconomic security, education, community programmes and activities of senior citizens promote and enhance the living standards of the elderly. As a conclusion, the government, the private sector, non-governmental agencies and the community play important roles in addressing the issues of ageing.

Arokiasamy, J. T. (1997). Social problems and care of the elderly. *Medical Journal of Malaysia*, 52(3), 231–237.

The ageing population is both a sociological and medical problem that can easily be neglected in relation to other current and more pressing problems within the country. The needs of the elderly need to be addressed and planned for especially as a long term measure within the context of the countries available resources. At the national level, society is often faced with decisions on what resources it is willing to commit to reduce disability in old age and improve and maintain the quality of life of the elderly. Those in the working group may resist diverting available resources for those elderly who are non-productive. On the other hand, it is also known that the elderly can become a strong political pressure group that can influence legislative action. This will become more apparent with the increase in wealth that follows industrialization of a country.

Arshat, A. H., Tan, P. C., & Tey, N. P. (1989). *The ageing of population in Malaysia. (Asian Population Studies Series Vol. 96). Economic and Social Commission for Asia and the Pacific, New York: United Nations, 87 pages*

Gives details of the extent of ageing, life expectancy, social and economic conditions of the elderly, literacy, labor force participation of the elderly and household composition and family structure. Includes a study on ageing undertaken in the state of Melaka, and a review of the policies and programs.

Ashari, A., Yassin, Z., & Hamid, T. A. (2008). Relationship between selected socio-demographic and health-related factors with intake of fruits and vegetables among the elderly in Malaysia. *Malaysian Journal of Nutrition*, 14(2) (supplement), S17.

Food intake plays an important role in providing adequate nutrients. Several studies have indicated that diets relatively high in fruits and vegetables are associated with a lower risk of chronic diseases. The objective of this study is to identify the relationship between socio demographic and health-related variables with intake of fruits and vegetables among older persons aged 60 years and above in Malaysia. The subjects were a representative sample from 13 states and the Federal Territory of Kuala Lumpur. One older person within an available household in selected enumeration blocks was included in the study. Information on demographics, socioeconomic status, and lifestyle characteristics was obtained using a pre-tested questionnaire. The frequency per week of fruits and vegetables intake was obtained through a face-to-face interview. The sample consisted of 2,980 older persons (males = 47.9%; female = 52.1%). The mean age of respondents was 70.46 ± 7.2 years, the majority were Malays (58.3%), married (55.8%), with no formal education (44.5%), with an average monthly income of RM551.02. About 75.3% of the respondents were taking vegetables daily and 38.1% were taking fruits daily. By gender, 51.9% of women and 45.7% of men had daily intake of vegetables, while 50.4% of the women and 48.1% of men reported daily intake of fruits. In terms of health status and other lifestyle variables, 54.2% rated their health as "good", 53.3% were inactive or sedentary and 17.2% were currently smoking. The results showed a significant association between intake of fruits with age ($c2 = 7.077$, $df = 2$, $p = 0.029$), ethnicity ($c2 = 42.23$, $df = 4$, $p = 0.000$), stratum ($c2 = 15.126$, $df = 1$, $p = 0.000$) and self-rated health ($c2 = 16.31$, $df = 3$, $p = 0.001$). On the other hand, only ethnicity ($c2 = 11.352$, $df = 4$, $p = 0.023$) and self-rated health ($c2 = 16.16$, $df = 3$, $p = 0.001$) were significantly associated with intake of vegetables. These findings indicate that there is a relationship between pattern of fruits and vegetables intake with selected demographic and health-related characteristics of the respondents. Therefore, appropriate nutrition intervention programs need to be formulated to encourage increased intake of fruits and vegetables among the elderly in Malaysia to promote optimal health and wellness.

Asher, M. (2011). Malaysia: Pension system overview and reform directions. In *Pension Systems and Old-Age Income Support in East and Southeast Asia* (pp. 101–123). Asian Development Bank.

This paper provides an assessment of Malaysia's current pension system and discusses possible reform directions. This study also discusses the trends and the implications in the demographic and labor market and analyses the current pension arrangements in Malaysia. Suggestions included in this discussion are the limitations of the schemes and measures to improve them. Lastly, it provides an assessment of Malaysia's current pension system from the perspective of coverage, adequacy, equity, administrative efficiency, management and governance structures.

Asher, M., & Bali, A. S. (2015). Public pension programs in Southeast Asia: An assessment. *Asian Economic Policy Review*, 10(2), 225-245.

This paper assesses public pension programs in select Southeast Asian economies (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam – henceforth referred to as the SEA6) and the key issues facing them. The criteria used in assessing pension

systems are the philosophy of pension design, the extent of coverage, investment policies and performance, and administrative and compliance costs. The paper argues that three broad reform directions to strengthen public pensions merit consideration. The first direction is to enhance the professionalism of the existing provident and pension fund organizations, including their governance practices. The second direction is to strengthen the role of noncontributory budget-financed pensions (e.g. social pensions). The third is to adopt a systemic perspective to pension reform that includes reforms in complementary areas (labor markets, public financial management practices, and the civil service); developing a financing-mix of pensions; and lastly, improving effective coverage by exploring complementarities between health care and pension programs.

Asnarulkhadi, A. S., Hamid, T. A., & Ahmad Hariza, H. (2001). Focus group discussion: an empowering technique in need assessment of older Malaysians. *Malaysian Journal of Consumer and Family Economics*, 4, 66–75.

Population ageing is an emerging social issue for Malaysia. The growth in numbers and proportion of the older population aged 60 years and above has encouraged the government to preempt the event by developing the National Policy for Older Persons as a national strategy to face the impending aged nation status. This paper discusses the utilization of focus group discussion (FGD) as a technique in gathering information from older Malaysians. The procedures involved in conducting FGD are discussed. Older persons involved in FGD are able to articulate their needs and programs could be developed to match them. The paper also highlights the use of this methodology in soliciting information from older persons. In addition, the activities in FGD empower older persons, the very essence of the national policy.

Awang, H., Mansor, N., Tey, N. P., & Nik Osman, N. A. (2018). Understanding ageing: Fear of chronic diseases later in life. *Journal of International Medical Research*, 46(1), 175-184.

Ageing is often associated with deteriorating mental and physical health and the need for long-term care, creating a fear of ageing. We investigated what people fear most in terms of disabling chronic diseases and their concerns regarding having long-term illnesses. Data were obtained from an online survey of 518 respondents aged 40 years and older residing in Malaysia, which was based on a convenience sample collected in May 2015 to January 2016. Data were analyzed using chi-squared tests and multinomial logistic regression. Of the most dreaded diseases, heart disease and cancer are life-threatening; however, dementia, diabetes, and hypertension persist and have a disabling effect for a long time. While there were variations in the diseases feared most across sex, ethnicity, and place of residence, the biggest worry for all respondents with regard to having a long-term illness was that they would become a burden to their family, a concern that superseded fear of dying. We found our survey respondents had a fear of chronic diseases and placing a burden on others. Thus, there is a need to provide motivation for people to adopt a healthy lifestyle, to remain healthy.

Ayiesah, R. (2007). The level of physical activities amongst elderly in a community. *Journal of Health and Translational Medicine (JUMMEC)*, 10(1), 29–33.

Little is known of Malaysian older people's participation in physical activities, and the purpose of this pilot study is to explore their participation and the barriers. A self-administered questionnaire was given to 80 eligible respondents at the Kuala Lumpur Health Clinic of which 70 responded. Thirty-six (51.4%) were males and 34 (48.6%) were females. There were 26 (37.1%) Malays, 20 (28.6%) Chinese, 18 (25.7%) Indians and 6 (8.6%) of other ethnic groups. Forty (57.1%) took part in some form of physical activities and the remaining 30 (42.9%) reported no participation at all. The Chinese participated actively in physical activities (90%), followed by Indians (66.7%) and Malays (30.8%). The five common activities were walking (60%), tai chi (20%), gardening (12.5%), stretching (2.5%) and cycling (5.0%). Identified barriers to physical activities were lack of time (26.7%), having health problems (26.7%), was already fit (26.7%), no companion to exercise with (13.3%) and no exercise knowledge (6.7%). These findings indicated that emphasis should be given to the females and the Malay ethnic group when planning physical activity education for the older people as they were identified to be the least active groups.

Azidah, A. K., Hasniza, H., & Zunaina, E. (2012). Prevalence of falls and its associated factors among elderly diabetes in a tertiary center, Malaysia. *Current Gerontology Geriatrics Research*, 2012(Article 539073), 1–5. <https://doi.org/10.1155/2012/539073>

The purpose of this study is to determine the prevalence of falls and its associated factors among elderly diabetes type 2 patients attending a tertiary center in Malaysia. We conducted a cross-sectional study among 288 elderly diabetes type 2. The data collected includes data on sociodemographic, diabetes history, comorbid diseases, drug use, and activity of daily living (Barthel's index). The patient also was examined physically, and balance and gait assessment was carried out. Prevalence of falls among elderly diabetes was 18.8%. Female gender (OR: 2.54, $P < 0.05$), age group more than 75 (OR: 2.97, $P < 0.05$), retinopathy (OR: 2.19, $P < 0.05$), and orthostatic hypotension (OR: 2.87, $P < 0.05$) were associated with higher risk for falls. High balance and gait score was associated with reduced risk of fall in elderly diabetes (OR: 0.89, $P < 0.05$). In conclusion, the factors that are associated with higher risk for falls among elderly diabetes were female sex, age group more than 75, presence of retinopathy, and orthostatic hypotension. Those who had higher balance and gait score were found to be less likely to fall compared with those with lower score.

Azir Rezha, N., Maksom, Z., & Naim, C. P. (2014). Tackling design issues on elderly smartphone interface design using activity centered design approach. *ARPN Journal of Engineering and Applied Sciences*, 9(8), 1190–1196.

Activity theory is the conceptual framework that is derived from the socio-cultural tradition in Russian psychology. The foundational concept of the framework is 'activity', which is understood as purposeful, transformative, and developing interaction between subjects and the world. Activity theory used to enhance the understanding of the behavior and characteristics of the individual and how the relevant social entities interact with technology for daily activities. Reviews on the smart phone interface for the elderly is not something new and various research approaches were carried out to help the elderly to get use of the smart phone technology. Until recently, most of the interface design use user centered design as main methodology. Activity theory is seen as a potential method to help researchers to identify

aspects where in activities that contribute to the inefficiency of the interface design activities. In the paper, we will explain why activity centered design (ACD) is selected from other Human-Computer Interaction (HCI) methodology commonly used to study the interface design. In addition, we will describe the challenges faced when using ACD as the main methodology of the study. The population selected for this study is populated urban area in Malaysia, a developing country in term of the use of technology.

Aziz, N. A., Leelavathi, M., Tohid, H., & Hamzah, M. S. (2009). Challenges in managing dementia in a primary health care setting: A case report. *South African Family Practice*, 51(6), 519-520.

Dementia is a condition that is frequently associated with ageing. However, many fail to recognise that dementia is a treatable condition if detected early. This case report illustrates a 64-year-old man who was initially presented in a primary health care (PHC) centre in Kuala Lumpur Malaysia, with gradual changes in his behaviour. Initial assessment concluded that he suffered from depression and he was treated accordingly. However, over time his condition deteriorated and the diagnosis was re-evaluated from depression to dementia when he developed poor cognitive and memory function. The patient defaulted on his follow-up appointments due to poor understanding of the illness and poor family support.

Aziz, R. A., & Yusooif, F. (2012). Intergenerational relationships and communication among the rural aged in Malaysia. *Asian Social Science*, 8(6), 184–195.

In Malaysia the family has been the main institution caring for the aged. However, the processes of development, directly or indirectly, have impacted the size, functions and structure of the family unit, which subsequently impacted the family intergenerational relationships and communication. This study is about the intergenerational relationships and communication specifically among the rural aged with their family members. The main objective is to further understand the relationship of the aged with those around them and its contribution to productive and quality ageing process. Survey was the main method used in the study and was conducted among 200 older persons residing in the rural area of mukim Sungai Petani, in the district of Kuala Muda, Kedah, Malaysia. A total of 186 co-residing adult children were also interviewed. The study shows that the intergenerational relationship is still stable and harmonious. The study also shows that the family structure in the area is mainly extended rather than nuclear with the family members exchanging mutual support. In fact, family and kinship network have remain important support network for the families. Generally, the children show positive and responsible attitudes towards their parents. This is in line with Malaysian culture that places importance on good and close relationships between generations.

Azlan, N., & Nidzwani, S. (2012). Factors predicting outcome of cardiopulmonary resuscitation among elderly Malaysians: A retrospective study. *Med J Malaysia*, 67(3), 278-283.

Cardiopulmonary resuscitation (CPR) has been standard treatment for all cardiac arrest patients that arrive at the Emergency Department. However it is unclear whether prolonging resuscitation among the elderly victims will provide any benefit or improve outcome. This study is to evaluate factors that can influence outcome of CPR among the

elderly, such as time of arrest, duration of CPR, lactate levels and age (among elderly age groups). 89 patients fit the inclusion criteria from January 2007 to January 2009, and all underwent CPR. Lactate levels ($p=0.047$) and duration of CPR performed ($p=0.019$) had significant relation to outcome. Time of arrest to CPR and age had no significance. Of 89 patients studied, 4 (4.5%) survived to hospital discharge. The remaining 85 (95.5%) died either in the emergency department, the wards or the Intensive Care Unit. Among the survivors, only 2 (2.3%) functional (independent on activities of daily life) patients were identified. Among the survivors, the mean lactate level was 4.0 mmol/L. The mean lactate levels among the dead were 9.84 mmol/L. The mean length of CPR among the survivors was 5.42 minutes and for the non-survivors, 19.28 minutes. This study reports certain factors such as duration of resuscitation and initial lactate levels that can be valuable tools in decision making when resuscitating an elderly.

Azman, S., Bidin, H., Mohd, A., Abdul, W., & Wan, R. (2017). Initial intervention study of kansei robotic implementation for elderly. *Procedia Computer Science*, 105, 87–92. <https://doi.org/10.1016/j.procs.2017.01.205>

The elderly population in Malaysia may increase to 15 percent from the country's population by the year 2030. This fact brings concern for the future prospect of the elderly care system in Malaysia, where there are possibilities of a robot being embedded into the life of the elderly. There have been many initiatives towards using robots as a therapeutic approach to improve the elderly Quality of Life (QoL). The relevant robotic studies for elderly are much associated with the Japanese Culture. However, there is a little study to investigate the feasibility of learning system using a robot among the elderly in Malaysia. The main objective of this study is to investigate the feasibility of using robots for elderly in Malaysia based on emotion requirement for the learning purposes. Persona approach will be used as a method to study on the three selected elderly from Tanjung Malim Elderly Activity Centre (PAWE). The result shows that majority of them are interested with the use of robot as learning assistant although they did not have any prior knowledge on robot learning before. "Interesting", "familiar" and "comfortable" emotion value seems to be an important aspect for the implementation of robot as their therapeutic learning approach. Further research will investigate on the possibility of Kansei robotic implementation via robot assisted learning suitable with elderly emotion as well as enhance their emotion wellbeing.

Azmin, S., Osman, S. S., Mukari, S., & Sahathevan, R. (2015). Cerebral amyloid angiopathy: An important differential diagnosis of stroke in the elderly, *Malaysia Journal of Medical Science* 22(1), 74–78.

Cerebral amyloid angiopathy (CAA) accounts for approximately 10-20% of spontaneous intracerebral haemorrhage (ICH). This figure is thought to be higher in the elderly population. With the increasing life expectancy of our population, we anticipate that the prevalence of CAA-related ICH will increase in tandem. Although CAA-related ICH and hypertension-related ICH are distinct entities based on histopathology and imaging, the clinical presentation of the two conditions is similar. The use of brain computed tomography (CT) scans remain the ICH imaging modality of choice in Malaysia due to its availability, cost, and sensitivity in detecting acute bleeds. On the other hand, the use of brain magnetic resonance imaging (MRI) with susceptibility-weighted imaging (SWI) sequencing enables the clinician to determine the presence of chronic blood products in the brain, especially

clinically silent microbleeds associated with CAA. However, the use of brain MRI scans in our country is limited and leads to a blurring of lines when differentiating between hypertension-related ICH and CAA-related ICH. How this misrepresentation affects the management of these conditions is unclear. In this study, we present two cases of ICH to illustrate this point and to serve as a springboard to question current practice and promote discussion.

Badrasawi, M., Shahar, S., & Singh, D. K. A. (2017). Risk factors of frailty among multi-ethnic Malaysian older adults. *International Journal of Gerontology*, 11(3), 154–160.

Malaysia is experiencing an increase in the percentage of older people who have a higher life expectancy. However, information regarding the prevalence and risk factors of frailty is scarce for Malaysian older adults. The aim of this cross-sectional study is to determine the prevalence and risk factors of frailty among multi-ethnic community dwellings for older adults in Malaysia. A total of 473 older adults aged 60 years and above (210 men and 263 women) were randomly selected from 10 different areas in the Klang Valley of Malaysia. The respondents were screened at selected community centres; their frailty status was defined using Fried's criteria. Respondents were assessed for their physical functional status using selected parameters of a senior fitness test and other physical performance tests regarding their activities in daily life. Anthropometric measurements, cognitive function and symptoms of depression were also assessed for each respondent. The prevalence of frailty was 8.9% and of pre-frailty was 61.7%, with women having a higher prevalence compared to men ($p < 0.01$). Binary logistic regression analyses showed that female gender, abdominal obesity, low peak respiratory flow rate score and slower rapid pace gait speed were significant predictors of frailty. Frailty affected about one tenth of the respondents, but almost two thirds were pre-frail. In addition to gender, other modifiable factors including abdominal obesity and poor physical function were identified as risk factors for frailty and pre-frailty among Malaysian older adults.

Badrasawi, M., Shahar, S., Manaf, Z. A., & Haron, H. (2013). Effect of Talbinah food consumption on depressive symptoms among elderly individuals in long term care facilities, randomized clinical trial. *Clinical Interventions in Aging*, 8, 279–285. <https://doi.org/10.2147/CIA.S37586>

Talbinah is a barley syrup cooked with milk and sweetened by honey. In his famous Hadith on Talbinah, the Prophet Mohammad (SAW) recommended it when sad events happen for its effect on soothing hearts and relieving sadness. This 3-week crossover designed, randomized clinical trial was conducted to determine the effect of Talbinah on mood and depression among institutionalized elderly people in Seremban. A sample of 30 depressed elderly subjects (21 men and 9 women) was selected from the long term care facility. Three different interview-based validated scales (Geriatric Depression Scale, Depression Anxiety Stress Scales, and Profile of Mood States) were used to determine mood, depression, stress, and anxiety at week 0, 3, 4, and 7. The nutritional value of Talbinah was examined using proximate food analysis, minerals content analysis, and differential amino acid analysis. The results indicated that Talbinah is a high carbohydrate food (86.4%) and has a high tryptophan: branch chain amino acids ratio (1:2). A Wilcoxon nonparametric test showed that there was a statistically significant decrease on depression, stress, and mood disturbances scores among the intervention group ($P < 0.05$) for all parameters. In conclusion, Talbinah has the potential

to reduce depression and enhance mood among the subjects. Ingestion of functional foods such as Talbinah may provide a mental health benefit to elderly people.

Badrasawi, M., Shahar, S., Zahara, A. M., & Devinder, K. A. S. (2016). Nutritional, physical and cognitive status among pre-frail and frail Malaysian older adults. *Malaysian Journal of Nutrition*, 22(3), 351-361.

Frailty is related to physical function, nutritional status, and cognition; however, these factors are rarely investigated comprehensively in a single study. Thus, this study aimed to examine the differences in nutritional, physical and cognitive function among frail, pre-frail and robust Malaysian elderly. A total of 473 participants were randomly selected from ten different areas in Klang Valley by multistage random sampling. Frailty was characterised using the Fried criteria. Anthropometric measurements, diet intake, body composition, and physical and cognitive function were assessed. Kruskal Wallis test was employed to examine the relationship between the independent variables and frailty. Frail subjects had significant higher body mass index ($26.8 \pm 4.4 \text{ kg/m}^2$) compared to pre-frail ($25.7 \pm 4.4 \text{ kg/m}^2$) and robust ($24.9 \pm 3.9 \text{ kg/m}^2$), ($p < 0.05$). The same trend was found in waist circumference, an indicator for abdominal obesity. On the other hand, calf circumference, fat free mass, and basal metabolic rate (BMR) were lower in frail subjects ($p < 0.05$ for all parameters). In fact, calf circumference in frail, pre-frail and robust groups were $34.6 \pm 3.6 \text{ cm}$, $34.5 \pm 3.6 \text{ cm}$ and $35.6 \pm 5 \text{ cm}$, respectively ($p < 0.05$). Frail subjects had the highest hours of overnight fasting and percent of energy intake and the poorest physical and cognitive performance compared to the other groups ($p < 0.05$ for all parameters). Frail subjects are being categorised as obese with high fat intake but had muscle wasting and longer overnight fasting, together with known poor physical function and cognitive status. There is a need to strategically prevent frailty through a comprehensive diet, physical function and cognitive training.

Badrasawi, M., Shahar, S., Zahara, A. M., Nor Fadilah, R., & Singh, D. K. A. (2016). Efficacy of L-carnitine supplementation on frailty status and its biomarkers, nutritional status, and physical and cognitive function among prefrail older adults: A double-blind, randomized, placebo-controlled clinical trial. *Clinical Interventions in Aging*, 11, 1675–1686. <https://doi.org/10.2147/CIA.S113287>

Frailty is a biological syndrome of decreased reserve and resistance to stressors due to decline in multiple physiological systems. Amino acid deficiency, including L-carnitine, has been proposed to be associated with its pathophysiology. Nevertheless, the efficacy of L-carnitine supplementation on frailty status has not been documented. Thus, this study aimed to determine the effect of 10-week L-carnitine supplement (1.5 g/day) on frailty status and its biomarkers and also physical function, cognition, and nutritional status among prefrail older adults in Klang Valley, Malaysia. This study is a randomized, double-blind, placebo-controlled clinical trial conducted among 50 prefrail subjects randomized into two groups (26 in L-carnitine group and 24 in placebo group). Outcome measures include frailty status using Fried criteria and Frailty Index accumulation of deficit, selected frailty biomarkers (interleukin-6, tumor necrosis factor-alpha, and insulin-like growth factor-1), physical function, cognitive function, nutritional status and biochemical profile. The results indicated that the mean scores of Frailty Index score and hand grip test were significantly improved in subjects supplemented with L-carnitine ($P < 0.05$ for both parameters) as compared to no change in the placebo group. Based on Fried criteria, four subjects (three from the L-carnitine group

and one from the control group) transitioned from prefrail status to robust after the intervention. L-carnitine supplementation has a favorable effect on the functional status and fatigue in prefrail older adults.

Baginda, A. (1987). *The emerging issues of the aging of population: Malaysia. In population aging: Review of emerging issues. Report, proposed study design and selected background papers from the Meeting on Emerging Issues on the Aging of Population, 22-26 September 1986, Bangkok. (Asian Population Studies Series, No. 80: ST/ESCAP/496), 33-43. Thailand: Economic and Social Commission for Asia and the Pacific.*

Although the population of Malaysia has continued to grow, its growth rate has declined from 3.2% in 1961 to 2.3% in 1980. If current trends continue, the population will reach replacement level in 2030, with about 15% of the population aged. The Chinese as a group are experiencing the aging process much faster than the Malays or the Indians. In view of the rapid demographic changes in the population, a number of issues which in the past were taken for granted or considered minor now require serious attention, including 1) family versus government care for the aged, 2) health care for the aged, 3) old age pensions, 4) employment opportunities for older people, and 5) housing in urban areas large enough for the aged to live with their children. Government policies that need to be examined include 1) pension schemes, 2) the employees' provident fund, 3) welfare assistance, 4) filial piety, 5) leisure activities, 6) health care, and 7) transportation. Younger generations should be made aware of the need to care for their elderly as the state, however rich and developed, cannot replace or substitute for love and affection from one's own family. The elderly today were young once and they have performed their duties and contributed to the growth and development of the country, therefore they deserve the best of care for the rest of their lives.

Banchit, A., Zainuddin, P. F. A., & Enchas, C. A. (2017). *Financial planning, savings and consumption among retirees in Kuching, Sarawak. International Journal of Applied Business and Economic Research, 15(24), 613-619.*

The paper investigates the link between retirement planning with their living lifestyles after retirement. The awareness of financial importance after retirement is found significant in most countries as reported by AEGON retirement readiness 2012 survey. However, the report also comments that most of the respondents do not put this awareness into practical action. There are also individuals who are too complacent and rely solely on the Governments' plans to cater for their retirement needs instead of preparing for the retirement on their own. Therefore, this paper would like to know whether the retirees in Kuching, Sarawak the largest state in Malaysia, can truly manage their fund before retirement to retire comfortable while at the same time support their dependants and pursue their hobbies after retirement. The results show that the retirees do the opposite from the traditional economic theory of individual or aggregate savings behaviour where the theory predicts people will save for their retirement with these concepts in mind. There is evidence in this research that zero retirement planning knowledge respondents pre-retirement saves less than those who had at least moderate knowledge. These ultimately adversely affect the retirees' ability to pay for their basic expenses or healthcare, as well as their other dependants under their care.

Bhaskar Raj, N., Saha, S., Saha, S., Hashim, H. A., Mohd Zahir, N. E. B., & Huda, F. (2017). Exploring predictors of physical dysfunction associated with proprioception in Malaysian elderly individuals suffering from osteoarthritis of knee. *International Medical Journal*, 24(3), 260-263.

This study was done to identify the problems associated with physical dysfunction in relation to proprioception in osteoarthritis (OA) of knee. OA is a degenerative joint disorder, which commonly occurs in knee of middle aged and elderly patients, with a high prevalence rate amongst individuals with higher body-mass index. As the Community Orientated Program for Control of Rheumatic Diseases (COPCORD) reported that, 23% of Malaysians aging more than 55 yrs. and 39% of those aged more than 65 yrs. complained of sharp increase in knee pain. From a pool of six-hundred ninety-seven elderly individuals suffering from pain in knee, four-hundred forty-four individuals (two hundred fifty-three females and one-hundred ninety-one male patients) aging between fifty-six to sixty-five years were selected on the basis of Kellgren's (Grade - II) criteria of deficit in proprioception. Participants were subjected to assessment of body-composition analyses using the BOD-POD analyser. Extent of proprioception was evaluated by the Isokinetic device and problems associated with stiffness were evaluated by the 3D motion tracking system. Following WOMAC assessment protocol, extent of difficulties associated with knee pain was evaluated. Regression analyses reports however revealed that, taller old individuals, if had higher BMI & higher extent of stiffness, were evident as having most difficulty in proprioception. Significance of perceived stiffness was evident, which in association with different metabolic indices emerged as significant predictor of deficient proprioception and related knee osteoarthritis.

Bidin, A., & Yusoff, J. Z. M. (2015). Experience of domestic abuse among Malaysian elderly. [Special Issue], *Pertanika Journal of Social Science and Humanities*, 23, 107-117.

Domestic elder abuse is a social problem. In some countries, it had affected a large number of the elderly. Although this issue has gained prominence for over two decades, in Malaysia, the information on this is still scarce. Most of the elder abuse cases were not reported and concealed from public knowledge. Victims too, rarely report the abuses perpetrated by their own family members. This study aims to examine the experiences of the elderly in Malaysia who have sustained domestic abuse. Face-to-face in-depth interviews were conducted on ten (10) people aged 60 year and above were residing in Rumah Seri Kenangan (an old folks home) in Pengkalan Chepa, Kelantan. Each interview took an average of 15 to 30 minutes and was stopped when the information reached a saturated level. Observation on the physical characteristics of the elderly was done during the interview. The findings showed that majority of the elderly had experienced one or more abuses. The most reported forms of abuse were emotional and financial abuse. The main perpetrators were the adult children or their spouses. Through observation, the study found that the victims had similar characteristics namely physical disability and one or more chronic illnesses.

Bommier, A. (1995). Can you count on children to look after you when you are old? The example of Malaysia. *Économie et Prévision*, 121(5), 75-86.

This is a microeconomic analysis of the transfer of resources by adults to their elderly parents in Malaysia, using data from the Second Malaysian Family Life Survey carried out in 1988-1989. The author concludes that such transfers from children within a family are independent of each other. The factors that lead a child to support elderly parents are

examined; they range from agreements to repay money advanced previously to that child for education to altruistic support for a parent fallen into a position of need. The author notes the importance of joint decisions by a couple regarding support for an elderly parent, and the fact that the level of support depends on the distribution of income between spouses.

Brahmana, R., Puah, C. H., Hla, D. T., & Lestari, S. (2015). *Financial literacy and retirement planning: Evidence from Malaysia*. Paper presented at the Institutional and Individual Investors: Saving for Old Age Conference and Special Issue of Journal of Banking and Finance 22-23 June 2015. School of Management, University of Bath, UK.

This research offers several appealing features for an analysis of financial literacy and retirement planning. We add financial education as the moderating variable on that association. The questionnaires were distributed to evaluate financial knowledge of working adult in their retirement planning decision. Our findings showed a significant relation to retirement planning behaviors with several demography variables such as gender and education level. Meanwhile, we found also that basic financial literacy has failed to contribute significantly on retirement planning, but not advance financial literacy. We also find that respondent literacy is higher when they were exposed to economics in school and to company-based financial education programs.

Caraher, K. (2003). *Malaysia: Approaches to income security in old age*. *Social Policy and Society*, 2(4), 295–304.

In most developed and developing nations individuals are actively being encouraged to save towards retirement via a plethora of savings mechanisms. In Malaysia, the reliance on individual savings through the Employees Provident Fund has costly implications for those in low paid, insecure employment, women and those working in the informal sector. Focussing on Malaysia, this paper seeks to present the pitfalls of such over reliance on the provident fund mechanism, which allows early access to savings and diverts members' contributions to subsidiary accounts. In conclusion, the paper suggests paths of reform which would, at the very least, lessen the growing threat of poverty and social exclusion amongst older Malaysians.

Caraher, K. (n.d.). *Issues in incomes provision for the elderly in Malaysia*. Paper presented at the Year 2000 International Research Conference on Social Security - "Social Security in A Global Village", 25-27 September 2000, Helsinki. International Social Security Association (ISSA) Research Program (Finnish ISSA Member Associations).

This paper discusses whether the current levels of income provision for the elderly under the auspices of the Employees Provident Fund are sufficient to meet the needs of the increasingly elderly population in contemporary Malaysia. It concludes that: (1) Lump sum payments do not represent the best option for income security into old age; (2) Increased accessibility to funds prior to retirement, through dedicated separate accounts, lessens the ability of the EPF to act as a reliable source of income for the elderly; (3) Current arrangements are inadequate to meet the needs of an increasingly elderly population and thus leaves them more vulnerable to the socially exclusive aspects of poverty in old age.

Chai, S. T., Hamid, T. A., Ahmad, Z., & Ibrahim, R. (2012). *Public or private? The utilization and financing of health services by older Malaysians*. Paper presented at the 1st Asia Pacific Clinical Epidemiology & Evidence-Based Medicine Conference, Linking Clinical Epidemiology to Evidence-Based Practice: Issues and Challenges, 6-8 July 2012, Kuala Lumpur.

This study aims to examine the health services utilization and financing of medical expenses for older Malaysians. Data analyzed were part of a larger sample ($n = 5,598$) from a nationwide cross-sectional survey of four age groups (18-25, 26-39, 40-59 & 60+) in 2009. The enumerator-administered questionnaire included questions on socioeconomic status, health and lifestyle information. A total of 2,128 respondents or 38.2% of the sample had reported being sick at least once in the past six months prior to the interview. Out of the 660 respondents aged 60 years or over whom had had fallen ill (50.7% of the total elderly sample), almost all (98.3%) sought some form of medical assistance or treatment. A majority (73%) utilized government hospitals and clinics only while 16.5% relied solely on private health care services. 5.3% of the older respondents made use of both public and private medical facilities. Bivariate analysis showed that there is a significant difference in the patterns of utilization by ethnicity ($X^2=56.34$, $p<0.01$), stratum ($X^2=9.49$, $p<0.05$) and household income ($X^2=26.91$, $p<0.01$). Life and medical insurance coverage are limited, and the medical expenses incurred are usually borne by their adult children (63.9%) or by the elderly themselves (29.1%). The patterns of health services utilization by older persons in Malaysia are mostly affected by socioeconomic and health factors. Detailed data such as out-of-pocket spending, consultation frequency, duration of hospitalization and outpatient waiting time are needed to provide a more accurate estimation of public and private health care costs, access, equity, capacity and efficiency.

Chan, A. (1996). How do parents and children help one another? Socioeconomic determinants of intergenerational transfers in Peninsular Malaysia. *Journal of Population*, 2(1), 43–82.

This study examines the socioeconomic determinants of intergenerational transfers in peninsular Malaysia. The research explores to what extent transfers are money, goods, time, coresidence, or frequent interpersonal contact. Data are obtained from the 1988-89 Malaysia Family Life Survey among 1141 elderly over 50 years old with at least 1 adult child over 20 years old living elsewhere. 742 seniors were married, and 399 seniors were unmarried. Findings indicate that seniors were more likely to receive transfers from non-coresident children than to give transfers. At least 50% of seniors received weekly visits from non-coresident adult children, regardless of whether the senior lived with an adult child. Unmarried seniors were more likely to coreside. 64% of married seniors and 74% of unmarried seniors lived with an adult child. Elderly seniors regardless of marital status were least likely to transfer food, housework, or personal care to non-coresident adult children. Unmarried seniors living with an adult child were less likely to receive money, food, housework, or personal care from their non-coresident adult children. Nine separate logistic models are estimated to determine the probability that seniors received money, food, or housework from non-coresident adult children, or that a senior coresided, gave money to non-coresident adult children, visited weekly with non-coresident children, or gave food, housework, or child care to non-coresident adult children. Findings indicate that unmarried seniors with some education were more likely give and receive transfers. Married seniors with a husband in poor health were more likely to receive money and visits, while ill wives were

more likely to receive help with housework, personal care, money, and food. Chinese seniors were more likely to receive money, but least likely to give transfers. Married Indian seniors were most likely to give transfers and to coreside with at least 1 adult child.

Chan, A., & Davanzo, J. (1996). Ethnic differences in parents' coresidence with adult children in Peninsular Malaysia. *Journal of Cross-Cultural Gerontology*, 11(1), 29–59. <https://doi.org/10.1007/BF00116264>

In this paper we use data from the Second Malaysian Family Life Survey (MFLS-2) to examine the extent to which ethnic differences in the living arrangements of the older population in Peninsular Malaysia can be explained by ethnic differences in demographic and socioeconomic characteristics. We also investigate whether the three main ethnic groups of Malaysia differ in the extent to which their living arrangements are influenced by these factors. For the married, the higher incidence of remarriage and lower housing costs for Malays each contribute importantly to their lower coresidence rates. The relatively poorer health of Indians and better health of Malays also contribute to the ethnic differences in coresidence rates for the married, as does the higher incidence of daughter-only families among Malays. The explanatory variables considered here explain less of the ethnic differences in coresidence rates for the unmarried.

Chan, B, Y. F. (2010). Living standard, living level and economic wellbeing of older persons. *Canadian Social Science* 6(5), 145–150.

The number of older persons is increasing throughout the world and the consequences of ageing population; specifically in economics of aging was deserved to be being attention. The main issue in economics of aging is the way in identifying the economically vulnerable group and how the allocate government's limited resources to the needed group. However, various methods, either using objective approach (income, consumption, net flow, net worth) or subjective approach (self-rated income adequacy, perceived financial satisfaction) were employed to identify the vulnerable group. This paper aims to link concept of economic status, economic wellbeing with living level and living standard. It recommended that those who want to study the concept of economic wellbeing should start from the understanding of living level and living standard.

Chan, B, Y. F. (2010). Perception of human resource personnel towards Malaysia older workers. *The Journal of International Social Research*, 3(14), 168–174.

Elderly aged sixty and above is gaining a larger share of the population pie in Malaysia but their involvement in the labor force is on a steady decline. In general, Human Resource personnel (HR) is the gatekeeper for the recruitment of elderly workers and the decision to recruit or re-employ an elderly worker might depend on their perception towards elderly workers. This study aims to identify the HR personnel's perception towards elderly workers. A self-administered survey with 136 HR respondents was conducted using a 13 items modified version of the Mature Age Worker Employer Survey (Alpha=0.728) by the Social Policy Research Centre, NSW. The perceptions of HR personnel towards elderly workers are more likely associated with positive characteristics than negative. Interestingly, the younger HR personnel group reported a better perception towards. Rather than instilling a positive image of elderly workers, improving the employability of the elderly workers is

crucial since paid employment is the key to maintain an equivalent standard of living in old age.

Chan, B. Y. F., Hamid, T. A., Masud, J., & Paim, L. (2010). Financial satisfaction among older Malaysians in Peninsular Malaysia. *International Journal of Social Policy and Society*, 7.

Population ageing is a triumph in the twentieth century. One of the key issues in discussing financial aspects of aging is about the financial satisfaction among the older persons. This study investigated the financial literacy, monetary attitude, financial practices and the predictors of financial satisfaction in a sample of 1,841 older Malaysians from 60 territorial divisions in Peninsular Malaysia. Multiple Linear Regression model explains 30% of the variance in financial satisfaction with an overall goodness of fit at 45.985 which is significant at $\alpha = 0.01$. Income adequacy was found to contribute most significantly towards one's financial satisfaction as the more an individual perceived about their income adequacy, the higher standards they set for their financial satisfaction. Hence, it is importance to educate the population about personal finance, inculcating a positive money attitude and good financial practices as these will eventually lead to a better financial satisfaction in old age.

Chan, B. Y. F., Hamid, T. A., Masud, J., & Paim, L. (2010). Predictors of financial dependency in old age in Peninsular Malaysia : An Ethnicity Comparison. *Asian Social Science*, 6(6), 54–62.

Aging is a global issue affecting countries including Malaysia. From an economic perspective, the government encourages senior citizens to be financially independent for as long as possible. To what extent the elderly is financially dependent is well documented but only few studies focus on an ethnic disparity perspective. This paper aims to identify the predictors of financial dependency among older Malaysians from the three ethnic groups. Data from an area study in Malaysia involving 806 older persons who participated in face-to-face interviews was used. Results showed that more than half of the respondents are financially independent while 44% depends on their children, sons or daughters in law, friends, neighbors or government financial assistance. Age and employment status were significant predictors of financial independence across all ethnic models. The study showed that there are different predictors of financial dependency by ethnic group and the result calls for different intervention strategies for the various ethnic elderly in achieving financial independence in old age.

Chan, B. Y. F., Hamid, T. A., Masud, J., & Paim, L. (2010). The future of the Malaysian older employees: An exploratory study. *International Journal of Business and Management*, 5(4), 125–132.

Malaysia older workers might choose either to continue working or stop working upon retirement due to various working accessibility barriers. This paper examined the factor/s that drives them continue working or stop working. Besides, this paper also focused on the respondents' saving in their provident fund and exploring how the respondents utilized their provident fund in old age. This paper provides information on employment issues and financial aspects among the older workers as well as some recommendations in improving the employability and financial security among Malaysian elderly.

Chan, B. Y. F., Masud, J., Hamid, T. A., & Paim, L. (2010). Financial wellbeing of older Peninsular Malaysians: A gender comparison. *Asian Social Science*, 6(3), 58–71. <https://doi.org/10.5539/ass.v6n3p58>

Longer life expectancy means older persons can live longer but it also implied that they need more money to sustain their old age. Nevertheless, research on financial wellbeing of older persons in Malaysia is few and this lead to this study highlighting some facts related to financial wellbeing of older Malaysians. A total of 1,841 older Malaysians from 60 territorial divisions in Peninsular Malaysia have been interviewed. Looking at gender differences, male and female respondents have significant differences in financial literacy, monetary attitude, financial practices as well as financial problems. Multiple regressions explained 31% variance of financial wellbeing. Female in this study are more likely to be relegated because of lower education and less net worth compared to older men. It is therefore a great challenge for older women as well as other parties to increase the financial wellbeing of older women.

Chan, B. Y. F., Paim, L., Masud, J., & Hamid, T. A. (2010). Malaysia older employees and Employee Provident Fund. *International Journal of Business and Management*, 5(4), 125–132.

Malaysia older workers might choose to either continue working or stop working upon retirement due to various working accessibility barriers. This paper examined the factor/s that drives them continue working or stop working. Besides, this paper also focused on the respondents' saving in their provident fund and exploring how the respondents utilized their provident fund in old age. This paper provides information on employment issues and financial aspects among the older workers as well as some recommendations in improving the employability and financial security among Malaysian elderly.

Chan, C., Yeoh, S., & Bagat, M. (2011). Accessibility to urban facilities among rural older Malaysians. *Management Science and Engineering*, 5(2), 22–30.

This article discuss a computer-based mapping tool called a geographi information system (GIS), which can present the inter-spatial variations for cert accessibility indicators of older Malaysians in color-coded or symbol-coded thema maps. This article also introduces the GIS and how it can help in profiling cert characteristics of older Malaysians. Types of Out-of-home activities and perceiv barriers to town among the older persons were also been explored in this study. I conclusion, it is recommended for both government and Non-government Organization (NGO) should take initiatives to identify the most effective ways ensuring that the outdoor environment is designed inclusively to improve the quali life of the older persons.

Chang, T. P., & Peng, T. N. (2005). Empowering older adults as key resources in development in Malaysia. In H. Yoon & Jon Hendricks (Eds.), *Handbook of Asian Aging*. Amityville, New York: Baywood Publishing Company, Inc.

Policies and programs to provide options for older people to continue to participate in society, have access to care, and pursue self-fulfillment in order to age with dignity and independence are crucial in countries where social security provisions are unlikely to be adequate. This article discusses the community center approach in Malaysia in mobilizing the

human resources, particularly those of older adults, in economic activities, education and training, environmental services, health and care giving programs.

Chan, K. E. (1982). Population aging in developing countries: A spatio-temporal case study of Peninsular Malaysia, 1957-1970. *Asian Profile*, 10(3), 243–268.

Where an advanced phase in demographic transition has been reached, as exemplified by Peninsular Malaysia, there has been a growing trend towards population aging. Using several indicators of this phenomenon, the article examines the patterns and processes of population aging in the Peninsular Malaysian population considered in total and by its three major ethnic constituents: Malay, Chinese, and Indian. An analysis is made of the spatial variations in population aging in Peninsular Malaysia over the censal years, 1957 and 1970

Chan, K. E. (1981). *The elderly in Peninsular Malaysia: A neglected group? Some socio-economic implication*. Population Study Unit, 1981 Nov. 37 p. (Occasional Paper No. 5) Kuala Lumpur: FEA, UM.

An important demographic trend is examined that has been overlooked in post-independence Peninsular Malaysia. The issue of population aging at the apex of the age pyramid, as denoted by increasing aggregate members of elderly persons and, to a smaller extent, the proportion of elderly persons in the population since 1957 has been ignored in comparison to the issue of growth in the groups located at the base and in the middle of the age pyramid. The position taken is that the status of the elderly is not static but is rapidly changing and worsening over time with accelerated modernization, industrialization, and urbanization. With the prospect of continued aging of the population over time, the problems connected with the elderly are going to be intensified unless effective remedial action is taken. Certain problems are highlighted in this discussion and solutions suggested which permit a higher level of institutional intervention than is presently available. The major factors contributing to the increase in the number and proportion of elderly persons in Malaysia since 1957 are a combination of declining mortality and declining fertility. Life expectancy has increased for all age segments of the population. The following problems and issues related to population aging and the elderly are reviewed: increase in societal dependency; the arbitrary character of age definition; increase in working life expectancy; unemployment of older persons; modernization and status of the elderly; increased female labor force participation; relatively low spatial mobility; widowhood and loneliness; the problem of inflation; economic vulnerability; and health care. The care of the elderly should basically remain the concern of their immediate families, yet the state has an important and increasing role to play in ensuring that the rights of the elderly as a group highly vulnerable to socioeconomic deprivation are not neglected. The kind of public intervention called for includes: institutional live in care; medical services; day care arrangements; assurance of a reasonable income in retirement; and legislation against employment discrimination. From the perspective of the new economic policy, with its focus on socioeconomic restructuring and the eradication of poverty regardless of race, the elderly should stand out as an identifiable target group for remedial action.

Cheah, Y. K. (2017). The utilization of diagnostic tests among the elderly: Evidence from Malaysia. *Socio-Economic Planning Sciences*, 1-8.

Diagnostic test plays a major role in reducing the prevalence of non-communicable diseases (NCDs). The present study examines the relationships between the utilization of diagnostic tests and socioeconomic, insurance, lifestyle, and health factors among the elderly in Malaysia. Analyses based on the National Health and Morbidity Survey 2011 (NHMS 2011) suggest that high income and having private insurance are associated with a higher likelihood of utilizing diagnostic tests. However, low education levels, being employed and smoking are associated with a lower propensity to utilize. These results provide public health administrators with useful information on policy development. In particular, the proposed policies include providing the poor with nominal price of basic diagnostic tests, introducing various health education programmes to the public, creating health awareness campaigns to encourage elders who do not own private insurance to utilize diagnostic tests, as well as making basic diagnostic tests compulsory for all elders owning government insurance.

Cheah, Y. K. (2015). Socioeconomic determinants of health enhancing expenditure among the elderly in Malaysia: An Ethnic Comparison. *Jurnal Ekonomi Malaysia*, 49(1), 93–102.

The objective of this study is to examine the effects of socioeconomic factors on consumption of health-enhancing goods and services among different ethnicities of the elderly in Malaysia. The Third National Health and Morbidity Survey (NHMS III) comprising 4573 respondents (aged. 60) is used for analysis. The results suggest that age, income, gender, education and location of residence are significantly associated with consumption of health-enhancing goods and services. Specifically, there are negative relationships between the likelihood of consuming health-enhancing goods and services and older individuals, lower income earners, males, the less-educated, and rural dwellers. Based on these findings, several intervention strategies toward promoting the consumption of health-enhancing goods and services are suggested.

Cheah, Y. K., & Goh, K. L. (2017). Determinants of the demand for health screening in Malaysia: The case of the aged population. *The Social Science Journal*, 54(3), 305-313.

The increase in the prevalence of heart disease has become a serious public health issue. Hypercholesterolemia and hypertension are two main modifiable health risk factors for heart disease. In a fast ageing society, proper preventive measures should be adopted, particularly to achieve healthy aging. The objective of the present study is to examine the factors affecting the use of two health tests, namely blood cholesterol and blood pressure screenings among adults aged 60 years and above in Malaysia. Nationally representative data collected through the National Health and Morbidity Survey 2011 (NHMS, 2011) by the Ministry of Health, Malaysia were analysed. The survey used a two-stage stratified sampling method. Enumeration Blocks were selected in the first stage, while the second stage involved selection of Living Quarters. The proportions of those not using the blood cholesterol (45.4%) and blood pressure (30.8%) tests are alarmingly high. A bivariate probit model is applied to examine the determinants of the use of these two health screening tests. The results show that education, ethnicity, location of residence, employment status, health insurance and smoking significantly affect the decision of the aged population to undergo these tests. Key findings are, first, time is a more dominant factor than income in determining health screening

behaviour among the aged population. Second, being covered by insurance increases the propensity to undergo health screening. Third, smokers have a lower likelihood of screening than non-smokers. The findings suggest that intervention programmes should be targeted at the less-educated, employed individuals, individuals not covered by health insurance and smokers.

Chen, L. L., Tangiisuran, B., Shafie, A. A., & Hassali, M. A. A. (2012). Evaluation of potentially inappropriate medications among older residents of Malaysian nursing homes. *International Journal of Clinical Pharmacy*, 34(4), 596–603. <https://doi.org/10.1007/s11096-012-9651-1>

There is an increasing evidence of medicines related issues such as inappropriate prescribing among older people. Inappropriate prescribing is an important risk factor for adverse drug reactions and hospitalizations in the older people. To assess and characterize the prevalence of Potentially Inappropriate Medications (PIMs) in nursing home care in Malaysia as defined by Screening Tool of Older Peoples Prescriptions (STOPP) and Beers criteria. Setting: Four Nursing Homes situated in Penang, Malaysia. A multicenter and cross-sectional study was conducted over 2 months period at four large non-governmental organizations nursing homes in Penang, Malaysia. The study population included older residents (≥ 65 years old) taking at least one medication. Residents who had been diagnosed with dementia or taking anti dementia drugs, delirium, too frail or refused to give consent were excluded. Demographic, clinical data and concurrent medications were collected through direct interview and also by reviewing medical records. STOPP and Beers criteria were applied in the medical review to screen for PIMs. Main Outcome Measure: Potentially Inappropriate Medication using STOPP and Beers criteria. *Results:* Two hundred eleven residents were included in the study with the median age of 77 (inter quartile range (IQR) 72-82) years. Median number of prescription medicines was 4 (IQR 1-14). STOPP identified less residents (50 residents, 23.7 %) being prescribed on PIMs compared with Beers criteria (69 residents, 32.7 %) ($p < 0.001$). There was a significant difference in the number of residents with PIMs detected by STOPP (23.7 %) and by Beers criteria (32.7 %), $p < 0.001$. The common identified PIMs by Beers criteria included nifedipine short acting, chlorpheniramine and diphenhydramine. The STOPP identified first generation antihistamines, duplication of drug classes, glibenclamide and anticholinergic agents. Higher number of medications (OR = 1.405 [1.193-1.654]; OR = 1.447 [1.215-1.723]) and longer stay at nursing home (OR = 1.132 [1.045-1.226]; OR = 1.133 [1.034-1.241]) were identified as predictors for both Beers and STOPP PIMs. Potentially inappropriate medications are highly prevalent among older residents living in the nursing homes and are associated with number of medications and longer nursing home stay. Further research is warranted to study the impact of PIMs towards health related outcomes in these elderly.

Chen, P. C. Y. (2000). Editorial: Aging in Malaysia. *Medical Journal of Malaysia*, 42(3), 144–145.

The life of mankind undergoes a series of changes. We start life off as a newborn, gradually progressing in years until, eventually, we die. The young and active shun the thought of growing old but aging is normal and inevitable. The proportion of the aged (taken to be those aged 60 and above) in developing countries is still relatively small, but the proportion of aged will grow very rapidly even as health standards improve. The United

Nations has estimated that by the year 2000, the population of the aged in developing countries would have increased by the order of 100 million. In Malaysia, the life expectancy stands at 68 years for males and 73 years for females. Infant mortality has dropped from 200 per 1000 in the 1920's to 17 per 1000 in 1985. Therefore, it is not surprising that today, 900,000 out of a total population of 16 million are aged 60 years and above, and that this will increase as the year 2000 approaches.

Aging has often been seen as a pathological process and that mental and physical deterioration are unavoidable concomitants of advancing years. It is crucial that this stereotypical view of the aged as being frail, weak and senile be rectified. The inter-country study on aging in the Western Pacific sponsored by the World Health Organization has shown that, contrary to belief, the aged are, in general, robust and able to lead useful and active lives. However, a variety of chronic disorders plague the older people more frequently than earlier in life. For example, 67% of the elderly reported to having sight problems and 48% found difficulty in chewing food? In developing countries such as Malaysia, industrialisation and urbanisation are causing a significant impact on the health of the elderly in terms of the social structure of the family and social networks, thus, resulting in the growing dependence of the elderly on health and social services provided by the Government.

It has been suggested that the main emphasis of health care for the aged should be on prevention." In view of the relatively high rate of certain disabilities encountered by the elderly which has profound impact on the quality of life and wellbeing, it is vital to promote good quality preventive and therapeutic care. Health care workers in all the relevant professional fields should be exposed to the issues related to aging during their training which would prepare them with essential knowledge even as the numbers of elderly patients increase in the future." Unfortunately, up-to-date, the curriculum of medical, nursing, social welfare and other students are inadequate in terms of gerontology. To this end, the recently sponsored workshop on curricular changes to meet the health needs of the elderly held in Kuala Lumpur is a landmark."

In addition, the public should be made aware of the fact that the elderly are still productive to the country and a part of society. The inculcation of positive attitudes towards the elderly should encourage them to maintain their well-being and to keep an active interest in life. Educating the public in this respect helps the elderly to be better integrated into society rather than becoming an alienated and neglected group of people.

The major role played by the family in the care and support of the aged in developing countries should be recognised and appreciated. Hence, policies should be aimed at supporting the family in this traditional role so as to minimise the rate of institutionalisation. One such measure would be to provide financial incentives such as income tax relief for families to continue caring for their elderly. The time has come for us to focus on the well-being of the elderly as we pursue our aim of Health for all by the year 2000.

Chen, P. C. Y. (1987). Family support and the health of the elderly Malaysian. *Journal of Cross-Cultural Gerontology*, 2(2), 187–193.

Until recently the population of developing countries has been relatively young. However, with the rapid decline of mortality and of birth rates, the proportion of persons aged 60 years and over is rapidly increasing. In Malaysia, infant mortality has decreased from 200

per 1000 in the 1920's to 17 per 1000 in 1985. The expectation of life at birth is currently 72 years for females and 68 years for males. Out of a total population of million, a million in 1986 are aged 60 years and over. In the developed world, aging has been well accepted as a sphere for research and policy formulation, whereas little is known of the aged in the developing world.

Chen, P. C. Y. (1987). Psychosocial factors and the health of the elderly Malaysian. *Annals of the Academy of Medicine, Singapore*, 16(1), 110–114.

Consequent to rapidly declining mortality and birth rates, developing countries, including Malaysia, can expect a rapid increase in the population aged 60 years and above. The health of the elderly is intimately tied up with both biophysical as well as psychosocial factors which include status loss, loneliness, fear of illness and death, poverty, harmful lifestyles and deterioration of the quality of life. The effects of these psychosocial factors can manifest as sleep difficulties, worry and anxiety, depression, loss of interest, and a feeling of tiredness. In extreme cases, there may be auditory or visual hallucinations or paranoia. In the present paper, which is based upon a WHO sponsored study of 1001 elderly Malaysians, it is noted that 36% of the elderly have sleep difficulties, 47% "feel tired", 31% have a "loss of interest" and 22% are "worried tense". However 71% of the elderly are able to correctly perform at least 12 of 15 cognitive tests. 20% of elderly men smoke 15 or more cigarettes a day while 44% smoke at least one cigarette a day. 40% of elderly men indicate that their families complain about the amount of alcohol they drink. Undoubtedly primary health care programs need to be re-oriented to the problems and needs of the elderly in countries such as Malaysia.

Chen, P. C. Y. (1984). The elderly Malaysian. *Medical Journal of Malaysia*, 39(4), 254–256.

In the recorded history of mankind, some people have lived to a ripe old age. However, these have been few, forming only a small proportion of the population. During recent times however, with a decline in both birth rates and death rates, and the control of communicable diseases, the expectation of life has increased. In Peninsular Malaysia, the crude birth rate is 5.9 per 1,000 population (1980) while the infant mortality rate is 21.0 per 1,000 live births (1981), and the expectation of life is 65.9 years and 71.0 years (1979) for males and females respectively. Consequently, the numbers as well as the proportion of old people is quite high. Thus, in 1980, 5.1% of the population, i.e., 765,000 people were over the age of 60 years, while 1.9% of the population, i.e., 285,000 people were aged 70 years or more. This phenomenon of an increasing number and proportion of old people in the population is slowly but surely beginning to create social, health, political and economic problems which, up to now, society has never yet had to face. The elderly have special problems of disease, disability and social support that are uniquely their own, and it is important that relevant professionals as well as politicians understand the implications and social needs of this increasingly large proportion of the population.

Chen, S. T., Ngoh, H. J., & Harith, S. (2012). Prevalence of malnutrition among institutionalized elderly people in Northern Peninsular Malaysia: Gender, ethnicity and age-specific. *Sains Malaysiana*, 41(1), 141–148.

Evidence-based information on nutritional status of elderly people is essential for the formulation of health care system and prevents the elderly people from the risk of poor health and malnutrition. This cross-sectional study aimed to determine the prevalence of malnutrition among elderly people in Northern Peninsular Malaysia. A total of 236 participants (149 men and 87 women), aged 60 years and above, resided in government-funded shelter home were recruited. Anthropometric parameters of body weight, standing height, body mass index (BMI), mid upper arm circumference (MUAC) and waist circumference (WC) were measured and used as indices to assess malnutrition. The overall prevalence of underweight based on BMI <18.5 kg/m² was 17.4%. The prevalence of overweight based on BMI ≥25 kg/m² was 28.4%. Gender and ethnicity were significantly associated with malnutrition (p<0.05). Women were significantly more vulnerable to both underweight and overweight. Most Malays (37.7%) had overweight and obesity problems whereas more Indians (22.5%) were posed to greater risk of underweight. More women (32.2%) had high WC than men (4%) (p<0.05). A significantly declined trend of anthropometric measurements was observed among the elderly between age groups 60-69 years and ≥80 years. In conclusion, malnutrition and overweight coexisted among the institutionalized elderly people and this situation urged for specific interventional strategies and health policy formulation in order to reduce this double burden of disease.

Cheong, S. M., Kaur, J., Lim, K. H., Ho, B. K., & Mohmad, S. (2013). Use and understanding of nutrition labeling among elderly men and women in Malaysia. *Malaysian Journal of Nutrition*, 19(3), 353–362.

Consumers are advised to read the nutrition labeling when purchasing packaged food. To what extent consumers read nutrition labeling and understand what they read is not well established among Malaysian older persons. Data from the National Health and Morbidity Survey III (NHMS III) undertaken in 2006 was analysed to determine the use and understanding of nutrition labeling and its associated factors among free living elderly men and women aged ≥60 years. Descriptive analysis and binary Logistic Regression were used to analyse the data. A total of 4,898 respondents provided self-reported information on their use and understanding of nutrition labeling when they bought or received food. Use of nutrition labeling was higher among elderly men [61.9% (95% CI: 59.6-64.1)] than for women [36.6% (95% CI: 34.5-38.8)]. Nutrition labeling use was significantly associated with age, formal education, higher household income levels and marital status among both elderly men and women. Understanding of nutrition labeling among elderly men and women was 91.8% (95% CI: 90.1-93.2) and 89.7% (95% CI: 87.4-91.7) respectively and was significantly associated with formal education for both elderly men and women. Overall, the reading of nutrition labeling among Malaysian elderly is moderate. Elderly men and women with formal education were more likely to understand nutrition labeling. The importance of reading nutrition labels should be inculcated in consumers including older persons so that they choose foods that are nutritious and safe.

Chew, F. L., Yong, C. K., Mas Ayu, S., & Tajunisah, I. (2010). The association between various visual function tests and low fragility hip fractures among the elderly: A Malaysian experience. *Age Ageing*, 39(2), 239–245.

Hip fractures are an increasing source of morbidity and mortality in older people. The role of visual function tests such as visual impairment, stereopsis, contrast sensitivity and visual field defects in low fragility hip fractures in Asian populations is not well understood. To determine the association between various visual function tests and low fragility hip fractures in an Asian population. Design: case-control study. Setting: University Malaya Medical Centre, Kuala Lumpur, Malaysia. Subjects: 108 cases aged ≥ 55 years admitted with low fragility fractures and 108 controls (matched for age, gender and race). Both cases and controls underwent a detailed ophthalmological examination, which included visual acuity, stereopsis, contrast sensitivity and visual field testing. Poorer visual acuity (odds ratio, OR = 4.08; 95% confidence interval, CI: 1.44, 11.51), stereopsis (OR = 3.60, 95% CI: 1.55, 8.38), contrast sensitivity (OR = 3.34, 95% CI: 1.48, 7.57) and visual field defects (OR = 11.60, 95% CI: 5.21, 25.81) increased the risk of fracture. Increased falls were associated with poorer visual acuity (OR = 2.30, 95% CI: 1.04, 5.13), stereopsis (OR = 2.11, 95% CI: 1.03, 4.32), contrast sensitivity (OR = 2.12, 95% CI: 1.05, 4.30) and visual field defects (OR = 3.40, 95% CI: 1.69, 6.86). Impaired visual acuity, stereopsis, contrast sensitivity and visual field defects are associated with an increased risk of low fragility hip fractures. We recommend that all patients aged ≥ 55 should have an annual ophthalmological examination that includes visual acuity, contrast sensitivity, stereopsis and visual field testing to assess the risks for falls and low fragility fractures.

Chia, Y. C., Beh, H. C., Ng, C. J., Teng, C. L., Hanafi, N. S., Choo, W. Y., & Ching, S. M. (2016). Ethnic differences in the prevalence of knee pain among adults of a community in a cross-sectional study. *BMJ Open*, 6(12), 1–7.

To determine the prevalence of knee pain among 3 major ethnic groups in Malaysia. By identifying high-risk groups, preventive measures can be targeted at these populations. A cross-sectional survey was carried out in rural and urban areas in a state in Malaysia. Secondary schools were randomly selected and used as sampling units. Participants Adults aged ≥ 18 years old were invited to answer a self-administered questionnaire on pain experienced over the previous 6 months. Out of 9300 questionnaires distributed, 5206 were returned and 150 participants who did not fall into the 3 ethnic groups were excluded, yielding a total of 5056 questionnaires for analysis. 58.2% (n=2926) were women. 50% (n=2512) were Malays, 41.4% (n=2079) were Chinese and 8.6% (n=434) were Indians. 21.1% (n=1069) had knee pain during the previous 6 months. More Indians (31.8%) experienced knee pain compared with Malays (24.3%) and Chinese (15%) ($p < 0.001$). The odds of Indian women reporting knee pain was twofold higher compared with Malay women. There was a rising trend in the prevalence of knee pain with increasing age ($p < 0.001$). The association between age and knee pain appeared to be stronger in women than men. 68.1% of Indians used analgesia for knee pain while 75.4% of Malays and 52.1% of Chinese did so ($p < 0.001$). The most common analgesic used for knee pain across all groups was topical medicated oil (43.7%). The prevalence of knee pain in adults was more common in Indian women and older women age groups and Chinese men had the lowest prevalence of knee pain. Further studies should investigate the reasons for these differences.

Chin, K. Y., Ima-Nirwana, S., Mohamed, I., Aminuddin, A., & Ngah, W. Z. (2013). Total testosterone and sex hormone-binding globulin are significantly associated with metabolic syndrome in middle-aged and elderly men. *Experimental and Clinical Endocrinology and Diabetes*, 121(7), 407–412.

Testosterone and sex hormone-binding globulin (SHBG) have been shown to be associated with metabolic syndrome (MS) in men. This study aimed at validating these relationships in a group of middle-aged and elderly men and assessing their strength of association to MS. A cross-sectional study of 332 Malaysian men aged 40 years and above was conducted. The blood of subject was collected under fasting condition for determination of testosterone, SHBG, glucose and lipid levels. Their medical history, smoking and alcohol consumption status, waist circumference (WC), body mass index (BMI) and blood pressure (BP) were recorded. All testosterone and SHBG levels were significantly reduced in MS subjects compared to non-MS subjects ($p < 0.05$). Testosterone and SHBG were correlated significantly with most of the MS indicators without adjustments. In multiple regression analysis, the triglyceride level was the only MS indicator that was significantly, inversely and independently associated with all testosterone measurements and SHBG ($p < 0.05$). Waist circumference was significantly and negatively associated with SHBG level ($p < 0.05$) though not independent of BMI. Total testosterone and SHBG were significantly and inversely associated with the presence of MS. Testosterone and SHBG are potential intervention targets for the prevention of MS in men.

Chin, K. Y., Ima-Nirwana, S., Naina, M. I., Norazlina, M., Nazrun, S. A., Norliza, M., Faizah, O., Farihah, H. S., Suhana, M. R., & Zurinah, W. N. W. (2012). Calcaneal quantitative ultrasound value for middle-aged and elderly Malaysian Chinese men and its association with age and body anthropometry. *Journal of Clinical Densitometry*, 15(1), 86–91. <https://doi.org/10.1016/j.jocd.2011.09.004>

Quantitative ultrasound (QUS) is a relatively easy, reliable, and safe method for bone status assessment, but reference data for Asian males remain scarce. Our study aimed to determine the values for one QUS parameter, the speed of sound (SOS) at the calcaneus, in Malaysian Chinese men and to determine the association between the SOS and several demographic characteristics, such as age, weight, height, and body mass index. Three hundred forty-eight Malaysian Chinese men aged 40 yr and older were recruited, and their calcaneal QUS value was determined using the CM-200 densitometer (Furuno Electric, Nishinomiya City, Japan). The results indicated a significant correlation between SOS and age, and multiple stepwise regression analysis indicated that age and height were important predictors of SOS. A significant reduction in SOS value was observed when men 60 yr and older were compared with men aged 40–49 yr. Compared with the reference data for Japanese males, Chinese men in Malaysia showed higher SOS values across all the age groups studied. In conclusion, there is an age-related decrease in SOS values in Malaysian Chinese men, and the SOS values established in this study can be used as a reference for future studies.

Chin, K. Y., Kamaruddin, A., Low, N. Y., & Ima Nirwana, S. (2016). Effects of age, sex, and ethnicity on bone health status of the elderly in Kuala Lumpur, Malaysia. *Clinical Interventions in Aging*, 767. <https://doi.org/10.2147/CIA.S108772>

Osteoporosis is a significant health problem in the developing countries and its prevalence data are important for the estimation of health care burden and policy making.

This study aimed to determine the age-related changes in bone health and the prevalence of osteoporosis in males and females aged 50 years or above living in Kuala Lumpur, Malaysia. A cross-sectional study was conducted between December 2014 and December 2015. Subjects answered a demographic questionnaire and underwent body anthropometric and bone health measurement. Assessment of bone health was performed using a quantitative ultrasound device that generated speed of sound, broadband ultrasound attenuation, stiffness index, and T-score based on stiffness index value as bone health indices. The prevalence of osteoporosis was 10.6% in males and 8.0% in females. Significant age-related decline of bone health indices (speed of sound, broadband ultrasound attenuation, stiffness index, and T-score) and a concurrent increase in the prevalence of osteoporosis and osteopenia were observed in females ($P < 0.05$) but not in males ($P > 0.05$). Ethnic differences in bone health indices and prevalence of osteoporosis/osteopenia were not observed ($P > 0.05$). A significant proportion of males and females age 50 years or above have suboptimal bone health. Preventive measures such as early screening should be implemented to retard the progression of osteoporosis.

Chin, K. Y., Low, N. Y., Dewiputri, W. I., & Ima-Nirwana, S. (2017). Factor associated with bone health in Malaysian middle-aged and elderly women assessed via quantitative ultrasound. *International Journal of Environmental Research and Public Health*, 14(7), 1-13.

Risk factors for osteoporosis may vary according to different populations. We aimed to investigate the relationship between risk factors of osteoporosis and bone health indices determined via calcaneal quantitative ultrasound (QUS) in a group of Malaysian women aged 50 years or above. A cross-sectional study was performed on 344 Malaysian women recruited from a tertiary medical centre in Kuala Lumpur, Malaysia. They answered a self-administered questionnaire on their social-demographic details, medical history, lifestyle, and physical activity status. Their height was measured using a stadiometer, and their body composition estimated using a bioelectrical impedance device. Their bone health status was determined using a water-based calcaneal QUS device that generated three indices, namely speed of sound (SOS), broadband ultrasound attenuation (BUA), and stiffness index (SI). A T-score was computed from SI values using a reference database from a mainland Chinese population. Women with three or more lifetime pregnancies, who were underweight and not drinking coffee had a significantly lower BUA. Stepwise multiple linear regression showed that SOS was predicted by age alone, BUA and SI by years since menopause, body mass index (BMI), and number of lifetime pregnancies, and T-score by years since menopause and percentage of body fat. As a conclusion, suboptimal bone health in middle-aged and elderly Malaysian women as indicated by QUS is associated with old age, being underweight, having a high body fat percentage, and a high number of lifetime pregnancies. Women having several risk factors should be monitored more closely to protect their bones against accelerated bone loss.

Ching, S. M., Chia, Y. C., Chong, W. P., & Jalalian, M. (2014). Determinants of left ventricular hypertrophy among elderly hypertensive in Malaysia. *The Asian International Journal of Life Sciences*, 23(January 2013), 1-9.

Left ventricular hypertrophy (LVH) has high prognostic value on cardiovascular mortality and morbidity. However, echocardiography is not routinely performed among elderly hypertensives in the primary-care setting due to limited resources. The aim of this

study was to determine the prevalence of LVH and its associated risk factors in a multi-ethnic elderly hypertensive population in a primary-care clinic in Malaysia. This study was a sub-analysis of a cross-sectional study of 359 patients with hypertension in a primary-care clinic. All test subjects recruited for the study were hypertensive patients aged 60 and above. Blood pressure, height and weight were measured. All patients underwent an echocardiogram examination for diagnosis of LVH. One hundred and ninety-nine patients were studied for the analysis. The mean age and duration of hypertension was 64.8 (SD 2.9) and 10.4 (SD 7.7) years, respectively. The study found that 44.7% of respondents achieved target blood pressure. The prevalence of LVH was 23.6%. Using multiple logistic regression, factors associated with LVH among elderly patients with hypertension were diabetes (odds ratio [OR] 3.346, 95% confidence interval [CI] 1.458-7.676), higher diastolic blood pressure (OR: 1.088; 95% CI: 1.024-1.156), higher body mass index (OR: 1.113; 95% CI: 1.031-1.203) and poorer blood pressure control was 23.6%. Using multiple logistic regression, factors associated with LVH among elderly patients with hypertension were diabetes (odds ratio [OR] 3.346, 95% confidence interval [CI] 1.458-7.676), higher diastolic blood pressure (OR: 1.088; 95% CI: 1.024-1.156), higher body mass index (OR: 1.113; 95% CI: 1.031-1.203) and poorer blood pressure control (OR: 2.924; 95% CI: 1.180-7.258). Poor hypertension control, higher diastolic blood pressure, presence of diabetes and obesity are the predictors for the development of LVH in elderly hypertensive.

Chong, P. Y., Tan, M. P., & Khor, H. M. (2017). Time to hospital presentation and time to operation among older hip fracture patients in a teaching hospital in Malaysia. *Osteoporosis and Sarcopenia*, 3(3), S7.

Hip fracture in an older person is a serious condition associated with devastating consequences including loss of mobility, increased dependency, and institutionalization. As South-East Asian data on hip fractures in the elderly is limited, our study aimed to evaluate the presentation and management of hip fracture patients in a tertiary hospital in this setting. This was a prospective study of consecutive patients aged 65 years old and above admitted to the orthopaedics ward in the University of Malaya Medical Centre, Kuala Lumpur, Malaysia, from March 2016 to March 2017. Information on basic socio-demographics, comorbidities, cognitive screen (Abbreviated Mental Test Score), type of fractures (neck of femur, intertrochanteric and subtrochanteric fracture), time of fall to time of admission, time to surgery, complications and inpatient mortality were recorded. A total of 202 patients (67.7% female) with the mean age of 79.0 (SD 7.14) years were included. 49 these patients had history of recurrent falls in the previous one year preceding the event. Of the 202 elderly patients with hip fracture, only 18 (8.9%) were diagnosed with osteoporosis prior to admission. Majority (55%) of the elderly patients were walking independently without aid prior acute hip fracture. The median time of presentation to hospital following the fall was 1 day (Interquartile range (IQR) of 0 to 2 days). 182 (90.1%) of patients underwent surgical intervention. The median waiting time from admission to surgical intervention was 5 days (IQR of 3-9 days). 34 (18.7%) patients had surgical intervention within 48hours of admission. The main reasons for delay in surgical intervention included antiplatelet or anticoagulation therapy (7.7%), medical optimization (23.2%) and the lack of operating theatre space (28.3%). There were 11 (5.4%) in deaths, where 5 patients died post operatively. Underlying chronic kidney disease (OR 4.51, 95% CI 1.21-16.79; $p=0.04$), uncontrolled thyroid disease (OR 7.04, 95%CI 1.59-31.41; $p=0.02$) and AMTS<8(<0.01) were significantly associated with inpatient mortality. Delays in presentation to hospital and surgery occur commonly among hip fracture patients in our

setting, while the comorbidities of kidney disease, uncontrolled thyroid disease and cognitive impairment are associated with inpatient mortality. Majority of deaths occur pre-operatively. Our study was unable to determine the rationale underlying delayed presentation to hospital. Nearly one in three of the emergency hip operations were delayed due to lack of theatre availability. Future studies should identify the patient, healthcare and administrative issues determining these delays. Only one in five hip fracture patients in our setting receive their operation within 48 hours of arrival as recommended by international guidelines. Some delays also occur in presentation to hospital. Further research into reasons underlying delays and effective solutions should now be conducted.

Chong, S. C., Sia, B. K., Ng, K. K., Lim, C. S., & Ooi, B. C. (2012). Financial satisfaction and intergenerational resource transfers among urban older Malaysians. *American Journal of Scientific Research*, ISSN 1450-223X Issue 43 (2012), 32–45.

This paper attempted to set out the conceptual framework on intergenerational transfers and outline the theories surrounding time and financial transfers. Equally important is the concept of financial satisfaction that may have some influence on the extent of or direction of transfers. Important components of time transfers include time spent by children with their parents and the provision of emotional support, especially where it can contribute towards the building up of self-confidence of influencing family members and society. In the case of financial transfers, tests were conducted on parents-to-children and children-to-parents transfers. This study proves that time and financial transfers exist in Malaysia, contributing to self-confidence in family members. There also exist significant relationship between emotional support and self-confidence of influencing family members and that of influencing society. Financial satisfaction may be affected by an individual's income. Finally, resource (time and financial) transfers are also found to be significantly related with financial satisfaction.

Choo W. Y., Hairi, N. N., Sooryanarayana R., Yunus, R. M., Hairi, F. M., Ismail, N., Kandiben, S., Ali, Z. M., Ahmad, S. N., Razak, I. A., Othman, S., Tan, M. P., Mydin, F. H. M., Peramalah, D., Brownell, P., & Bulgiba, A. (2016). Elder mistreatment in a community dwelling population: The Malaysian Elder Mistreatment Project (MAESTRO) cohort study protocol. *BMJ Open*, 6, e011057. doi:10.1136/bmjopen-2016-011057.

Despite being now recognised as a global health concern, there is still an inadequate amount of research into elder mistreatment, especially in low and middle-income regions. The purpose of this paper is to report on the design and methodology of a population-based cohort study on elder mistreatment among the older Malaysian population. The study aims at gathering data and evidence to estimate the prevalence and incidence of elder mistreatment, identify its individual, familial and social determinants, and quantify its health consequences. This is a community-based prospective cohort study using randomly selected households from the national census. A multistage sampling method was employed to obtain a total of 2496 older adults living in the rural Kuala Pilah district. The study is divided into two phases: cross-sectional study (baseline), and a longitudinal follow-up study at the third and fifth years. Elder mistreatment was measured using instrument derived from the previous literature and modified Conflict Tactic Scales. Outcomes of elder mistreatment include mortality, physical function, mental health, quality of life and health utilisation. Logistic

regression models are used to examine the relationship between risk factors and abuse estimates. Cox proportional hazard regression will be used to estimate risk of mortality associated with abuse. Associated annual rate of hospitalisation and health visit frequency, and reporting of abuse, will be estimated using Poisson regression. The study has been approved by the Medical Ethics Committee of the University of Malaya Medical Center (MEC Ref 902.2) and the Malaysian National Medical Research Register (NMRR-12-1444-11726). Written consent was obtained from all respondents prior to baseline assessment and subsequent follow-up. Findings will be disseminated to local stakeholders via forums with community leaders, and health and social welfare departments, and published in appropriate scientific journals and presented at conferences.

Choo, W. Y., Karina, R., Poi, P. J. H., Ebenezer, E., & Prince, M. J. (2003). Social support and burden among caregivers of patients with dementia in Malaysia. *Asia Pacific Journal of Public Health*, 15(1), 23-29.

This study aims to examine selected factors of dementia patients and their caregivers that were associated with the burden of family caregivers. This cross sectional study involves face-to-face interview with family caregivers of patients with dementia. Participants were recruited through convenient sampling from geriatric and psychiatry outpatient clinics from three government hospitals, one university hospital, one rural health centre and Alzheimer Disease caregivers' support groups. 70 caregivers took part in the study. Measures included patient and caregiver demographic variables and caregiver burden using the Zarit Burden Interview (ZBI). Caregiver burden was found to be significantly associated with both ethnicity and informal support. Chinese caregivers were found to have a higher level of burden compared to Indians and Malays. Informal support, in particular assistance from family members, was significantly associated with a lower burden perceived by the caregivers. However, the study shows that formal support such as assistance from maids and private nurses did not alleviate the burden of caregivers. Results highlighted the importance of improving the coping skills in burdened caregivers particularly among family members with dementia relatives. Interventions should be designed for specific needs of caregivers of different ethnicities.

Choong, W. W., & Cham, Q. W. (2015). *Preferred housing attributes among elderly in Malaysia*. Paper presented at the PRRES Conference - 2015, 1st Annual Conference, January 18 -21 2015. Kuala Lumpur, Malaysia.

Over the past century, the global ageing population with strong saving and pension fund has increased. In Malaysia, the property developers have targeted the emerging demand from silver-haired market by offering retirement residential. One of the challenges for them are to provide housing feature and environment that favour elderly market. This paper investigates the preferred housing attributes among Malaysian elderly by using choice-based questionnaire and conjoint analysis. Two categories of housing attributes have been investigated, namely dwelling features and environment features. The result reveals that the most preferred housing attributes among elderly in Malaysia are typed of dwelling, price, built up area and the disability convenience features. As for the environmental feature, the most preferred attributes are living convenience, followed by security, amenities in the neighbourhood, building density and public transport. Finally, this study generates preferred

profile among the elderly which serve as an important reference for developers in designing and marketing their product to elderly.

Dahlan, A., Nicol, M., & Maciver, D. (2010). Elements of life satisfaction amongst elderly people living in institutions in Malaysia: A mixed methodology approach. *Hong Kong Journal of Occupational Therapy*, 20(2), 71–79.

Changes in demographic characteristics, social structure and economic status have shifted the direction of care of elderly people in Malaysia. Subsequently, nursing homes and institutions for elderly people becoming a significant care option. The aim of this study is to identify the level of life satisfaction and to examine the elements of life satisfaction amongst the elderly people living in the institutions. In this mixed methodology, a survey using translated version of Satisfaction with Life Scale (SWLS) was conducted to 82 participants who conformed to the inclusion criteria. Twenty participants who volunteered to discuss about their live experience regarding life satisfaction living in a public elderly institution in Malaysia. The participants were stratified according to age group and gender. Four focus groups were conducted and the Interpretative Phenomenological Analysis were used to identify the key themes emerged from the focus groups. The level of life satisfaction is equivalent to the norms and there is no statistical significant difference between the levels with the demographic variables. Two main themes were developed, contentment and acceptance, reflecting the elements of life satisfaction of the participants in the institution. The findings are inconsistent with previous findings. However, it identified new elements of life satisfaction for elderly people in the institution.

Davanzo, J., & Chan, A. (1994). Living arrangements of older Malaysians: Who coresides with their adult children? *Demography* 31(1), 95–113.

More than two-thirds of Malaysians age 60 or older coreside with an adult child. Data from the Senior sample of the Second Malaysian Family Life Survey (MFLS-2) are used to investigate which "seniors" (persons age 60 or older) live in this way. The analysis generally supports the notion that coresidence is influenced by the benefits, costs, opportunities, and preferences for coresidence versus separate living arrangements. For example, married seniors are more likely to coreside with adult children when housing costs are greater in their area or when the husband or wife is in poor health. This finding suggests that married parents and children live together to economize on living costs or to receive help with household services. Unmarried seniors who are better off economically are less likely to live with adult children, presumably because they use their higher incomes to "purchase privacy."

David, M. K., & Alagappar, P. N. (2013). Representation of the elderly in a Malaysian English daily. *ICSSR E-Journal of Social Science Research*, 2013, 270–283.

Media play a vital role in the construction of social realism and thus knowledge of what is reported in the media is essential to understand social outlooks towards important issues. Aging of the population is one of these subjects in many countries including Malaysia. As Malaysia is likely to reach an aging nation status by 2035, with the number of people above the age of 60 reaching to 15 per cent of the population (NST, 23/11/2010), it is, therefore, important to study how the media represents the elderly in Malaysia. This study aims at finding out the way the Malaysian elderly populations are represented in a national

English daily newspaper covering a five-year period, from 2007 to 2011. Content analysis was used to categorize and analyze texts relevant to elderly and a total of 326 news articles were identified with the words 'elderly, senior citizens or aged'.

David, M., Tien, W. Y. M., Meng, N. Y., & Hui, G. K. (2009). Language choice and code switching of the elderly and the youth. *International Journal of the Sociology of Language*, 200, 49–74.

The language of the aged has not been given as much attention as that of the youth. Hence, the aim of this research is to compare the language choices and discursal features of the aged with that of the youth. This study focuses on the Chinese community from Tangkak, Johor, in Peninsular Malaysia, who use the Hokkien dialect. The older informants preferred to speak in their dialect while the younger informants preferred Mandarin. Older informants seldom code-switched but when they did, the codes in their mixed discourse were Hokkien and Mandarin, while that of the younger informants were Mandarin, Malay, and/or English. On the basis of an analysis of the audio recordings, observations, field notes, and informal interviews, the features are identified in the discourse of the aged, i.e., off-target verbosity (OTV), painful self-disclosure (PSD), and self-handicapping talk. The study shows that the discursal features of the aged are clearly different from that of the youth.

Dawal, S. Z. M., Ismail, Z., Yusuf, K., Abdul-Rashid, S. H., Shalahim, N. S. M., Abdullah, N. S., & Kamil, N. S. M. (2015). Determination of the significant anthropometry dimensions for user-friendly designs of domestic furniture and appliances – Experience from a study in Malaysia. *Measurement*, 59 (Supplement C), 205–215.

Future design for the elderly is undoubtedly important for their survival to live independently in this challenging world. Therefore to realize the mentioned design, an anthropometric database for Malaysian elderly population need to be developed. A total of 107 participants took part in the study which involved 61 females and 46 males with ages ranging between 55 and 70 years. An earlier anthropometric database for Malaysian elderly population has been developed. Sixty body dimensions were measured in the study. It is hoped that from this study, the database can be used as a guideline in designing household facilities for the Malaysian elderly and elderly of other countries. The design of the household facilities should be influenced by sound ergonomics dimensions in order to create a safe and healthy environment for the elderly.

Delafrooz, N., & Paim, L. H. J. (2012). Effects of demographic characteristics, financial literacy and management on saving behavior of Malaysian employees. *Asia Life Sciences*, 21(1), 85–93.

The aims of this study were to examine the effects of demographic characteristics (gender, marital status, ethnic, age, level of education, income) on saving behavior and to determine factors (demographic variables, financial management practice and financial literacy) affecting the saving behavior among Malaysian employees. A total of 2,242 respondents, from public and private sectors participated in the study. Samples were selected using multi-stage sampling technique. Data were coded and analyzed using SPSS. T-tests and ANOVA were used for testing differences of demographic characteristics on saving behavior.

Hierarchical multiple regressions were executed to determine predictors that had significant effects on savings behavior. Results of the study indicated significant differences of saving behavior according to age, level of education and income. Furthermore, income, age, financial management and financial literacy were found to be the most influential predictors of saving behavior.

Din, N. C., Ghazali, S. E., Ibrahim, N., Ahmad, M., Said, Z., Ghazali, A. R., Razali, R., & Shahar, S. (2014). Health needs assessment of older people in an agricultural plantation. *International Journal of Gerontology*, 8(3), 120–126.

Federal Land Development Authority (FELDA) is a unique palm oil and rubber plantation settlement in the rural areas of Malaysia occupied by the land settlers who are now in their old age. Their health needs may be different from other agricultural workers in the world. The aim of the study was to conduct health needs assessment to identify health priorities of the older people in FELDA, based on the National Institute for Health and Clinical Excellence guidelines. A sample of 162 older Malays aged 60-80 years from FELDA settlement volunteered to participate in the study. Data include information on health, cognitive, psychosocial, nutrition, and food intake using standard questionnaires. Cognitive tests were administered, and measurement of body composition and food intake were taken. The results showed that the main factors influencing health functioning of the older people of FELDA according to the priorities were as follows: (1) psychological factors, (2) nutritional factors, (3) social factors, (4) health conditions, (5) access to health services and functional status, (6) lifestyles factors, (7) biological factors, (8) socioeconomic factors, and (9) cognitive factors. Psychological factors had the main influence on health functioning of the older people of FELDA. Physical health needs of the older people in FELDA were determined mainly by psychological, nutritional, and lifestyle factors, whereas mental health needs were determined mainly by psychological, socioeconomic, and social factors. FELDA has vast resources to utilize for the running and maintaining of health programs for their older people as well as for evaluating and monitoring the effectiveness of health programs.

Doling, J., & Omar, R. (2012). Home ownership and pensions in East Asia: The case of Malaysia. *Journal of Population Ageing*, 5(1), 67-85.

In the East Asian welfare model the income needs of older people are typically met by a combination of family support, pension systems and home ownership. Insofar as the latter two elements are concerned, and in comparison with the typical western country, pension systems are generally less well developed with more restricted social protection elements while home ownership rates are higher; indeed the trade-off, identified in western countries, between public pension provision and private home ownership is here even more extreme. The paper begins with a brief outline of the general features of the East Asian welfare model, emphasising some of the key distinctions from western models. The main part of the paper focuses on a case study of Malaysia. It firstly investigates the development of the pension and home ownership systems, the former based on private, mandatory savings through the Employees Provident Fund which has been progressively amended to enable ever large parts of each member's fund to be diverted into pre-retirement payment for home ownership. Secondly, the paper investigates the extent to which the system has resulted in gains and losses for households seeking both to meet their housing requirements and enhance their post-retirement standard of living.

Ebenezer, E. (2009). *Elderly quality of life issues*. Paper presented at the 13th Malaysian Family Medicine Specialists Scientific Conference, 6th – 9th August 2009. Awana Porto Malai, Langkawi, Kedah, Malaysia.

Global population is aging rapidly, it is much more pronounced in developing countries and Malaysia is not exceptional. Physical changes associated with aging would result in decline in efficiency of function but do not qualify as having a disease refers to 'Usual Ageing' whereas 'Successful Ageing' causes minimal age associated change in a given physiological function. Healthy ageing is the process of optimizing physical, social and mental health to enable older people to take an active part in society to enjoy autonomy, independence and good quality of life. Quality of life is determined by various factors like culture, gender, health and social services, financial securities, personal and behavioral apart from physical, mental and social well being. In the past decade a fast shift from communicable to non-communicable diseases is occurring in developing countries, where chronic illnesses such as heart disease, cancer and depression are becoming the leading causes of morbidity and disability. Encouraging healthy life style can stabilize or even can prevent the onset of many physical conditions. Disease prevention should be promoted through healthy ageing policies. Equity of health for elders explicitly includes nondiscrimination of age. It is never too late to promote health for the elderly. Ageing populations will increase demands in health care and social security costs but evidence show that innovation, cooperation from all sectors, and planning ahead culturally-appropriate policy choices will enable the policy makers to manage the economics of an elderly population successfully. Educating young people about ageing and upholding the rights of older people will help to eliminate discrimination and abuse. Families and communities should be supported in efforts to care for their older members.

Elena, W. P., Snigdha, M., & Rosmaliza, M. (2008). *Nutritional challenges among the elderly in an old folks home in Pahang*. *Malaysian Journal of Nutrition*, 14(2) (Supplement), S24.

Older adults are the fastest growing segment of the population worldwide. It is estimated that in 2025, there will be a total of about 1.2 billion people over the age of 60. The aim of this study is to determine the food habits among the elderly in the old folk's home, and assess their intake of macronutrients and micronutrients. This study was conducted in four old folk's home in Pahang, namely Alur Akar CARE Centre, Pusat Jagaan Orang Tua Indah, Grannies Old Folks Home, and Melodi Nursing Home. Respondents were divided into five groups; 51-60 years, 61-70 years, 71-80 years, 81-90 years and 91 above. Respondents were asked the types of food consumed per day. Frequency and amount of vitamin supplements intake was substantial. The mean energy intake was less than the Malaysian RNI (men= 2020 kcal, women= 1600 kcal) for all the five age groups. The carbohydrate intake was higher than fat and protein intake. The mean calcium intake (men=105.4 mg, woman= 136.5 mg), was found to be extremely low which could lead to problems like osteoporosis. For vitamin and mineral intake, all the age groups consumed less than Malaysian RNI for both sexes. The total mean of all nutrient intake were found to decline with age increment for both sexes. About 76% of the elderly had a normal weight, 18% were underweight, followed by 2% of them obese and 4% overweight. About 61% of the subjects consumed between 3-4 glasses plain water per day, followed by 13% consuming 1 – 2 glasses per day, 25% consumed 5-6 glasses and only 1% of them consumed between 7-8 glasses of plain water per day. This study shows that the nutrient intakes were lower than RNI for both sexes. Older people have a decreased

thirst and more likely to become dehydrated. Primary care providers need to be vigilant when treating elderly patients under their care in the old folk's home.

Elias, S. M. S. (2017). *Spiritual reminiscence therapy for older people with loneliness, anxiety and depression living in a residential aged care facility, Malaysia: The effectiveness and older people's experiences* (Doctoral dissertation). The University of Queensland, Australia. Retrieved from <https://espace.library.uq.edu.au/view/UQ:690545>

Spiritual reminiscence therapy (SRT), a type of spiritual integration in reminiscence therapy (RT), has shown its potential in providing a positive impact for older people living in residential aged care facilities (RACFs). Using a social identity approach, it is expected that SRT can help older people to deal with loneliness, anxiety, and depression by promoting a sense of social connectedness with other people. SRT might be particularly useful for a Malaysian population given the importance of religion and spirituality for Malaysian culture. The practice of SRT is increasing; however, limited studies have investigated the effectiveness of SRT for older people with loneliness, anxiety and depression and these studies have found mixed results.

To determine if a SRT program is effective in reducing loneliness, anxiety and depression for older people living in a residential aged care facility in Malaysia and to investigate its acceptability to this population.

Using the Psychotherapy Adaptation and Modification Framework, the SRT program was modified according to recommendations made by older Malaysian people (N=10) — modifications particularly related to cultural, religious and language differences. The adapted program was piloted with a convenience sample of older Malaysian people (N=10). It was well accepted by the pilot participants, providing a strong basis to conduct a randomised controlled study with older people living in a RACF in Malaysia.

A randomised controlled trial design with qualitative components conducted concurrently and sequentially was used. This study was conducted in a RACF in Malaysia, involving permanent residents (N=34) who understood and spoke the Malay language and had been resident for more than four weeks. At recruitment, participants were screened with the Mini-Cog, the Loneliness screening tool, a short form of the Geriatric Anxiety Inventory and the 4-item Geriatric Depression Scale.

Participants were randomly allocated to one of two intervention groups or a control group. Participants in the intervention groups received the SRT program in weekly 60–90 minute sessions for six weeks. The control group participated in activities such as painting, drawing and playing games over the same six weeks. Data were collected at pre-test, post-test, and three-month follow-up. The primary outcome measures were the UCLA Loneliness Scale, the Geriatric Anxiety Scale (GAS) and the Malay version of the 14-item Geriatric Depression Scale (M-GDS-14). The measurement instruments were translated and the translation subsequently verified by translating backwards and forwards between English and Malay. To evaluate the effectiveness of the intervention, the mean scores were compared at baseline, a week after intervention and at three-month follow-up.

To investigate participants' experiences of the program and its acceptability with this population, observations were recorded during the six weeks of intervention sessions. Seven

participants in the intervention groups also participated in a focus group discussion (FGD) after completion of the intervention to share their experiences of the SRT program.

Of 180 residents, 34 participated, with 18 participants in the intervention groups and 16 in the control group. Participants in both groups were in the young old age group (Intervention: $M = 67$, $SD = 4.67$ and Control: $M = 69$, $SD = 6.60$). Chronic medical illness burden was low ($M = 2.12$, $SD = 2.10$). The dropout rate was 8.8%. The main effect between groups was not significant, suggesting no difference between the intervention groups and the control group for the UCLA Loneliness Scale, GAS and M-GDS-14 scale. Within-group analysis revealed that both the intervention groups and the control group showed a significant mean difference for the UCLA Loneliness Scale and the M-GDS-14 scale. Post hoc comparisons showed that UCLA Loneliness Scale mean scores for the intervention groups in the pre-test were significantly improved from the scores at three-month follow-up. UCLA Loneliness Scale mean scores for the control group showed a significant improvement from pre-test to post-test, but not between post-test and three-month follow-up. M-GDS-14 mean scores for both groups were significantly improved from pre-test to three-month follow-up. Analysis of focus group and observational data relating to participants' experiences and acceptability of the SRT program revealed four themes: enthusiastic participation and enjoyment of the program, connection-making across boundaries between participants, use of the sessions as space for expressing and reflecting, and successful use of triggers.

Although the findings showed no significant between-groups differences, there were significant within-groups differences for loneliness and depression. This finding suggests SRT is a worthwhile program and a future development of SRT among older people living in RACFs is supported. The significant within-group results for the control group on measures of loneliness and depression suggest the value of group based interventions in RACFs. While the findings did not confirm the effectiveness of SRT as a whole, they suggested that SRT was not only an acceptable and enjoyable experience for the participants, but developed a shared identity and connectedness across perceived differences, as social identity theory predicts.

Elottol, R. M. A., & Bahauddin, A. (2011). A practical step towards integrating elderly pathway design into museum space planning: Framework of satisfaction assessment. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 2(3), 265–285.

The study examines how elderly visitors' perception, interior environment, pathway design quality, and satisfaction are related in the context of interior environment and space planning of museums. This paper explores a theoretical as well as practical key issue in elderly pathway design in museums in Malaysia. The research intends to explore the elderly pathway design that interacts with the interior environment and space planning in museums. This is to fully understand the relationship between elderly visitors' satisfaction and pathway design. This paper plans to answer critical questions; what is interior pathway design? How does the pathway design relate to the elderly visitors' satisfaction? And what is the relationship between elderly visitors' satisfaction, and pathway design quality? This study is one of the few studies focus on elderly people and pathway design. The empirical analysis carried out on 509 of elderly visitors in 21 museums in Malaysia allows us to confirm that the quality of interior pathway design is a direct determinant of elderly satisfaction. The results also reveal

that there is a significant relationship between elderly satisfaction and quality perception. Finally, the interior environment elements of museums such as lighting design, furniture arrangement and finishes materials are also considered.

Elsawahli, H., & Ali, A. S. (2017). Measured neighbourhood environmental factors correlate with active lifestyle among elderly. *Open House International* 42(1), 87-94.

Neighbourhood environmental factors are associated with active lifestyle. Despite the considerable research that examined their relationship with elderly active lifestyle, the measures' reliability and validity attracted less attention. This pilot study aimed at examining the reliability and validity of eleven neighbourhood environmental factors hypothesized to promote active lifestyle among the elderly. The neighbourhood environmental factors ratings were compared from previous studies scale and the NEWS scale among young elderly residing in two cities in Malaysia. The identified items were further examined to identify their potential association with elderly active lifestyle. All the measures showed valid values except for convenience in both neighbourhoods and accessibility in Taman Meru. All items showed good-excellent reliability except for convenience in Taman Meru. All factors showed moderate-good correlations with active lifestyle except for walkability and convenience in Taman Meru, maintenance and safety in TTDI. The neighbourhood environmental factors can be used in neighbourhood and relevant surveys.

Elsawahli, H. M. H., Ahmad, F., & Ali, A. S. (2012). *Neighbourhood design and the young elderly active lifestyle: A pilot survey*. Paper presented at the APGS 2012, Towards Comprehensive and Sustainable Built Environment, ASEAN Post Graduate Seminar, 4 December 2012 (pp. 194–207). Faculty of Built Environment, University of Malaya, Kuala Lumpur, Malaysia.

According to census figures the number of elderly in Malaysia was approximately 1,15million in 2005, in 2010 the number has risen to 2.1million (Census 2010, Department of Statistics, Malaysia). This number is expected to increase to be 3.4 million by 2020. There is considerable evidence that active lifestyle at older age contributes to improved health. Most research concerning elderly active lifestyle focused on the relationship between healthy aging and physical activity while little focused on the validity of the measures. In Malaysia, active lifestyle among the young elderly is greatly understudied. This paper is one among the few that looks at young elderly active lifestyle from the social and physical perspectives. The purpose of the pilot study is to measure the validity and reliability of the scales used to measure active lifestyle. The factors are further examined to identify the salient factors that impact young elderly active lifestyle. 50 residents were surveyed from Taman Tun neighbourhood in KL. The study found that the scales can be used to examine the impact of neighbourhood environmental factors on active lifestyle. Further findings included that the hypothesized neighbourhood factors are associated with young elderly active life style.

Elsawahli, H., Ahmad, F., & Shah Ali, A. (2014). New urbanism design principles and young elderly active lifestyle: An analysis of TTDI neighbourhood in Kuala Lumpur, Malaysia. *Urban Design International*, 19(4), 249–258.

Previous researchers have found that neighbourhood environmental factors play a significant role in promoting an active lifestyle among the elderly. Few studies in Malaysia

have addressed this relationship. This article aims to explore the relationship between young elderly active lifestyle and the built environment. Through an extensive literature review, the article identified the neighbourhood environmental factors that pertain to active lifestyle. The factors identified complied with New Urbanism design principles. One hundred residents from Taman Tun Dr Ismail neighbourhood in Kuala Lumpur were surveyed using a semi-structured questionnaire. Descriptive, correlation and multiple regression were used for the data analysis. The results showed that New Urbanism design principles promoted active lifestyles among the young elderly. Social interaction, walking, accessibility and permeability were among the factors that showed correlation with the young elderly active lifestyle. Maintenance and safety factors did not differ.

Elsawahli, H., Shah Ali, A., Ahmad, F., & Al-Obaidi, K. M. (2017). Evaluating potential environmental variables and active aging in older adults for age-friendly neighborhoods in Malaysia. *Journal of Housing for the Elderly*, 31(1), 74-92.

As Malaysia's population is aging rapidly, and since there is no specific housing policy for the elderly, it is vital that neighborhoods meet the different needs of elderly for active aging to maintain their quality of life. This study aims to investigate the neighborhood environmental variables, the outcome active aging, and potential variables that inhibit active aging in the elderly that lead to their quality of life. It examined quality-of-life determinants that are influenced by the existence of certain neighborhood characteristics. In the study, 385 older adults aged 60+ years residing in two different cities in Malaysia were surveyed. Multiple regression was used to explore how much variance in active aging variables the neighborhood environmental factors explained as a group. The results showed that permeability, accessibility, and facilitators to walking are key determinants of active aging. There is a need to improve the physical design of the neighborhoods with regard to these three factors.

Embong, M. F., Yaacob, R., Abdullah, M. S., Abdul Karim, A. H., Ghazali, A. K., & Jalaluddin, W. M. (2013). MR volumetry of hippocampus in normal adult Malay of age 50 years old and above. *Malaysian Journal of Medical Sciences*, 20(4), 25-31.

Hippocampal volume is affected by several psychiatric illnesses of old age, as well as by normal aging. It is important to have a normal data in a population to assist in diagnosis. The aim of this study is to determine hippocampal volume in normal Malay people aged 50 years old and older. This was a cross-sectional study of the normal Malay population aged 50 to 77 years. We included 43 participants, representing 19 men and 24 women. Magnetic resonance imaging (MRI) was performed using a GE Signa Horizon LX 1.0 Tesla. Oblique coronal images of temporal lobes were obtained and hippocampal volumetry was done manually and normalised with intracranial volume. Mean right and left hippocampal volumes (HCVs) were 3.43 cm³ (SD 0.32) and 3.26 cm³ (SD 0.34), with a significant difference between them ($P < 0.001$). Total mean HCVs exhibited no significant difference between men and women ($P = 0.234$). The means of the normalised right and left HCVs were 3.42 cm³ (SD 0.31) and 3.26 cm³ (SD 0.32). The mean right and left hippocampal volumes were significantly different in this study. Men had slightly larger mean HCVs but the difference was not statistically significant. It was found that normalisation further reduces the mean volume difference between the genders.

Enny, E., Abdul, M., Ruhaya, H., & Zulkarnain, S. (2015). Oral hygiene care and nutritional status among institutionalised elderly in Kedah and Kelantan, Malaysia. *Malaysian Journal of Nutrition*, 21(2), 207–217.

Unsatisfactory oral hygiene care can lead to poor nutritional status among the elderly. This study assessed the oral hygiene and nutritional status of the elderly living in institutional homes. A cross-sectional study of 174 respondents from public institutional homes in the Malaysian states of Kedah and Kelantan was conducted. A structured interview consisting of the Mini Nutritional Assessment Short Form (MNA-SF) and Dietary History Questionnaire (DHQ) was conducted to obtain information on the nutritional status and the dietary intake of the participants. Anthropometric measurements including body weight, height and calf circumference were taken. Oral hygiene assessments were conducted using the Sillnes & Loe index (1964) and the Ausburger & Elahi criteria (1982). Multivariate linear analysis was performed to explore the association and predictive values of explanatory variables. The mean age of the respondents was 71.4 ± 7.6 years. The MNA-SF scores showed that 25.9% suffered from malnutrition whilst 39.1% were at risk of malnutrition. Poor oral hygiene was reported with a mean score of 2.72 ± 0.34 for dental plaque, and 2.82 ± 0.57 for denture plaque. Stepwise multiple linear regression analysis showed that energy intake was the most significant predictor contributing to the nutritional status of the elderly, after controlling for monthly income, self-health assessment and denture plaque score. Poor oral hygiene was evident amongst elderly residents, but no significant association with nutritional status was reported. Further studies on the effects of oral infection and oral hygiene care on the elderly's ability to taste and smell, as well as their nutritional status is recommended.

Eshkoor, S. A., Hamid, T. A., Chan, Y. M., & Ng, C. K. (2015). Mild cognitive impairment and its management in older people. *Clinical Interventions in Aging*, 10, 687–693.

Mild cognitive impairment (MCI) is a common condition in the elderly. It is characterized by deterioration of memory, attention, and cognitive function that is beyond what is expected based on age and educational level. MCI does not interfere significantly with individuals' daily activities. It can act as a transitional level of evolving dementia with a range of conversion of 10%-15% per year. Thus, it is crucial to protect older people against MCI and developing dementia. The preventive interventions and appropriate treatments should improve cognitive performance, and retard or prevent progressive deficits. The avoidance of toxins, reduction of stress, prevention of somatic diseases, implementation of mental and physical exercises, as well as the use of dietary compounds like antioxidants and supplements can be protective against MCI. The modification of risk factors such as stopping smoking, as well as the treatment of deficiency in vitamins and hormones by correcting behaviors and lifestyle, can prevent cognitive decline in the elderly. The progressive increase in the growth rate of the elderly population can enhance the rate of MCI all over the world. There is no exact cure for MCI and dementia; therefore, further studies are needed in the future to determine causes of MCI and risk factors of progression from MCI to dementia. This will help to find better ways for prevention and treatment of cognitive impairment worldwide.

Eshkoor, S. A., Hamid, T. A., Shahar, S., & Chan, Y. M. (2017). Factors related to urinary incontinence among the Malaysian elderly. *Journal of Nutrition, Health and Aging, 21(2)*, 220-226.

Urinary incontinence is a prevalent condition in the elderly that is the spontaneous leakage of urine. It is an age-related problem and increases especially in people aged above 65 years. It can cause many psychological, behavioral, biological, economic and social effects. The treatment of urinary incontinence can reduce morbidity and mortality. Thus, this study aimed to determine the effects of variables including age, ethnicity, gender, education, marital status, body weight, blood elements and nutritional parameters on urinary incontinence among the Malaysian elderly. The study was on 2322 non-institutionalized Malaysian elderly. The hierarchy logistic regression analysis was applied to estimate the risk of independent variables for urinary incontinence among respondents. The findings indicated that approximately 3.80% of subjects had urinary incontinence. In addition, constipation was found a significant factor that increased the risk of urinary incontinence in samples ($p=0.006$; $OR=3.77$). The increase in dietary monounsaturated fat ($p=0.038$; $OR=0.59$) and plasma triglyceride levels ($p=0.029$; $OR=0.56$) significantly reduced the risk of incontinence in subjects. Many of suspected variables including socio-demographic factors, diseases, nutritional minerals, blood components and body weight were non-relevant factors to urinary incontinence in respondents. Constipation increased the risk of urinary incontinence in subjects, and increase in dietary monounsaturated fat and plasma triglyceride levels decreased the risk.

Eshkoor, S. A., Ismail, P., Rahman, S. A., Adon, M. Y., & Devan, R. V. (2013). Contribution of CYP2E1 polymorphism to aging in the mechanical workshop workers. *Toxicology Mechanisms and Methods, 23(4)*, 217-222.

Aging is attributed to both genetic and environmental factors. Occupational exposure is one of the environmental factors with potential genotoxic effects. Researchers try to determine factors involved in genetic damages at hazards exposure that could accelerate aging. Cytochrome P450 2E1 (CYP2E1) gene contributes in activation and detoxification of the environmental hazards. This polymorphism plays an important role in susceptibility of inter-individuals to DNA damage at the occupational exposure. The current study evaluated the possible influence of this gene polymorphism in aging by genomic damages through the biomarkers alterations of micronuclei (MN), comet tail length and telomere length shortening at the exposure. In this study, buccal cells were collected from the oral cavity of exposed workers and non-exposed controls. The CYP2E1 genotypes were detected by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). The wild genotype significantly affected MN frequency ($p = 0.007$) and relative telomere length ($p = 0.047$) in the older group of workers. It was concluded that the interaction of gene polymorphism and exposure enhances DNA damage and accelerates aging consequently.

Esther, E. Shahrul, K., & Low, W. Y. (2006). Elder abuse: A silent cry. *Malaysian Journal of Psychiatry, 14(1)*, 29-34.

Elderly abuse exists in our society but is hardly ever reported. This problem often remains undetected because of poor public awareness and lack of knowledge among health care personnel. This article addresses the definition of elderly abuse, characteristics of the abused elderly and their abusers as well as strategies to detect and manage it. Collaboration

between health care professionals and government bodies is needed to identify and manage elderly abuse. Ultimately, a legislative "Elder Protective Act" should be implemented to safeguard the rights of our vulnerable elderly.

Fatimah, O., Noraishah, D., Nasir, R., & Khairuddin, R. (2012). Employment security as moderator on the effect of job security on worker's job satisfaction and well being. *Asian Social Science*, 8(9), 50-56.

Economic instability around the world has resulted in many organizations having to lay off workers and also shut down to save their business. This economic strain and stress have impact on the worker's job satisfaction and well being through job insecurity. Thus, the purpose of this study is to examine the moderating effects of employment security on job security and job satisfaction and well being among workers in the banking sectors and manufacturing sectors who were most affected by the economic downturn. Participants were 600 workers of which 200 represented the workers who work in the bank, 200 in electronic industry and 200 in textile industry. They were randomly selected to participate in the research. A set of questionnaire comprising of Employment Security Scale, Job Security Scale, Job Satisfaction Scale and Well-Being Scale were used to measure the variables. Results from the multiple regression analysis showed that employment security did not moderate the relationship between job security and job satisfaction and well being of workers. However, job security had a direct relationship with job satisfaction and well being of workers. Thus, result from this study implicated that it was not the employment security that worried the workers but the security of their job that they were holding that impacted on their job satisfaction and well-being.

Ferraro, K. F., & Su, Y.P. (1999). Financial strain, social relations, and psychological distress among older people: A cross-cultural analysis. *The Journals of gerontology. Series B, Psychological Sciences and Social Sciences*, 54(1), S3-15.

This article examines how financial strain and social relations may independently and jointly influence psychological distress among older people in four nations. Data from four Western Pacific nations (N = 3,277) are used to test additive and multiplicative models of the relationships between financial strain, social relations, and psychological distress. Financial strain is associated with higher levels of psychological distress in three of the four nations. Interactive models of the effects of financial strain and social relations on distress were uncovered in three of the four nations, but the type of social relation influencing the strain-distress relationship varied. Subjective health and IADLs were significant predictors of psychological distress in all four nations. Findings suggest that although financial strain is quite likely to lead to psychological distress among elders, this can be mitigated, at least in part, by social relationships. Modernization was not associated with higher psychological distress.

Fitri, N., Ghazali, S., & Yaakob, U. (2014). Living arrangements, poverty, and health amongst the elderly in the District of Jerantut, Pahang, Malaysia. *Proceedings Book of ICETSR, 2014, Malaysia Handbook on the Emerging Trends in Scientific Research* (pp. 332–341).

As a developing country, Malaysia has witnessed an increase in the number of the elderly due to the advancement in medical care and the increase in life expectancy. Nevertheless, the increase in the number of elderly people poses various challenges when a country is not prepared in the aspect of economy, social, healthcare and housing. In 2011, according to the Department of Statistics Malaysia, there was a hike of 8.4 percent in the number of elderly people compared to the previous years. This paper aims to discuss the issues and problems regarding the elderly by focusing on their wellbeing from the aspect of living arrangements. For that purpose, a study was conducted on the wellbeing and living arrangements, and the poverty and health of the elderly, which involved 327 elderly peoples from two selected villages – a rural village and a village at the suburban area - in Jerantut, Pahang, Malaysia. Random sampling method was used in the selection of the elderly. The findings reveal that, in the aspect of living arrangements, the majority of the elderly live with their spouses, while some live alone after the demise of their spouses. Many of them experience financial problem due to lack of assistance offered by the responsible agencies. Their health is relatively low due to insufficient healthcare facilities and difficulty in obtaining treatment at the nearest clinic or hospital. It is hoped that this study will contribute to the awareness on the challenges faced by the elderly in the aspect of living arrangements in rural and suburban areas, while at the same time, this study can be used as a guide by the responsible agencies to improve on the wellbeing and quality of life of the elderly in rural and suburban areas.

Folk, J. Y., Beh, L. S., & Baronovich, D. L. (2012). Financial education: Determinant of retirement planning in Malaysia. *Journal of Business Management and Economics*, 3(2), 69–78. <https://doi.org/10.5539/jms.v2n1p75>

This paper examined the influence of financial learning on retirees' retirement financial planning preparation. 750 questionnaires were distributed with a 53.9% return rate. Three hypotheses were analyzed using hierarchical regression analysis. The results revealed that some mediating effect existed between financial learning and behavioral assessment of personal finance, and that the older age groups had mediating effect on the relationship between financial learning and subjective perception of satisfaction with personal finance. Within this context, respondents were satisfied with their financial situation from the behavioral assessment of personal finances, subjective perception and perceived financial well-being perspective.

Folk, J. Y., Beh, L. S., & Baronovich, D. L. (2012). Financial literacy key to retirement planning in Malaysia. *Journal of Management and Sustainability*, 2(1), 75–86.

This paper examined the influence of financial learning on retirees' retirement financial planning preparation. 750 questionnaires were distributed with a 53.9% return rate. Three hypotheses were analysed using hierarchical regression analysis. The results revealed that some mediating effect existed between financial learning and behavioural assessment of personal finance, and that the older age groups had mediating effect on the relationship between financial learning and subjective perception of satisfaction with personal finance.

Within this context, respondents were satisfied with their financial situation from the behavioural assessment of personal finances, subjective perception and perceived financial well-being perspective. The study also indicated that some mediating effect existed between financial learning and behavioural assessment of personal finance, and that the older age groups (above 50 years) had mediating effect on the relationship between financial learning and subjective perception of satisfaction with personal finance.

Foong, H. B. B., Chong, M., Taylor, E. M., Carlson, J. A., & Petrella, T. (2013). Blastic plasmacytoid dendritic cell neoplasm in an elderly. *Medical Journal of Malaysia* 68(2), 2012–2014.

Blastic plasmacytoid dendritic cell neoplasm (a.k.a. NK cell lymphoma, CD4+CD56+ haematodermic neoplasm) is a rare aggressive tumour that arises from plasmacytoid dendritic cell precursors. We report the first case from Malaysia of a 79-year-old Chinese woman who presented with purpuric plaques and nodules produced by pleomorphic CD4+, CD56+, CD68+, CD123+ and CD303+, but CD2AP-mononuclear cell infiltrates. Leukemic dissemination occurred and she succumbed to disease without treatment 4 weeks after diagnosis and 9 months after onset of cutaneous disease.

Foong, H. F., Hamid, T. A., Ibrahim, R., & Haron, S. A. (2017). Information processing speed as a mediator between psychosocial stress and global cognition in older adults. *Psychogeriatrics*, 18(1), 21-29.

The link between psychosocial stress and cognitive function is complex, and previous studies have indicated that it may be mediated by processing speed. Therefore, the main aim of this study was to examine whether processing speed mediates the association between psychosocial stress and global cognition in older adults. Moreover, the moderating role of gender in this model is examined as well. The study included 2322 community-dwelling older adults in Malaysia who were randomly selected through a multistage proportional cluster random sampling technique. Global cognition construct was measured by the Mini-Mental State Examination and Montreal Cognitive Assessment; psychosocial stress construct was measured by perceived stress, depression, loneliness, and neuroticism; and processing speed was assessed by the Digit Symbol Substitution Test. Structural equation modelling was used to analyze the mediation and moderation tests. Processing speed was found to partially mediate the relationship between psychosocial stress and global cognition (β in the direct model = -0.15, $P < 0.001$; β in the full mediation model = -0.11, $P < 0.001$). Moreover, the relationship between psychosocial stress and global cognition was found to be significant in men only, whereas the association between processing speed and global cognition was significant in men and women. Psychosocial stress may increase the likelihood that older adults will experience poor processing capacity, which could reduce their higher level cognition. Results indicate that there is a need to develop processing capacity intervention programmes for psychologically distressed older adults to prevent them from suffering cognitive decline.

Foong, H. F., Hamid, T. A., Ibrahim, R., & Haron, S. A. (2017). Moderating effect of intrinsic religiosity on the relationship between depression and cognitive function among community-dwelling older adults. *Aging & Mental Health*, 1-6.

Research has found that depression in later life is associated with cognitive impairment. Thus, the mechanism to reduce the effect of depression on cognitive function is warranted. In this paper, we intend to examine whether intrinsic religiosity mediates the association between depression and cognitive function. The study included 2322 nationally representative community-dwelling elderly in Malaysia, randomly selected through a multi-stage proportional cluster random sampling from Peninsular Malaysia. The elderly were surveyed on socio-demographic information, cognitive function, depression and intrinsic religiosity. A four-step moderated hierarchical regression analysis was employed to test the moderating effect. Statistical analyses were performed using SPSS (version 15.0). Bivariate analyses showed that both depression and intrinsic religiosity had significant relationships with cognitive function. In addition, four-step moderated hierarchical regression analysis revealed that the intrinsic religiosity moderated the association between depression and cognitive function, after controlling for selected socio-demographic characteristics. Intrinsic religiosity might reduce the negative effect of depression on cognitive function. Professionals who are working with depressed older adults should seek ways to improve their intrinsic religiosity as one of the strategies to prevent cognitive impairment.

Foong, H. F., Hamid, T. A., Ibrahim, R., Haron, S. A., & Shahar, S. (2018). Predicting cognitive function of the Malaysian elderly: A structural equation modelling approach. *Aging Mental Health*, 22(1), 109-120.

The aim of this study was to identify the predictors of elderly's cognitive function based on biopsychosocial and cognitive reserve perspectives. The study included 2322 community-dwelling elderly in Malaysia, randomly selected through a multi-stage proportional cluster random sampling from Peninsular Malaysia. The elderly were surveyed on socio-demographic information, biomarkers, psychosocial status, disability, and cognitive function. A biopsychosocial model of cognitive function was developed to test variables' predictive power on cognitive function. Statistical analyses were performed using SPSS (version 15.0) in conjunction with Analysis of Moment Structures Graphics (AMOS 7.0). The estimated theoretical model fitted the data well. Psychosocial stress and metabolic syndrome (MetS) negatively predicted cognitive function and psychosocial stress appeared as a main predictor. Socio-demographic characteristics, except gender, also had significant effects on cognitive function. However, disability failed to predict cognitive function. Several factors together may predict cognitive function in the Malaysian elderly population, and the variance accounted for it is large enough to be considered substantial. Key factor associated with the elderly's cognitive function seems to be psychosocial well-being. Thus, psychosocial well-being should be included in the elderly assessment, apart from medical conditions, both in clinical and community setting.

Forsyth, D. R., & Chia, Y.C. (2009). How should Malaysia respond to its ageing society? *Medical Journal of Malaysia*, 64(1), 46-50.

As Malaysia ages its health and social care systems will have to adapt to a changing pattern of disease and dependency. Improved public health measures extend life expectancy at the relative expense of increased prevalence of currently incurable conditions such as

dementia and Parkinson's disease. In this article we discuss how these demographic changes will impact and suggest possible means of coping with the altered epidemiology of disease and disability. Malaysia will need to swiftly develop sufficient expertise in acute Geriatric Medicine, rehabilitation of older people; the management of long-term conditions in older people with multiple complex problems within Primary Care; as well as an infrastructure for home and institutional care.

Franck, A. K. (2011). I am too old! Who is going to give me a job? Women hawkers in Teluk Bahang, Penang, Malaysia. *Journal of Workplace Rights*, 15(1), 111–132.

The informal economy is of massive importance to women workers in the Southeast Asian region. This article explores women's informal work as hawkers in the village of Teluk Bahang in the State of Penang in northern Malaysia. Focusing on women's right to work and their rights at work, the article engages in an analysis of women's labor market experiences and decisions during different periods in their lives as well as an analysis of the gendered outcome of contemporary hawker policies. Spatial aspects are central to this analysis, and it is argued that hawking represents not only an important informal economic activity for women but also a way for them to gain extended access to public places of work.

Georgousopoulou, E. N., Panagiotakos, D. B., Mellor, D. D., & Naumovski, N. (2017). Tocotrienols, health and ageing: A systematic review. *Maturitas*, 95, 55–60. <https://doi.org/10.1016/j.maturitas.2016.11.003>

A systematic review of studies was undertaken to evaluate the potential effect of intake of tocotrienols or circulating levels of tocotrienols on parameters associated with successful ageing, specifically in relation to cognitive function, osteoporosis and DNA damage. Following PRISMA guidelines a systematic review of epidemiological observational studies and clinical trials was undertaken. Inclusion criteria included all English language publications in the databases PubMed and Scopus, through to the end of July 2016. Evidence from prospective and case-control studies suggested that increased blood levels of tocotrienols were associated with favorable cognitive function outcomes. A clinical trial of tocotrienol supplementation for 6 months suggested a beneficial effect of intake on DNA damage rates, but only in elderly people. Regarding osteoporosis, only in vitro studies with cultures of human bone cells were identified, and these demonstrated significant inhibition of osteoclast activity and promotion of osteoblast activity. Research in middle-aged and elderly humans suggests that tocotrienols have a potential beneficial anti-ageing action with respect to cognitive impairment and DNA damage. Clinical trials are required to elucidate these effects.

Ghazali, A. R., Kamarulzaman, F., Normah, C. D., Ahmad, M., Ghazali, S. E., Ibrahim, N., Said, Z., Shahar, S., Angkat, N., & Razali, R. (2013). Levels of metallic elements and their potential relationships to cognitive function among elderly from Federal Land Development Authority (FELDA) settlement in Selangor Malaysia. *Biological Trace Element Research*, 153(1), 16–21. <https://doi.org/10.1007/s12011-013-9642-7>

Exposure to toxic metals and excessive amount of trace elements is a risk factor of cognitive decline. Continuous monitoring of these elements by the use of metabolically inactive tissues such as fingernails may help in taking preventive measures to delay the cognitive decline process. In this study, the cognitive function of 54 elderly (60-72 years

old) from FELDA Sungai Tinggi, Selangor, was evaluated using the Malay version of Mini-Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA). The levels of arsenic (As), cadmium (Cd), copper (Cu), manganese (Mn), lead (Pb), and zinc (Zn) in fingernail were detected using Inductively Coupled Plasma-Mass Spectrometry. Results showed that (92.6 %) our population was cognitively impaired based on the MoCA with mean score of 18.07 ± 5.11 . The mean level of elements in fingernails for As, Cd, Cu, Mn, Pb, and Zn were 16.68 ± 3.52 , 4.26 ± 0.91 , 4.81 ± 1.16 , 1.00 ± 0.23 , 1.83 ± 0.47 , and 40.86 ± 10.81 $\mu\text{g/g}$, respectively. Significant inverse correlations were observed between MoCA with age ($r = -0.543$, $p < 0.01$), Cu level ($r = -0.330$, $p < 0.05$), and Mn level ($r = -0.496$, $p < 0.01$). MMSE was correlated to age ($r = -0.346$, $p < 0.05$) only. In conclusion, besides aging, the progression of cognitive decline among the elderly FELDA population was associated with increased levels of copper and manganese.

Ghazali, S. B., Abdullah, K. L., Aziz, A. B., Amin, R. B., Jusoh, A. S., Mansor, M. B., Abdul, W. N., & Shafie, Z. B. (2015). Burden of caregivers of the elderly with chronic illnesses and their associated factors in an urban setting in Malaysia. *Malaysian Journal of Public Health Medicine*, 15(1), 1–9.

The burden faced by caregivers undertaking caregiving responsibilities may affect their health. This study aims to determine the burden of caregivers of elderly with chronic illness based on caregivers' sociodemographic, experience and elderly dependence level. A cross-sectional study involving 166 caregivers of elderly with chronic illness was conducted at the outpatient medical clinic of a tertiary teaching hospital in Malaysia. The Barthel's Index (BI) of Activity of Daily Living (ADL) scale was used to assess the degree of physical care required by the elderly with chronic illnesses. Caregiver Burden Inventory (CBI) Scale was used to assess the level of burden of caregivers. Descriptive statistics was used to determine the sociodemographic characteristics of caregiver and the level of elderly dependency. Chi-square test and Multivariable logistic regression were used to determine factors associated with the level of burden among caregivers. About two third (67.5%) of the elderly suffered medium to high range of functional disabilities; 38.0% were partially dependent and 29.5% were dependent. Almost one fifth (21.7%) of caregivers experienced high level of burden, especially time-dependent burden followed by physical and emotional burden. Caregivers who were employed and served more than 14 hours of caregiving have more than three times greater burden. Additionally, caregiving for elderly with greater functional dependence were seven times more burden. Level of caregivers' burden in local urban population in Malaysia was lower than other studies in Asia. Employed caregivers, long duration of caregiving per day and functionally dependent care were significant for caregivers burden. Results highlighted that that health care provider should consider these factors when planning interventions to alleviate the burden.

Gikonyo, L. (2007). *Gender comparison of economic status of the elderly in Peninsular Malaysia* (Master's Thesis). Universiti Putra Malaysia. Retrieved from <http://psasir.upm.edu.my/4970/>

The purpose of this study was to investigate the economic status of elderly men and women in Peninsular Malaysia using their net flow (income less expenditures) and net worth (assets less liabilities). The study utilized secondary data from an IRPA Project titled "Economic and Financial Aspects of Ageing in Malaysia (2005)" the research programme on

Quality of Life of Older Malaysians. The dataset contained information on 1841 elderly (926 females and 915 males) aged 55-75 from Peninsular Malaysia. The dataset contained a range of information on the elderly including their demographics. This study analyzed and described selected portions of the dataset which had variables that corresponded to the objectives of the study. Twelve variables were selected and used in this research. Their basis for inclusion was the literature reviewed for this study. These variables included age, sex, ethnicity, marital status, educational attainment, employment status, home ownership, perceived health status, assets, liabilities, income and expenditure. The data was at the individual level except for expenditure data which was at the household level. Analysis was run using SPSS version 13. Tests run were ANOVA, T-tests and Discriminant analysis. The results of the study revealed that elderly males and females differ in their economic status. For instance, when both net flow and net worth are taken into consideration, 79% males compared to 72% females have positive net flow. The data further revealed that 89% males compared to 71% females had positive net worth. Elderly men reported earning an income from multiple sources compared to women who predominantly reported social income (money from children) as their main source of income. Income did not tell the whole story about the elderly's economic status because the elderly have had the opportunity to accumulate assets throughout their life cycle and can draw on these assets to support their consumption as they advance in age. The study further assessed the economic status of the elderly using a combined net worth and net flow measure resulting into four typologies. The respondents values of net worth and net flow were used to profile them into four typologies: i) those with positive net flow and positive net worth ii) those with positive net flow and negative net worth iii) those with negative net flow and positive net worth iv) those with both negative net flow and negative net worth. Only 40% of the respondents were correctly grouped as revealed by discriminant analysis results. This means that the model needs further improvement. The typologies revealed that 70% of elderly males and 53% elderly females had both positive net flow and net worth. Those with both negatives comprised 3% males and 10% females. This research implies that elderly men and women differ in their resources and consequently economic status. Different measures should be taken as indicators of economic status of both elderly men and women.

Gikonyo, L., Masud, J., & Haron, S. A. (2012). Exploring economic status of the elderly in Peninsular Malaysia using net flow and net worth. *International Journal of Humanities and Social Sciences*, 2(17), 154–160.

Economically, as people reach retirement and start drawing on their savings and accumulated stocks of wealth, they may experience a lot of uncertainty as a result of lack of proper planning. In the developing world, elderly people are consistently among the poorest and most marginalized (Help Age International, 2000). This study sought to examine the economic status of the elderly using net flow and net worth. Four aspects of focus are Income, expenditure, assets and liabilities. The study also explored the Economic Status of elderly using four typologies (Positive net worth and Positive net flow, Negative net worth and Positive net flow, Positive net worth and Negative net flow, Negative net worth and Negative net flow). A total of 1841 elderly males and females from Peninsular Malaysia participated in the study. The findings revealed that elderly males and females differed in their economic status as indicated by their net flow and net worth. A significant proportion of both elderly males and females had positive net worth and net flow values.

Goh, C. H., Ng, S. C., Kamaruzzaman, S. B., Chin, A. V., Poi, P. J. H., Chee, K. H., Imran, Z. A., & Tan, M. P. (2016). Evaluation of two new indices of blood pressure variability using postural change in older fallers. *Medicine (Baltimore)*, 95(19), 1–6. <https://doi.org/10.1097/MD.0000000000003614>

To evaluate the utility of blood pressure variability (BPV) calculated using previously published and newly introduced indices using the variables falls and age as comparators. While postural hypotension has long been considered a risk factor for falls, there is currently no documented evidence on the relationship between BPV and falls. A case-controlled study involving 25 fallers and 25 nonfallers was conducted. Systolic (SBPV) and diastolic blood pressure variability (DBPV) were assessed using 5 indices: standard deviation (SD), standard deviation of most stable continuous 120 beats (staSD), average real variability (ARV), root mean square of real variability (RMSRV), and standard deviation of real variability (SDRV). Continuous beat-to-beat blood pressure was recorded during 10 minutes' supine rest and 3 minutes' standing. Standing SBPV was significantly higher than supine SBPV using 4 indices in both groups. The standing-to-supine-BPV ratio (SSR) was then computed for each subject (staSD, ARV, RMSRV, and SDRV). Standing-to-supine ratio for SBPV was significantly higher among fallers compared to nonfallers using RMSRV and SDRV ($P = 0.034$ and $P = 0.025$). Using linear discriminant analysis (LDA), 3 indices (ARV, RMSRV, and SDRV) of SSR SBPV provided accuracies of 61.6%, 61.2%, and 60.0% for the prediction of falls which is comparable with timed-up and go (TUG), 64.4%. This study suggests that SSR SBPV using RMSRV and SDRV is a potential predictor for falls among older patients, and deserves further evaluation in larger prospective studies.

Goh, Z. Y., Lai, M. M., Lau, S. H., & Ahmad, N. (2013). The formal and informal long-term caregiving for the elderly: The Malaysian experience. *Asian Social Science*, 9(4), 174–184.

This paper examines the formal and informal caregiving for elderly in the Malaysian society under the absence of a structured long-term care environment. We surveyed 31 health care providers and 56 informal caregivers for elderly. The private for-profit care providers offer better facilities and services than non-profit centres. Females especially daughters were usually the informal caregivers to the elderly. Caregivers spent below USD\$330 on long-term care expenses and relying heavily on public health care services. The results suggest government to implement a comprehensive social insurance for long-term care to ensure protection and equal treatment to be received by elderly.

Gwee, S. L., & Fernandez, J. L. (2010). *Labor force participation of elderly persons in Penan*. Paper presented at the International Conference on Business and Economic Research, 15 -16 March 2010. Sarawak, Malaysia.

Life expectancy has increased over the past few decades. Thus it is necessary to study the issue of labour force participation (LFP) of older persons, given its impact on the welfare of the elderly, households, society and the economy of the nation. This study examines the socio-demographic and socio-economic factors which influence the LFP of elderly persons in one state in Malaysia, i.e., Penang. A logit model is used to analyse the determinants of elderly persons' LFP. The findings in this study indicate that gender, high monthly expenses, previous employment status of the individual and spouse's labour force participation status have a significant positive relationship with LFP. The human capital variables, i.e. education and

health, are also positively related to LFP but are statistically insignificant. The factors which have a significant negative relationship with LFP of the elderly are age, spouse's income, financial security and low monthly expenses.

Haaga, J., Peterson, C., DaVanzo, J., & Lee, S. M. (n.d.). *Health status and family support of older Malaysians (Labor and Population Program Working Paper Series)*, 93-117.

In this paper, we describe the Malaysian setting for older people and the data, from the Second Malaysian Family Life Survey, that we use to study them. We then use these data to examine the relationship between sociodemographic characteristics and an indicator of physical disabilities, to describe residential arrangements and financial assistance for frail older people in Malaysia, and to assess how these vary across the major ethnic groups.

Hairi, N. N., Bulgiba, A., Cumming, R. G., Naganathan, V., & Mudla, I. (2010). Prevalence and correlates of physical disability and functional limitation among community dwelling older people in rural Malaysia, a middle income country. *BMC Public Health*, 10, 492.

The prevalence and correlates of physical disability and functional limitation among older people have been studied in many developed countries but not in a middle income country such as Malaysia. The present study investigated the epidemiology of physical disability and functional limitation among older people in Malaysia and compares findings to other countries. A population-based cross sectional study was conducted in Alor Gajah, Malacca. Seven hundred and sixty five older people aged 60 years and above underwent tests of functional limitation (Tinetti Performance Oriented Mobility Assessment Tool). Data were also collected for self-reported activities of daily living (ADL) using the Barthel Index (ten items). To compare prevalence with other studies, ADL disability was also defined using six basic ADL's (eating, bathing, dressing, transferring, toileting and walking) and five basic ADL's (eating, bathing, dressing, transferring and toileting). Ten, six and five basic ADL disability was reported by 24.7% (95% CI 21.6-27.9), 14.4% (95% CI 11.9-17.2) and 10.6% (95% CI 8.5-13.1), respectively. Functional limitation was found in 19.5% (95% CI 16.8-22.5) of participants. Variables independently associated with 10 item ADL disability physical disability, were advanced age (\geq or = 75 years: prevalence ratio (PR) 7.9; 95% CI 4.8-12.9), presence of diabetes (PR 1.8; 95% CI 1.4-2.3), stroke (PR 1.5; 95% CI 1.1-2.2), depressive symptomology (PR 1.3; 95% CI 1.1-1.8) and visual impairment (blind: PR 2.0; 95% CI 1.1-3.6). Advancing age (\geq or = 75 years: PR 3.0; 95% CI 1.7-5.2) being female (PR 2.7; 95% CI 1.2-6.1), presence of arthritis (PR 1.6; 95% CI 1.2-2.1) and depressive symptomology (PR 2.0; 95% CI 1.5-2.7) were significantly associated with functional limitation. The prevalence of physical disability and functional limitation among older Malaysians appears to be much higher than in developed countries but is comparable to developing countries. Associations with socio-demographic and other health related variables were consistent with other studies.

Hairi, N. N., Bulgiba, A., Mudla, I., & Said, M. A. (2011). Chronic diseases, depressive symptoms and functional limitation amongst older people in rural Malaysia, a middle income developing country. *Preventive Medicine*, 53(4), 343-346.

To determine prevalence and prevalence ratio of functional limitation amongst older people with combined chronic diseases and co-morbid depressive symptoms compared with

older people with either chronic disease or depressive symptoms alone. Data were analysed from a cross-sectional study of 765 people aged 60 years and over, conducted from 2007 to 2008 in Malaysia. Chronic diseases were self-reported, depressive symptoms were measured using the Geriatric Depression Scale and functional limitation was assessed using the Tinetti Performance Oriented Mobility Assessment Tool. A higher proportion of older people with combined chronic diseases and depressive symptoms reported having functional limitation (44.7%) compared with older people with chronic diseases alone (12.5%) and depressive symptoms alone (18.1%). Adjusting for socio-demographic characteristics, cognitive status and living arrangements, chronic diseases were associated with functional limitation (PR 2.21, 95% CI 1.31, 3.72). Depressive symptoms were also associated with functional limitation (PR 2.07, 95% CI 1.56, 2.76). The prevalence ratio for functional limitation was much greater for combined chronic diseases and depressive symptoms (PR 4.09, 95% CI 2.23, 7.51). Older people with combined chronic diseases and depressive symptoms are more likely to have functional limitation than those with chronic disease or depressive symptoms alone.

Hairi, N. N., Bulgiba, A., Peramalah, D., & Mudla, I. (2013). Do older people with visual impairment and living alone in a rural developing country report greater difficulty in managing stairs? *Preventive Medicine*, 56(1), 8–11.

Managing stairs is a challenging activity of daily living (ADL) for older people. This study aims to examine the association between visual impairment and difficulty in managing stairs among older people living alone and those living with others. A population-based cross sectional study was conducted in rural Malaysia from 2007 till 2008. Seven hundred and sixty five older people aged 60 years and over underwent eye examination for visual impairment. Visual acuity criteria were used to define visual impairment. Presenting visual acuity was assessed using a standard metric Snellen Chart of E type. Difficulty in managing stairs was measured according to a question drawn from the Barthel Index which asks "do you need help in climbing stairs". Overall, the prevalence of difficulty in managing stairs among older people in our population was 135 (18.3%, 95% CI 15.7-21.2). After adjusting for important confounders the odds ratio (OR) for visual impairment and difficulty in managing stairs among older people living alone was 5.04 (95% CI 2.27, 10.62). Among older people living with others, the adjusted OR for visual impairment and difficulty in managing stairs was 3.10 (95% CI 1.52, 6.80). In a sample of older people aged 60 years and over, those living alone with visual impairment had greater difficulty in managing stairs than those living with others. Identification of these groups of older people is useful for targeting interventions.

Halit, A. H. (2014). Self esteem and its relation to depression among the elderly. *International Journal of Business and Social Science*, 5(3), 266–273.

Due to the aging Malaysian population, the issue concerning the elderly has become increasingly important. The elderly are said to have a higher risk to undergo depression compared to other age groups (Boyd & Bee, 2009). Thus this study is conducted to see the correlation between levels of self-esteem and levels of depression among the elderly in nursing homes, Kuantan and the differences by gender. This study consists of respondents aged 60 years old and above, respondents were selected based on the method of purposive sampling 50 respondents out of 83 people in four nursing homes were involved in this study. Beck's Depression Inventory research tool was used to measure levels of depression and the Rosenberg Self-Esteem Scale was used to measure the respondents' self esteem. The data

obtained were analyzed using Pearson correlation and T-test. Pearson correlation test results show that there was significant relationship between self-esteem and depression levels, but the relationship is weak where the value of $r^2 = 0.301$. T-test results showed no significant difference between self-esteem by gender and level of depression by gender. Based on these findings and several suggestions have been submitted.

Hamid, T. A. (2015). *Population ageing in Malaysia : A mosaic of issues, challenges and prospects*. Inaugural Lecture Series. Universiti Putra Malaysia, Malaysia.

The world is ageing, and in the next decade the growth of the aged population will be fastest in the developing countries. The number of older persons is expected to more than double globally from 841 million in 2013 to more than 2 billion in 2050. By then, nearly 8 in 10 of the world's older population will live in less developed regions. Rapid population ageing in Malaysia can be attributed to the dramatic decline in fertility and mortality rates in tandem with longer life expectancy. Compared to more developed countries, Malaysia has a rather short time to prepare for the transition into an aged nation. The older population aged 65 years or over will take only 23 years to double from 7 percent in 2020 to 14 percent in 2043. Like many other developing countries in the region, Malaysia is ageing at lower levels of development. All trends point towards a rapid demographic transition that is currently taking place as a "silent epidemic". The inaugural lecture will focus on the trends of population ageing and the characteristics of the elderly in Malaysia from five (economic, health, social, psycho-spiritual, environmental) key domains. A discussion of the prospects and the way forward for population ageing in Malaysia is also presented.

Hamid, T. A. (2012). Population ageing: past, present and future trends. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 1–32). Universiti Putra Malaysia: Institute of Gerontology.

This chapter sets the demographic foundation for understanding ageing of the population in Malaysia. It describes the demographic profile of aged population, where possible state level analysis is presented. The unique geospatial population distribution and growth is attributable to her historical and regional development experienced before and after her independence which give rise to the unique population pattern. As the number of older persons is expected to increase, necessary steps will have to be undertaken to cater for the needs of the older segment in the population.

Hamid, T. A., & Chai, S. T. (2013). Meeting the needs of older Malaysians: Expansion, diversification and multi-sector collaboration. *Malaysian Journal of Economic Studies*, 50(2), 157–174.

The older population (aged 60 years or over) in Malaysia has grown from 0.5 million in 1970 to almost 2.3 million in 2010, making up about 8 percent of the current total population. By 2020, one in ten Malaysians will be an older person. Older Malaysians are a heterogeneous group with diverse demographic, socio-economic, cultural and religious characteristics. A social policy framework that recognizes the evolving nature of needs in a rapidly ageing population is fundamental to Malaysia's development and growth. This paper assesses the adequacy, affordability, sustainability, equitability, predictability and robustness of current policies, programmes and services to meet the needs of the ageing population in

Malaysia. Based on the World Bank's multi-pillar pension taxonomy, the analysis will focus on the social assistance scheme for the elderly (BOT), pay-as-you-go financed state pension (JPA) and defined contribution funds (EPF). Between conditional cash transfers and mandatory retirement savings, the central role of informal support systems in old age has often been overlooked. Results from past studies have shown that the family has played a major role in providing care and support for the aged in Malaysia. A majority of older Malaysians still co-reside with their adult children and receives financial assistance from them. Older Malaysians today are living longer, are better educated and wealthier, and they will become consumers of a burgeoning silver hair industry. Balancing social and economic priorities in national development is a challenging task, but the two goals are not mutually exclusive. Myopic focus on welfarism or paternalism will encourage the mind-set of treating an ageing population as a dependent population, instead of finding ways of empowering them. An interdependence approach, rooted in a mix of individual responsibility, family obligations, active civil society and state provisions (regulatory and non-regulatory), will enable a more broad-based and sustainable solution to meet the present and future needs of the elderly.

Hamid, T. A., & Ibrahim, R. (2014). Cohort comparisons: Emotional well-being among adolescents and older adults. *Clinical Interventions in Aging, 9*, 813–819.

There are several negative stereotypes about older adults that have negatively influenced people's attitude about aging. The present study compared emotional well-being between older adults and adolescents. Data for this study came from 1,403 community-dwelling elderly persons and 1,190 secondary school students and were obtained from two national cross-sectional surveys. Emotional well-being was measured using the World Health Organization-Five Well-Being Index. Data analysis was conducted using a multivariate analysis of covariance with SPSS software version 20 (IBM Corporation, Armonk, NY, USA). Elderly people significantly scored higher levels of emotional well-being (mean, 62.3; standard deviation, 22.55) than younger people (mean, 57.9; standard deviation, 18.46; $t, 5.32$; $P \leq 0.001$). The findings from the multivariate analysis of covariance revealed a significant difference between older adults and younger people in emotional well-being [$F(3, 2587) = 120.21$; $P \leq 0.001$; $\eta^2 = 0.122$] after controlling for sex. Contrary to negative stereotypes about aging, our findings show a higher level of emotional well-being among older adults compared with younger people.

Hamid, T. A., & Yahaya, N. (2008). National policy for the elderly in Malaysia: Achievements and challenges. In *Ageing in Southeast and East Asia: Family, social protection and policy challenges* (pp. 108–133). Pasir Panjang, Singapore: Institute of Southeast Asian Studies.

Hamid, T. A., Abdullah, S. S., Chai, S. T., & Abu Samah, A. (2012). Caring for parents with dementia: working adult children as caregivers. In *Profile of Older Malaysians: Current and Future Challenges*. (pp. 175–196). Universiti Putra Malaysia: Institute of Gerontology.

Caregiving across the life course is moderated by a host of complex and interrelated factors. It is commonly associated with parenting roles in the early stages of the family life cycle. Child-care may last for a lifetime as the love, nurturing and support by parents persist

in various forms even as a child matures into adulthood. Now, the intergenerational caregiving roles are reversed as adult children are needed to care of their parents as their parents grow older. Some people look after their parents especially those who are suffering from dementia. Therefore, this study highlights the issues and challenges faced by working adults in caring for their elderly parents with dementia.

Hamid, T. A., Krishnaswamy, S., Abdullah, S. S., & Momtaz, Y. A. (2010). Sociodemographic risk factors and correlates of dementia in older Malaysians. *Dementia and Geriatric Cognitive Disorders*, 30(6), 533–539.

The rapid expansion of the aged population in Malaysia is expected to greatly increase the number of persons with dementia in the country. However, data on dementia prevalence at the national level is lacking, and little is known about the socio-demographic risk factors and correlates of dementia. This paper describes a nationwide study of dementia prevalence and its socio-demographic risk factors and health correlates among older Malaysians. In the nationwide study, the Mental Health and Quality of Life of Older Malaysians, AGE-CAT-GMS was used to diagnose dementia in a nationally representative sample of 2,980 persons aged 60 and above. The prevalence rate of dementia was 14.3%. Higher dementia prevalences were found in oldest age (26.3%), women (19.7%), no formal education (24.1%), Bumiputeras (32.2%), unmarried (19.4%), unemployed (31.3%) and very poor on self-rated health (33.3%). Multivariate logistic regression analyses showed that older age, female gender, no formal education, ethnicity and very poor self-rated health were independent risk factors and correlates of dementia. Relatively higher prevalence rates of dementia in older Malaysians were accounted for by greater proportions without education, Malay and Bumiputera ethnicity, and other unknown factors which should be further investigated.

Hamid, T. A., Masud, J., & Chai, S. T. (2004). Socioeconomic status of older Malaysians: A gender comparison. *Malaysian Journal of Family Studies*, 1(1), 54–69.

The feminization of old age is a global phenomenon that brings with it unique and multiple challenges. Cumulative effects of past (and present) gender inequality only further compound the difficulties older women face in later life. The objective of this paper is to provide a comparison of the socioeconomic status between older men and women. A survey of the older population living in the community was conducted from 22nd October till 8th December 1999. The sample was derived from stratified district (rural and urban) of 4 states (Johor, Perak, Kedah, Kelantan) where 1726 older persons were successfully interviewed. Out of that sample, 843 are women. Results from the study showed that there is significant difference between older men and women in terms of monthly income ($t=-3.567, p<0.01$). The primary source of sustenance for older women actually comes from their adult sons ($M=168.3, SD=207.8$) and daughters ($M=133.4, SD=190.3$). The value of monetary assistance from sons increases when the female elderly have more children ($r=0.123, p<0.01$). There is also significant relationship between gender and other socioeconomic indicators such as employment, past occupation, education, marital status and home ownership. In conclusion, women face a greater risk in the future of a greying population as they form the major stakeholders. Being financially beholden to their adult children, older Malaysian women's dependency is an important issue that requires attention. Further investigation is

needed to determine if the gender differences will translate or relate to other variables such as health and overall well being.

Hamid, T. A., Momtaz, Y. A., & Ibrahim, R. (2012). Predictors and prevalence of successful aging among older Malaysians. *Gerontology*, 58(4), 366–370.

Successful aging is an important and worldwide concept in gerontology. However, until recently, there has been very little known about successful aging in Malaysia. This study was designed to describe the prevalence and correlates of successful aging among older Malaysians. Data for this study were obtained from the national survey 'The Mental Health and Quality of Life of Older Malaysians'. For this study, successful aging was defined based on a multidimensional model, encompassing the avoidance of chronic disease and physical functioning difficulty, and maintenance of good psycho cognitive functioning. The prevalence of successful aging among older Malaysians was calculated at 13.8% (CI: 12.6-15.1). Results of multiple logistic regression analysis showed that age, educational attainment, household income, and ethnicity were significantly associated with successful aging. Results of this study show that successful agers were more likely to be among the younger age, ethnic Chinese, and those with a higher education level and household income, after adjusting for all other variables in the model.

Hamid, T. A., Momtaz, Y. A., & Rashid, S. N. S. A. (2010). Older women and lower self-rated health. *Educational Gerontology*, 36(6), 521–528.

Several studies have found that older women report lower self-rated health than men. However, it is not clear why older women are more likely to report poor self-rated health than older men. Data for this study came from a national cross-sectional survey, Mental Health and Quality of Life of Older Malaysians (MHQoLOM). Included in the survey were 2980 respondents consisting of Malaysians aged 60 years and over, with both men (n=1428) and women (n=1552) represented. Results of t-tests showed older men expressed significantly higher levels of self-rated health and self-esteem than women ($p < .01$). Separate multivariate regression by gender revealed that age, life-threatening problems, and self-esteem were highly significant predictors of self-rated health among older men and women and explained 18.4% of variance in self-rated health for men and 18.2% for women. In the last step we examined the main effects of gender on self-rated health using General Linear Models (GLM) Univariate by adjusting for age, life-threatening problems, and self-esteem. Results showed an insignificant difference in self-rated health between older men and women ($F(1, 2715) = 2.26, P = 0.13$) only after adjusting for self-esteem. It can be concluded that self-esteem affects responses to self-rated health of older men and women.

Hamid, T. A., Momtaz, Y. A., Ibrahim, R., & Akahbar, S. A. N. (2014). The impact of giving support on perceived health status. *Psycho-geriatric*, 14(1), 31-37.

Social support that may contribute to the physical and mental health of older adults is widely studied. However, much of the existing research has focused on the impact of receiving support; the effects of giving support have largely been neglected. Using the biopsychosocial perspective, this study aimed to examine the independent impact of giving support to others on older adults' perceived health status. Data for this study were obtained from a nationwide community-based cross-sectional survey entitled 'Determinants of

Wellness among Older Malaysians: A Health Promotion Perspective', which was conducted in 2010. To assess the unique effects of giving support on perceived health status, above and beyond other possible known factors, a four-step hierarchical regression model using SPSS was used to test the hypothesis. The findings from the analysis revealed that giving support to others was a significant positive predictor of older adults' perceived health status after receiving support, demographic variables and chronic medical conditions were considered. Further results showed that giving support to others had almost twice the effect on perceived health status ($\beta = 0.11$, $P < 0.001$) as receiving support ($\beta = 0.06$, $P < 0.05$). The findings from this study underscore the need to develop programmes that encourage older adults' participation in productive activities such as caring for and helping others and volunteering.

Hamid, T. A., Momtaz, Y. A., Ibrahim, R., Mansor, M., Samah, A. A., Yahaya, N., & Abdullah, S. F. Z. (2013). Development and psychometric properties of the Malaysian elder abuse scale, *Open Journal of Psychiatry*, 3, 283–289.

Elder abuse is an emerging issue of serious concern with life-threatening consequences. This study aimed to develop and assess the validity and reliability of a new scale to assess elder abuse. A cross-sectional multistage sampling technique was used to obtain a nationally representative sample of older Malaysians. The iterative development process resulted in a 16-item, four-dimension scale. Exploratory factor analysis yielded a 10-item scale with three factors. The value of Cronbach's alpha for total scale and its sub-scales indicated sufficient internal consistency. Multi-trait scaling analysis also showed good convergent and discriminant validity. Furthermore, predictive validity of the proposed scale was established by demonstrating a statistically significant association between elder abuse and depression through multiple logistic regression analysis. The findings from this study demonstrate an acceptable level of validity and reliability for new scale. This scale can be used by health and social care workers to identify elder abuse cases.

Hamid, T. A., Sulaiman, H., & Abdullah, S. F. Z. (2012). Emerging issues and future challenges. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 321–341). Universiti Putra Malaysia: Institute of Gerontology.

This chapter discusses the context of Malaysia's ageing population, future challenges and the way forward for the nation in the efforts to improve the well-being of the current and future elderly in Malaysia.

Hamid, T. A., Yahaya, N., & Chai, S. T. (2005). Factors associated with the self-esteem of older persons in the community: Evidence for enabling environments. *Gerontechnology*, 3(4), 199.

As one grows older, the need for primary and secondary control strategies becomes greater due to the increasing likelihood of age-related loss. Creating enabling environments is therefore crucial in the empowerment of older persons. This paper identifies the relationship and relative importance of a range of selected indicators on the self-esteem of older Malaysians living in the community. Data on 1,776 respondents (60 years and over) from the 1999 IRPA study that examines the perception of needs and problems of the elderly were used. In the cross-sectional survey, respondents completed a five-module questionnaire which includes the Rosenberg Self-esteem Scale (RSS). A combination of 27 variables representing

separate domains was selected to predict self-esteem. The results show that the predictor variables accounted for 24.8% of variance in the RSS score ($F=17.12$, $p<0.01$). Hierarchical MRA showed that greater self esteem is associated with fewer depressive symptoms, higher life satisfaction, being urban, being of ethnic majority and in possession of more home appliances. Instead of focusing on engineering changes that one can make easily with the help of technology, many elderly insist on the impractical, focusing on things beyond their control.

Hanapi, N. L., Ahmad, S. S., Ibrahim, N., Abd Razak, A., & Ali, N. M. (2017). Suitability of escape route design for elderly residents of public multi-storey residential building. *Pertanika Journal of Social Science and Humanities*, 25, 247-254.

The rapid increase in the number of multi-storey residential buildings has raised concerns on the provision of escape route design. Statistics from the Fire and Rescue Department Malaysia showed a high number of casualties involved elderlies when there is a fire. This paper studies expert opinions on the suitability of escape route design for elderlies in public multi-storey residential buildings based on the Uniform Building By-Law (UBBL) 1984 specifications. The result showed enhancing the escape route design suited for the elderly is needed arising from the slow walking speed of the elderlies which can cause delays in the evacuation process. The majority of experts agreed that the escape route design is most important to provide safe evacuation process followed with occupant physiological and psychological characteristics.

Harith, S., Shahar, S., Yusoff, N. A. M., Kamaruzzaman, S. B., & Poi, P. J. H. (2010). The magnitude of malnutrition among hospitalized elderly patients in University Malaya Medical Centre. *Health and the Environment Journal*, 1(2), 64–72.

Malnutrition is a common, potentially serious and frequently undiagnosed condition among hospitalized elderly patients. It is important to determine the magnitude of malnutrition among hospitalized geriatric patients using anthropometric and biochemical indicators. This is a cross-sectional study involving the nutritional assessment of 181 subjects (98 women) aged 65 or older. These subjects were admitted to the Geriatric Ward, University Malaya Medical Centre within 72 hours of admission between April and August 2003. Subjects were assessed for anthropometric (body weight, height, mid upper arm circumference, and calf circumference), and biochemical (serum albumin, hemoglobin, total lymphocyte count and serum cholesterol) malnutrition. Although the majority of subjects had a normal Body Mass Index (BMI), 18.0% were underweight and 37.3% were overweight. 16.0% and 26.0% subjects had muscle wasting as assessed by low mid upper arm circumference (MUAC) and calf circumference (CC) respectively. Biochemical tests indicated that 41.4% subjects had hypoalbuminemia, 39.4% had anemia, and 23.4% had low total lymphocyte count. There were no subjects with low serum cholesterol values on admission. Since malnutrition is prevalent among hospitalized geriatric patients, there is a need to screen elderly patients during admission to ascertain who are at risk of malnutrition in order to improve their health, nutritional status and decrease the length of hospital stay.

Haron, S. A., Masud, J., & Yahaya, N. (2012). Poverty among older Malaysians. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 79–98). Universiti Putra Malaysia: Institute of Gerontology.

This chapter reviews previous literature and discusses empirical findings on poverty particularly among elderly. In the first part of the chapter, discussion centers on the concept and measurement of poverty, problems of poverty, poverty trend in Malaysia and incidence of poverty among elderly. In the second part, the chapter presents the empirical finding on poverty among elderly from a nationwide study on “Economic and Financial Aspects of Aging.”

Haron, S. A., Sharpe, D. L., Abdel-Ghany, M., & Masud, J. (2013). Moving up the savings hierarchy: examining savings motives of older Malay Muslim. *Journal of Family and Economic Issues*, 34(3), 314–328.

Continuation ratio analysis of data from the 2004 Economic and Financial Aspects of Aging in Malaysia was conducted to assess likelihood of Malay Muslims aged 55-75 moving up in a hierarchical model of savings motives. Results indicate that more than half of older Malay Muslim has no savings. Many are barely surviving economically. Family size, educational level, health perception, income quintiles and income adequacy were important predictors of advancing from a lower level to a higher level in the savings motive hierarchy. Saving for Hajj was an important self-actualization savings motive.

Haron, S. A., Sharpe, D. L., Masud, J., & Abdel-Ghany, M. (2010). Health divide: economic and demographic factors associated with self-reported health among older Malaysians. *Journal of Family and Economic*, 31(3), 328–337.

Data from the 2004 Survey of Economic and Financial Aspects of Aging in Malaysia were analyzed to determine factors associated with self-reported health status among older Malaysians. Odds of self-reporting health as bad versus moderate or good were higher for respondents who were in lower income quintiles, who perceived their financial situation as bad, who were older and who were not married. Malay, Chinese, Indian, and Bumiputra ethnic groups had lower odds of perceiving their health to be bad as compared with those in other ethnic groups.

Haron, S. A., Sharpe, D., Masud, J., & Abdel-Ghany, M. (2011). Ethnic differences in the probability of saving and owning land among elderly in Malaysia. *Malaysian Journal of Consumer and Family Economics*, 14(1), 59–75.

Data from the 2004 Economic and Financial Aspects of Aging in Malaysia were used to examine factors associated with having savings and land ownership among the Malay, Chinese, and Indian elderly in Malaysia. Those with lower levels of education, income and self-reported health were less likely to have savings. Also, Indians were less likely than Malay or Chinese to have savings. Land ownership was more likely for those with higher income, larger family size, the widowed or separated and females. Indians were more likely than Malay or Chinese own land. Value of land holdings was significantly higher for the Chinese as compared to the Malay and Indians.

Haron, S. A., Yahaya, N., Paim, L., Hamid, T. A., Zumilhl, Z., Marof, R., Sharifah Norazizan, S. A. R., & Asnarulkhadi, A. S. (2006). Living arrangements of older persons on welfare: Implications on health, economic well being and life satisfaction. *Asia-Pacific Journal of Public Health*, 18, 26–34.

This paper examined the pattern of living arrangements and health status of the older persons, to assess the effect of various living arrangement on older persons' economic well being and life satisfaction. Results indicate that more than half of older persons live alone with no other kin and one-fourth co-reside with either their children or other individuals. Majority of those living alone were widowed Malay females, aged 65 years and above, who had no formal or low education, had low health status and spent the least on health. However, the number of older persons living alone decreased as the number of living children increased. Gender preference for the co-residence children varies according to ethnicity. Given their sources and amount of income and their health status, older persons were better off co-residing either with children or others, as the older persons also require non-financial assistance especially when they are ill. However, co-residing older persons reported low life satisfaction compared to their counterparts living alone.

Hasan, S. S., Kow, C. S., Thiruchelvam, K., Chong, D. W. K., & Ahmed, S. I. (2017). An evaluation of the central nervous system medication use and frailty among residents of aged care homes in Malaysia. *Neuroepidemiology*, 49, 82-90.

Old age and institutionalization in care homes are associated with increased use of risk medications affecting the central nervous system (CNS). This study evaluated medication utilization and appropriateness; and assessed frailty among residents of Malaysian aged care homes. The subjects of this study included 202 elderly (≥ 65 years) residents of 17 aged care homes in suburban peninsular Malaysia. Frailty was measured using the Groningen Frailty Indicator (GFI) score and independence in daily living was measured as KATZ activity of daily living score. Medication appropriateness was assessed using the Medication Appropriateness Index (MAI) and 2015 Beers' criteria for Potentially Inappropriate Medication (PIM). CNS medications constituted about 16% of the total, with an average of 0.8 ± 1.1 medications per resident, which reduced to 0.5 ± 0.8 medications after 3 months. Frailty (154/202) and polypharmacy (90/202) were highly prevalent in study subjects. Subjects on CNS medications had significantly higher GFI score (7.1 vs. 5.9; $p = 0.031$), polypharmacy (57.8 vs. 35.3%; $p = 0.002$), number of PIMs (0.9 vs. 0.2; $p = 0.001$), and mean summed MAI score (3.6 vs. 2.6; $p = 0.015$) than subjects not on CNS medications. Medication number was also significantly correlated with GFI ($r = 0.194$; $p = 0.006$) and KATZ ($r = 0.141$; $p = 0.046$) scores. Frailty and polypharmacy were highly prevalent among aged care home subjects taking CNS medications. These findings support the notion that periodic regular medication review should improve the overall use of medications in elderly patients.

Hasan, S. S., Kow, C. S., Verma, R. K., Ahmed, S. I., Mittal, P., & Chong, D. W. (2017). An evaluation of medication appropriateness and frailty among residents of aged care homes in Malaysia. *Medicine (Baltimore)*, 96(35), 1-7.

Aging is significantly associated with the development of comorbid chronic conditions. These conditions indicate the use of multiple medications, and are often warranted by clinical guidelines. The aim of the present study was to evaluate medication appropriateness and frailty among Malaysian aged care home residents with chronic disease.

The participants were 202 elderly (≥ 65 years) individuals, a cross-sectional sample from 17 aged care homes. After ethics approval, each participant was interviewed to collect data on sociodemographics, frailty status (Groningen Frailty Indicator [GFI]), medication appropriateness (Medication Appropriateness Index (MAI), the 2015 Beers' criteria (Potentially Inappropriate Medication [PIM]), and 2014 STOPP criteria (Potentially Inappropriate Prescribing [PIP]). The findings show that 81% ($n=164$) and 42% ($n=85$) were taking medications for cardiovascular and central nervous system-related conditions, respectively, and 34% were using medications for diabetes ($n=69$). Each participant had a mean of 2.9 ± 1.5 chronic diseases, with an average GFI score of 6.4 ± 3.6 . More than three-quarters of the participants (76%) were frail and polypharmacy was a factor in nearly half (48%); 41% and 36% were prescribed at least one PIP and PIM, respectively, whereas the average MAI score was 0.6 (range: 0-6). The number of medications used per participant correlated significantly and positively ($0.21, P=.002$) with GFI score. These findings reinforce the need for participants of aged care homes to receive periodic medication review aimed at minimizing morbidity associated with inappropriate pharmacotherapy.

Hashim, J., & Wok, S. (2013). Competence, performance and trainability of older workers of higher educational institutions in Malaysia. *Employee Relations*, 36(1), 82–106. <https://doi.org/10.1108/ER-04-2012-0031>

The purpose of this paper is to investigate the competence, performance, and trainability of older workers of higher educational institutions in Malaysia. Survey methods were used in this study. The survey measures were adopted from Rothwell (2002) and Sarmiento et al. (2007) for performance and competence, respectively, while trainability measurements were adopted from Maurer et al. (2008). The sample of 325 respondents consisted older workers in the higher education sector aged between 55 and 60 years old. Based on the assessments made by the older workers themselves and their superiors, it is found that the older workers are competent, performing well, and are trainable. The administrative older staff, however, were rated lower by the superior as compared to the academic older staff. This may be due to the fact that most of the assessors are academicians. Regardless of the category of the staff, performance of older workers is positively related to their competence and trainability. Competence and trainability are important factors as they are found related to performance. This study focuses on education sector. It would be interesting to include older workers from other sectors because the education sector is perceived to be less physically demanding. This study provides valuable insights into considering of revising the retirement age of academicians in higher education sector even higher. Age seems to be an advantage to this group of employees. This study is unique and significant because it focuses on important sector, i.e. higher education. It would reduce the knowledge gap in performance management of older workers especially in higher education sector.

Hashim, S. M., Tan, C. E., Tohit, N., & Wahab, S. (2013). Bereavement in the elderly: the role of primary care. *Mental Health in Family Medicine*, 10, 159 – 162.

Bereavement in the elderly is a concern to primary care physicians (PCPs) as it can lead to psychological illness such as depression. Most people are able to come to terms with their grief without any intervention, but some people are not. This case highlights the importance of early recognition of bereavement-related depressive illness in elderly people.

PCPs need to optimise support and available resources prior to, and throughout, the bereavement period in order to reduce the family members' burden and suffering.

Hasim, R., Ahmad, Z., Salleh, M., & Hamid, T. A. (2012). Health issues among the aged. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 127–144). Universiti Putra Malaysia: Institute of Gerontology.

The paper discusses health issues and implications among current older people. The scope of the discussion includes perceived health status, oral health, self-report health problems, mental health, and psychological health, sexual and reproductive health. The paper also focuses on the functional status and disabilities of the elderly.

Hassan, M. F., Kugimiya, T., Tanaka, Y., Tanaka, K., & Paramesran, R. (2015). Comparative analysis of the color perception loss for elderly people. *Proceedings of the 2015 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA), 16-19 December 2015* (pp. 1176-1181). Hong Kong.

In recent years, based on the report provided by the Department of Statistic, there are about 2.5 million people who are over 60 years old in Malaysia. The number of people in this elderly group is estimated to increase in the next few years. Thus, technologists have focused on the elderly group by providing various support systems to assist them in their daily activities. An area of concern for this group is on the human vision aspect where it is shown in medical reports that elderly people suffer from certain degrees of color perception loss. In this paper, a comparative analysis is performed between two fundamental researches that measure the color perception loss of the elderly people. The first fundamental research is done by Okajima et al. which employed two-factor model that relates the effect of aging to the optical density of human lens in their computation of color perception loss for elderly. Meanwhile, apart from using the two-factor model, Tanaka et. al. took into consideration the retinal illuminance model that relates the pupil size with aging. They introduced a computational model that utilizes the rate of retinal illuminance in relation to aging and the effective components of the yellowing filter. The results observed from both researches show that elderly people suffer a certain degrees of losses in their color perception.

Hassan, N., & Tan, J. Q. (2017). Preference for purpose built retirement neighbourhood among the Chinese elderly in small towns in Malaysia. *Planning Malaysia, 15*(3), 179-192.

The popularity of retirement villages in many developed countries provides a potential market in Malaysia, which is rapidly facing an ageing society. However, little is known about the purpose-built retirement neighbourhood especially its desirability among the local elderly and niche in smaller towns which are poised to reap economic benefits from their locational advantage trending the retirement industry in the region. This study aims to firstly, explore the desirability of retirement neighbourhood among the Chinese elderly in Segamat using semistructured interviews and secondly, identify the niche market of such neighbourhood and its potential contribution to support development strategy of the town. The preference for retirement neighbourhood as an alternative living arrangement among the Chinese elderly in Segamat indicates its good potential as a new source of economic growth

but requires that public planning facilitates efficient land development process and increase amenity and services for all especially the elderly.

Hazrati, M., Hamid, T. A., & Ibrahim, R., Hassan, S. A., Sharif, F., & Bagheri, Z. (2017). The effect of emotional focused intervention on spousal emotional abuse and marital satisfaction among elderly married couples: A randomized controlled trial. *International Journal of Community Based Nursing and Midwifery*, 5(4), 329–341.

This study examined the impacts of an Emotional Focused Intervention on emotional abuse behaviors and marital satisfaction among the elderly married couples. This randomized controlled trial study was carried out in Shiraz-Iran, during September 2013-2014. The elderly couples were invited to join an emotional focused intervention, following the advertisement and announcement on bulletin boards in the elderly day clinic centers and all governmental primary health care centers. Then, 57 couples (114 participants) who were eligible for study were assigned in two groups by block randomization (29 in the experimental and 28 in the control group). The couples in the experimental group received intervention twice a week for four weeks. Each session lasted 90 minutes. The control group didn't receive any intervention and the subjects were put in the waiting list. The outcome measures were evaluated by Multidimensional Measure of Emotional Abuse Questionnaire (MMEAQ) and Marital Satisfaction Questionnaire for Older People (MSQFOP). Repeated measurement ANOVA was used to detect any significant changes between groups in their mean scores of emotional abuse behaviors and marital satisfaction from pre- to post-test, and 3 months after the intervention. Analysis of data was performed using SPSS, version 19, and $P \leq 0.05$ was measured as significant. The mean duration of marriage was 39.56 ± 9.64 years. In the experimental group, the abusive behaviors decreased significantly ($P < 0.001$) at times 2 and 3 compared with time 1, and marital satisfaction improved significantly only at time 3 ($P < 0.001$). These differences were not significant in the control group. Emotion-focused couple-based interventions are helpful in reducing the spousal emotional abuse and improving marital satisfaction in among the elderly couples.

Hisham, S. (2009). Experimenting with the use of persona in a focus group discussion with older adults in Malaysia. *Proceedings of the 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group, Australia* (pp. 333–336). <https://doi.org/10.1145/1738826.1738889>

Eliciting user-requirements from older adults – especially amongst non-users – can be challenging. This is due to the fact that older adults are varied in term of their functional abilities and experience with technology. The common User-centered design (UCD) techniques such as focus group and interviews were found to be less effective with older adults. Inspired by the benefits of persona in enhancing designer's attention through narrative and storytelling, the study reported in this paper tested persona as a communication tool in a focus group discussion with older adults in Malaysia. The study was carried out to gather Malaysian older adults' needs and requirements for the development of a prototype email application. Findings and feedbacks from the study shows that persona can be a potential technique to be applied in working with older adults. The use of persona in a focus group discussion does not only benefit the researchers and designers but also the participants – particularly in building interest among non-users to embrace computers.

Hisham, S. (2006). Localising the user interface for elderly people in Malaysia. *The HCI*.

The major motivation in this research is to encourage success in the adoption of computer technology among elderly people in developed countries. The demographic diversity and cultural differences among multi-racial elderly people in Malaysia can be both the uniqueness and challenge to this research. This paper reports the findings and results from a preliminary study conducted by the author in September 2005. Based on the findings, this research aims to blend culture and ageing concerns into localised interface design for the Malaysian elderly. It is hope that the localised user interface will attract more elderly people to go online and to enhance their Web experiences.

Hisham, S., & Edwards, A. (2007). Ageing and its implications for elderly web experience. In S. Kurniawan & P. Zaphiris (Eds.), *Advances in Universal Web Design and Evaluation: Research, Trends and Opportunities* (pp. 97–115). London, UK: Idea Group Publishing.

This chapter discusses ageing related issues and their implications to the Web experience of elderly users. Particular emphasis is placed on ageing in a developing region highlighting some cases from Malaysia. The first section consists of a brief review regarding ageing functional abilities and their implications for Web interaction. Examples are given based on studies by other researchers in this area, covering major age-related impairments, namely visual and mental impairment. The potential benefits of the Internet and the elderly user as an ideal partner is examined. The second section presents more examples of the Internet as a platform for elderly people to pursue self-fulfillment. This can be achieved through the available facilities, including communication, services, personal enjoyment and lifelong education which facilitate an independent life and valued membership of society. The third section investigates some of the barriers that inhibit elderly users in utilising Web features. These include issues regarding interface design, assistive devices and software aids for elderly users. A summary of the ICT penetration among elderly users in Malaysia is included after the three main sections. Finally, the chapter is concluded with some ideas concerning the cultural and demographic differences in determining new trends, directions and opportunities in advanced Web design specifically for elderly users.

Hisham, S., & Edwards, A. D. N. (2007). Culture and user-interface design for older users in Malaysia. *Gerontechnology*, 6(4), 217-223.

The implications of age-related changes in perceptual, cognitive and psycho-motor abilities for older users' computer interaction are well-documented. Although studies in Age Associated Memory Impairment (AAMI) show that semantic memory is unaffected by ageing, many researches in the area of computing and older users only emphasize working memory capabilities. Cultural norms and knowledge learned from living in a specific environment tend to remain as people get older. Culture norms also have a significant impact on users' acceptance and performance with computer technology. To demonstrate such impact, this paper reviews listening and speaking modes using a Malaysian scenario.

Hisham, S., & Edwards, A. D. N. (2007). Incorporating culture in user-interface: A case study of older adults in Malaysia. *Proceedings of the Eighteenth Conference on Hypertext and Hypermedia* (pp. 145–146). ACM, New York, NY, USA.

As people age they will hold the same pattern of thinking, acting, communication style and behaviours which they learn from living in a specific social environment. Regardless of demographics and geographic differences, older adults share similar age-related changes in perception, cognition and mobility that profoundly affect their daily activities including computer tasks. The problem is more apparent for Malaysian older adults who are not only struggling with their age-related difficulties but at the same time need to use a user-interface which has been designed out of their culture. As localization is not well-practised in Malaysia, the English user-interface is one of the biggest barriers for older adults who could not read the language. Thus, this paper reports the current trend of computer usage among Malaysian older adults and the roles of culture in user-interface design for this fast-growing user group in Malaysia.

Ho, B. K., Jasvinder, K., Gurpreet, K., Ambigga, D., Suthahar, A., Cheong, S. M., Lim, K. H. (2013). Prevalence, awareness, treatment and control of hypertension among the elderly: The 2006 National Health and Morbidity Survey III in Malaysia. *Medical Journal of Malaysia*, 68(4), 332–337.

The objective of this study was to determine the prevalence and factors associated with the awareness, treatment and control of hypertension among the elderly population in Malaysia. Analysis of secondary data from a cross-sectional national population based survey using stratified multistage sampling conducted from April to August 2006 throughout Malaysia National Health and Morbidity Survey III (NHMS III). Adults aged 60 and older who had participated in the survey were included in the study. A total of 4954 respondents (14.3%) were elderly from the 34,539 respondents aged 18 years and above for hypertension module in NHMS III. A total of 4933 elderly had their blood pressure examined (giving a response rate of 99.6%). The overall prevalence of hypertension among elderly was 74.0%, more in elderly female (77.4%) than men (70.1%). Only 49.3% of them were aware of their hypertensive status, 42.4% were currently treated and 22.6% of those being treated were under control. The results of multiple logistic regression showed factors associated with higher awareness and treatment rates were similar i.e. females, young-old age group (age 60-74), urban residents, Chinese ethnic group and higher education. For those elderly who were on treatment, determinants associated with controlled hypertension were Chinese and Indians ethnic groups and higher educational level. There was a high prevalence of hypertension among the elderly in Malaysia but with poor awareness, treatment and control rate. Reliable information on these aspects is important for the development of patient education programs, health policies to improve disease management and overall health care resource allocation especially among the elderly in Malaysia.

Holzmann, R. (2014). *Old-age financial protection in Malaysia: Challenges and options* (SSRC Working Paper Series 2014-3). Kuala Lumpur: SSRC, UM.

This policy paper presents key findings and suggestions on Malaysia's old-age financial protection system within the context of the country's broader social security framework. The trademark policy approach focusing on job creation instead of expanding social security programs served the country well to move it quickly to a high-middle income

level. But to join the club of high-income countries in a sustainable manner may require the country to review its approach to social security, including the way old-age income support is provided, and to address the main current weaknesses: fragmentation across economic sectors, lack of an enabling political environment, incomplete benefit coverage, low mandated savings level, and inadequate disbursement options given the challenges of projected population aging and socioeconomic shifts. To address the old-age financial protection challenge, the paper outlines two key options for Malaysia's Employees Provident Fund, the country's central pension pillar: (i) moving from a mere retirement savings investment fund to a fully-fledged pension fund that offers some minimum annuities; or (ii) more radically, moving the benefits toward a Non-Financial Defined Contribution scheme with the fund's resources used as its major reserve fund. Whatever approach is considered, the reform discourse would benefit from changes in the overall governance structure of social security and from a comprehensive research agenda that offers an evidence based decision making.

Hor, J. Y. (2008). Prescription drug use among elderly admitted to medical wards in a Malaysian government hospital. *Medical Journal of Malaysia*, 63(2), 125–130.

A cross-sectional study was conducted to examine the use of prescription drugs among elderly patients (≥ 60 years old) admitted to medical wards in Hospital Kuala Lumpur, Malaysia. A total of 204 elderly (101 men and 103 women) were interviewed. Eighty two percent of the elderly were taking at least one prescription drug, with 39.2% taking ≥ 5 drugs. Prescription drugs commonly used were antihypertensives (54.4%), antidiabetics (40.2%), drugs used in haemostasis (36.8%), nitrates (33.3%) and diuretics (32.4%). Factors associated with increased use of prescription drugs were: more number of chronic diseases, self-rated health status as poor, low Barthel score, and Chinese women.

Htut, Y., Shahrul, K., & Poi, P. J. H. (2007). The views of older Malaysians on advanced directive and advanced care planning: A qualitative study. *Asia-Pacific Journal of Public Health*, 19(3), 58–67.

The provision of optimum care for the ageing population is dependent on the understanding of their views and values on end of life issues. A qualitative descriptive study was conducted to describe views of elderly Malaysians on Advanced Care Planning (henceforth ACP) and Advanced Directives (henceforth AD), and explore factors influencing these views. Fifteen elderly subjects with ages ranging from 65 to 83 years, representing different ethnic and religious groups in Malaysia were selected for in-depth interviews guided by a questionnaire. Five core themes were extracted from the interviews: 1) Considering the future 2) Contingency plans for future illnesses 3) Attitudes towards life prolonging treatment procedures 4) Doctor-patient relationships and 5) Influence of religion on decisions related to future illness. Despite the lack of knowledge on ACP and AD, older respondents were very receptive to their concept. Although the majority agreed on the importance of planning for future medical management and having open discussion on end of life issues with their doctor, they felt it unnecessary to make a formal written AD. Most felt that the future was best left to fate or God, and none had made any contingency plan for severe future illnesses citing religion as reason for this view. Cardiopulmonary resuscitation, mechanical ventilation and dialysis were considered by most to be invasive life prolonging treatments. We suggest that doctors initiate discussions on end of life care with every older patient and their family so as to promote awareness and introduce the concept of ACP/AD to a Malaysian setting.

Husna A. A., Robaiyah, K., & Tanti I. R. (2009). Dental students' knowledge and perception of elderly in relation to geriatric dentistry training, *Medical and Health* 4(2), 76–83.

Dental students need to be equipped with skills, knowledge and positive attitudes while providing dental care to the elderly. Reports from Ministry of Health Malaysia indicated that the prevalence of dental caries and periodontal disease was high among older people in the country. The aim of this study was to assess the knowledge and perception of final year dental students towards the elderly in relation to training of geriatric dentistry in Universiti Kebangsaan Malaysia Medical Centre (UKMMC). All the final year dental students were required to complete a questionnaire that comprised of 3 sections: 1) Palmore's Facts on Aging Quiz II, 2) Oral health and social concerns of patients, and 3) Perception towards the teaching of geriatric dentistry. A total of 83 students participated in the study. Twenty-four per cent (n=20) scored more than 70% to questions on knowledge about older people and 73% (n=61) scored between 50-70%. The students had ranked physical disability, transportation problems and complex and overlapping priorities as reasons for elderly not keeping to their appointments. Majority of the students reported that lack of educational resource materials and very minimum clinical sites experience were the main barriers faced during the course. In conclusion, majority of the students had moderate to good knowledge about older people and were able to recognize issues of social concerns that can influence their oral health. In general, there were not many changes in the perceived competencies of managing older patients following the geriatric module.

Hussain, F., Abdul Kadir, M. R., Zulkifly, A. H., Sa'At, A., Aziz, A. A., Hossain, M. G., Kamarul, T., & Syahrom, A. (2013). Anthropometric measurements of the human distal femur: A study of the adult Malay population. *BioMed Research International*, 2013, Article ID 175056, 5 pages. <https://doi.org/10.1155/2013/175056>

The distal femurs of 100 subjects (50 men, 50 women) from the Malay population aged between 19 and 38 years were scanned to measure the anterior-posterior (AP) and medial-lateral (ML) width. The mean AP values were 64.02 ± 3.38 mm and 57.33 ± 3.26 mm for men and women, respectively, and the mean ML values were 74.91 ± 3.52 mm and 64.53 ± 3.07 mm. We compared our data to that published previously for the Chinese and Indian populations. It was found that the Malay population had smaller distal femur than that of the Chinese but was larger than that of the Indian population ($P < 0.05$). In conclusion, although it is well established that Asians have a smaller distal femur size than that of the Western population, the variations in different Asian ethnicities may need to be considered when designing the appropriate knee implant.

Hussain, M. R., Chai, S. T., & Sharifah Norazizan, S. A. R. (2008). Computer anxiety and attitudes towards the internet among older Malaysians. *Gerontechnology*, 7, 126. <https://doi.org/10.4017/gt.2008.07.02.063.00>

Computer anxiety is the 'fear of impending interaction with a computer that is disproportionate to the actual threat presented by the computer'. Past studies have shown that many older persons have experienced computer anxiety and fear of the internet which resulted in its limited use. Seniors who are confident in their ability to use the Internet, who are comfortable using the Internet, and who are experienced in using computers are more likely to use the Internet for comparison shopping. A cross-sectional survey of computer and internet

usage among older Malaysians in the community was conducted in 2008 at multiple urban localities for the states of Selangor, Kelantan, Pahang and Negeri Sembilan. The survey investigated the computer attitude, computer anxiety and attitudes towards the internet of both older users and non-users aged 60 years or over. Data were entered and analyzed using the Statistical Program for Social Sciences (SPSS). Preliminary results showed that a majority of the interviewed respondents have limited access to the computer and internet. Prior usage was mostly for work and few have had formal learning opportunities. A common anxiety is related to fear of irrevocable damage while using the computer.

Hussin, N. M., Shahar, S., Teng, N. I. M. F., Ngah, W. Z. W., & Das, S. K. (2013). Efficacy of fasting and calorie restriction (FCR) on mood and depression among ageing men. *The Journal of Nutrition, Health & Aging*, 17(8), 674–680. <https://doi.org/10.1007/s12603-013-0344-9>

An intervention study on the FCR (Fasting and Calorie Restriction) dietary regime was carried out to determine its efficacy in improving mood states and depression status among ageing men. A total of 32 healthy males (Mean±SD), aged 59.7±6.3 years, with a BMI of 26.7±2.2 kg/m² were recruited to the study. Participants were randomized to either the FCR group (and were instructed to follow a calorie restricted dietary regime with intermittent fasting) or to the control group (in which individuals were asked to maintain their current lifestyle), for a 3 month period. Mood was assessed using the Profile of Mood States and depression was assessed using Beck Depression Inventory-II and Geriatric Depression Scale-15 at baseline, week 6 and week 12 of the intervention. A total of 31 subjects completed the study (n=16, FCR and n=15, control). Significant decreases in tension, anger, confusion and total mood disturbance and improvements in vigor were observed in participants in the FCR group compared to the control group (p<0.05). No significant changes in mean depression scores were observed. Weight, BMI and percent body fat were reduced by 3.8%, 3.7% and 5.7% respectively in the FCR group. Our findings show that a FCR dietary regime is effective in improving mood states and nutritional status among ageing men.

Hussin S. S., Mitra G., Roman D., Kamaruzaman W., & Ahmad W. (2011). Employees' Provident Funds of Singapore, Malaysia, India and Sri Lanka: A comparative study. In Mitra G., Schwaiger K. (Eds.), *Asset and Liability Management Handbook*. Palgrave Macmillan, London.

Demographic changes affect social and economic performance all over the world. Current demographic trends, such as declining fertility rates, declining mortality rates and increasing life expectancies, are causing an aging population, in which the proportion of elderly people to the total population is increasing (Long, 2008). In 2000, less than one in ten people were over 60 years old, but estimates indicate that by year 2050 one in every five people will be over 60 years old (United Nations, 2000). As an example, in Japan, which is one of the fastest aging nations in the world, there were 9.3 people under 20 for every person over 65 in 1950; for 2025, this ratio is forecasted to be 0.59 people under 20 for every person older than 65 (United Nations, 2000).

Ibrahim, N. (2014). *Depression and factors of psychological well-being among Malay, Chinese and Indian elderly women at Rumah Seri Kenangan (RSK), public welfare institutions in Malaysia. (Doctoral dissertation). Southern Illinois University, United States. Retrieved from <http://opensiuc.lib.siu.edu/dissertations/825/>*

For more than four decades, researchers have found depression to be a common mental illness among the elderly (Charatan, 1975; Sreevani & Reddemma, 2012). In Malaysia, the rates of depression among elderly residents of institutions are 67% higher than among elderly adults residing at home (Al-Jawad, Rashid, & Narayan, 2007). As in the United States, elderly Malaysian women are twice as likely to be diagnosed with depressive symptoms as elderly men (Salimah et al., 2008). Time and again, research has revealed that depression is a significant problem for individuals later in life and may affect their psychological well-being. The purpose of this cross-sectional study was to examine the relationship among depression and factors of psychological well-being among Malay, Chinese, and Indian elderly women living in four Rumah Seri Kenangans (RSKs), or public welfare institutions in Malaysia. Face-to-face interviews were conducted from August to October 2013 to measure participants' baseline depression, perceived social support, spiritual intelligence, self-esteem, and level of social desirability. A diverse group of 163 elderly women participated in this study, including 84 ethnic Malays (51.5%), 43 ethnic Chinese (26.4%), and 36 ethnic Indians (22.1%) with an average age of 70 (SD = 7.10). The results indicated that there were significant differences between the three ethnic groups in terms of their depression, spiritual intelligence, and perceived social support. Chinese elderly women were found to have higher baseline rates of depression, lower spiritual intelligence, and lower perceived social support than Malay as well as Indian elderly women. The results indicated that 37% of the combination of spiritual intelligence, perceived social support, self-esteem, and social desirability significantly predicted depression among elderly female participants ($F(4,127)=22.77, p < .001$). However, only perceived social support and self-esteem were found to be significant predictors of depression among the elderly women of the selected RSKs. These results led to some important implications for practitioners working with the elderly population in institutions, as well as for counselor educators. Limitations and recommendations for future research are also provided.

Ibrahim N., Din, N. C., Ahmad, M., Ghazali, S. E., Said, Z., Shahar, S., Ghazali, A. R., & Razali, R. (2013). *Relationships between social support and depression, and quality of life of the elderly in a rural community in Malaysia. *Asia-Pacific Psychiatry*, 5(Supplement S1), 59–66.*

This study aimed to examine the role of social support and depression in predicting the quality of life among the elderly living in a rural Federal Land Development Authority (FELDA) community in Malaysia. A total of 162 elderly settlers of FELDA Sungai Tinggi, aged 60 years and above, were selected by universal sampling method in this cross-sectional study. Three standardized instruments - the 12-item Short Form (SF-12), 15-item Geriatric Depression Scale (GDS-15) and Medical Outcome Study Social Support (MOS-Social Support) - were used to assess for quality of life, depression and social support. Quality of life of the elderly people in this community was high, especially in terms of physical components as compared to mental components. The mean scores for emotional role in the SF-12 was relatively the highest (90.74 ± 21.59) with social functioning being the lowest (30.35 ± 22.29). The results also showed that the mean value was higher for physical component summary (74.40) as compared to mental component summary (51.51). Approximately 23.5% suffered

mild depression and only 2.5% had severe depression. This study showed that the elderly FELDA settlers have a high quality of life, mainly on the physical components of life and low rate of severe depression, a positive indicator of their psychological well-being. Social support in the form of emotional/informational support, and depression were significant factors related to their good quality of life.

Ibrahim, A., Singh, D. K. A., & Shahar, S. (2017). “Timed Up and Go” test: Age, gender and cognitive impairment stratified normative values of older adults. *PLOS ONE*, 12(10), 1–14. <https://doi.org/10.1371/journal.pone.0185641>

The aim of this study was to establish ‘Timed up and Go’ test (TUG) normative data among community dwelling older adults stratified based on cognitive status, gender and age groups. A total of 2084 community dwelling older adults from wave I and II were recruited through a multistage random sampling method. TUG was performed using the standard protocol and scores were then stratified based on with and without mild cognitive impairment (MCI), gender and in a 5-year age groups ranging from ages of 60’s to 80’s. Results 529(16%) participants were identified to have MCI. Past history of falls and medical history of hypertension, heart disease, joint pain, hearing and vision problem, and urinary incontinence were found to have influenced TUG performance. Cognitive status as a mediator, predicted TUG performance even when both gender and age were controlled for (B 0.24, 95% CI (0.02–0.47), β 0.03, t 2.10, $p = 0.36$). Further descriptive analysis showed, participants with MCI, women and older in age took a longer time to complete TUG, as compared to men with MCI across all age groups with exceptions for some age groups. These results suggested that MCI needs to be taken into consideration when testing older adults using TUG, besides age and gender factors. Data using fast speed TUG may be required among older adults with and without MCI for further understanding.

Ibrahim, A., Singh, D. K. A., Shahar, S., & Omar, M. A. (2017). Timed up and go test combined with self-rated multifactorial questionnaire on falls risk and sociodemographic factors predicts falls among community-dwelling older adults better than the timed up and go test on its own. *Journal of Multidisciplinary Healthcare*, 10, 409-416.

Early detection of falls risk among older adults using simple tools may assist in fall prevention strategies. The aim of this study was to identify the best parameters associated with previous falls, either the timed up and go (TUG) test combined with sociodemographic factors and a self-rated multifactorial questionnaire (SRMQ) on falls risk or the TUG on its own. Falls risk was determined based on parameters associated with previous falls. This was a retrospective cohort study. The study was conducted in a community setting. The participants were 1,086 community-dwelling older adults, with mean age of 69.6±5.6 years. Participants were categorized into fallers and nonfallers based on their history of falls in the past 12 months. Participants’ sociodemographic data was taken, and SRMQ consisting of five falls-related questions was administered. Participants performed the TUG test twice, and the mean was taken as the result. A total of 161 participants were categorized as fallers (14.8%). Multivariate logistic regression analysis showed that the model ($\chi^2(6)=61.0$, $p<0.001$, Nagelkerke $R^2=0.10$) consisting of the TUG test, sociodemographic factors (gender, cataract/glaucoma and joint pain), as well as the SRMQ items “previous falls history” (Q1) and “worried of falls” (Q5), was more robust in terms of falls risk association compared to

that with TUG on its own ($\chi^2(1)=10.3$, $p<0.001$, Nagelkerke $R^2=0.02$). Combination of sociodemographic factors and SRMQ with TUG is more favorable as an initial falls risk screening tool among community-dwelling older adults. Subsequently, further comprehensive falls risk assessment may be performed in clinical settings to identify the specific impairments for effective management.

Ibrahim, D., Isa, Z. M., & Ali, N. (2012). Malaysian savings behavior towards retirement planning. *Proceedings of the International Conference on Economics Marketing and Management IPEDR*, 28 (pp. 102–105). Singapore: IACSIT Press.

Awareness in retirement is still a vague issue among society in Malaysia. There are a lot of retirement products being introduced by financial institutions and yet the initiatives to save for retirement are stepsided by many. Since most think that companies and government retirement plan should be enough to cover for golden years expenses. Nevertheless, many studies have shown that money saved in companies and government pension plan may not be adequate for future consumption. Therefore, this paper, subjectively, aimed at discussion on retirement issues scenario in Malaysia, attitudes towards investment, savings behavior towards retirement among the populace and current issues in Malaysia. As a result, a theoretical framework is developed to illustrate the relationship between demographic, financial education programmes, social influences, and personal retirement savings behavior.

Ibrahim, N., Moy, F. M., Awalludin, I. A. N., Ali, Z., & Ismail, I. S. (2014). The health-related quality of life among pre-diabetics and its association with body mass index and physical activity in a semi-urban community in Malaysia - A cross sectional study. *BMC Public Health*, 14, 298.

People with pre-diabetes are at high risk of developing type 2 diabetes and cardiovascular diseases. Measurements of health-related quality of life (HRQOL) among pre-diabetics enable the health care providers to understand their overall health status and planning of interventions to prevent type 2 diabetes. Therefore we aimed to determine the HRQOL and physical activity level; and its association with Body Mass Index (BMI) among pre-diabetics. This was a cross sectional study carried out in two primary care clinics in a semi-urban locality of Ampangan, Negeri Sembilan, Malaysia. Data was collected through self-administered questionnaires assessing the demographic characteristics, medical history, lifestyle and physical activity. The Short Form 36-items health survey was used to measure HRQOL among the pre-diabetics. Data entry and analysis were performed using the SPSS version 19. A total of 268 eligible pre-diabetics participated in this study. The prevalence of normal weight, overweight and obesity were 7.1%, 21.6% and 71.3% respectively. Their mean (SD) age was 52.5 (8.3) years and 64.2% were females. Among the obese pre-diabetics, 42.2% had both IFG and IGT, 47.0% had isolated IFG and 10.8% had isolated IGT, 36.2% had combination of hypertension, dyslipidemia and musculoskeletal diseases. More than 53.4% of the obese pre-diabetics had family history of diabetes, 15.7% were smokers and 60.8% were physically inactive with mean PA of < 600 MET-minutes/week. After adjusted for co-variables, Physical Component Summary (PCS) was significantly associated with BMI categories [$F(2,262) = 11.73$, $p < 0.001$] where pre-diabetics with normal weight and overweight had significantly higher PCS than those obese; normal vs obese [Mdiff = 9.84, $p = 0.006$, 95% CI diff = 2.28, 17.40] and between overweight vs obese [Mdiff = 8.14, $p < 0.001$, 95% CI diff = 3.46, 12.80]. Pre-diabetics who were of normal weight reported higher HRQOL

compared to those overweight and obese. These results suggest a potentially greater risk of poor HRQOL among pre-diabetics who were overweight and obese especially with regard to the physical health component. Promoting recommended amount of physical activity and weight control are particularly important interventions for pre-diabetics at the primary care level.

Ibrahim, R., & Hamid, T. A. (2012). Experience of lifelong learning among participants of LLIFE programme. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 280–303). Universiti Putra Malaysia: Institute of Gerontology.

This chapter discusses an overview Lifelong Learning Initiative for the Elderly (LLIFE) program. It also highlights the findings from focus group discussions with the participants, the advantages and implications of LLIFE Program.

Ibrahim, R. I., & Siri, Z. (2015). A study on longevity factor: The case of government pensioner in Malaysia. *International Journal of Business and Society*, 16(1), 147-161.

There are many researches showing that the life expectancy for most countries is increasing. Since the life expectancy at a particular age tends to increase over time for male and female, the mortality risk tends to be smaller over time. Therefore it is expected that pensioners tend to live longer and thereby cause increase in pension liabilities to the government. Countries are looking for solutions to decrease the effect of increased longevity on pension costs. The most common changes are to equalize the retirement age for male and female and to rise the retirement age. Therefore, we studied the longevity factor for the government pensioner in Malaysia at age 55, 56, 57, 58, 59 and 60 years respectively. Since the pensions are paid for the rest of the pensioner's life in the event of his death and also to his spouse and child if any in the form of a derivative pension, the longevity factor for pensioner, spouse and child will be formulated and estimated separately. To formulate and estimate these factors, the theory of annuities and the Pension Law of Malaysia need to be studied.

Ibrahim, R., Chai, S. T., Hamid, T. A., & Ismail, N. A. (2012). *Types of support received by co-resident and non co-resident Older Malaysians*. Paper presented at the 2nd International Leadership Assembly of Nursing Homes cum APIAS-TSAO-ILC Symposium for Junior Researchers on Active Ageing 2012, 27-28 June 2012. Hong Kong.

Dependency in old age is commonly linked to declining health and financial resources and thus, older persons have to rely on family members for support. Nonetheless, family support has been found to vary widely by coresidence status. The purpose of this study is to determine the contribution of co-residence status and selected demographic variables in predicting the likelihood of older persons receiving financial and/or non-financial support from children. A sub-sample of 1,273 older persons aged 60 years and above was obtained from a nationwide survey in Malaysia in 2010. Respondents' response on the types of support received from children were collapsed into financial (monetary assistance and payment for: treatment cost, place to stay, in-home care services, and assistive devices) and non-financial support (household chores, care when sick and others). Multinomial logistic regression was performed to assess the contribution of factors on the likelihood that respondents would

receive support (0 = No support, 1 = Either financial or non-financial support, 2 = Both types of support). The model contained eight dichotomous independent variables including sex, education level, marital status, employment status, co-resident status, health problems, monthly personal income and household size. Descriptive results showed that 78.9% of older persons co-reside with their children. Majority of older persons received both financial and non-financial support (64%), compared to financial only (11%), non-financial only (9%), or no support at all (16%). Chi-square test of independence found that there was significant relationship between co-residential status and types of assistance received. Multinomial regression showed that co-residence with children was the most influential determinant of support type, followed by employment and education of older persons. The full model containing all predictors was statistically significant ($X^2 = 196.512$, $df = 16$, $p = 0.001$) and correctly classified 66% of cases, which was more robust proportional by chance accuracy rate, in distinguishing respondents with different types of support received. Reference group for the model are those who received no support. If an elderly were to co-reside with adult children, they are 3 times more likely to receive both support than not getting any. Differences in the respondent's gender and health were significant determinants of partial or full support. While co-residential status affects the overall support for the elderly in Malaysia, the relative influence of other predictors must be given due consideration. The disadvantaged elderly or older persons at-risk should be provided with assistance so that they do not face unmet needs in terms of support in old age.

Ibrahim, R., Momtaz, Y. A., & Hamid, T. A. (2013). Social isolation in older Malaysians: Prevalence and risk factors. *Psychogeriatrics*, 13(2), 71–79.

Social isolation is one of the most important emerging issues among ageing populations, as it reduces well-being, health and quality of life. The purpose of this study was to identify prevalence and risk factors of social isolation in older Malaysians. The sample for this study was drawn from a national survey entitled 'Patterns of Social Relationships and Psychological Well-Being among Older Persons in Peninsular Malaysia'. Social isolation was measured with the Lubben Social Network Scale. The findings from the present study showed that 49.8% of older Malaysians are at risk for social isolation. The results of logistic regression analysis revealed that the number of sons, number of brothers, number of sisters, household size, self-rated health, place of residence, homeownership, sex and ethnicity were significantly associated with social isolation. These findings may have some implications for social and health-care policymakers in planning and developing new and effective interventions such as educational programs to reduce social isolation among this vulnerable population.

Ibrahim, N. M., Shohaimi, S., Chong, H. T., Rahman, A. H., Razali, R., Esther, E., & Basri, H. B. (2009). Validation study of the mini-mental state examination in a Malay-speaking elderly population in Malaysia. *Dementia and Geriatric Cognitive Disorders*, 27(3), 247–253.

In view of the differing sensitivity and specificity of the Mini-Mental State Examination (MMSE) in the non-English-speaking populations, we conducted the first validation study of the Malay version (M-MMSE) in Malaysia among 300 subjects (from the community and outpatient clinics). Three versions were used: M-MMSE-7 (serial 7), M-MMSE-3 (serial 3) and M-MMSE-S (spell 'dunia' backwards). Dementia was assessed using

the criteria of the *Diagnostic and Statistical Manual of Mental Disorders IV*. The optimal cutoff scores were obtained from the receiver operating characteristics curves. Seventy-three patients (24.3%) had dementia and 227 (75.7%) were controls. Three hundred patients completed the M-MMSE-7, 160 the M-MMSE-3 and 145 the M-MMSE-S. All 3 versions were valid and reliable in the diagnosis of dementia. The optimal cutoff scores varied with each version and gender. In the control group, significant gender differences were observed in the patients with the lowest educational status. Increasing educational levels significantly improved the M-MMSE performance in both genders. All 3 versions of the M-MMSE are valid and reliable as a screening tool for dementia in the Malaysian population, but at different cutoff scores. In those with the lowest educational background, gender-adjusted cutoff scores should be applied.

Idris, I. (2016). *Older people as models in Malaysian television and print advertisements* (Doctoral dissertation). University of Liverpool, United Kingdom. Retrieved from <https://livrepository.liverpool.ac.uk/3007899/>

Despite a global ageing population, many businesses in general and advertisers in particular have been criticised for not meeting the needs of older consumers. Older Malaysians are relatively neglected and ignored by marketing and advertising although this market is growing. The majority of research pertaining to ageing consumers has been conducted in Western countries and cannot always be applied to the East because of cultural differences. As Malaysia is experiencing a demographic transition where the number of older people is increasing, it is essential for advertisers and marketers to understand older adults' specific preferences in the marketplace. The central aim of this research is to advance knowledge by analysing the usage and portrayal of older models in both television and print advertisements in Malaysia and investigating the attitude of older consumers towards such advertisements. This study evaluates the portrayal in terms of function and roles of older adults in both television and print advertisements. On top of that, attitudes of older consumers towards the use of older models in advertising are also investigated. Since not many studies on cognitive age has been done particularly in Malaysia, this study also measures cognitive age among older adults and analyses its impact on attitudes towards older advertising models. Lastly, this study has also compared and contrasted the attitudes of older and younger adults towards older models in advertisements. Based on the review of the international literature pertaining to older adults in advertising in terms of their representation, roles in advertisements, the way older models are portrayed in advertising, age-related social attitudes in terms of young people attitudes towards age and ageing and also discussion on the concept of age, a number of propositions emerged. Several relevant gerontological, psychological and sociological theories and concepts also underpin the review of the literature. Content analyses were used to analyse the use and portrayal of older adults. A total of 2,230 TV advertisements and 2,687 print advertisements comprise the sample, making this the largest content analysis of Malaysian advertising ever conducted. Then, a total of 600 questionnaires comprising 400 from adults' age 50+ years and, for comparative purposes, 200 from younger people, were collected in order to assess attitudes towards different portrayals of older models. Cognitive age was also measured. The findings of this thesis have made several contributions to knowledge. First, this is the first Malaysia study to consider the use and portrayal of older models in both print and television advertisements. Results show that older adults in Malaysian advertising are portrayed as active, happy and are shown in a variety of settings. These findings are in contrast to many international studies, and are important because

advertising can impact the way older adults are treated in society and influence the self-esteem of older adults themselves. Second, the thesis analyses the different ways in which gender is depicted in advertising, and finds that despite older females being financially successful, advertising still restricts them to mostly support roles and rarely shows them in non-domestic settings. Third, the thesis has also considered how different ethnic groups are portrayed in ads and analysed attitudes of different ethnic groups towards older models which have never been studied before, which have implications for advertising design. Fourth, the study establishes that older Malaysian consumers use advertising to inform product choices in different ways to younger adults. Different media usage and attitudes towards advertisements also emerged among the older group, all of which have implications for segmentation as well as helping marketers to design better advertising strategies and media plans. Fifth, the study explores age differences in attitudes towards older advertising models and finds that younger people actually had more positive attitudes towards advertisements with positive portrayals than did the older adults. However, advertisements that portray older models with positive stereotype are more preferable by older adults compared to younger people. Lastly, this study has also measured self-perceived age among older Malaysian consumers, considers the impact of self-perceived age on attitudes towards older models in advertisements, and finds that self-perceived or cognitive age is a useful concept for consideration when advertising to this increasingly important consumer market. Existing literature indicates limited research has identified segments of older adults in Malaysia. The findings of this study on media usage and self-perceived age make a significant contribution to the body of knowledge on segmentation of older Malaysian adults. The different segmentation variables that emerged from this study show that older consumers are not a homogeneous demographic. In addition to these contributions to knowledge, the study strengthens and contributes to theoretical perspectives on successful ageing. Notably, this research finds that older Malaysians are capable of remaining socially active and continue many behavioural patterns with which they are comfortable. These findings support Activity Theory and Continuity Theory. A key contribution to these theories is the finding of a 'youth bias' in that older Malaysians feel on average 14 years younger than their actual age. The research therefore lends a new dimension of support for these key gerontological theories. The thesis makes several practical contributions. The research finds that older adults rely on product and service information contained in advertising to make purchase decisions, hence informational as opposed to solely emotional advertising execution strategies should work well with this older demographic. Second, the findings pertaining to self-perceived age suggest that advertisers should create ads that portray older adults in the same way as they perceive themselves. Results also suggest that both younger and older adults prefer older adults to be portrayed in a positive light in advertisement. Indeed, younger people showed more positive attitudes towards older adults that portray positive stereotypes in advertisements compared with older people themselves. Analysis of the study data revealed that the methods used in this study are appropriate to be employed with this age group and the study has guided other researchers in ways of collecting data from older adults. This study has also suggested that mixed methods can be also applied to get in depth analysis.

Idris, I., & Sudbury-Riley, L. (2016). The representation of older adults in Malaysian advertising. *The International Journal of Aging and Society*, 6(3), 1-16.

This paper presents the results of a content analysis of older adults in Malaysian advertising. It is the first study to utilize both print and television advertisements. Despite a

global ageing population, many businesses in general and advertisers in particular have been criticized for not meeting the needs of older consumers. Previous content analyses reveal that older adults are vastly under-represented, and this is true across many countries in the world. The present study finds that while older women are still slightly underrepresented, there appears to be progress made in that greater numbers of older adults are now included in mainstream advertising. Moreover, these seniors are depicted as relatively happy, active, and physically strong and are utilized in ads for a range of different products. The study is the first content analysis to tentatively suggest that business is now beginning to respond to the shift in demographics.

Imran A., Azidah, A. K., Asrenee, A. R., & Rosediani, M. (2009). Prevalence of depression and its associated factors among elderly patients in outpatient clinic of Universiti Sains Malaysia Hospital. *The Medical Journal of Malaysia*, 64(2), 134–139.

Depression among elderly primary care patients is a serious problem with significant morbidity and mortality. This is a cross sectional study to determine the prevalence of depression and its associated factors among the elderly patients attending the outpatient clinic, Universiti Sains Malaysia Hospital. This study utilized Malay version Geriatric Depression Scale 14 (M-GDS 14) to screen for elderly depression among Malaysian population. It also looked into associated risk factors for elderly depression using sociodemographic, family dynamics, and medically related questionnaires. Out of 244 subjects, 34 or 13.9% were found to have depression. Three variables were found to be significantly associated with depression. Elderly patient with any illness that limits the patient's activity or mobility has more risk of developing depression (OR 2.68 CI 1.15 - 6.24). Elderly patients who were satisfied with their personal incomes (OR 0.29 CI 0.10 - 0.85), and who had children or son/daughter-in law to take care of them when they are sick (OR 0.10 CI 0.01 - 0.83) have a lower chance of having depression. Screening the elderly for depression, would help in diagnosing the elderly depression better and offer them the treatment needed.

Ishak, N. H., Mohd Yusoff, S. S., Rahman, R. A., & Kadir, A. A. (2017). Diabetes self-care and its associated factors among elderly diabetes in primary care. *Journal of Taibah University Medical Sciences*, 12(6), 504–511.

Diabetes is a primarily self-manageable condition. Healthcare professionals usually offer education, treatment, and support, but patients themselves are responsible for the daily management of their condition. Increasing the effectiveness of self-management support may have a considerable impact on health care, especially for elderly people. The aim of this study was to describe diabetes self-care among elderly diabetics and to determine its associated factors. This report describes a cross-sectional study involving 143 elderly diabetes patients in the outpatient department of the Hospital Universiti Sains Malaysia (HUSM). Self-care activities assessed in this study included dietary control, physical activity, self-monitoring of blood glucose, medication adherence, and situational related adherence behaviour, all of which were obtained using the validated Malay Elderly Diabetes Self-Care Questionnaire (MEDSCaQ). The mean (\pm SD) age of the subjects was 67.9 (\pm 5.4) years old. A majority was Malay, with a mean HbA1c of 8.4 (\pm 1.9). The mean diabetes self-care score was 26.5 (\pm 8.0). Factors with a positive impact on diabetes self-care included being non-Malay ($\beta = 5.275$, $p = 0.002$), having family as care givers ($\beta = 8.995$, $p = 0.004$), having a higher level of family support ($\beta = 0.159$, $p = 0.042$), and possessing acceptable ($\beta = 4.375$, $p = 0.001$) or good

knowledge of diabetes ($\beta = 5.893$, $p = 0.004$). The presence of neuropathy negatively impacted self-care, while diabetes nephropathy had a positive impact on self care ($\beta = -4.053$, $p = 0.003$). Elderly individuals with type 2 diabetes in HUSM have a moderate score of diabetes self-care practice based on the MEDSCaQ. Determinants for good diabetes self-care include race, social support, having care-takers during periods of illness, diabetes knowledge, and diabetic microvascular complications.

Ismail, N., Hairi, F., Choo, W. Y., Hairi, N. N., Peramalah, D., & Bulgiba, A. (2015). The Physical Activity Scale for the Elderly (PASE): Validity and reliability among community-dwelling older adults in Malaysia. *Asia-Pacific Journal of Public Health, 27(8_suppl)*, 62–72.

Physical Activity Scale for the Elderly (PASE) is among the frequently used self-reported physical activity assessment for older adults. This study aims to assess the validity and reliability of a Malay version of this scale (PASE-M). A total of 408 community-dwelling older adults were enrolled. Concurrent validity was evaluated by Spearman's rank correlation coefficients between PASE with physical and psychosocial measures. Test-retest reliability was determined by the intraclass correlation coefficient (ICC). The mean PASE-M scores at baseline and follow-up were 94.96 (SD 62.82) and 92.19 (SD 64.02). Fair to moderate correlation were found between PASE-M and physical function scale, IADL ($r_s = 0.429$, $P < .001$), walking speed ($r_s = 0.270$, $P < .001$), grip strength ($r_s = 0.313-0.339$, $P < .001$), and perceived health status ($r_s = -0.124$, $P = .016$). Test-retest reliability was adequate (ICC = 0.493). The Malay version of PASE was shown to have acceptable validity and reliability. This tool is useful for assessing the physical activity level of elderly Malaysians.

Ismail, R., Hamid, T. A., & Low, W. Y. (2008). Socioeconomic determinants of self-rated health among older Malaysians: Non-comparative and age-comparative models. *International Journal of Psychology, 43(3-4)*, 74.

The study was to determine the effect of selected socioeconomic variables on self-rated health (SRH) of older persons. Total respondents is 2,980. Mean age is 70 years old ($M=70.43$, $SD=7.23$), males (50.5%), Malays (56.9%), married (56.2%) and primary education (44.6%), median income is USD106 a month. The independent variables accounted for 7.4% of variance in noncomparative SRH ($F=35.33$, $df=6$, $p=0.000$), with greatest effect is age, education, ethnicity, marital status and monthly income. Results indicated differences in the two measures of SRH, as the age-comparative single item naturally has weaker correlation with age. The study investigated the direct impact of socioeconomic factors on SRH and compared two separate models.

Ismail, Z., Mohamed, R., Mohd Hassan, M. H., & Wan Su, K. (2005). Usage of traditional medicines among elderly and the prevalence of prednisolone contamination. *Malaysian Journal of Medical Sciences, 12(2)*, 50-55.

The elderly consume many medications including traditional medicines. In 1986, it was found that 29% of elderly took traditional medicines although in 1996, the National Health Morbidity survey reported a 2.3% prevalence. However, studies from other countries showed much higher percentages. The Ministry of Health in Malaysia is concerned that some of these preparations maybe contaminated with steroids, antihistamines, hormones and other

poisons. The aims of the study were to determine a) the health seeking behaviour of elderly Malays living in rural areas, b). the utilization of both modern and traditional medicines and c). the steroid content of the traditional medicines used. Methodology included interviews using structured questionnaires of elderly Malays living in rural areas of Kelantan, aged above 60 years. Samples of traditional medications collected were sent to the Pharmacology Department, School of Medical Sciences, Universiti Sains Malaysia, for steroid content analysis using Thin Layer Chromatography. A total of 599 elderly respondents were interviewed comprising 62.4% females and 37.6% males. The 60–69 years cohort group made up 48.7%, followed by 70–79 years at 36.1% and the remainder 15.2% were more than 80 years. There were 82% of elderly taking medicines. The trends of utilization of modern and traditional medicine in the last two weeks among elderly were 59.3% and 40.9% respectively. The utilization of traditional medicine by rural elderly Malays was therefore much higher than that reported in the previous study and nearly similar to that of France and Australian studies. There were 102 samples of traditional medications collected and analysed for steroid content. Results showed that 27.5% were positive for prednisolone, 34.3% positive for unknown steroids (a total of 61.8%) and 38.2% were negative for both steroids. The present study therefore once again confirmed the high usage of traditional medicines where some of which are contaminated with steroids.

Jaafar, M. H., Mahadeva, S., Tan, K. M., & Tan, M. P. (2015). Attitudes of health care professionals towards gastrostomy feeding in older adults in Malaysia. *International Journal of Gerontology*, 9(1), 40–45.

The uptake of percutaneous endoscopic gastrostomy (PEG) tube insertion for long-term enteral feeding in the Malaysian population is poor. This study investigates the perception of Malaysian health care professionals (HCPs) towards gastrostomy feeding. A survey on knowledge, awareness of, and barriers to gastrostomy feeding was conducted among HCPs attending a national geriatrics conference. Responses were evaluated according to profession, years of experience, and specialty. The questionnaire was completed by 180 participants. Of these, 119/180 (66%) agreed PEG feeding should be used for long-term enteral feeding (>8 weeks). Doctors were more likely to agree because they were convinced of the benefit of PEG feeding [odds ratio (OR), 95% confidence interval (CI) = 2.76 (1.06, 7.17)]. HCPs with >5 years' experience were more likely to agree because of family members' opinion [2.56 (1.11, 5.92)] and geriatrics workers were more likely to agree due to previous experiences [3.29 (1.30-8.34)]. Doctors were more likely to disagree due to unavailability of a PEG service [40.29 (5.59-290.42)], HCPs with >5 years' experience were more likely to disagree due to risks of the procedure [3.35 (0.92, 12.24)] and geriatrics workers were more likely to disagree as they were not convinced of the benefit of PEG feeding [5.57 (1.00-31.05)]. This survey indicated that most HCPs involved in the care of geriatric patients would advocate PEG feeding. Important factors inhibiting the use of PEG tube feeding in Malaysia were identified. Future studies should explore the barriers to acceptance in order to identify potential solutions to improving PEG feeding use in Malaysia.

Jalil, M. A., Razak, D. A., & Ferdous Azam, S. M. (2013). Exploring factors influencing financial planning after retirement: Structural equation modeling approach. *American Journal of Applied Sciences*, 10(3), 270-279.

The study explores the critical factors that influence financial planning after retirement among Malaysians, an area which has somewhat been largely overlooked by the extant literature. The study has used a quantitative method to survey a sample of 170 Malaysian citizens, from various places in the Klang Valley area. Exploratory factor analysis, confirmatory factor analysis and structural equation modeling were used to analyze the data. The results suggest that the paths are interrelated to the casual processes significantly. Furthermore, individual's income or monthly salary is found to be the most important factor influencing financial planning, followed by attitude and culture. The results are mainly favourable to academics and practitioners in Malaysia by contributing an understanding into critical factors that influence people to make financial plan before their retirement. The study provides implications of the findings in the concluding section.

Jamaiyah, H., Geeta, A., Safiza, M. N., Khor, G. L., Wong, N. F., Kee, C. C, Ahmad A. Z., Rahmah, R., Shahar, S., Ruzita, A. T., Chen, W. S., Rajaah, M. & Faudzi, A. (2008). Reliability and technical error of calf circumference and mid-half arm span measurements for nutritional status assessment of elderly persons in Malaysia. *Malaysian Journal of Nutrition*, 14(2), 137-150.

This study sought to examine the reliability of two measurements; Calf Circumference (CC) and Mid-half Arm Span (MHAS). A sample of 130 elderly persons aged 60 years and above seen consecutively in the Kuala Lumpur Hospital outpatient clinic during the period of December 2005 to January 2006, upon consent, were recruited to the study. There was a high degree of reliability for both inter- and intra-examiner (r close to 1). For inter-examiner, on average the CC measurements taken by the first examiner were 0.3 cm lower than that of the second examiner. The upper and lower limit of the differences were +0.4 to -0.9 cm respectively. Inter-examiner MHAS measurements on average by the first examiner were 0.2 cm lower than that of the second examiner. The limits were +1.7 to -2.1 cm. By comparison, the inter-examiner CC measurements were more reliable than the MHAS measurements. For intra-examiner, on average the CC measurements at Time 1 were consistent with Time 2 (mean difference=0) with limits of the difference at + 0.5 cm. MHAS measurements at Time 1 were on average 0.1 cm less than at Time 2 with limits at +1.7 and -1.8 cm. The technical error of measurement (TEM) and coefficient of variation of CC and MHAS for both interexaminer and intra-examiner measurements were within acceptable limits with the exception of MHAS TEM. This study suggests that CC and MHAS measured in elderly persons 60 years and above, using Seca Circumference Tape ® 206, Germany (0.05 cm) are reliable and can be used in a community survey.

Jamaludin, N. (2012). *Individual Retirement Savings Behaviour: Evidence from Malaysia* (Doctoral dissertation). Edith Cowan University, Australia. Retrieved from <http://ro.ecu.edu.au/theses/432/>

This thesis investigates factors that influence individuals' investment choice decisions within the context of retirement savings in Malaysia. The focus is on individuals' likelihood of investing part of their retirement savings in approved unit trusts (also known as mutual funds). In addition, individuals' choice of fund and mutual fund selection criteria are

also explored. This thesis utilised questionnaire-based surveys to solicit responses from members of the Employees Provident Fund (EPF), as well as from unit trust consultants. Data collected from 440 EPF members and 561 unit trust consultants were analysed using statistical procedures of SPSS version 18.0 (also known as PASW 18). The results of logistic regression models revealed three significant predictors of individuals' likelihood to invest part of their retirement savings in the unit trusts: perceived importance of financial advisor, financial risk tolerance, and perceived plan design. Financial knowledge appeared to be insignificant in influencing individuals' investment choice decision. Furthermore, the thesis found that religious affiliation, religious commitment and Muslim religiosity had no significant effect in individuals' investment choice decision. In terms of demographic variables, gender, age, and marital status were all found to be significant predictors of individuals' likelihood to invest part of their retirement savings in the unit trusts. With respect to mutual fund selection criteria, the thesis found that the fund's commitment to Islamic principles, past performance of fund and overall reputation of fund were the top three criteria considered important by the EPF members. In contrast, from the consultants' point of view, the top three criteria considered important were the past performance of fund, overall reputation of fund, and fund ratings. Although the earlier results indicated no significant effect of religion on the individuals' likelihood to invest part of their retirement savings in the unit trusts, additional analyses revealed that religious affiliation, religious commitment, and Muslim religiosity had significant influence on the individuals' choice of unit trust fund. Several implications emerge from these empirical findings. First, the thesis highlighted the role of the unit trust consultants in individuals' investment decision making. Therefore, fund management companies and the governing body of the unit trust consultants should ensure that ongoing training is provided so that proper advice and recommendations can be delivered to the consultants' clients. Next, the thesis provided insightful information to the EPF as the policy maker, on the retirement savings behaviour of its members. In particular, the study presented the first evidence with regard to the EPF Members Investment Scheme (MIS), a unique feature that differentiated this retirement plan from its counterparts in emerging countries, as well as developed countries. Last, but not least, given that Malaysia is a multi-cultural nation, the findings of the thesis suggest that religion had some effect on individuals' choice of fund. Therefore, fund management companies might make use of the information provided by the thesis in better promoting their funds.

Jamaluddin, N., & Gerrans, P. (2015). Retirement savings investment decisions: evidence from Malaysia. *Journal of the Asia Pacific Economy*, 20(4), 644-657.

This paper investigates individual retirement savings investment choices of members of Malaysia's Employees Provident Fund (EPF). The focus is on the option available to EPF members to invest part of their savings in approved unit trusts. A survey of EPF members allows a contrast with existing empirical evidence, largely drawn from developed countries. Three significant factors are identified: perceived importance of financial advisor; financial risk tolerance and perceived plan design. Gender and marital status were also significant predictors of investing in the unit trusts, though religion and religious commitment were not significant. Several implications emerge from these findings. First, results highlight the important role of unit trust consultants in individuals' choices which in turn highlights the important role of the governing body of consultants in ensuring appropriate advice is delivered to clients. The study is relevant to the EPF as policy-maker, on the behaviour and attitudes of its members.

Jamaluddin, S. Z., et al. (2017). *Protecting the elderly against abuse and neglect: Legal and social strategies*. Kuala Lumpur: UM Press.

The issues pertaining to the elderly started to receive attention from the society when it was highlighted via the media. Yes, it does occur in our society. It is a fact that we have to accept. To many, this is something that is very difficult to believe, the reason being that the elders in our society, be it Malay, Chinese, Indian or other ethnics, are highly respected. This was what been inculcated in our society for generations. Unfortunately, unwanted acts take place and we have to put an end to such acts. What more, we are heading towards an ageing nation by the year 2035. In order to ensure that we are able to obtain more ideas and input regarding issues on the elderly and also to take a step towards addressing the urgency of the matter, a seminar was convened in November 2015 by Sub-GC 5 (Law), under the Prevent Elder Abuse and Neglect Initiative (PEACE) Research Project, University of Malaya. This book is based on the papers that were presented at the seminar. These papers explored the issues concerning the elderly from the legal and social perspective. In addition, a comparison was made between the local spectrum and the international as well as the Islamic spectrum. Further thereto, the seminar addressed the rights of vulnerable adults and senior citizens as well as matters pertaining to finance, welfare, maintenance as well as the characteristics of elder abuse and neglect. It also included the discussion on the duties of family members, caregivers, public authorities towards the elderly, apart from how elder abuse and neglect can be prevented through collaborative efforts.

Jamil, N., Rosie, C., Nasah, J., & Hassan, Z. (2014). *The feasibility of entrepreneurship after retirement*. *Malaysian Journal of Business and Economics*, 1(1), 19–33.

Many people are looking forward for retirement after long years of working. Retirement is the time to do things that we enjoyed all this while. Nonetheless, some of the retirees are thinking about their retirement plans as their Employees Provident Fund (EPF) is not sufficient to support them for the remaining years and they are too shy to ask money from their children. In order to support themselves and with the motivation as well as the means, some of the retirees opt to be an entrepreneur. This paper attempts to explore entrepreneurship in later phase of life especially for most of the retirees which are categorised in the “Third Age” group. Additionally, this paper discusses the impact of elderly entrepreneurship towards entrepreneurship development in Malaysia.

Johari, S, & Shahar, S. (2014). *Metabolic Syndrome: The association of obesity and unhealthy lifestyle among Malaysian elderly people*. *Archives of Gerontology and Geriatrics*, 59(2), 360–366.

The aim of this study is to investigate the prevalence of metabolic syndrome (MetS) and its predictors among Malaysian elderly. A total of 343 elderly aged ≥ 60 years residing low cost flats in an urban area in the central of Malaysia were invited to participate in health screening in community centers. Subjects were interviewed to obtain socio demography, health status and behavior data. Anthropometric measurements were also measured. A total of 30 ml fasting blood was taken to determine fasting serum lipid, glucose level and oxidative stress. MetS was classified according to The International Diabetes Federation (IDF) criteria. The prevalence of MetS was 43.4%. More women (48.1%) were affected than men (36.3%) ($p < 0.05$). Being obese or overweight was the strongest predictor for MetS in men and women ($p < 0.05$, both gender). High carbohydrate intake increased risk of MetS in men by 2.8 folds.

In women, higher fat free mass index, physical inactivity and good appetite increased risk of MetS by 3.9, 2.1 and 2.3 folds respectively. MetS affected almost half of Malaysian elderly being investigated, especially women, and is associated with obesity and unhealthy lifestyle. It is essential to develop preventive and intervention strategies to curb undesirable consequences associated with MetS.

Johari, S., Shahar, S., Ng, T. P., & Rajikan, R. (2014). A preliminary randomized controlled trial of multifaceted educational intervention for mild cognitive impairment among elderly Malays in Kuala Lumpur. *International Journal of Gerontology*, 8(2), 74–80. <https://doi.org/10.1016/j.ijge.2013.07.002>

The aim of this study was to determine the effect of health education in changing nutritional, lifestyle, and cognitive function of elderly individuals with mild cognitive impairment (MCI). Thirty-five elderly individuals with MCI (mean age 65.7 ± 3.8 years, 45.7% men) were randomly assigned to intervention ($n = 17$) and control ($n = 18$) groups. The intervention group participated in monthly sessions on nutrition and lifestyle education for 12 months, based on a booklet ('7 Guides to Enhance Elderly Memory'). Outcomes (cognitive performance, biomarkers, dietary intake, and knowledge, attitude and practice, knowledge, attitude, and practice score) were measured at 6 and 12 months. Repeated-measure analysis of covariance showed significant improvements in serum B12 ($\eta^2 = 0.094$, $p = 0.049$), homocysteine ($\eta^2 = 0.113$, $p = 0.022$), vitamin C ($\eta^2 = 0.140$, $p = 0.019$), sodium ($\eta^2 = 0.321$, $p = 0.000$), potassium ($\eta^2 = 0.321$, $p = 0.006$), knowledge ($\eta^2 = 0.220$, $p = 0.001$), and attitude ($\eta^2 = 0.105$, $p = 0.040$) in the intervention group over the control group. Individuals in the intervention group showed a significantly higher percentage of improvement in block design (+53.7%) compared to the control group (+8.0%), ($p < 0.05$). A 12-month educational intervention on nutritional, lifestyle, and cognitive exercise significantly improved nutritional status, knowledge, and attitude score. The study lacked power to demonstrate a statistically significant positive effect on cognitive functioning; thus, the preliminary findings should be confirmed in a larger trial.

John, J., Mani, S. A., & Azizah, Y. (2004). Oral health care in the elderly population in Malaysia - A review. *Medical Journal of Malaysia*, 59(3), 433–439.

One of the undeniable facts about living is that every day we are getting older. By 2050, it is projected that one out of every five Malaysians will be 60 or older. The economic challenge of this demographic change will affect development and the financial implications of sustaining well being of this group are formidable and complex. This population group has extensive oral disease, medical problems that complicate their oral care, and unique dental treatment challenges. The authors discuss the problem of oral healthcare among the aged, its impediments and propose some approaches for improvement to better serve the needs of this group of vulnerable members of our nation.

Jumadi, N., Mat Noor, N., & Bujang, A. (2017). The potential of sustainable cohousing to support social interaction for active ageing neighborhood: A conceptual framework. *Jurnal Kemanusiaan*, 26(1 – Special Edition), 50-59.

Malaysia is expected to reach the ageing population status by 2030, and this drive different sector to prepare for their needs, including housing. Cohousing is an alternative for

intentional living community to resolve the problems of isolation and loneliness within an ageing neighborhood. Numbers of scholars have deliberated on this model and it is believed to be a sustainable medium in enhancing social interaction. This research gained data from existing literature on cohousing and social interaction, through contents analysis and the data were assessed from various dimensions. Results showed that all of the 6 elements have contributed to social sustainability and strongly support social interaction through community involvement from the initial stage, design input, recruitment, as well as their daily management. The findings are illustrated in the form of conceptual framework and will be useful for all property practitioners in helping them to enhance their understanding of the cohousing approach.

Juni, M. H. (2015). Ageing population: A public health implications. *International Journal of Public Health and Clinical Sciences*, 2(3), 4-8.

Population ageing is worldwide phenomenon experienced by developed and developing countries. Population ageing is a phenomenon that occur when the median age of a country's rises and shifts the distribution of a country's population towards elder ages; this as results of rising life expectancy and/or declining birth rates. Increasing in elderly population will inevitably see changing population burdens of disease. Diseases such as cardiovascular diseases, cancer, mental disorders, rheumatism, arthritis, Alzheimer's disease, permanent disability and decreased mobility thought to be the domain of higher-income countries are now significant causes of morbidity and mortality in a developing countries. This will increase pressure on health resources, public and private.

Justine, M., & Hamid, T. A. (2010). A multicomponent exercise program for institutionalized older adults: Effects on depression and quality of life. *Journal of Gerontological Nursing*, 36(10), 32-41.

This study examined the effects of a multicomponent exercise program on depression and quality of life in institutionalized older adults. A quasi-experimental pretest-posttest design was used. Participants were recruited from a publicly funded shelter home in Seremban, Negeri Sembilan Malaysia. The experimental group consisted of 23 volunteers 60 or older who performed 60 minutes of supervised exercise three times per week for 12 weeks. The control group consisted of 20 volunteers who continued with a sedentary lifestyle. At 12 weeks, the exercise group demonstrated an improvement in quality of life by 10.74% ($p > 0.05$) but not depression (-1.6%, $p > 0.05$). The control group demonstrated a decrease in both quality of life by 11.26% ($p > 0.05$) and level of depression by 17.7% ($p > 0.05$). This study suggests a multicomponent exercise program is a feasible intervention to improve quality of life in institutionalized older adults.

Justine, M., Azizan, A., Hassan, V., Salleh, Z., & Manaf, H. (2013). Barriers to participation in physical activity and exercise among middle-aged and elderly individuals. *Singapore Medical Journal*, 54(10), 581-586. <https://doi.org/10.11622/smedj.2013203>

Although the benefits of physical activity and exercise are widely acknowledged, many middle-aged and elderly individuals remain sedentary. This cross-sectional study aimed to identify the external and internal barriers to physical activity and exercise participation

among middle-aged and elderly individuals, as well as identify any differences in these barriers between the two groups. Recruited individuals were categorised into either the middle-aged (age 45-59 years, $n = 60$) or elderly (age ≥ 60 years, $n = 60$) group. Data on demographics, anthropometry, as well as external and internal barriers to participation in physical activity and exercise were collected. Analysis showed no significant differences in the total scores of all internal barriers between the two groups ($p > 0.05$). The total scores for most external barriers between the two groups also showed no significant differences ($p > 0.05$); only 'cost' ($p = 0.045$) and 'exercise interferes with social/family activities' ($p = 0.011$) showed significant differences. The most common external barriers among the middle-aged and elderly respondents were 'not enough time' (46.7% vs. 48.4%), 'no one to exercise with' (40.0% vs. 28.3%) and 'lack of facilities' (33.4 % vs. 35.0%). The most common internal barriers for middle-aged respondents were 'too tired' (48.3%), 'already active enough' (38.3%), 'do not know how to do it' (36.7%) and 'too lazy' (36.7%), while those for elderly respondents were 'too tired' (51.7%), 'lack of motivation' (38.4%) and 'already active enough' (38.4%). Middle-aged and elderly respondents presented with similar external and internal barriers to physical activity and exercise participation. These factors should be taken into account when healthcare policies are being designed and when interventions such as the provision of facilities to promote physical activity and exercise among older people are being considered.

Justine, M., Hamid, T. A., Mohan, V., & Jagannathan, M. (2012). Effects of multicomponent exercise training on physical functioning among institutionalized elderly. *ISRN Rehabilitation Volume 2012 (2012), Article ID 124916, 1–7.*

This quasiexperimental study aimed to measure the effects of 12-week multicomponent exercise training on physical functioning among institutionalized elderly. Forty-three participants (age $=70.88 \pm 7.82$ years) were self-assigned to an intervention ($n=23$) or control ($n=20$) group. Before and after training, cardiorespiratory endurance, arm curl strength, grip strength, lower limb strength, upper and lower limb flexibility, balance, and mobility were assessed. The training included aerobic, resistance, balance and flexibility exercises, performed 3 times per week. Significant increases ($P < 0.05$) were observed in the exercise group on cardiorespiratory endurance (41.79%), right arm curl strength (25%), left arm curl strength (30.79%), right hand grip strength (13.65%), left hand grip strength (9.93%), lower limb strength (46.19%), balance (49.58%), and mobility (26.37%). Measures of flexibility in the exercise group also showed improvement (right lower limb (63.57%), left lower limb (44.17%), right upper limb (36.67%), and left upper limb (63.1%)) but were not statistically significant (all, $P > 0.05$). The control group did not show any significant changes ($P > 0.05$) in any variables. The data suggested that 12-week multicomponent exercise training may improve physical functioning among institutionalized elderly.

Kadir, A. A., & Hasim, H. (2011). Prevalence of falls in elderly men with diabetes in diabetic clinic Universiti Sains Malaysia Hospital, Malaysia. *Journal of Men's Health, 8(Supplement 1), 91–93.*

Falls are a common health problem in the elderly. Diabetes mellitus (DM), highly prevalent in older people, is associated with an increased risk of falling and greater risks of disabilities related to mobility and daily tasks among elderly people. The objectives of this study are to determine the prevalence of fall and its associated factors among elderly diabetes type 2 male in Diabetic Clinic Universiti Sains Malaysia Hospital. This is a cross sectional

study conducted from April 2007 till March 2008. A total of 131 elderly male were interviewed with a structured questionnaire which consisted of baseline data and medical history. Patients were physically examined for balance and gait assessment. We also reviewed patient's medical record for laboratory investigations result, medication and concomitant illness. In this study, we defined falls as "having at least one history of falls" in the past one year from the interview date. The mean age of the respondents was 67.5 ± 5.6 years and the mean HBA1c and fasting blood sugar were is 8.2% and 7.7 mmol/L respectively. The prevalence of fall was 12.9% ($n = 17$) and eleven males had history of recurrent falls. (64.7%) Age ($p < 0.05$), balance and gait score ($p < 0.05$), postural hypotension ($p < 0.05$) and peripheral neuropathy ($p < 0.05$) were significantly associated with fall. The prevalence of falls in elderly diabetic males was 12.9%. The associated factors of fall were age, balance and gait score, orthostatic hypotension, and peripheral neuropathy.

Kamaruddin, A. R. (2008). Consumer behavior in Malaysia travel marketplace : A profile of urban travel for senior citizens, (February). *Journal of International Management Studies (February 2008)*, 107–115.

Transportation is an essential part of the community infrastructure that individuals need to gain access to goods, services and social contact that support their day-to-day existence and quality of life. To date, however, there has been little research on the profile of urban travel among Malaysian senior citizens. The purpose of this paper is to better understand the transportation needs of older adults in Malaysia marketplace and to explore the problems encountered by them in relation to public transportation. The survey is particularly focused on travel concerns of adults age 55 and older, because it is known that personal mobility shrinks as individuals' age. It was found that own transport and bus were the most preferred modal choice among the majority of older consumers. In light of the demographic profile, bus and own transport were also the preferred mode of transport according to various categories of age, income and gender of older adults. The information derived from this study is essential to the development of marketing strategies that expand and improve transportation choices for older consumers and the accessibility that those choices provide.

Kamaruzzaman, S., Ploubidis, G. B., Fletcher, A., & Ebrahim, S. (2010). A reliable measure of frailty for a community dwelling older population. *Health and Quality of Life Outcomes*, 8(1), 123. <https://doi.org/10.1186/1477-7525-8-123>

Frailty remains an elusive concept despite many efforts to define and measure it. The difficulty in translating the clinical profile of frail elderly people into a quantifiable assessment tool is due to the complex and heterogeneous nature of their health problems. Viewing frailty as a 'latent vulnerability' in older people this study aims to derive a model based measurement of frailty and examines its internal reliability in community dwelling elderly. The British Women's Heart and Health Study (BWHHS) cohort of 4286 women aged 60-79 years from 23 towns in Britain provided 35 frailty indicators expressed as binary categorical variables. These indicators were corrected for measurement error and assigned relative weights in its association with frailty. Exploratory factor analysis (EFA) reduced the data to a smaller number of factors and was subjected to confirmatory factor analysis (CFA) which restricted the model by fitting the EFA-driven structure to observed data. Cox regression analysis compared the hazard ratios for adverse outcomes of the newly developed

British frailty index (FI) with a widely known FI. This process was replicated in the MRC Assessment study of older people, a larger cohort drawn from 106 general practices in Britain. Seven factors explained the association between frailty indicators: physical ability, cardiac symptoms/disease, respiratory symptoms/disease, physiological measures, psychological problems, co-morbidities and visual impairment. Based on existing concepts and statistical indices of fit, frailty was best described using a General Specific Model. The British FI would serve as a better population metric than the FI as it enables people with varying degrees of frailty to be better distinguished over a wider range of scores. The British FI was a better independent predictor of all-cause mortality, hospitalization and institutionalization than the FI in both cohorts. Frailty is a multidimensional concept represented by a wide range of latent (not directly observed) attributes. This new measure provides more precise information than is currently recognized, of which cluster of frailty indicators are important in older people. This study could potentially improve quality of life among older people through targeted efforts in early prevention and treatment of frailty.

Kamil, N. S., & Dawal, S. Z. (2015). Effect of postural angle on back muscle activities in aging female workers performing computer tasks. *Journal of Physical Therapy Science*, 27(6), 1967–1970. <https://doi.org/10.1589/jpts.27.1967>

This study investigated the effects of postural angle on back muscle activity during a computer task in aging women. Seventeen women ≥ 50 years old participated. The participants were instructed to perform computer-related tasks for 20 minutes on a workstation that simulated typical office working conditions. Back posture was measured from the measured trunk and pelvic angles. Electromyography activities were recorded simultaneously from the cervical erector spinae, longissimus, and multifidus muscles. The lowest mean percentages of maximum voluntary contraction for the cervical erector spinae and longissimus muscles were obtained when the upper trunk and pelvic angles were between 0° to -5° from the sagittal plane. The back muscle activities increased as the upper trunk and pelvic angles exceeded 0° . Statistical analysis showed significant correlations between upper trunk angle and cervical erector spinae and longissimus muscle activities. Similarly, pelvic angle was significantly correlated with cervical erector spinae and multifidus muscle activities. A neutral back posture minimizes muscle activities in aging women performing computer tasks.

Kang, Y., & Goh, K. (2017). Determinants of the demand for health screening in Malaysia : The case of the aged population. *The Social Science Journal*, 54(3), 305–313. <https://doi.org/10.1016/j.soscij.2017.03.003>

The increase in the prevalence of heart disease has become a serious public health issue. Hypercholesterolemia and hypertension are two main modifiable health risk factors for heart disease. In a fast ageing society, proper preventive measures should be adopted, particularly to achieve healthy aging. The objective of the present study is to examine the factors affecting the use of two health tests, namely blood cholesterol and blood pressure screenings among adults aged 60 years and above in Malaysia. Nationally representative data collected through the National Health and Morbidity Survey 2011 (NHMS, 2011) by the Ministry of Health, Malaysia were analysed. The survey used a two-stage stratified sampling method. Enumeration Blocks were selected in the first stage, while the second stage involved selection of Living Quarters. The proportions of those not using the blood cholesterol (45.4%) and blood pressure (30.8%) tests are alarmingly high. A bivariate probit model is applied to

examine the determinants of the use of these two health screening tests. The results show that education, ethnicity, location of residence, employment status, health insurance and smoking significantly affect the decision of the aged population to undergo these tests. Key findings are, first, time is a more dominant factor than income in determining health screening behaviour among the aged population. Second, being covered by insurance increases the propensity to undergo health screening. Third, smokers have a lower likelihood of screening than non-smokers. The findings suggest that intervention programmes should be targeted at the less-educated, employed individuals, individuals not covered by health insurance and smokers.

Karim, H. A. (1997). The elderly in Malaysia: Demographic trends. *Medical Journal of Malaysia*, 52(3), 206–212.

The process of development in Malaysia has brought about significant socio-economic and demographic transformations. Reduction in fertility and mortality have resulted in the increase of the population's survival to a later life. Thus, the proportion of the elderly community is increasing. Population ageing, the most salient change affecting the demographic profile of Malaysia will have a significant impact on the patterns of socio-economic development. This study discusses about the demographic trends, disease profile as well as health policy implications of the ageing in Malaysia.

Karim, N. A., & Kather, H. M. M. (2003). Nutritional status and food habits of middle-aged adults in selected areas of Selangor. *Malaysian Journal of Nutrition*, 9(2), 125–136.

A food habits and health status study was carried out among 100 Malay adults aged 40 years and above. The study protocol incorporated anthropometric measurements, evaluation of food habits and determination of blood glucose, cholesterol and blood pressure. Mean body mass index (BMI) for men and women were 27.2 ± 4.2 kg/m² and 27.0 ± 5.2 kg/m² respectively, which on average showed that the subjects were overweight. Food habits evaluation indicated that rice, fish and vegetables were the foods consumed almost everyday by the majority of the subjects. Meat, dairy products and fruits were eaten once to three times per week. Food intake score for sugar and salt demonstrated that a majority of men and women consumed moderate amounts of these foods. Most subjects exercised twice to three times a week for 15 min per session. Blood glucose tests revealed a mean of 5.04 ± 1.60 mmol/l in men and 4.86 ± 2.10 mmol/l for women. Mean cholesterol for men was 5.06 ± 1.22 mmol/l while it was 4.90 ± 1.34 mmol/l in women. Mean systolic and diastolic blood pressure in men was normal of 127.69 ± 13.60 mm Hg dan 85.87 ± 7.97 mm Hg, while in women it was 127.42 ± 17.54 mm Hg, 83.53 ± 9.50 mm Hg. The mean value for glucose, cholesterol and blood pressure increased with age. The food habits of these adults were satisfactory; however blood test for the nutrients of interest exhibited an increasing trend towards blood pressure, blood cholesterol and glucose with age. Middle-aged adults should adapt to a more active lifestyle and be more cautious of their food habits. This is to ensure a healthy well being throughout their life span.

Karim, N. A., Ashari, F., & Rahman, S. A. (1990). The nutritional and health status of the elderly at Rumah Seri Kenangan, Seremban, Malaysia. *Malaysian Applied Biology*, 19(1), 13–21.

A nutritional and health status study was carried out on 57 elderly consisting of 12 Malays, 21 Chinese and 24 Indians at Rumah Seri Kenangan, Seremban. Parameters studied were food intake, anthropometry measurements and urinary pH, protein, glucose, ketone and blood as well as haemoglobin and haematocrit in the blood. 75% of the Malay subjects; 52% of the Chinese and 29% of the Indians were underweight in contrast with none of the Malay subjects, 5% of the Chinese and 21% of the Indians were obese. The overall energy and nutrient intake were above 2/3 of the recommended dietary allowance of Malaysia. With regards to the health status, the incidence of diabetes, heart disease, hypertension, bone and joint disease and asthma was lower than 20% in all subjects studied.

Karim, N. A., Safii, N. S., Yusof, S. M., Noor, N. M., Ahmad, Z., & Tee, E. S. (2008). Nutrition knowledge among Malaysian elderly. *Jurnal Sains Kesihatan Malaysia*, 6(2), 43–54.

This paper reports the nutrition knowledge of Malaysian elderly, as part of a nationwide study to evaluate the status of nutrition knowledge, attitude and practice (KAP) of food and nutrition among various communities in Malaysia. A total of 906 elderly, age ranging between 60 to 96 years old, with mean age 67.4 ± 6.7 years representing all states in Malaysia participated in the study. An interview administered questionnaire was used to assess the nutrition knowledge and to collect demographic data of the elderly. Subjects were in the 60-65 years (51%) and more than 65 years (49%) age category. There were 46% Malays, 32% Chinese, 6% Indians while the remaining 16% comprised of other minority groups in Malaysia such as Iban, Kadazan, Melanau, Orang Asli and others. More than half of the elderly (54%) had no formal education, 36% completed primary schooling and only 9% finished secondary education. Overall 73% elderly were categorized as having poor nutrition knowledge, 18% moderate and only 9% good. The minority groups had the highest percentage of poor nutrition knowledge (91%) while the Chinese had the highest percentage of good nutrition knowledge (11%). More female (78%) than male (67%) had poor nutrition knowledge, in contrast to more male (10%) than female (8%) with good nutrition knowledge. Chi square test showed that there was a significant correlation between educational status and nutrition knowledge. This was reflected in the results which showed that 81% elderly with no formal education were categorized in the poor nutrition knowledge group. Majority of the elderly did not know about foods to be consumed most (88%), or to be eaten least (87%). Only a quarter to a third of the elderly responded correctly to questions on nutrient function and content. The question on foods with high salt was well responded by the elderly (65%). It is quite discouraging to show that a majority of Malaysian elderly had poor nutrition knowledge. This study indicated that appropriate nutrition education interventions need to be implemented to improve the shortcomings of nutrition knowledge among the Malaysian elderly.

Kaur, J., Kaur, G., Ho, B. K., Yao, W. K., Salleh, M., & Lim, K. H. (2015). Predictors of physical inactivity among elderly Malaysians: Recommendations for policy planning. *Asia Pacific Journal of Public Health*, 27(3), 314-322.

Physical inactivity is the fourth leading risk factor for global mortality. Regular moderate-intensity physical activity has significant benefits for health. To determine the socioeconomic predictors of physical inactivity among elderly Malaysian population. A nationwide community-based survey was conducted among 4831 respondents aged ≥ 60 years with a face-to-face questionnaire. The prevalence of physical inactivity among the elderly was 88.0%, highest in respondents aged older than 80 years (95.4%), females (90.1%), other Bumiputra (92.2%), earning household income less than RM1000 (87.9%), and residing in urban locality (88.4%). In the multivariate model, the predictors of physical inactivity were only sex, ethnicity, locality, and age group (adjusted odds ratio = 1.3-3.6). The predictors of physical inactivity can identify the risk factors to develop policies that will reduce the public health burden of noncommunicable diseases.

Karto, D., & Teh, K. P. (1986). Social security in Malaysia [with Comment]. *ASEAN Economic Bulletin*, 3(1), 70-91.

The purpose of the paper is to highlight and analyse the social security position of the country taking into account the contingencies or “risks” and persons covered as well as the methods implementation of the legislation. It also reviews and critiques the inadequacies and shortcomings in social security. It also provides an in-depth perspective for the future development of social security.

Keevil, V., Mazzuin Razali, R., Chin, A. V., Jameson, K., Aihie Sayer, A., & Roberts, H. (2013). Grip strength in a cohort of older medical inpatients in Malaysia: A pilot study to describe the range, determinants and association with length of hospital stay. *Archives of Gerontology and Geriatrics*, 56(1), 155-159.

Grip strength is a marker of sarcopenia, the age-related decline in muscle mass and function, and has been little researched in Asian populations. We aimed to describe the feasibility and acceptability of measuring grip strength in hospitalized, older people in Malaysia and to explore its range, determinants and association with length of stay. Patients admitted acutely to the geriatrics ward of a teaching hospital were consecutively recruited. Inability to consent or use the dynamometer led to exclusion. Maximum grip strength, anthropometric data, length of hospital stay, discharge destination, 3-point Barthel score, mini-mental state examination, falls history and number of co-morbidities and medications on admission were recorded. 80/153 (52%) eligible patients were recruited (52 women; age range 64-100 years). 9/153 (6%) refused to participate and 64/153 (42%) were excluded (34 too unwell, 24 unable to consent, 4 unable to use the dynamometer, 2 other reasons). 76/80 patients (95%) reported that they would undergo grip strength measurement again. Determinants were similar to those of Caucasian populations but grip strength values were lower. After adjustment for sex, age and height, stronger grip strength was associated with shorter length of stay [hazard ratio 1.05 (95% CI 1.00, 1.09; $P = 0.03$)]. This is the first report of grip strength measurement in hospitalized older people in Malaysia. It was feasible, acceptable to participants and associated with length of stay. Further research is warranted to elucidate the normative range in different ethnic groups and explore its potential use in clinical practice in Malaysia.

Kefeli, Z., & Zaidi, M. A. S. (2013). Health care utilisation among the elderly in Malaysia: Does socioeconomic status matters? *Proceedings of the Eighth Malaysian National Economic Conference (PERKEM VIII): Public Policy in the Era of Economic Transformation: Challenges and Future Directions* (pp. 1141-1152). Johor Bahru.

Solving the imbalance in the availability of health and medical services and achieving a more equitable distribution of health care services has been one of the main objectives in the Malaysia Plans. Due to increasing proportion of aging population in the country, this paper examines differences in the utilisation of health services among the elderly in Malaysia and identifies any factors responsible for the observed changes between 1996 and 2006 by using the non-linear decomposition approach. The empirical analysis uses the second and third National Health and Morbidity Survey (NHMSII and NHMSIII) data which was conducted in 1996 and 2006. Overall, the findings of this research suggest that other than being sick, the raw differentials in the utilisation of health care among the elderly are influenced by the socioeconomic status such as education, income and job status but not private health insurance. From this study, it is hoped that by understanding the factors that contribute to the differentials in public and private hospital admissions, and individual's behaviour towards the use of health care services, the government can develop strategies for eliminating socially caused inequity in health. Reducing financial barriers to care, especially among the private health providers may benefit the lower socioeconomic group.

Kenayathulla, H. B., Alias, N., & Siraj, S. B. (2016). Malaysian elderly perceptions on contribution to human capital development. *Actual Problems of Economics*, 177(3), 284-291.

This study explores the perceptions of Malaysian elderly and their self-efficacy in continuing their contributions to human capital development after retirement. The questionnaires were distributed to 219 respondents still contributing to society. The findings indicate that the elderly with bachelor's degrees and above are more likely to contribute to the society. In addition, motivation to occupy time, to get more money, credit commitments and others are also important determinants of the willingness of the elderly to contribute to the society.

Kevin, C. (2007). *Global forces, institutional pressures: the Malaysian Employees Provident Fund in need of reform* (Doctoral dissertation). Durham University, United Kingdom. Retrieved from Durham E-Theses Online: <http://etheses.dur.ac.uk/2419/>

This thesis examines one area of welfare in one rapidly industrialising country Malaysia in order to explore the nature and impact of key economic, social and institutional pressures on a key component of the Malaysian welfare system: the Employees Provident Fund (EPF). The fundamental question is can the Malaysian EPF meet its core objective which is to ensure that all of its members have financial security in their old age? The thesis identifies four key challenges: first, can the current pensions system meet its stated aims despite external global economic pressures which can impinge on the way states configure their welfare systems; second, how will population ageing impact upon current pensions policy and third, do class and ethnic changes matter? The fourth challenge is the EPF itself which - in common with core institutions in other welfare systems is itself 'institutionalised' - though having been in existence for over 50 years, needs to change in order to fulfil its primary objective of ensuring financial security for its members in old age. Continued reliance on

individual provision alone will increase inequality based on gender, age, class and ethnicity. The demographic shift to an ageing population combined with widening income inequality- itself a product of Malaysia's engagement with the global economy- will result in too few people will having amassed the required level of savings to fund a lengthening old age. The thesis concludes that neither expansion of the EPF's remit nor inaction are viable options. A new social insurance based scheme which guarantees a minimum level of income for all, regardless of class or ethnicity should be introduced. Such a scheme, though expensive, would be both effective and equitable, and would be consistent with the EPF's own stated objectives.

Khadijah, A. (2013). *Intergenerational relationships between aging parents and their adult children in Malaysia*. Paper presented at the 20th Association of Asian Social Science Research Councils (AASSREC) Biennial General Conference, 4-6 April 2013, Cebu Parklane Hotel, Cebu City, Philippines.

Under the impact of rapid industrialization and urbanization over the last few decades, family structures in Malaysia have changed, impacting upon relationships between older parents and their adult children, triggering a debate on numerous complex issues surrounding such relationships. The debate on the relationships between older parents and their adult children today encompasses roles and responsibilities, parent-child interaction (physical, emotional and social support), quality relationship and caregiving. The objective of this paper is to explore the intergenerational relationships between older parents and their adult children in Malaysia. The paper is based on a study conducted by the author who used in-depth interview method on 15 elderly parents and adult children. The elderly parents were from Malay, Chinese and Indian ethnic groups, aged 60 years and above. The findings indicate that roles and responsibilities, parent-child interaction (physical, emotional and social support), quality relationship and caregiving fall upon the shoulders of daughters more frequently than sons. This phenomenon impacts the development of families, communities and nation. The implication of this study is that there must be improvements in formal and informal support systems to assist adult children address the dilemma and challenges they face in caring for older parents.

Khairiah, K., Ching, S. M., & Hamid, T. A. (2016). Prevalence and factors associated with mild cognitive impairment on screening in older Malaysians. *Dusunen Adam- Journal of Psychiatry and Neurological Sciences*, 29(4), 298-306.

This study was aimed to determine the prevalence and predictors of mild cognitive impairments (MCIs) in Malaysia. This is a cross-sectional community-based study among elderlies aged 60 years and above in the four states of Malaysia - Perak, Kelantan, Selangor and Johor. A multi-stage stratified random sampling method was used for the data collection. Mini Mental State Examination score ≥ 22 was used to diagnosed MCI and analyzed by using multivariate logistic regression. A total of 2112 participants were recruited into this study. Mean age of the participants was 69.2 +/- 18.8 years, and 51.4% of them were females. The ethnic distribution was 63.4% Malaysian, 31.4% Chinese, 5.0% Indians, and 0.2% others. The overall prevalence of MCI was 68% (n=1436/2112). In multivariate logistic regression analysis, participant who were older (OR 1.02, 95% CI 1.00-1.04), did not receive formal education (OR 6.85, 95% CI 4.58-10.25), had primary education (OR 2.35 95% CI 1.84-3.00), were lonely (OR 1.18 95% CI 1.05-1.32), and had low level of life satisfaction (OR 1.68 95% CI 1.02-2.67), had significant positive correlations with MCI. MCI is present in seven out of

ten elderly Malaysians. Aging population, presence of low education level, loneliness and low life satisfaction level seem to facilitate development of MCI.

Khairudin, R., Nasir, R., Zainah, A. Z., Fatimah, Y., & Fatimah, O. (2011). Depression, anxiety and locus of control among elderly with dementia. *Pertanika Journal of Social Science and Humanities*, 19(S), 27–31.

The aging population has increased due to increasing longevity. Dementia, however, is one threat that has not received much attention particularly from the perspective of psychological well-being within this population. Thus, this study examined depression, anxiety, and locus of control in elderly suffering dementia. Instruments used were Geriatric Depression Scale to measure depression, Beck Anxiety Inventory for anxiety, and Rotter's Locus of Control Scale to measure locus of control. Clinical Dementia Rating (CDR) was used to evaluate stages of dementia. One hundred elderly from various nursing homes participated in the study. Descriptive analysis of the CDR showed that 61% of the sample suffered very mild to mild dementia, 21% suffered moderate dementia, and 10% suffered severe dementia. Inferential analysis showed that there was a significant positive correlation between depression and anxiety. The results led to a conclusion that elderly suffering dementia experience depression. Also, the more depressed the elderly were, the higher their anxiety level.

Khairul Anuar, A. M., Shahnaz, S. F. K., Wong, E. F. S., Evelyn, Tan, H. E., Chan, Y. Q., Karunakaran, T., Lee, T. M., & Ko, M. (2017). 127 A prospective data analysis on prevalence of acute kidney injury (AKI) of the elderly at HTAR, Malaysia. *Kidney International Reports*, 2(4), S35. <https://doi.org/10.1016/j.ekir.2017.06.113>

AKI is common in elderly and carries higher mortality. The prevalence of AKI in adult population in Malaysia is unknown especially the elderly patients. Objective: To determine the prevalence of AKI in the elderly patients admitted to HTAR and analyze the outcome. This is prospective descriptive study of all adult patients (18 years and above) admitted into HTAR for month March of 2017 who was diagnosed with AKI following EPI:CKD criteria using only serum creatinine. All patients with serum creatinine taken were evaluated using STATA analysis software to detect AKI. Elderly is defined individual aged 65 years and above. Results were analyzed using SPSS version 13. A total of 4866 adults were admitted and of these, 377 patients had AKI (7.7%). There were 131 deaths recorded (2.7%) and 106 records were missing for analysis (2.17%). From these 377 patients, 88.6% (334) were discharged home, 1.3% (5) were transferred to other facility for further tertiary care. 9.5% (36) of these died during this admission and 0.5% (2) were still being warded. Mean age were 53.45 (± 18.7) years, and baseline creatinine were 107.5 (± 60.5) mmol/L. Majority were males (55.4%). Predominant of the populations were Malay (47.2%) and Indian (29.7%), followed by Chinese (14.1%) and others (0.3%). There were 128 (34%) patients with AKI were elderly. Among 26 of those admitted into ICU, 23.1% (6) were elderly. They are more likely to be referred to nephrologist (80%) ($p < 0.06$) and 3.1% (4) requiring Renal Replacement Therapy (RRT). In comparison, 0.4% (1) of those aged below 65 years old required RRT. Twelve point five percent (16) of elderly with AKI died. The elderly age group were less likely to be discharged home compared to the younger age group: 75 years old and above (83.7%) vs age 65 to 74.9 (86.1%) vs age 46 to 64.9% (88.7%) vs age 18 to 44.9 years old (93.4%) ($p < 0.05$). The elderly who were admitted for AKI carries a significant high

mortality. Age alone can be strong predictor of survival of patient who developed AKI requiring admission.

Khalid, M. A. (2016). *Income security for older persons in Malaysia. (SDD-SPPS Project Working Papers Series: Income Security for older persons in Asia and the Pacific). United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). Thailand: Bangkok.*

This paper provides an overview and analysis of the current state of pension schemes in Malaysia. Old-age income support is a growing concern throughout many advanced and developing countries, including Malaysia, primarily due to demographic changes, in which the young working population is slowly being replaced with older workers.

Khamsya, M. B. K. (2016). 'Balik Kampung': The practice of transborder retirement migration in Johor, Malaysia. In K. F. Lian, M. M. Rahman, & Y. bin Alas (Eds.), *International Migration in Southeast Asia: Continuities and Discontinuities* (pp. 57–82). Singapore: Springer Singapore. https://doi.org/10.1007/978-981-287-712-3_4

For a segment of elderly Singaporean Malays who find growing old in Singapore costly, shifting to kampungs in Johor, Malaysia to retire is a viable solution, considering the low cost of living, accessible modern facilities, relatively developed infrastructure as well as its geographical proximity which allows for occasional return to Singapore. Some questions then emerge out of this practice. First, what is the kind of lifestyle that elderly, retired Singaporean Malays have to contend with in choosing to live in such settings? What kind of support do they receive as elderly migrants living away from home? The author embarked on a year-long ethnographic research in a particular Kampung Makmur, Johor to capture the dynamics of retirement migration for this particular group of elderly. The research elucidates several aspects of retirement migration—the working of the migrant network within the kampung organization, the everyday lived realities and practice of migrants to secure elder care and the process of migrant integration. Drawing on social capital and network, this research proposes that 'social capital projects' are undertaken by the elderly retirees to secure emotional and physical care in the kampong.

Khan, A. R., & Tahir, I. (2014). Influence of social factors to the quality of life of the elderly in Malaysia. *Open Medicine Journal*, 1, 29-35.

The increase in the life expectancy does not necessarily correlate with a higher quality of life. The objective of this study was to determine the influences of social factors to the quality of life of the elderly in Malaysia. This cross sectional study was conducted in Penang, Malaysia among 2005 randomly sampled elderly using the WHOQOL-BREF scale. The sample was randomly collected from a list of residents of the state who are aged 60 years and older who receive the special aid provided by the Penang state government to all elderly residing in Penang irrespective of their socio and economic status. Regression analysis showed that after controlling for demographic factors which include age, sex, race, marital status, education and employment; living with spouse and family members and being socially active were significantly associated with increased quality of life scores and being dependent on partner and children as compared to being selfdependent on mobility and having poor and moderate support as compared to good social support were significantly associated with

decreased quality of life scores. The quality of life of the elderly is very much influenced by social factors.

Khan, A. R., Narayan, K. A., & Manan, A. H. A. (2008). The prevalence of hypertension among the elderly in fourteen villages in Kedah, Malaysia. *Malaysian Journal of Medicine and Health Sciences*, 4(2), 33–39.

Currently, there is a dearth of research into the elderly in Malaysia. More data is needed in order to plan services for them. Hypertension is an illness whose prevalence increases with age. The objective of this study was to determine the prevalence of hypertension among the elderly population of fourteen villages in Kedah. A descriptive cross-sectional study was conducted on all elderly persons who consented to participate, in fourteen villages in the district of Kuala Muda in Kedah. A questionnaire was used for the data collection. Blood pressure was measured and participants were assessed for their activities of daily living using Barthel Index, cognitive impairment using Elderly Cognitive Assessment Questionnaire (ECAQ) and depression using Geriatric Depression Scale. Descriptive analysis, using SPSS version 11.0, was done to explore the data. The total population of the villages was 3095 and 336 were 60 and above. A total of 240 elderly individuals agreed to participate giving a response rate of 71.4%. There were 138 females (57.5%) and 102 (42.45) males. Ninety-eight percent of the respondents were Malays (n=236) of which 57.2% were females and 42.8% males; the remaining 4 (1.7%) were Indians, of which 3 were females and 1 male. The prevalence of hypertension was 58.3% (n=140) in the villages. 138 (58.5%) of the Malays were hypertensive compared to 2 (50%) of the Indians. Half (51.4%) of those diagnosed as hypertensive were unaware of their condition and half (48.6%) of those known to have hypertension, the blood pressure was not controlled ($p < 0.05$). The results of the study are similar to the National Health and Morbidity Survey, 1996. Though the data is from an opportunistic sample and may not represent a larger population especially by race, the findings offer data for a pooled analysis. It is also very worrying to note that 48.6% of the people knew of their condition but did not do anything to control their blood pressure.

Khan, H. T. A., & Flynn, M. (2016). Self-reported health status of older adults in Malaysia and Singapore: Evidence from the 2007 Global Ageing Survey. *Applied Research in Quality of Life*, 11, 687–705. <https://doi.org/10.1007/s11482-015-9390-2>

The aim of this study is to investigate the correlates of self-reported health (SRH) among older adults in Malaysia and Singapore. The study uses data collected in the Global Ageing Study (GLAS) 2007, one of the largest surveys of its kind, specially designed to investigate attitudes towards later life, ageing and retirement. Data were collected from 1002 and 1004 respondents from Malaysia and Singapore respectively. The study found that Singaporeans report a healthier life than Malaysians. The two countries have consistent results with regard to the influences of selected covariates on individual health. Poorer health is more prevalent among people with lower education, among those widowed, divorced or separated, and those working in blue-collar occupations. Although social support is found to be an important determinant of SRH, the effects are partially confounded with other covariates. These findings enhance our knowledge about the health status of older people, and in turn will be useful for governments to ensure effective policy making.

Khan, S., Tan, O., Khan, N., & Vergara, R. G. (2017). Strengthening social safety net for older people in Malaysia. *Journal of Southeast Asian Research*, 2017. <https://doi.org/10.5171/2017>.

There are a number of social security schemes and institutions in Malaysia but not all has the ability to address the long term financial commitments and provides security during the old age. High inflation rates, global economic growth and changes in employment and social structure have contributed in raising serious concerns about the efficiency of the current social safety net especially when the number of older people has increased due to the increase in life expectancy. An effective social safety net should be able to protect the welfare of a person at their old age and the existing social safety net in Malaysia is not sufficient. Hence, this paper examines the current social safety net in Malaysia for the older people and analyses the efficiency of the protection provided. This paper further discusses the social safety net provided in other jurisdictions specifically in Japan and Singapore. Japan is chosen as one of the countries since Japan is currently having the highest number of elder people in the world and it is worth to look at how Japan is handling the issue currently. Singapore is chosen since it is the neighbouring country and has similar social safety net as in Malaysia. In fact, this paper used the qualitative legal research methodology specifically a comparative and analytical research approach on the social safety net for older people in Malaysia by reference to the social safety nets as practised in Japan. The objective of this paper is whether to recommend an additional measure to be added into the current social safety net in Malaysia to ensure that the welfare of Malaysians at their old age is well protected.

Khan, T. M., Sulaiman, S. A., & Hassali, M. A. (2010). Mental health literacy towards depression among non-medical students at a Malaysian University. *Mental Health in Family Medicine*, 7(1), 27–35.

The aim of the present study was to evaluate the knowledge and perception of depression among students of University Sains Malaysia (USM), in Penang, Peninsular Malaysia. Face-to-face interviews were conducted using a pre-validated 21-item questionnaire among students at USM. A total of 500 respondents participated in the survey comprising 24.6% (n=123) males and 75.4% (n=377) females. Half (50.0%, n=250) were Malays, followed by Chinese (44.0%, n=220) and Indians (6.0%, n=30). Whilst exploring the respondents' knowledge of the symptoms of depression, it was found that Chinese females had a comparatively better knowledge ($P=0.058$) of the symptoms of depression in comparison with Malays and Indians. Overall, social issues were attributed as the possible cause of depression. A cursory knowledge level was observed regarding medication for depression. Female students were more inclined towards the use of alternative and traditional medicines. However, with regard to seeking professional help, consultation with a psychiatrist was preferred by the majority. Overall, a moderate level of knowledge about the symptoms of depression and a cursory knowledge of its therapy were observed. Those with personal experience of depression had better knowledge of the symptoms and therapy. Alternative treatments and traditional medicines were also favoured. There is a risk that this may affect the ability of Malaysian youths to seek evidence-based mental health care.

Khoo, E. M., Tan, H. M., & Low, W. Y. (2008). Erectile dysfunction and comorbidities in aging men: An urban cross-sectional study in Malaysia. *The Journal of Sexual Medicine*, 5(12), 2925–2934.

Erectile dysfunction (ED), lower urinary tract symptoms (LUTS), cardiovascular disease (CVD), depression, and androgen deficiency are common conditions affecting aging men over 50 years. However, data were limited in developing countries. To investigate the prevalence of ED, LUTS, chronic diseases, depression, androgen deficiency symptoms, and lifestyle of aging men in Malaysia, and to examine their associations with sociodemographic factors. Main Outcome Measures: ED, LUTS, chronic diseases, depression, positive Androgen Deficiency in the Aging Male (ADAM) questionnaire. A randomized survey of 351 men using structured questionnaires consisting of self-reported medical conditions, International Index for Erectile Function-5, International Prostate Symptom Score, Geriatric Depression Scale-15, and St Louis University questionnaire for ADAM. Blood samples were taken for glucose, lipid, prostate specific antigen (PSA), and hormones. Mean age was 58+/-7 years. Prevalence of ED was 70.1% (mild ED 32.8%, mild to moderate ED 17.7%, moderate ED 5.1%, and severe ED 14.5%). There were 29% of men with moderate and severe LUTS; 11.1% had severe depression; 25.4% scored positive on ADAM questionnaire; 30.2% self-reported hypertension, 21.4% self-reported diabetes mellitus; 10.8% self-reported coronary artery disease; 19.1% were smokers; and 34% consumed alcohol. There were 78.6% of men that are overweight and obese; 28.8% had a fasting blood sugar (FBS) ≥ 6.1 mmol/L, 70.1% had total cholesterol >5.2 mmol/L, 19.1% had total testosterone ≥ 11.0 nmoL/L, 14.0% had calculated free testosterone <0.0225 nmoL/dL; 4% had PSA >4 microg/L; 9.4% had insulin-like growth factor-1 (IGF-1) level below age specific range, 5.1% had abnormal sex hormone binding globulin (<15 nmoL/L and >70 nmol/L). ED was found to be significantly associated with LUTS, depression ($P<0.001$ respectively). Similarly, LUTS was significantly associated with depression and ADAM questionnaire status ($P<0.001$ respectively); and ADAM questionnaire status was also significantly associated with depression ($P<0.001$). ED, LUTS, depression, and androgen deficiency symptoms are common in urban aging men. As these conditions are possibly interrelated, strategies for early disease prevention and detection are warranted when one disease presents.

Khor, H. M., Tan, J., Saedon, N. I., Kamaruzzaman, S. B., Chin, A. V., Poi, P. J. H., & Tan, M. P. (2014). Determinants of mortality among older adults with pressure ulcers. *Archives of Gerontology and Geriatrics*, 59(3), 536–541.

The presence of pressure ulcers imposes a huge burden on the older person's quality of life and significantly increases their risk of dying. The objective of this study was to determine patient characteristics associated with the presence of pressure ulcers and to evaluate the risk factors associated with mortality among older patients with pressure ulcers. A prospective observational study was performed between Oct 2012 and May 2013. Patients with preexisting pressure ulcers on admission and those with hospital acquired pressure ulcers were recruited into the study. Information on patient demographics, functional status, nutritional level, stages of pressure ulcer and their complications were obtained. Cox proportional hazard analysis was used to assess the risk of death in all patients. 76/684 (11.1%) patients had pre-existing pressure ulcers on admission and 30/684 (4.4%) developed pressure ulcers in hospital. There were 68 (66%) deaths by the end of the median follow-up period of 12 (IQR 2.5-14) weeks. Our Cox regression model revealed that nursing home residence (Hazard Ratio, HR. = 2.33, 95% confidence interval, CI. = 1.30, 4.17; $p=$ 0.005),

infected deep pressure ulcers (HR. = 2.21, 95% CI. = 1.26, 3.87; p= 0.006) and neutrophilia (HR. = 1.76; 95% CI 1.05, 2.94; p= 0.031) were independent predictors of mortality in our elderly patients with pressure ulcers. The prevalence of pressure ulcers in our setting is comparable to previously reported figures in Europe and North America. Mortality in patients with pressure ulcer was high, and was predicted by institutionalization, concurrent infection and high neutrophil counts.

Kimiyaghalam, F., Mansori, S., Safari, M., & Yap, S. (2017). Parents' influence on retirement planning in Malaysia. *Family and Consumer Sciences Research Journal*, 45(3), 315-325.

Many studies have indicated that the development of children's behavior is strongly influenced by their parents' behavior during childhood. This paper applied the theory of planned behavior as a basis for the analysis of data from a sample of 520 Malaysians aged 18 and over. Regression analysis was used to assess the relationship between parents' financial behavior and their children's retirement planning. Results showed that: (a) parents play a significant role as agents of financial socialization for their children's retirement planning behavior, and (b) saving attitude mediates this relationship. Suggestions for policymakers and future research are presented.

Kok, J. K., & Yap, Y. N. (2014). Aging gracefully: A comparative study of Japanese and Malaysian women aged 65–75. *Journal of Aging Studies*, 31 (Supplement C), 54–61.

Longer lives and extended retirement have created a 'young old age' stage of life. How people spend their "young old age" has become increasingly important. This research aims to investigate the different ageing experiences of Japanese and Malaysian women and the activities they engaged in their "young old age". In-depth interviews were conducted to collect data and an adapted grounded theory approach was used for data analysis. Findings reveal many common characteristics for both groups of research participants. The emerging themes show that Japanese and Malaysian Chinese have different life missions evident in their daily activities, one passing on culture and the other passing on family values and life experience. They also differ in their choice of living arrangement (independent versus dependent/interdependent), attitudes to life (fighting versus accepting) and activities in which to engage (aesthetic pursuits versus family oriented activities).

Kooshair, H. Yahaya, N., Hamid, T. A., & Abu Samah, A. (2014). Gender as a moderator of the relation among social support functions and life satisfaction in older Malaysians. *Journal of Women and Aging*, 26(1), 22–38.

The aim of this study was to examine the moderating role of gender on relations among social support functions and life satisfaction in older Malaysians. The study sample was 1,800 older residents in a community; all were at least 60 years old. This study was a cross-sectional and correlational survey, and the data were collected by multistage stratified sampling. This study revealed that fewer social support functions, and therefore less life satisfaction, were available for females than for males. The results of moderated regression analyses demonstrated that gender interacted only on the relationship between positive social interaction support and tangible support with life satisfaction. Specifically, at a high tangible support level, females had lower life satisfaction when compared to a low tangible support

level. There may be a need for new programs and services to provide other aspects of social support to older female adults to improve and maintain life satisfaction in later life.

Kooshlar, H., Yahaya, N., Hamid, T. A., Abu Samah, A., & Sedaghat Jou, V. (2012). Living arrangement and life satisfaction in older Malaysians: The mediating role of social support function. *PLOS ONE*, 7(8), 1–6.

This cross-sectional and correlational survey examines the association between different types of living arrangements and life satisfaction in older Malaysians, while taking into account the mediating effects of social support function. A total of 1880 of older adults were selected by multistage stratified sampling. Life satisfaction and social support were measured with the Philadelphia Geriatric Center Morale Scale and Medical Outcomes Study Social Support Survey. The result shows living with children as the commonest type of living arrangement for older adults in peninsular Malaysia. Compared to living alone, living only with a spouse especially and then co-residency with children were both associated with better life satisfaction ($p < .01$) and social support function ($p < .01$). The mediating effect of social support function enhanced the relation between living arrangements and life satisfaction. This study revealed that types of living arrangement directly, and indirectly through social support function, play an important role in predicting life satisfaction for older adults in Malaysia. This study makes remarkable contributions to the Convoy model in older Malaysians.

Krishnapillai, A. D. S., Daher, A. M., Ramli, A. S., Razak, S. A., Nasir, N. M., Miskan, M., Hamid, T. A., Ariffin, F., Nawawi, H., & Yusoff, K. (2012). 685 cardiovascular risk profiles of the elderly population in Malaysia. *Journal of Hypertension* 30, 199.

Cardiovascular disease (CVD) is the 2nd leading cause of death in Malaysian hospitals and the prevalence of CVD risk factors is especially high amongst the elderly. This study aims to determine the cardiovascular risk profiles of the Malaysian elderly population. This community-based, cross sectional study involving 3113 adults aged ≥ 60 years was conducted in urban and rural areas in Malaysia between 2007 and 2010. Demographic data, anthropometric measurements and venous blood assays were obtained. Data was analyzed using STATA version 11. Among the 3113 elderly subjects, 55% were from the urban areas and 45% were from the rural areas. 52.1% were males and 47.9% were females. Mean age was 67 years (SD \pm 5.86). The subjects consisted of 71.7% Malays, 11.3% Chinese, 2% Indians and 15% others including Bumiputra Sabah & Sarawak.

Krishnaswamy, S. (1997). Psychiatric problems among the elderly in Malaysia. *Medical Journal of Malaysia*, 52(3), 222–225.

The rate of growth among the world's elderly population is reflected by the fact that while the total world population would have increased by 26% between 1980 and 2000, the rate of population growth over 65 years of age would have increased by more than 35%. "While the elderly population of the developed countries would have increased by 29.4% in the 20 years 1980 to 2000, that of the developing countries would have increased by 77%. In 1970, only 3.7% of the population in Malaysia was 60 years and above. In the year 2020, this population would have increased to 7% and would comprise 2.1 million of the estimated population of 29.5 million. Factors contributing to the ageing of the population are the decline in mortality rates, the changes in life expectancy which has increased to 69 years for men and

72 years for women in 1990 and the declining fertility rate due to increased literacy, improvements in quality of life and public health and awareness of family planning methods including abortions and sterilisations. The problems of the ageing population will affect both the developed and developing countries.

Generally the population over 65 has a span of 35 years, in Malaysia the life expectancy for men has increased to 69 years and 72 years for women on the average. In Malaysia 'elderly' or older adults can include anyone over 55 but it may be incorrect to generalize about this group. Functioning and disabilities can vary significantly and this can differ markedly between the 'young old' (55 to 75) and the 'old-old' (75 and above). The prevalence of most of the severe types of disabilities were 3 per 1000 for those under 50, 16 per 1000 for those in their sixties and 133 per 1000 for those 80 and over. This includes disabilities due to all kinds of factors physical as well as psychological. In Malaysia a local study in Kampung Bahru, Kuala Lumpur covering the elderly showed that 25% had diabetes, 16% had low levels of serum calcium, 24% had low levels of serum albumin and 51 % had low haemoglobin levels. The prevalence of psychiatric disorders in those above 65 is reported as 5% with dementia, 13% with depression (4% major depression) and 12% with anxiety states (7% phobic). Other psychiatric disorders that can occur include delirium usually secondary to physical conditions, memory disorders 'due to amnesic syndromes, substance abuse related disorders, schizophrenia and personality and behavioral disorders.

Krishnaswamy, S., Kadir, K., Ali, R. A., Sidi, H., & Mathews, S. (1997). Prevalence of dementia among elderly Malays in an urban settlement in Malaysia. *Neurological Journal of South East Asia*, 2, 159–162.

This is a community based study of the prevalence of dementia among the Malay urban settlements in Kuala Lumpur. 522 subjects were screened using the Malay version of the Elderly Cognitive Assessment Questionnaire (ECAQ). All those who scored 6 and below was submitted to a more detailed Geriatric Mental Scale (GMS). The GMS was used as a semi-structured instrument to arrive at a diagnosis of dementia made according to ICD-10. There were 20 cases of dementia among the study subjects of age > 65 years with the estimated prevalence of 6%. Overall the prevalence rate is similar to studies elsewhere and correspond to that reported earlier among the ethnic Malays from Singapore. This is higher than the rates for ethnic Chinese from Singapore and elsewhere. The suggested reasons for the higher prevalence among the Malays versus Chinese are the possible higher frequency of the common cerebrovascular risk factors and apo-E4 alleles.

Lai, M. M., & Tan, W. K. (2009). An empirical analysis of personal financial planning in an emerging economy. *European Journal of Economics, Finance, and Administrative Sciences*, 16, 102-115.

This paper examines the attitudes of the Malaysians toward personal financial planning, which encompasses money management, insurance planning, investment planning, retirement planning, and estate planning. A survey data was obtained from 400 Malaysians by using a set of structured questionnaire. We associated personal financial planning efforts with three measures: attitudes towards personal financial planning, factors influencing various aspects of personal financial planning decision, and frequency of managing for various aspects of personal financial planning. The results show that the job status of a respondent is

the primary factor in influencing attitudes towards personal financial planning and the frequency in managing for various aspects of personal financial planning. Demographic characteristics such as age, race, marital status, gender, and education level are the secondary factors where concerned. This paper has implications on financial planners in formulation strategies on how to successfully deploy a personal financial planning programme for their customers.

Lai, M. M., Lai, M. L., & Lau, S. H. (2009). Managing money and retirement planning: Academics perspectives. *Pensions, 14*(4), 282-292.

This paper examines money attitudes and associated retirement issues of academics in higher education in Malaysia. Systematic random sampling was used in selecting the target respondents. A questionnaire was personally administered on 458 academics in 16 universities in Malaysia. The survey found that academics exhibited positive attitudes toward money, and income appears to be the prime motivator. Consistent with the findings of prior studies, position, age and educational levels were strong indicators of an academic's annual income. The survey found that female academics and those from public universities had more positive attitudes towards retirement. In retirement planning, the respondents considered the availability of other income after retirement the most important factor, while payment for children's education was the key potential conflict area. The findings provide important insights for the top management of higher education of the necessity of pre-retirement counseling and assistance to ease the passage to retirement for academics.

Lai, M. M., Lein, S. Y., Lau, S. H., & Lai, M. L. (2016). The determinant of age-friendly environment in Malaysia. *Information, 19*(7B), 2919–2923.

This paper examines the determinants of age-friendly environments from the perspectives of caregivers in the absence of long term care insurance and social security net. A survey was conducted among 172 government formal care providers in Malaysia. The structural model revealed that social participation, communication and information as well as community support and health services have positively significant relationships with age-friendly environments. As such, social environment has greater significant role in building an age-friendly environment. The findings provide important information for the authority to meet the challenges of an ageing society, in order to prepare to become an age-prepared society.

Latiff, L. A., & Hanachi, P. (2008). To investigate the relation of hypertension and anthropometric measurement among elderly in Malaysia. *Journal of Applied Sciences, 8*(21), 3963–3968.

This study aimed to determine the association between anthropometric measurement and dyslipidemia and their association with hypertension among older people. A cross sectional study was done among the residents in two old folks homes (Rumah Seri Kenangan Cheras and Little Sisters of the Poor) in urban Malaysia using a pre-tested guided questionnaire. Measurements taken were the blood pressure level, height and weight measurement and lipid profile. There were 92 respondents participated in the study. The prevalence of hypertension was 51.1%. The study found significant association between anthropometric measurement and hypertension although there was no difference in waist hip ratio measurement among hypertensive and normotensive individuals. Level of total

cholesterol, LDL-C and triglycerides were significantly higher among hypertensive individuals compared to normotensive individuals. The prevalence rate of hypertension among residents in this study is higher compared to the national prevalence rate among the older adults. Appropriate intervention programmes should be reinforced to reduce the complications of hypertension especially among institutionalized elderly.

Latiffah, A. L., Hanachi, P., & Khania, S. (2008). The association of hypertension with major risks factors among University Putra Malaysia retirees. *Journal of Medical Sciences*, 8(3), 254–261.

The aim of this study was to determine the prevalence of hypertension and its associated risk factors among University Putra Malaysia (UPM) retirees in Klang Valley, Malaysia. This study was conducted among UPM retirees aged 50 years and above. Seventy-three respondents (males $n = 62$, females $n = 11$) were selected randomly and interviewed using a pre-designed questionnaire to collect information on the above variables. Blood pressure and anthropometric parameters measurement were done using standardized technique. Prevalence of hypertension was 32.88% in males and 36.36% in females, with the highest proportion among those aged 70 years and above (75%). Isolated systolic hypertension was detected in 50% hypertensive subjects. The mean systolic blood pressure was 133.73 ± 16.35 mmHg with a significant difference observed in age group and various ethnics ($p < 0.05$). The mean diastolic blood pressure was 81.99 ± 9.46 mmHg. Among hypertensive subjects, 70.83% were aware of their hypertension and 82.35% (14) were currently under treatment. Among ever diagnosed hypertensive, 73.33% were currently under treatment and a mere 40.91% achieved blood pressure control. Factors found to be significantly associated with hypertension were literacy ($\chi^2 = 16.51$, $df = 2$, $p < 0.05$) and previous job ($\chi^2 = 8.82$, $df = 1$, $p < 0.05$). The prevalence of hypertension in this study was high. It is highly recommend that proper screening of blood pressure should be emphasized among the retirees to increase their awareness on the importance of blood pressure control and to improve lifestyle modification of hypertension.

Lau, H. J., Fitri, A., Ludin, M., Rajab, N. F., & Shahar, S. (2017). Identification of neuroprotective factors associated with successful ageing and risk of cognitive impairment among Malaysia older adults, *Current Gerontology and Geriatrics Research*, 2017, 7 pages. <https://doi.org/10.1155/2017/4218756>

The increase of ageing population has raised public attention on the concept of successful ageing. Studies have shown that vitamin D, telomere length, and brain-derived neurotrophic factor (BDNF) have been associated with cognitive function. Therefore, this study aimed to identify neuroprotective factors for cognitive decline in different ageing groups. A total of 300 older adults aged 60 years and above were recruited in this population based cross-sectional study. Participants were categorized into three groups: mild cognitive impairment (MCI) ($n=100$), usual ageing (UA) ($n=100$), and successful ageing (SA) ($n=100$). Dietary vitamin D intake was assessed through Diet History Questionnaire (DHQ). Out of the 300 participants, only 150 were subjected to fasting blood sample collection. These samples were used for serum vitamin D and plasma BDNF measurements. Whole blood telomere length was measured using RT-PCR method. The results show that the reduction of the risk of MCI was achieved by higher serum vitamin D level (OR: 0.96, 95% CI: 0.92–0.99, $p < 0.05$), higher plasma BDNF level (OR: 0.51, 95% CI: 0.30–0.88, $p < 0.05$), and longer

telomere (OR: 0.97, 95% CI: 0.95–0.99, $p < 0.001$). In conclusion, participants with higher vitamin D level, higher BDNF level, and longer telomere length were more likely to age successfully.

Lau, H. J., Ludin, A. F. M., Rajab, N. F., & Shahar, S. (2017). The association between physical fitness with successful ageing and risk of cognitive impairment among Malaysian older adults. *Malaysian Journal of Health Sciences, 15*(2), 97-102.

The expansion of ageing population has gained much public attention on the importance of healthy and successful ageing, which is absence of major chronic diseases, preserved physiological and cognitive functioning and active engagement with life. Previous studies have found there was a significant correlation between physical fitness with cognition. However, the relationship between physical fitness with successful and unsuccessful cognitive ageing groups are very limited. This study was aimed to identify the significant physical fitness components that contribute in reducing risk of cognitive decline represented as different cognitive ageing groups. A total of 300 community-based elderly aged 60 and above from the states of Selangor, Perak and Kelantan were recruited using multistage random sampling method in this cross-sectional study. Cognitive function of subjects was categorized into three groups, namely Mild Cognitive Impairment (MCI) ($n = 100$), Usual Ageing (UA) ($n = 100$) and Successful Ageing (SA) ($n = 100$) based on defined criteria. Senior Fitness Tests included 2-minute step, handgrip strength, chair stand, chair sit-and-reach, 8 foot up-and-go and back scratch were measured to determine the cardiorespiratory fitness; muscle strength; agility and flexibility of subjects. SA group had significantly better performance than non-SA groups in all fitness components, except for chair sit-and-reach. After controlling for age, gender, education years and smoking status, handgrip strength and chair stand tests were associated with a reduced risk of MCI by 7% [OR: 0.93, 95% C.I: 0.88-0.99, $p < 0.05$] and 15% [OR: 0.85, 95% C.I: 0.75-0.95, $p < 0.01$], respectively. These findings suggest that older adults with higher upper and lower body muscular strength could serve as protective factors for cognitive impairment. Further research is warranted to evaluate the mechanism of physical and cognitive decline such as Motoric Cognitive Risk Syndrome (MCR) in more detailed for the purpose for promoting healthy and successful ageing.

Lee, H. S. (2002). A study of poverty and social security in Malaysia. *International Area Review, 5*(2), 105–120. <https://doi.org/10.1177/223386590200500206>

This paper makes a diagnosis of poverty and social security system in Malaysia. The socioeconomic gap between Malays and non-Malays, between urban dwellers and rural residents, and between Peninsular Malaysia and Sabah or Sarawak remains enormous despite government's aggressive affirmative action policies since the ethnic riot in 1969 along with the rapid economic growth. Malaysia's social security system holds institutional safety measures mainly for old age and industrial accidents, but none for sickness and unemployment. In the country the people covered by the institutional scheme of social security are limited to employed workers. About half of the total employed workers are covered by the Employment Provident Fund or related pension schemes, and those covered by the SOCSO's social insurance scheme stays at two thirds of the total workers. The rest of the populations are still not protected by any social security measures. New social insurance schemes to cope with unemployment and sickness together with a consistent effort to expand

the comprehensiveness of existent measures are required for further socioeconomic development.

Lee, K. C. (1997). The Malaysian government pension: whither its future direction? *Jurnal Ekonomi Malaysia*, 31, 87–106.

Public sector employees in Malaysia are covered by the Government pension scheme. Benefits provided by the scheme include retirement benefits, survivor benefits and disability benefits. The financing of the scheme by the Government is a cause of concern in view of the large absolute amount of expenditure on pension benefits and the rising trend of such expenditures. This paper examines the financing of the pension scheme and the causes of its increasing costs as well as alternative options to the current system.

Lee, L. K., Noor Aini, M. Y., & Chin, A.V. (2013). Validation of a food frequency questionnaire in assessing the omega-3 polyunsaturated fatty acids intake for Malays and Chinese elderly in Malaysia. *Sains Malaysiana*, 42(11), 1625–1632.

Omega-3 polyunsaturated fatty acids (PUFAs) is crucial to prevent a wide range of chronic diseases from a global view point. However, no suitable dietary assessment tool is available for usage among Malaysian population. The present study aimed to evaluate the validity of interviewer-administered semi-quantitative Food Frequency Questionnaire (FFQ) for assessing the omega-3 PUFAs intake among the Malays and Chinese elderly individuals in Klang Valley, Malaysia. Thirty-seven elderly people (54.1% women and 45.9% men), aged 60 years and above, were recruited from a community setting. Omega-3 PUFAs intake for the past one month was assessed using a 45-food item FFQ and validated against 3 days Food Record (FR). Wilcoxon signed rank test indicated no significant mean intake difference between two assessment methods. Significant correlation was found for total omega-3 PUFAs ($r=0.926$), alpha-linolenic acid (ALA) ($r=0.745$), eicosapentaenoic acid (EPA) ($r=0.579$) and docosahexaenoic acid (DHA) ($r=0.912$). Bland-Altman analysis exhibited no apparent systematic bias between the two methods for total omega-3 PUFAs intake, while quartile analysis classified 73% subjects assigned into the same quartile. Conclusively, the newly-developed FFQ yielded a reasonable validity in the tested population and provided a convenient means to estimate omega-3 PUFAs intake within healthy Malays and Chinese elderly individuals. Further study to evaluate its validity and reproducibility for different age groups is required.

Lee, L. K., Shahar, S., Rajab, N., Yusoff, N. A. M., Jamal, R. A., & Then, S. M. (2013). The role of long chain omega-3 polyunsaturated fatty acids in reducing lipid peroxidation among elderly patients with mild cognitive impairment: a case-control study. *The Journal of Nutritional Biochemistry*, 24(5), 803–808.

The present work explores the effect of dietary omega-3 polyunsaturated fatty acids (PUFAs) intake on lipid peroxidation among mild cognitive impairment (MCI) patients. The plasma lipid hydroperoxide (LPO) levels in 67 MCI patients were compared to those of 134 healthy elderly controls. Omega-3 PUFA intake was assessed using an interviewer-administered food frequency questionnaire. Apolipoprotein E genotyping was performed using polymerase chain reaction and restriction enzyme digestion. The association between various confounders and lipid peroxidation was evaluated using regression analysis. The

influence of docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) intake on LPO level was investigated. The results revealed that LPO levels were significantly higher in the MCI group than in the control group. Inverse correlations were found between DHA and EPA intake and LPO level among the MCI group. LPO levels decreased significantly with increasing DHA and EPA intake. In summary, the findings revealed that DHA and EPA can play a role in alleviating oxidative stress and reducing the risk of neurodegenerative diseases.

Lee, L. K., Suzana, S., & Rajab, N. F. (2009). Serum folate concentration, cognitive impairment, and DNA damage among elderly individuals in Malaysia. *Nutrition Research*, 29(5), 327–334.

The notion that dietary factors affect cognitive function and subsequently the risk of dementia has increased over the years from a global viewpoint. Because low folate intake has been described to impair cognitive function, we tested the hypothesis that low serum folate concentration is associated with cognitive impairment and an attenuated increase in DNA damage. We investigated the relationship between serum folate concentration, cognitive impairment, and DNA damage among elderly people attending health clinics in Klang Valley, an urban area in Malaysia. Two hundred thirty-two participants, composed of 115 men (49.6%) and 117 women (50.4%), were involved; none of the patients were diagnosed with neuropsychiatric problems, nor were they terminally ill. Sociodemography and health variables were assessed through face-to-face interview. Cognitive impairment review was conducted through an Elderly Cognitive Assessment Questionnaire. The estimation of dietary intake, serum folate concentration, and DNA damage was individually analyzed using validated Dietary History Questionnaires, immunoassay methods, and an Alkaline Comet Assay study (10 mL of peripheral venous blood), respectively. Results indicated that more men had cognitive impairment (33.0%) and DNA damage (27.0% for percentage DNA in tail, 22.6% tail moment) compared with women (25.6%, 15.4%, and 15.4%, respectively) ($P < .05$ for all parameters), recording an average folate deficiency value of 13.9% (0.2% higher than women). Multivariate binary logistic regression analysis outlined the association of cognitive impairment with older age (odds ratio [OR], 2.74; 95% confidence interval [CI], 1.35-5.57), smoking habits (OR, 5.12; 95% CI, 2.48-10.57), poor serum folate concentration (OR, 3.46; 95% CI, 1.26-9.52), and DNA damage (percentage DNA in tail) (OR, 13.70; 95% CI, 1.36-138.29). In conclusion, this study highlighted the important role of serum folate concentration for cognitive function and provided a concise picture regarding the elevated levels of oxidative DNA damage in peripheral lymphocytes.

Leeson, G. (2016) Familial solidarity and orientation and life enjoyment in later life, in urban areas of Malaysia, the Philippines and Singapore. *Families, Relationships and Societies*, 5(1): 59-77. University of Bristol: Policy Press.

This article reports on analyses of familial solidarity and orientation and life enjoyment among 40- to 79-year-olds in urban areas of Malaysia, the Philippines and Singapore. Social, familial and personal factors affecting life enjoyment are analysed along with attitudes to familial solidarity and orientation in later life. Data are drawn from the Global Ageing Survey (GLAS), which includes approximately 1,000 people aged 40 to 79 from each country studied in this article. The results show that familial solidarity and orientation and life enjoyment are inversely affected by the pace of demographic change and economic development and by opportunity variables differently.

Leimller, R., & Lunenfeld, B. (2001). First Asian ISSAM meeting on the aging male, Kuala Lumpur, Malaysia, 1-3 March 2001 - An overview. *Asian Journal of Andrology*, 3(2), 151–154.

With decreasing fertility rate and increasing life expectancy, the world is aging - with highest rates in Asia. The socioeconomic, financial and medical consequences of the aging population will be even more pronounced due to the limited resources of many Asian countries. During the First Asian ISSAM Meeting on the Aging Male distinguished speakers depicted the scenario in the various countries and proposed solutions of how to manage the aging populations. The main goal should be healthy aging with an as short as possible disability period - which means in other words: to prevent the preventable and delay the inevitable.

Liew, L. K., Tan, M. P., Tan, P. J., Mat, S., Majid, L. A., Hill, K. D., & Mazlan, M. (2018). The modified otago exercises prevent grip strength deterioration among older fallers in the Malaysian Falls Assessment and Intervention Trial (MyFAIT). *Journal of Geriatric Physical Therapy*, 1-7.

Exercise-based interventions, such as the Otago Exercise Program (OEP), are effective in preventing falls in the older adult. Previous studies evaluating the OEP have determined falls, lower limb strength, or balance outcomes but with lack of assessment of hand grip strength. The objective of this study is to evaluate the effect of OEP on hand grip strength alongside mobility and balance outcomes. This was a single-center, prospective, and single-blind randomized controlled trial conducted at the University Malaya Medical Centre. Patients older than 65 years presenting to the hospital emergency department or geriatric clinic with 1 injurious fall or 2 falls in the past year and with impaired functional mobility were included in the study. The intervention group received a modified OEP intervention (n = 34) for 3 months, while the control group received conventional care (n = 33). All participants were assessed at baseline and 6 months. Twenty-four participants in both OEP and control groups completed the 6-month follow-up assessments. Within-group analyses revealed no difference in grip strength in the OEP group (P = 1.00, right hand; P = .55, left hand), with significant deterioration in grip strength in the control group (P = .01, right hand; P = .005, left hand). Change in grip strength over 6 months significantly favored the OEP group (P = .047, right hand; P = .004, left hand). Significant improvements were also observed in mobility and balance in the OEP group. In addition to benefits in mobility and balance, the OEP also prevents deterioration in upper limb strength. Additional benefits of exercise interventions for secondary prevention of falls in term of sarcopenia and frailty should also be evaluated in the future.

Lillard, L. A., & Willis, R. J. (1997). Motives for intergenerational transfers: Evidence from Malaysia. *Demography*, 34(1), 115–134.

In this paper we discuss a number of hypotheses about motives for intergenerational transfers within the family. We use data on time and money transfers between generations in Malaysia, where there is neither Social Security nor Medicare, to explore these hypotheses empirically. We find evidence supporting the hypotheses that children are an important source of old age security and that old age security is, in part, children's repayment for parental investments in their education. This repayment is partly a function of the children's income and, in the case of females, a function of their spouse's income. We also find evidence

supporting the hypotheses that parents and children engage in the exchange of time help for money.

Lillard, L. A., & Willis, R. J. (1994). Intergenerational educational mobility: Effects of family and state in Malaysia. *The Journal of Human Resources*, 29(4), 1126–1166.

In this paper we explore evidence concerning the relationship between parents' and children's education using a new body of data, the Second Malaysian Family Life Survey (MFLS-2), which contains information on the education of as many as four generations within a given family. These data allow us to study the spread of education in Malaysia over much of this century by examining the educational attainment of birth cohorts from 1910 to 1980. More significantly, we use these data to study the effects of parental education on the progress of their children through elementary, secondary, and post-secondary school within a sequential discrete-time hazard model which allows for correlations among unmeasured family and individual-specific components. For a subset of the cohorts, we are able to introduce time-varying covariates to measure the family's economic circumstances, the quality of its environment, and the composition of the subset at the time a given decision is made.

Lim, C. K. (2005). *Assessing the coverage, adequacy and accessibility of selected community facilities for Malaysian elderly based on GIS Approach*. (Master's thesis). Universiti Putra Malaysia. Retrieved from <http://psasir.upm.edu.my/5980/>

The numbers of elderly in the population nowadays have grown tremendously and benefited from the modern development of better community services especially in countries where there are great advancement and progression in health technology. This emphasis on improvement of community facilities has undoubtedly provided a better quality of life to many of the older generation and undeniably help in increasing their life span, hence the increase in population. Contrary to this, many from the older generations are still faced with difficulties in getting access to the provided services because of problems in efficiency of facilities provision. In conjunction to this, many initiatives have been taken by the associated government agencies dedicated to meet the needs of the elderly. The dedications are in terms of easier access to the available facilities and without having to pay an astronomical fee. But the planning for the elderly is a complex issue because their needs are as varied as the population composition itself. On the other hand, conventional method of data collection (hardcopy based) has been found to be inefficient and ineffective in terms of producing qualitative results within a short time span. The two primary objectives guide this research which is analysis of the coverage, adequacy and the accessibility of selected community facilities for the elderly through the GIS technology, and second is to create an automated data collection technique by using the PDA. Methods in use involve PDA program customization, selection and surveying of targeted sites in terms of accessibility to the selected community facilities. All collected PDA data are pooled and incorporated into the GIS database. This is followed by creation of elderly database for spatial analysis and accessibility analysis. From the experimental results, the used of automated data collection PDA system is much more cost-effective and time saving. Besides, with the aid of GIS technology, the distributions of demographic of elderly in different characteristic are clearly determined based on several definitions. The study successfully demonstrated the application of GIS with the several methods in the facilities accessibility assessment of the targeted group, and it has been found

that the community facilities are barely adequate in study area. As an addition, an automated data collection technique and complimentary spatial analysis procedures can help to encourage better decision modeling in the development of a better health care for the elderly. With this automated GIS system, it is hope that better planning and decision modeling can be done. This is to ensure that problems of specific needs of the target group, in relation of accessibility to social and health facilities, will be reduced and finally overcome albeit slowly.

Lim, C. K., Hamid, T. A., & Shariff, A. R. (2005). Accessibility of private hospitals for the Malaysian elderly: A GIS-based assessment. *Gerontechnology*, 3(4), 216.

With the rapid growth of the older population in Malaysia, greater demands for health care services are to be expected. Private hospitals and health centers play an important role in reducing the strain and dependency of the public on government-aided medical institutions. However, planning for the set-up of private health facilities remains inadequate as needs assessment of the locals is few and far in between. Thi study illustrates the distribution of private hospitals around the vicinity of the Subang Jaya municipality in the state of Selangor, Malaysia. A GIS-based approach to the assessment of health services takes into account the distribution of current and future populations which enables gradual optimization of resources for the respective target / age groups in an area. Application of the geographical information system allows researchers to analyze the delivery and reach of private health care services at a geo-spatial level. In the long run, such data will assist in achieving effective urban planning, good governance and sustainable development as census population data, road system and local information is merged.

Lim, K. G. (1997). Surgical problems among the elderly in Malaysia. *Medical Journal of Malaysia*, 52(3), 217–221.

According to the 1991 population census, about 3.7% of the population are elderly people. Due to better nutrition consumption and health, the number of the elderly population will definitely rise. The increasing ageing population will affect the increasing number of diseases. Surgical problems among the elderly in Malaysia is discussed in this study.

Lim, K. H., Jasvindar, K., Cheong, S. M., Ho, B. K., Lim, H. L., Teh, C. H, Lau, K. J., Suthahar, A., & Ambigga, D. (2016). Prevalence of smoking and its associated factors with smoking among elderly smokers in Malaysia: Findings from a nationwide population-based study. *Tobacco Induced Diseases*, 14(1), 1–8.

The determination of smoking prevalence and its associated factors among the elderly could provide evidence-based findings to guide the planning and implementation of policy in order to will help in reducing the morbidity and mortality of smoking-related diseases, thus increase their quality of life. This paper describes the rate of smoking and identifies the factor(s) associated with smoking among the elderly in Malaysia. A representative sample of 2674 respondents was obtained via a two-stage sampling method in proportion to population size. Face-to-face interviews were conducted using a set of standardized validated questionnaire. Data was weighted by taking into consideration the complex sampling design and non-response rate prior to data analysis. Univariable and multivariable logistic regression were used to determine the factor/s associated with smoking. The prevalence of non-smokers, ex-smokers and current smokers among Malaysians aged 60

years and above were 36.3 % (95 % CI = 32.7–39.8), 24.4 % (95 % CI = 21.2–27.5) and 11.9 % (95 % CI = 9.5–14.3), respectively. Current smokers were significantly more prevalent in men (28.1 %) than in women (2.9 %), but the prevalence declined with advancing age, higher educational attainment, and among respondents with known diabetes, hypertension and hypercholesterolemia. Multivariable analysis revealed that males (aOR, 18.6, 95 % CI 10.9–31.9) and other Bumiputras (aOR 2.58, 95 % CI 1.29–5.15) were more likely to smoke. In addition, elderly with lower educational attainment (aOR, 1.70, 95 % CI 1.24–7.41) and those without/unknown hypertension also reported higher likelihood to be current smokers (aOR 1.98, 95 % CI 1.35–2.83). However, there were no significant associations between respondents with no/unknown diabetes or hypercholesterolemia with smoking. In short, smoking is common among elderly men in Malaysia. Therefore, intervention programs should integrate the present findings to reduce the smoking rate and increase the smoking cessation rate among the elderly in Malaysia and subsequently to reduce the burden of smoking-related disease.

Lim, K. H., Jasvinder, K., Normala, I., Ho, B. K., Yau, W. K., Mohmad, S., Lai, W. Y., & Sherina, M. S. (2014). Risk factors of home injury among elderly people in Malaysia. *Asian Journal of Gerontology and Geriatrics*, 9(1), 16–20.

Home injuries among elderly people are a public health concern. This study aimed to determine the frequency and risk factors of home injuries among elderly people in Malaysia. The Third National Health and Morbidity Survey in 2006 was carried out from April to July 2006. The sample was proportional to population size and selected in 2 stages. Data were collected through face-to-face interviews using a validated questionnaire. Only injuries occurring within the previous year were included to avoid recall bias. The types of home injury, places where the injuries occurred, ability to work after the injury, and hospital admission were recorded, as were demographic variables such as sex, age, marital status, ethnicity, and residential area. Of 4842 respondents aged ≥ 60 years, 279 (5.8%) had experienced some kind of home injury within the previous year. The most common types of injury were fall ($n=205$), cuts ($n=43$), and being struck by objects ($n=14$). The most common injury locations were the kitchen ($n=81$), garden ($n=65$), bathroom/toilet ($n=45$), living room ($n=26$), bedroom ($n=22$), and stairs ($n=21$). Home injury rates were significantly higher among women than men (7.4% vs. 3.9%, $p<0.001$). Married elderly people were less likely to have a home injury than divorced/widowed or single elderly people (4.9% vs. 8.0% vs. 8.0%). Multiple logistic regression analysis revealed that women (adjusted odds ratio [OR]=1.87, 95% confidence interval [CI]=1.37–2.55) and respondents aged 70–74 years (adjusted OR=1.45, 95% CI=1.02–2.07) were more likely to sustain a home injury. With the increase in the elderly population, home injury prevention programmers are urgently needed.

Lim, K. K., Sivasampu, S., & Khoo, E. (2015). Antihypertensive drugs for elderly patients: A cross-sectional study. *Singapore Medical Journal*, 56(5), 291–297. <https://doi.org/10.11622/smedj.2015019>

As the population ages, the prevalence of hypertension also increases. Although primary care is usually the patient's first point of contact for healthcare, little is known about the management of hypertension among elderly patients at the primary care level. This study aimed to determine the antihypertensive prescription trend for elderly patients, the predictors of antihypertensive use and any inappropriate prescribing practices in both public and private

primary care settings. Data on patient demographics, diagnosis, prescription pattern, payment mode and follow-up was extracted from a cross-sectional study involving 122 public primary care clinics and 652 private primary care clinics in Malaysia. Encounters with hypertensive patients aged ≥ 60 years were included. A total of 1,017 antihypertensive medications were prescribed – calcium channel blockers (27.1%), beta blockers (25.5%), diuretics (23.3%), angiotensin-converting enzyme inhibitors (14.9%) and angiotensin receptor blockers (6.3%). Out of the 614 patient encounters, 53.1% of the patients were prescribed monotherapy, 31.6% were prescribed dual therapy, 12.2% triple therapy, 2.8% quadruple therapy and 0.3% quintuple therapy. Type of primary care clinic and payment mode were significant predictors for the prescription of combination therapy and fixed-dose combination therapy, respectively. Four types of inappropriate prescriptions were identified. Calcium channel blockers were the most common antihypertensive drug prescribed and more than half of the elderly patients were on monotherapy. Antihypertensive drug prescription was found to be associated with the type of primary care clinic and the payment mode, suggesting that prescription is influenced by the cost of the drug.

Lim, L. M., McStea, M., Chung, W. W., Azmi, N. N., Aziz, S. A. A., Alwi, S., Kamarulzaman, A., Kamaruzzaman, S. B., Chua, S. S., & Rajasuriar, R. (2017). Prevalence, risk factors and health outcomes associated with polypharmacy among urban community-dwelling older adults in multiethnic Malaysia. *PLOS ONE*, 12(3), 1-18.

Polypharmacy has been associated with increased morbidity and mortality in the older population. The aim of this study was to determine the prevalence, risk factors and health outcomes associated with polypharmacy in a cohort of urban community-dwelling older adults receiving chronic medications in Malaysia. This was a baseline study in the Malaysian Elders Longitudinal Research cohort. The inclusion criteria were individuals aged ≥ 55 years and taking at least one medication chronically (≥ 3 months). Participants were interviewed using a structured questionnaire during home visits where medications taken were reviewed. Health outcomes assessed were frequency of falls, functional disability, potential inappropriate medication use (PIMs), potential drug-drug interactions (PDDIs), healthcare utilisation and quality of life (QoL). Risk factors and health outcomes associated with polypharmacy (≥ 5 medications including dietary supplements) were determined using multivariate regression models. A total of 1256 participants were included with a median (interquartile range) age of 69(63–74) years. The prevalence of polypharmacy was 45.9% while supplement users made up 56.9% of the cohort. The risk factors associated with increasing medication use were increasing age, Indian ethnicity, male, having a higher number of comorbidities specifically those diagnosed with cardiovascular, endocrine and gastrointestinal disorders, as well as supplement use. Health outcomes significantly associated with polypharmacy were PIMS, PDDIs and increased healthcare utilisation. A significant proportion of older adults on chronic medications were exposed to polypharmacy and use of dietary supplements contributed significantly to this. Medication reviews are warranted to reduce significant polypharmacy related issues in the older population.

Lim, P. L., & Khan, T. H. (2012). Designing long term care accommodation for senior citizens: The need for a design code in Malaysia. *British Journal of Arts and Social Sciences*, 8(1), 45–56.

The objective of this study was twofold; 1) to explain the significant role of the physical environment in long term care homes to support health and quality of life for senior citizens, and 2) to construct design environment factors that benchmark long term care accommodation for senior citizens in Malaysia. After a careful literature review exploring through books, governmental reports, and journals, this paper identified five common attributes pivotal in supporting the health and well-being of the elderly. They are supportive physical environment, residential character, small scale approach, access to support services, and provision of opportunities for community integration. Previous researches show that Supportive Housing Design (SHD), which is an option for Long Term Care (LTC), is one of the most beneficial options as it provides with those attributes to maximum. In Malaysia, the study finds that the existing Malaysian National Policy for the Elderly does not synchronize the health and well-being issues of senior citizens with Long Term Care (LTC). This study implies that such policy should comprehensively consider SHD and derive design codes with respect to the components of SHD for a better quality of life for the senior citizens in the context of Malaysia.

Lim, W., Xin, W., Sulaiman, N., & Baldry, D. (2013). A conceptual framework for understanding the Social Care Facilities Management Audit (SCFMA) at the Residential Care Home for the Elderly (RCHfE) in Malaysia. *Proceedings of the 2nd International Conference on Management, Economics and Finance (2nd Icmef 2013)* (pp. 112–140).

The number of elderly ending up in welfare homes like Residential Care Home for the Elderly (RCHfE) in Malaysia is increasing by years. Census 2012 shows that the number of the elderly staying in the public RCHfE in Malaysia is approximately 1,927 people and this number is expected to increase as the elderly population in our country is expected to reach 3.2 million people by year 2020 which mark 9.5% of the Malaysian population. However, the existing RCHfE in Malaysia is seemingly not competent enough to deliver care needs to the elderly for the whole country. Reports and statistics reveal that the quality of healthcare service delivery at the RCHfE in Malaysia currently is yet to achieve the level of satisfactory. In addition, the absence of standards or National Minimum Standards (NMS) that is available in Malaysia makes the healthcare services more vulnerable to the elderly. Facilities Management (FM) is defined as an integration of processes within an organization to maintain and develop the agreed services which support and improve the effectiveness of its primary activities. Meanwhile, Facilities Management Audit (FMA) aims to reinforce and strengthen the FM processes deliver at the RCHfE. Currently, there are no FMA being conducted to audit standards delivered at the public RCHfE in Malaysia. Thus, this paper seeks to discuss a conceptual framework for Social Care Facilities Management Audit (SCFMA) for public RCHfE in Malaysia. Three research methods consist of participant observation; interviews and Delphi method are chosen for this study.

Ling, G. S., & Fernandez, J. L. (2010). *Labor force participation of elderly persons in Penan*. Paper presented at the International Conference on Business and Economic Research, 15 -16 March 2010. Sarawak, Malaysia.

Life expectancy has increased over the past few decades. Thus it is necessary to study the issue of labour force participation (LFP) of older persons, given its impact on the welfare of the elderly, households, society and the economy of the nation. This study examines the socio-demographic and socio-economic factors which influence the LFP of elderly persons in one state in Malaysia, i.e., Penang. A logit model is used to analyse the determinants of elderly persons' LFP. The findings in this study indicate that gender, high monthly expenses, previous employment status of the individual and spouse's labour force participation status have a significant positive relationship with LFP. The human capital variables, i.e. education and health, are also positively related to LFP but are statistically insignificant. The factors which have a significant negative relationship with LFP of the elderly are age, spouse's income, financial security and low monthly expenses.

Loganathan, A., Ng, C. J., & Low, W. Y. (2016). *Views and experiences of Malaysian older persons about falls and their prevention - A qualitative study*. *BMC Geriatrics*, 16(1), 1–8. <https://doi.org/10.1186/s12877-016-0274-6>

Few studies on falls interventions have been conducted in South East Asia. Despite its population ageing rapidly, the acceptability of interventions among the older population in this region remains variable. This study aims to explore views and experiences regarding falls and their prevention among older persons at high risk of falls. Sixteen individuals aged 60 years and over with at least one fall in the preceding 12 months were recruited from our Primary Care clinics. A qualitative study using semi-structured interviews among individuals and focus-groups was conducted. Thematic analyses were conducted on transcriptions of audio-taped interviews using the WeftQDA software. The interviews ceased when data saturation was achieved. The three themes included older persons' views on falls, help-seeking behaviour and views on falls interventions. Many older persons interviewed did not perceive falls as a serious problem, some reported a stigma surrounding falls, while others felt they had not sustained more serious injuries due to God's grace. Older persons sought traditional medicine and other alternative treatments for pain relief and other fall-related symptoms. Accessibility of healthcare facilities often prevented older persons from receiving physiotherapy or eye tests. The delivery of complex interventions for a multifactorial condition such as falls in the older persons in our setting is inhibited by various cultural barriers, falls perceptions as well as logistic difficulties. Efforts to establish a multi-disciplinary intervention among our older population will need to include strategies to overcome these issues.

Loh, K. Y., & Elango, S. (n.d.). *Hearing impairment in the elderly*. *Medical Journal of Malaysia*, 60(4), 526–529.

Hearing impairment is one of the most important health problems of the elderly above 60. Very often it leads to verbal communication difficulty and without treatment it can cause serious psychological and social complications such as depression and social isolation. Prebycusis remains a leading cause of sensorineural deafness in the elderly. Elderly patient must be encouraged to seek proper hearing assessment if they face hearing difficulty. Active screening by health care workers and patient self-evaluation by answering a simple list of

screening questions are possible for early detection and treatment of hearing loss in the elderly. Although hearing loss in the elderly may not have a cure, early rehabilitation helps to restore better quality of life if the problem is detected early.

Loh, K. Y., & Ogle, J. (2004). Age related visual impairment in the elderly. *Medical Journal of Malaysia*, 59(4), 562–568, quiz 569.

Visual impairment among the elderly is a major health problem. With advancing age, the normal function of eye tissues decreases and there is an increased incidence of ocular pathology. Demographic studies have shown that age is the best predictor of blindness and visual impairment. The most common causes of age related visual impairment in the elderly are presbyopia, cataracts, age related macular degeneration, primary open angle glaucoma and diabetic retinopathy. Untreated visual impairment leads to physical handicap, increased incidence of fall, depression, social isolation and dependency. Active screening for visual loss in the elderly should be part of the health examination. The elderly should be encouraged to come for formal 1-2 yearly eye assessment for early detection of visual impairment and to treat all associated problems in order to prevent permanent visual loss.

Loh, K. Y., Khairani, O., & Norlaili, T. (2005). The prevalence of functional impairment among elderly aged 60 years and above attending Klinik Kesihatan Batu 9 Ulu Langat, Selangor. *Medical Journal of Malaysia*, 60(2), 188–193.

The aim of this study was to determine the prevalence of functional impairment and its associated factors among patients aged 60 years and above attending Klinik Kesihatan Batu 9 Ulu Langat, Selangor. This is a cross sectional community health clinic based study. A total of 260 elderly patients attending the community health clinic were interviewed. They were clinically assessed for functional impairment by using the 9 item Instrumental Activities of Daily Living (IADL) scale. There were 118 (45.4%) elderly male and 142 (54.6%) elderly female with age ranging from 60 years to 92 years with the mean age of 67.5 and 65.5 years for male and female respectively. Chinese form the largest population (42.3%) followed by Malay (36.5%), Indian (19.2%) and others (2.0%). The overall prevalence of functional impairment among elderly aged 60 years and above in this study was 33.5%. Among the functionally impaired, two patients (0.8%) were totally dependent. There were significant associations between functional impairment and older age ($p = 0.025$), lower income group ($p = 0.010$), lower education level ($p = 0.030$) and history of chronic medical illness ($p = 0.020$). Functional impairment had no significant association with ethnic group, gender, occupation and living arrangement. For daily activities that were assessed, the commonest impairment was inability to perform shopping (40%) followed by impairment in climbing up staircase (36.6%) and impairment in taking medication (35%). Advanced age, lower income, lower education and history of medical illness are associated with functional impairment. Functional impairment is an important consideration in caring for the elderly patients in the community. These findings have implications in caring of the elderly in which attention need to be paid to activities such as shopping, climbing stairs and taking medication. The use of the IADL scale is feasible for screening of functional impairment among the elderly population in the community.

Lok, H. C. (2010). *Personal experiences of elderly Chinese women in a nursing home setting from the existential-humanistic perspective* (Master's thesis). Faculty of Educational Studies, Universiti Putra Malaysia. Retrieved from <http://psasir.upm.edu.my/25642/>

This qualitative study aimed at exploring and understanding the personal experiences of elderly Chinese women (ECW) residing in private nursing homes, using the Existential-Humanistic (EH) perspective. The EH perspective sees human beings as comprising the inter-relationships of their physical, social, psychological and spiritual beings. Human beings are also seen as unique and constantly in a process of “becoming”. Every person is free to choose and tends to search for meaning and transcendence or growth in life. Seven elderly Chinese women who voluntarily participated in this study were interviewed using a semi-structured interview guide. Respondents were selected by purposeful sampling from four nursing homes in the Klang Valley. The interview data collected were transcribed verbatim, translated from the Chinese language to English and analyzed using the constant comparative method. Content analysis of the first transcript, field notes and document collected yielded meaningful units or subthemes. Twenty-six subthemes emerged from the analyses of the interview transcripts. These subthemes were further organized into four components of the self according to the EH perspective, namely, physical being, social being, psychological being and spiritual being. Results showed that the ECW participants experienced both positive and negative experiences. ECW participants also hoped for (1) ease of physical pain, (2) social support from family members and friends, (3) having recreational activities, and (4) nurturing others and altruism. The findings primarily showed that the personal experiences of the elderly Chinese women in a nursing home setting is multidimensional and most of them are open to therapeutic talk (interview) where the researcher applied the Existential-Humanistic approach in order to “be present” with them. The findings of the study implied that elderly Chinese women in nursing homes need to fulfill their physical, social, psychological and spiritual dimensions of “self”. EH counseling is deemed suitable for ECW as it is a holistic approach and can help the ECW to transcend physical deterioration through greater self-awareness of their four beings. This approach can also empower elderly Chinese women to live a more authentic life. It offer opportunities to them to develop their psychological and spiritual dimensions. Future researchers are urged to study the effects of Existential-Humanistic counseling on elderly Chinese women and other ethnic groups.

Loke, S. C., Abdullah, S. S., Chai, S. T., Hamid, T. A., & Yahaya, N. (2011). Assessment of factors influencing morale in the elderly. *PLOS ONE*, 6(1), 1–8. <https://doi.org/10.1371/journal.pone.0016490>

We examined the relationship between morale measured by the Philadelphia Geriatric Morale Scale (PGC) and disability, social support, religiosity, and personality traits. Instruments predicting morale were then tested against PGC domains. The study utilized a cross-sectional survey with a multistage cluster sampling design. Instruments used were disability (disease burden; WHO Disability Score-II, WHODAS-II), social support (Duke Social Support Scale, DUSOCS; Lubben Social Network Scale, LSNS-6; Medical Outcomes Study Social Support Survey, MOS-SSS), religiosity (Revised Intrinsic-Extrinsic Religious Orientation Scale, I/E-R), and personality (Ten-Item Personality Inventory, TIPI). These were plotted as bar charts against PGC, resolved with one-way ANOVA and Kruskal-Wallis tests, then corrected for multiple comparisons. This process was repeated with PGC domains. Contribution of factors was modeled using population attributable risk (PAR) and odds ratios.

Effect of confounders such as gender, age, and ethnicity were checked using binary logistic regression. All instruments showed clear relationships with PGC, with WHODAS-II and DUSOCS performing well (ANOVA $p < 0.001$). For PGC domains, attitude toward aging and lonely dissatisfaction trended together, while agitation did not. PAR, odds ratios, and Exp (β) were disability (WHODAS-II: 28.5%, 3.8, 2.8), social support (DUSOCS: 28.0%, 3.4, 2.2), religiosity (I/E-R: 21.6%, 3.2, 2.1), and personality (TIPI: 27.9%, 3.6, 2.4). Combined PAR was 70.9. Disability, social support, religiosity, and personality strongly influence morale in the elderly. WHODAS-II and DUSOCS perform best in measuring disability and social support respectively.

Loke, S. C., Lim, W. S., Someya, Y., Hamid, T. A., & Nudin, S. S. H. (2016). Examining the disability model from the international classification of functioning, disability, and health using a large data set of community-dwelling Malaysian older adults. *Journal of Aging and Health, 28*(4), 704–725.

This study examines the International Classification of Functioning, Disability, and Health model (ICF) using a data set of 2,563 community-dwelling elderly with disease-independent measures of mobility, physical activity, and social networking, to represent ICF constructs. The relationship between chronic disease and disability (independent and dependent variables) was examined using logistic regression. To demonstrate variability in activity performance with functional impairment, graphing was used. The relationship between functional impairment, activity performance, and social participation was examined graphically and using ANOVA. The impact of cognitive deficits was quantified through stratifying by dementia. Disability is strongly related to chronic disease (Wald 25.5, $p < .001$), functional impairment with activity performance ($F = 34.2$, $p < .001$), and social participation ($F = 43.6$, $p < .001$). With good function, there is considerable variability in activity performance (inter-quartile range [IQR] = 2.00), but diminishes with high impairment (IQR = 0.00) especially with cognitive deficits. Environment modification benefits those with moderate functional impairment, but not with higher grades of functional loss.

Loo, K. W., & Gan, S. H. (2012). Burden of stroke in Malaysia. *International Journal of Stroke, 7*, 165-167.

Stroke is one of the top five leading causes of death and one of the top 10 causes for hospitalization in Malaysia. Stroke is also in the top five diseases with the greatest burden of disease, based on disability-adjusted life years. However, prospective studies on stroke in Malaysia are limited. To date, neither the prevalence of stroke nor its incidence nationally has been recorded. Hypertension is the major risk factor for stroke. The mean age of stroke patients in Malaysia is between 54.5 and 62.6 years. Traditional medicine is commonly practiced. With the increasing number of stroke cases annually, more government and nongovernment organizations should be involved in primary and secondary prevention strategies.

Lor, T. L., Boon, K. Y., Cheo, F. F., Lau, S. C., Lee, G. W., Ng, B. H., & Goh, K. J. (2009). The frequency of symptomatic sensory polyneuropathy in the elderly in an urban Malaysian community. *Neurology Asia, 14*(2), 109–113.

Neuropathic symptoms and signs are common in the elderly and are often considered normal findings. However, symptomatic polyneuropathy may contribute to disability and falls in the elderly. The prevalence of peripheral neuropathy in the elderly in Malaysia has not been previously reported. The objective of this pilot study is to determine the frequency of symptomatic sensory polyneuropathy in a group of elderly subjects in the community and their possible associated factors. Cross sectional survey of subjects aged 65 years and above, carried out in an urban neighbourhood in Petaling Jaya. Using a standardised questionnaire, subjects were asked about sensory neuropathic symptoms, associated medical conditions and social habits. They were examined for the ankle refl ex, vibration, joint position, and pinprick sensations. Possible symptomatic sensory polyneuropathy was defined as bilateral distal neuropathic symptoms, loss of pinprick sensation and proprioception sense. Of the 100 subjects, 63% had neuropathic symptoms and signs and 20% had possible symptomatic sensory polyneuropathy. Subjects with polyneuropathy complained of more postural instability and giddiness and distal weakness. Diabetes mellitus was associated with the presence of neuropathic symptoms and signs but not with polyneuropathy. Age was significantly associated with polyneuropathy. The frequency of symptomatic sensory polyneuropathy in a group of elderly subjects in an urban Malaysian community was 20%. The frequency increased with advancing age.

Low, W. Y., Khoo, E. M., Tan, H. M., Hew, F. L., & Teoh, S. H. (2006). Depression, hormonal status and erectile dysfunction in the aging male: Results from a community study in Malaysia. *The Journal of Men's Health & Gender, 3*(3), 263–270.

Depression and erectile dysfunction (ED) are common in aging and the two conditions often co-exist. These conditions have been shown to be associated with hormonal changes in men. This paper examines the association between depression, ED, and hormonal status of men aged above 50 years in the Klang Valley, Malaysia. Five hundred men aged 50 years and above were randomly selected via the electoral roll and invited to participate in a community-based study on men's health: 351 men responded. Respondents were interviewed individually based on a self-developed questionnaire, which included information on socio-demographic data. Erectile function was measured using the International Index for Erectile Function-5 (IIEF-5) and depression was measured using the 15 item Geriatric Depression Scale (GDS-15). Sixty-nine percent of the men were diagnosed with ED. Mean GDS score was 3.33 (SD = 3.29). Nineteen percent (n = 67) of the men had abnormal levels of testosterone (≤ 11 nmol/l) and this comprised 73% of men with ED (n = 49) and 27% of men without ED (n = 18). There was no significant association between testosterone level and ED ($\chi^2 = 0.68$, $p = 0.41$). Significant association was found between depression (GDS ≥ 5) and men with ED ($\chi^2 = 6.07$, $p = 0.014$). Sex hormone binding globulin and luteinising hormone were negatively correlated with erectile function. Results of the multiple linear regression showed that age and depression are predictors of erectile function. Depression and ED should be screened for when either exists in the male patient and treatment directed accordingly.

M. Fazilah, A. S. (2003). Survival after retirement: Will Employees Provident Fund (EPF) savings be able to provide for a comfortable retirement? *Akauntan Nasional*, 16(2), 8–12.

This article provides a brief background information of EPF, including the scope of coverage, withdrawal schemes. It provides an analysis of saving patterns of members and a comparative analysis of annuity payment and poverty level, followed by an analysis of the adequacy of savings. While many members may have RM200, 000 in EPF saving account by the time they retire, the estimated annuity is about RM1, 00 a month with an interest rate of 3.5 percent for the next 20 years. However, with inflation, the amount may be too little to provide a comfortable living in the longer term. In summary, the results show a rather gloomy picture of our retirement years. The author concludes that it is the responsibility of individuals to save the money for retirement.

Mafauzy, M. (2000). The problems and challenges of the aging population of Malaysia. *Malaysian Journal of Medical Sciences*, 7(1), 1–3.

It is undeniable that the ageing population in Malaysia has increased over the years. This study views the problems and challenges that exist in the aging population of Malaysia. An increase in the proportion of the elderly is associated with an increase in the prevalence of ill health. To overcome the challenges, adopting healthy lifestyles play an important role in the life of the elderly. Future development projects such as building hospitals, retirement homes for the elderly need to be further enhanced to provide care of the elderly. Therefore, a sharing of responsibilities between the government, private sector, non-governmental agencies and the community are required in tackling the issue of ageing population.

Mahazan, A. M., Abdullah, A. G., Wan Mohd Fazrul Azdi, W.R., Muhammad, H., Nisar Mohamad, A., Zaharuddin, Z., & Azman, A.R. (2016). The elderly and mosque leadership in Peninsular Malaysia. *Islamic Quarterly*, 60(3), 389-406.

This study investigates leadership of imams in Peninsular Malaysia based on two surveys conducted between 2009 and 2015. The focus is to identify the different roles played by elderly and younger imams by using two sets of leadership measures. The findings reveal that the elderly imams have limited roles over mosque leadership when measured by a conventional leadership behaviour instrument. When measured by Islamic leadership behaviour instruments, the elderly are reported to practise similar leadership behaviour with the younger. These findings help to explain the present conditions of the elderly in mosque institutions of Peninsular Malaysia because they show that the elderly are able to function as mosque leaders when the criteria to measure their leadership have elements of both Islam and management. Further research should be conducted on how the youth and elders in mosques collaborate to develop the community, fostering commitment to mosque activities, training of future mosque leaders and comparison between Islamic and conventional managerial leadership.

Mahdzan, N. S., Mohd-Any, A.A., & Chan, M. K. (2017). The influence of financial literacy, risk aversion and expectations on retirement planning and portfolio allocation in Malaysia. *Gadjah Mada International of Business*, 19(3), 267-289.

The two objectives of this paper are to examine the effect of financial literacy, risk aversion and expectations on retirement planning; and, to investigate the effect of these antecedents on the retirement portfolio allocation. Data was collected via a self-administered questionnaire from a sample of 270 working individuals in Kuala Lumpur, Malaysia. Logistic and ordered probit regressions were employed to analyse the first and second objective, respectively. The results from the logistic regression indicate that future expectations significantly influence the probability of planning for retirement. Meanwhile, individuals with higher financial literacy and lower risk aversion are more likely to hold risky assets in their retirement portfolios. Subsequently, two-sample t-test and one-way ANOVA tests were conducted to further examine the differences in financial literacy, risk aversion and expectations, across demographic subgroups. The study contributes to the literature by holistically incorporating the behavioural aspects that affect retirement planning and by exploring an uncharted issue of retirement planning—namely, the retirement portfolio allocation.

Manan, M. M., Husin, A. R., Alkhoshaiban, A. S., Al-Worafi, Y. M. A., & Ming, L. C. (2014). Interplay between oral hypoglycemic medication adherence and quality of life among elderly type 2 diabetes mellitus patients. *Journal of Clinical and Diagnostic Research*, 8(12), 5–9.

Adherence to medications is an important factor that contributes to therapeutic success. With the current increase in the elderly population, information relating to adherence to treatment and quality of life (QoL) of diabetic elderly patients will help the healthcare provider to improve their treatment. Thus, this study aims to determine the factors affecting adherence to medications and the consequence of non adherence to QoL. This was a cross-sectional study using validated Morisky Medication Adherence Scale (MMAS) Questionnaire. This study was conducted to assess the level of adherence on oral hypoglycemic medications (OHM) and quality of life of the Type 2 diabetes mellitus (T2DM) elderly patients in an urban health centre in Malaysia. A retrospective medication record review was also conducted to collect and confirm data on patients' demographics, diagnosis, treatments, and outcomes. One hundred and seventy nine patients were recruited in this study. Median adherence score was 7.75 (IQR 6.50- 8.00). Good adherer was observed in 48.00% of the participants. A Chi-square test indicated significant correlation between adherence and HbA1c ($p=0.010$). The mean elderly diabetes mellitus Problem Areas in Diabetes (PAID) score was $6.30 \pm SD 8.50$. A significant inversed association was observed between PAID score and the level of adherence ($r = -0.175, p < 0.05$). A highly significant difference in the low adherence group ($p = 0.002$). PAID score significantly correlated with age (years), female gender and HbA1c ($p < 0.05$). A negative association between HbA1c levels and adherence was identified where a 1% increase in HbA1c was associated with a 30% decrease in the likelihood of being adherent. A medication adherence rate of 48% was obtained among elderly T2DM patients treated in the primary care clinic. This study showed that HbA1c is a relevant tool to assess patient glycemic control and adherence. Sociodemographic characteristics were not statistically significantly associated with adherence. We reported a negative correlation between adherence and T2DM related emotional distress. The identified factors that relieve emotional distress of the elderly T2DM patients are similar with the western countries.

Mansor, N., & Awang, H. (2002). The role of social safety nets in Malaysia: Trends and prospects. In *Towards Asia's Sustainable development: The Role of Social Protection* (pp. 197–214). OECD.

The 1997 financial crisis exposed some inadequacies in the existing social safety net, due to the open market economy. To counter the vagaries of the economic cycles, one of the government's schemes is to promote self employment and self reliance. The paper provides a review of the various social schemes including the EPF (with a discussion of its strengths and weaknesses), employment injury compensation, pension, sickness and maternal benefits, SOCSO, old age benefit scheme under the Armed Forces, and other social security, health and social assistance program. The paper concludes with a discussion on the issues of concerns and policy recommendation.

Mansor, N., Salleh, S. N. S., Tan, L. Y., Koutronas, E., & Aikanathan, S. (2014). *Social security in Malaysia: Stock-take on players, available products and databases* (SSRC Working Paper Series No. 2014-1). Kuala Lumpur: SSRC, UM.

The main aim of this article is to provide an overview of social security in Malaysia. The focus is on relevant services, players and databases in the country. The development of social security in Malaysia is captured in Malaysia's Five Year Development plans with a twin goal of achieving good growth and equitable development. Hence, social security policies in the more recent development plans were part of the distribution policies. The study uses the ILO's three-dimensional approach to social protection as a benchmark for analysis. The first dimension refers to the proactive measures to provide social assistance to the non-productive and productive groups in society by ensuring access to basic essential goods and services. The basic protection floor has improved over the years with programmes targeted at equitable development and inclusive growth as seen in the NEM and the 10th MP. The second dimension refers to the social insurance system to prevent or at least mitigate the impact of risks borne by society. The four main schemes such as pension for civil servants, the LTAT, the EPF, and SOCSO have contributed to a relatively higher score for Malaysia (same income group), in the Social Protection Index (SPI) introduced by the ADB (2003). However, post-1997 Asian Financial Crisis saw social security policies beginning to incorporate labour market programmes, the third dimension of the ILO's framework which aims at promoting the potentials and opportunities for individuals to contribute positively to society. Several agencies that are accountable to different authorities are responsible for the programmes. Yet, there is no effective coordination; in other words, no supreme body to oversee the products of social security and to link them all to meet the national framework and policy. The absence of an overarching social policy is not helping either. All social protection service providers and government agencies collect data and information in order to support their own programmes. As a result, the single-user data collection remains isolated with no mega-database as an interface among social security providers.

Martin B. T., & Tracy, P. D. (1993). Health care and family support systems of functionally impaired rural elderly men and women in Terengganu, Malaysia. *Journal of Cross-Cultural Gerontology*, 8(1), 35–48.

This article examines the health and social support systems of a small survey sample of rural, low-income, functionally impaired elderly persons in the state of Terengganu, Malaysia. Increases in the number and proportion of the elderly are a growing concern,

especially in rural areas where there are indications that traditional care givers (daughters) for the elderly are migrating to urban areas. The out-migration patterns in this survey, however, were less than expected. In general, the needs of the respondents are being met by multiple in-kind assistance from adult children, spouses, relatives, friends and neighbors bolstered by free government health care and cash assistance programs. The survey does raise serious concerns regarding the utilization of health care facilities by women, the negative impact of detrimental myths about aging, and the need for more visiting nurses and mobile clinics.

Martin, L. (1989). Living arrangements of the elderly in Fiji, Korea, Malaysia, and the Philippines. *Demography*, 26(4), 627–643.

Using logit techniques and data from surveys of the elderly conducted in 1984 under the auspices of the World Health Organization, this article investigates socioeconomic, cultural, and demographic determinants of living arrangements of the elderly. Having a spouse or children with whom to live has important effects on living arrangements. The results provide only weak support, however, for hypotheses based on modernization theory and point to the need for detailed data on transitions in living arrangements and for information about the younger generation as well as the older generation, both of which are involved in deciding who lives with whom.

Masud, J., & Haron, S. A. (2014). Income disparity among older Malaysians. *Research in Applied Economics*, 6(2), 116. <https://doi.org/10.5296/rae.v6i2.5578>

The aim of this paper is to explore income disparities among older Malaysians. The specific objective is to determine the income disparities among different groups by gender, ethnicity, stratum and region. A total of 2,327 Malaysians, ages 55 to 75, were interviewed for the study. The data show that primary sources of income for older Malaysians, women in particular, were their children. The income disparity among various groups of older Malaysians was rather wide. Men tended to earn higher incomes compared to women. There were income gaps by ethnicity, strata, and region. The income gap among the participants in this study was much wider compared to the general population. The disparity reflected differences in the older persons' ability to meet daily needs, highlighting the need for programs designed specifically to address poverty among older Malaysians.

Masud, J., & Haron, S. A. (2012). Gender differences in economic status of older Malaysians. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 55–78). Universiti Putra Malaysia: Institute of Gerontology.

This chapter will focus on economic status of older persons from the gender perspective. The economic aspects will adopt the Ofstedal, Reidy and Knodel (2003) approach by looking at economic well being; current sources of income as represented in five categories: (1) work, (2) pension/retirement/Employees Provident Fund, (3) income from investments, (4) income from children or relatives, and (5) others. Chapter discusses these sources of income under three main categories, earned income, investment return and family support income. Acknowledging the fact that elderly income is not the only factor influencing the economic well being in old age household income and income security will also be discussed in this chapter.

Masud, J., & Haron, S. A. (2008). Income differences among elderly in Malaysia: A regional comparison. *International Journal of Consumer Studies*, 32(4), 335–340.

Malaysian economic development, formally launched in 1970 through a series of 5-year development plans, has tremendously improved the quality of life of its citizens. Unfortunately, varying degrees of regional development that lead to regional imbalances produce differential impact on different sets of population in each region. This is especially true for the poverty-prone groups, which include the elderly, women and children. This study attempts to assess regional differences (between West and East Malaysia) in the well-being of the elderly as indicated by the income inequality. Specifically, the objectives of this study are to identify sources of elderly income, to determine the mean monthly income and to examine elderly income disparity in the three regions of Peninsular, Sabah, and Sarawak in Malaysia. A total of 2327 elderly respondents were randomly selected nationwide using the stratified random sampling technique. The study indicated that generally, the income of the elderly in Malaysia is very low as most of them had received no formal education or had only obtained primary school education. In terms of income disparity, the elderly income distribution in Sabah showed an interesting pattern, whereby a high percentage of the elderly was clustered in the bottom 20 and top 20 percentile. However, the distribution of the elderly in Peninsular Malaysia was clustered around the bottom 40 percentile, the middle 60 and the top 40 percentile.

Masud, J., Hamid, T. A., & Haron, S.A. (2015). Measuring poverty among elderly Malaysians. *Asian Journal for Poverty Studies*, 1(1), 73–81.

Poverty among the elderly should be measured using different methodology as to differentiate them based on the different dimensions of poverty and to reflect the true differences in needs and resource insufficiency among elderly. How poverty is measured will influence coverage of programs for older persons and to date no specific measurement is available to determine poverty among older persons. This paper is focus on poverty measurement among elderly in Malaysia. Household income data 2009/10 obtained from the Department of Statistic Malaysia were utilized to examine the incidence of poverty among older persons in Malaysia. Incidence of poverty among older persons was measured using two measurements; absolute poverty (Yearly Poverty line income (PLI) of RM8640) and relative poverty (Half Median income of Malaysia of RM21756). Two income measurements were compared; individual elderly income and income of households headed by older persons. Measuring poverty using individual income will support the philosophy of economic empowerment of older persons. Income of household headed by older persons will reflect the economic situation of household headed by older persons, the proportion expected to increase in the future. Data of the study comprised of 184,447 individual member records of which 16325 were those age 60 and older (8.85%). There was also information on 43026 households, 7892 of which are headed by those ages 60 and older (18.3%). The incidence of absolute and relative poverty using the two measurements will be calculated and the implications of such measurement will be discussed.

Masud, J., Haron, S. A., & Gikonyo, L. W. (2008). Gender differences in income sources of the elderly in Peninsular Malaysia. *Journal of Family and Economic Issues*, 29(4), 623–633.

Objectives of this study were to identify and compare the sources and amounts of income received by elderly males and females. Specifically, this study examined gender differences in income receipt for a sample of 1,841 residents of Peninsular Malaysia who were aged 55–75. Significant differences were found in the source and amount of income of elderly males and females. Although the majority of elderly of both genders received income from their children, there were profound gender differences in the receipt of work-related and investment-related income.

Masud, J., Haron, S. A., Hamid, T. A., & Zainaluddin, Z. (2006). Economic well-being of the elderly : Gender differences. *Consumer Interest Annual*, 52, 456–461.

The purpose of this paper is to determine the economic well-being of the elderly in Malaysia using personal and household income measure. A total of 2,723 elderly from 75 sub-districts were successfully interviewed for the study in 2004. The elderly sources of income from work-, investment- and family-related sources were compared between the male and female elderly. When personal income was used to measure poverty, the (poverty) rate was much higher among elderly female compared to males. In contrast, there was no significant gender difference in proportion of those below poverty when household income was used. Perceived adequacy of income was closely related to the personal income as compared to household income.

Masud, J., Sabri, M. F., & Haron, S. A. (2012). Ethnic differences in financial practices of Malaysian elderly. *Malaysian Journal of Consumer and Family Economics*, 15(1), 54–70.

Malaysia is fast moving towards becoming a developed nation by 2020. Malaysia is also experiencing rapid ageing and will be an aged nation by 2035, and the ageing of the population cut across the major ethnic groups; Malay, Chinese and Indian. This paper focused on the financial resources, practices (12 item statements) and problems (seven items) of the three ethnic groups in Malaysia. Data used was part of a larger research on Economic and Financial Aspects of Ageing in Malaysia funded by the Intensified Research Priority Areas (IRPA), Ministry of Science, Technology and Innovation, Malaysia collected in 2004. The data analysis revealed that there were ethnic differences in financial resources and financial practices among the three ethnic groups particularly between Malay and Chinese. On the overall, the Chinese reported receiving higher mean of financial resources compared to Malay and Indian. Higher proportion of elderly Chinese and Indian received monthly support from children compared to the Malays who received money from children on a yearly basis. Higher proportion of the respondents in this study received income below annual poverty line of RM6, 348 (USD1, 670). Small percentage of elderly in this study experienced serious financial problems (e.g. borrowing form loan shark) and there were significant portion that experience problems meeting daily financial needs such as not having emergency fund and paying bills. Lack of access to financial resources can be detrimental to the elderly and influence their well-being.

Masud, J., Sulaiman, H., Hamid, T. A., & Ibrahim, R. (2012). Financial practices and problems amongst elderly in Malaysia. *Pertanika Journal of Social Science and Humanities*, 20(4), 1065–1084.

Being old is often associated with poverty, as a result of limited access to financial resources due to retirement or deterioration in health. The high incidence of poverty among the elderly is a global concern. How much the elderly have is important but how they use what they have is equally important. This paper focuses on financial practice and problems of the elderly in Malaysia. Data used in the analysis were collected in 2004 from among 2,327 elderly aged between 55 and 75 years. Samples were selected using multi stage systematic sampling. Financial practice was measured using 12 statements representing four dimensions, namely, planning, cash management, credit and investment. Financial problems were measured using seven items with two dimensions, namely, daily problems and credit management. In general, the elderly in the study performed basic financial practice (planning and cash management) but a lower percentage of these elderly performed credit and investment plans. About one third of elderly had experienced at least one of the seven financial problems listed. Multiple regression analysis conducted to explore the factors explaining variation in financial practice revealed that the model explained 20.7% variation in the financial practice score. The variable significantly explained the variations in the financial practice score were gender, age, region, ethnicity, education, home ownership, health perception, and income. A further research is needed to better understand the dynamic of financial practice among the elderly.

Mat, S., Ng, C. T., Fadzil, F., Rozli, F. I., & Tan, M. P. (2017). The mediating role of psychological symptoms on falls risk among older adults with osteoarthritis. *Clinical Interventions in Aging*, 12, 2025-2032.

The purpose of this study was to investigate the role of fear of falling (FoF) and psychological symptoms in explaining the relationship between osteoarthritis (OA) symptom severity and falls. Individuals aged ≥ 65 years with ≥ 2 falls or ≥ 1 injurious fall over the past 12 months were included in the falls group, while volunteers aged ≥ 65 years with no history of falls over 12 months were recruited as controls. The presence of lower extremity OA was determined radiologically and clinically. Severity of symptoms was assessed using the Western Ontario and McMaster Universities Arthritis Index (WOMAC) questionnaire. FoF and psychological status were measured with the shortened version of the Falls Efficacy Scale-International and the 21-item Depression, Anxiety and Stress Scale (DASS-21), respectively. Of 389 (229 fallers, 160 non-fallers) potential participants, mean (SD) age: 73.74 (6.60) years, 141 had clinical OA and 171 had radiological OA. Fallers with both radiological OA and clinical OA had significantly higher FoF and DASS-21 scores than non-fallers. FoF was significantly positively correlated with symptom severity in fallers and non-fallers with radiological and clinical OA. Depression, anxiety, and stress scores were only significantly correlated with symptom severity among fallers but not non-fallers in both clinical and radiological OA. The relationship between mild symptoms and reduced risk of falls compared to no symptoms in those with radiological OA was attenuated by increased anxiety. The increased falls risk associated with severe symptoms compared to mild symptoms in clinical OA was attenuated by FoF. FoF may, therefore, be a potentially modifiable risk factor for OA-associated falls which could be considered in future intervention studies.

Merriam, S. B., & Mohamad, M. (2000). How cultural values shape learning in older adulthood: The case of Malaysia. *Adult Education Quarterly*, 51(1), 45–63.

Culture shapes the meaning people make of their life as well as how people experience movement through the life course. Although there is some literature on how one's culture influences the experience of older adulthood, there is little on how culture defines the nature of learning in late life. The purpose of this study was to understand how cultural values shape learning in older adulthood in the Southeast Asian country of Malaysia. A qualitative research design was employed to explore this question. Nineteen men and women between the ages of 60 and 83 were interviewed as to their experience of aging and their learning activities. Using the constant comparative method of data analysis, three themes were inductively derived from the interview data. First, older adult learning in Malaysia is nonformal and experiential. Second, learning is communal. Third, much of the learning is religious or spiritual in orientation.

Minhat, H. (2014). Why Malay elderly female frequently engaged in religious activities during leisure?: A qualitative approach in Selangor. *Malaysian Journal of Public Health Medicine*, 14(1), 39–46.

Diversified leisure involvement pose various health benefits to the elderly population. However, some elderly are too focus on doing a particular type of activity during their leisure time such as religious activity. This study aims to explore factors that could possibly contribute to the higher involvement in religious activity among the Malay ethnic elderly in Malaysia. In depth interviews were conducted, involving a total of 20 elderly aged 60 years and above with stratification by background characteristics. Each interview was conducted for an average of 15 to 30 minutes. They were purposively selected from two health clinics located in two different districts in the state of Selangor, representing an urban and a rural area. Majority of the elderly interviewed perceived that by engaging in religious activities such as prayer and reciting the Holy Quran or old Islamic scripture gives them serenity or calmness. Additionally, they also felt that involvement in such activities is very synonymous with being old and therefore one should be actively involved in religious activities with increasing age. In view of the lack of diversity of leisure involvement among the elderly and the passive and solitary nature of some of the religious activities, the elderly should be made aware of the importance of participating in other types of leisure activities especially physical activities. Although, they gain spiritual and social benefits from involving in religious activities, they also need to perform other form of activities that can improve the physical health status.

Minhat, H. S., & Amin, R. M. (2012). Social support and leisure participation of elderly in Malaysia. *The Internet Journal of Geriatrics and Gerontology*, 7(1), 1–8.

Leisure participation is influenced by many factors. This study aims to measure the association between perceived social support received by the elderly and their leisure involvement in certain activity. A cross-sectional study was conducted among persons aged 60 years and above, purposively selected from eight health clinics in the state of Selangor. Leisure participation was measured using a validated Leisure Participation Questionnaire specific for Malaysian elderly, consisting of 25 activities, categorized into 4 categories, namely recreational (physical), cognitive, social and productive. Frequency of such participation was measured on a 6-point scale. Its association with perceived social support

variable was examined using Pearson's correlation and regression analysis. 268 participants were involved in this study (response rate=100%). The most common daily leisure activities were having conversations while relaxing (78.7%), watching television (74.6%) and reading (63.4%). The least frequently done leisure activities were from the recreational and cognitive categories. Majority (85.4%) perceived they received higher social support from family members compared to only 49.6% received higher social support from friends. However, social support received from friends was found to be the main predictor for leisure participation involving all categories of activities. Social activity was the only leisure activity shown to have significant correlation with both, perceived social support from family and friends. Perceived social support received from friends by elderly is an important predictor for their leisure participation. Health promotion programmes for the elderly should emphasize on the social interaction among the senior citizens.

Minhat, H. S., & Amin, R. M. (2012). Sociodemographic determinants of leisure participation among elderly in Malaysia. *Journal of Community Health, 37(4), 840–847.*

Leisure participation has been proven to be beneficial and has a positive link to successful ageing. This study aims to explore the sociodemographic determinants of leisure participation among the Malaysian elderly. A cross-sectional study was conducted among persons aged 60 years and above, purposively selected from eight health clinics in the state of Selangor. Leisure participation was measured using a validated Leisure Participation Questionnaire specific for Malaysian elderly, consisting of 25 activities, categorized into 4 categories, namely recreational (physical), cognitive, social and productive. Frequency of such participation was measured on a 6-point scale. Its association with sociodemographic variables was examined using inferential and regression analysis. 268 participants were involved in this study (response rate = 100%). The most common daily leisure activities were having conversations while relaxing (78.7%), watching television (74.6%) and reading (63.4%). The least frequently done leisure activities were from the recreational and cognitive categories. The activities were weakly correlated to each other, reflecting the lack of diversity of leisure activities among respondents. Education was the main predictor for leisure participation among elderly, with higher educational level is associated with high RAS ($B = 1.020, P < 0.05$), CAS ($B = 1.580, P < 0.05$) and SAS ($B = 1.276, P < 0.05$). Education level, marital status and locality were important determinants of leisure participation among elderly, with education being the main predictor. Further studies exploring the effective method of educating the ageing society are recommended.'

Minhat, H. S., Amin, R. M., & Shamsuddin, K. (2012). Late-life leisure constraints among Malaysian elderly: A qualitative approach. *Malaysian Journal of Public Health Medicine, 12(2), 24–30.*

Leisure involvement is an essential element in the daily life of the elderly people. Little is known, however, about the perceived leisure constraints among them, especially among the increasing elderly population in Malaysia. This study aims to explore constraints perceived by the elderly that prevent them from actively involved in leisure. In depth interviews were conducted, involving a total of 20 elderly aged 60 years and above with stratification by background characteristics. Each interview was conducted for an average of 15 to 30 minutes and discontinued when a saturation point was achieved. They were purposively selected from two health clinics located in two different districts in the state of

Selangor, representing an urban and a rural area. Elderly participation in leisure activities was constrained by many factors. These factors can be divided into individual, family and community factors such as increasing age and related physical deterioration, education level, health status and the existence of chronic illness, absence of family member or friends to perform the activity together and non-conducive environment. The constraints should be endorsed and acknowledged by the relevant agencies and authorities in order to facilitate effective implementation of related policies, strategies and programmes to improve the health of the elderly people. These include the provision of appropriate services and facilities to cater senior citizens from various health and demographic perspectives.

Minhat, H. S., Hamizah, S., & Nor Afiah, Z. (2015). A qualitative study on ageing related anxiety among middle aged women in Malaysia. *Malaysian Journal of Public Health Medicine*, 15(2), 1–7.

Ageing anxiety is commoner among women compared to men. However, little is known on the possible contributing factors towards the development of ageing related anxiety among Malaysian women. This study aimed to explore ageing anxiety among the middle-aged women in Malaysia in facing the ageing process. Series of 6 focus group discussions (FGD) were conducted involving a total of 36 women aged between 35 and 59 years old. Each FGD consisted of 5 to 7 respondents and was conducted for an average of 1 to 2 hours. The respondents were selected using the maximum variation sampling method focussing on five age categories, between 35 to 39, 40 to 44, 45 to 49, 50 to 54 and 55 to 59 years old. Representative from several residential areas in the area of Putrajaya Federal Territory and Seri Kembangan, Selangor were involved in the selection of respondents. The interviews revealed that, majority of the respondents were seriously thinking of the possible negative experiences associated with ageing and being old, but very few experiencing ageing anxiety. Three main themes that were identified to contribute to the ageing anxiety were issues related to caregiving at old age and fear of loneliness, the welfare and care of their children when they are old and eventually die and also physical changes that occurred with ageing process. These themes were not specifically associated with any particular age groups, marital or income status. However, the development of the ageing anxiety was found to be related to their personal experiences and observations from the surrounding community. The findings show that women in Malaysia are still emphasizing on the importance of traditional caregiving system, where elderly parents are looked after by the children or extended family members rather than living in formal institutions. Despite the important role of formal institutions in the care of elderly people in the future, it is still negatively perceived. With the shrinking of the size of nuclear family and massive involvement of women in employment sector, more elderly will be expected to reside in formal institutions in the near future. Relevant authorities should be made aware on the importance to maintain the quality of care in the formal institution for elderly, in order to tackle the negative perceptions.

Minhat, H. S., Rahmah, M. A., & Khadijah, S. (2013). Continuity theory of ageing and leisure participation among elderly attending selected health clinics in Selangor. *International Medical Journal Malaysia*, 12(2), 51–58.

Leisure participation in old age is often a continuation of their participation at younger age. This study aims to explore the association between current and former leisure participation of the elderly. A cross-sectional survey was conducted among 268 persons aged

60 years and above, purposively selected from eight health clinics in Selangor. Current leisure participation was measured using a validated Leisure Participation Questionnaire (LPQ), specific for Malaysian elderly. The LPQ consists of 25 activities, categorized into recreational (physical), cognitive, social and productive activity. Frequency of participation in each activity was measured on a 6-point scale. Leisure participation at younger age only involved their general participation in leisure. The most common daily leisure activities were having conversations while relaxing (78.7%) and watching television (74.6%), while the least were from playing golf (0.01 ± 0.12) and performing musical instruments (0.04 ± 0.36). More than half (64.9%) reported being actively involved in any leisure activity at younger age. The study found there was a significant association between former and current leisure participation, especially for cognitive ($t = -2.45$, $p = 0.015$), social ($t = -2.68$, $p = 0.008$) and productive ($t = -2.89$, $p = 0.004$) activities. However, only productive activity involvement was predicted by their leisure participation while younger ($B = 1.304$, $p = 0.027$). The findings suggest the importance of considering active intervention programmes at younger age to ensure better leisure participation of the elderly, especially in recreational physical activity.

Mohamad H. A., Shahar, S., Ibrahim, M. S. N., & Norshafarina, S. (2010). Relationship between appetite, food intake and body composition among elderly Malays from an urban residential area in Kuala Lumpur, Malaysia. *Malaysian Journal of Nutrition*, 16(3), 339–348.

Loss of appetite, decrease in food intake and changes in body composition appear to be inter-related factors that can influence the well-being of older individuals. Therefore, a study was conducted to determine the level of appetite, food intake and its relation to body composition and functional status among noninstitutionalised elderly Malays in Cheras, Kuala Lumpur. The Council on Nutrition Appetite Questionnaire (CNAQ), Diet History Questionnaire (DHQ), Bio-impedance Analysis (BIA) and Instrumental Activity of Daily Living (IADL) questionnaire and handgrip dynamometer were used to measure appetite, food intake, body composition and functional status respectively. A total of 112 subjects (41.1% men and 58.9% women) participated with mean age being 66.0 ± 5.0 years for men and 66.3 ± 6.2 years for women. Prevalence of poor appetite was higher in elderly women (72.3%) than in men (52.3%) ($p < 0.05$). Pearson's correlation test showed that CNAQ score correlated significantly with age ($r = -0.255$, $p < 0.01$), energy intake ($r = 0.272$, $p < 0.01$), IADL score ($r = 0.408$, $p < 0.01$) and handgrip strength ($r = 0.263$, $p < 0.05$). Energy intake correlated significantly with fat free mass ($r = 0.424$, $p < 0.05$), muscle mass ($r = 0.456$, $p < 0.05$) and total body water ($r = 0.403$, $p < 0.05$). Multiple regression analysis showed that 27.0% of poor appetite could be explained by advanced age, low energy intake and decreased functional status. In conclusion, the study showed that poor appetite was prevalent among the subjects, especially women and this was influenced by aging, inadequate energy intake and decreased functional status.

Mohamad, S., & Mohamad, I. (2017). An elderly man with an air-fluid level in the middle ear. *Malaysian Family Physician*, 12(1), 37-39.

A 68-year-old Malay man who is a rubber tapper, presented with a large painful right-sided neck swelling for 6 months, which was gradually increasing in size and associated with odynophagia, dysphagia, hoarseness and significant weight loss. He did not complain of any

ear symptoms, but on further questioning, he admitted having a 3-week history of occasional tinnitus and reduced hearing on the right ear. Other ear symptoms were negative.

Mohamed, N. A., & Muhamad, M. (2013). Older women breast cancer survivors: decision making, sources of information and wellness activities in Malaysia. *Asian Pacific Journal of Cancer Prevention*, 14(3), 2043–2048.

The purpose of this study was to profile older breast cancer survivors in Malaysia. In a survey study, a custom made questionnaire was administered to 69 breast cancer patients and survivors between 60 and 84 years of age in Peninsular Malaysia. The main ethnic group recorded was Chinese, followed by Malay and Indian. The majority of women were married (87%) and had children (84.1%). Just over half (53.6%) had primary and secondary education, whereas 24.7% had higher education. Fifty five percent of the study participants made their own decision on treatment, 60.8% exercised at least 3 times in a week, and 56.6% sought information from specialists. Our study suggests that older breast cancer survivors are aware of the importance of exercise in their daily lives and make attempts to be cancer free (e.g. doing exercise, recreational activity and have good relationships with friends and family).

Mohammad, N. M. N., & Abbas, M. Y. (2012). Elderly environment in Malaysia: Impact of multiple built environment characteristics. *Procedia - Social and Behavioral Sciences*, 49, 120–126. <https://doi.org/10.1016/j.sbspro.2012.07.011>

This study explored how elderly people respond to places and felt about their identities by examining their lifestyles, their routes to fulfillment and read images of general environments and family demands. In mid of 1980s, less than 30 percent of the world's elderly lived in Asia and it will rise to almost 60 percent by 2025 (Longman, 2000). Although several studies have been done in the past, most of them were focused on specific aspects of culture differences and their relationship to various aspects. This study explores their personal views and concern about their daily or routine activities. This paper is an effort to discuss their impact of multiple built environment characteristic in Malaysia, with reference to some experiences among selected countries.

Mohd Ali, H., & Ismail, A. A. (2013). A self-sustaining community living environment for urban golden agers. *WIT Transactions on Ecology and the Environment*, 179, 1271–1279. <https://doi.org/10.2495/SC131082>

From a biological perspective, the ageing process is a gradual change in the physical ability of humans that occurs with the passage of time. The current census showed only a mere 5.1% of the overall population in Malaysia is over 65 years old. However, it is predicted that the ageing population will grow in the next 10 to 20 years due to an increasing awareness of better healthcare. However, most golden-agers will live isolated lives due to various personal reasons such as death of spouse, divorce, health problems, abandoned by their children, etc. A decline in physical articulations and slow response in intellectual skills are common. As their limitations conflict with the rapid development of modern technology, some golden-agers may find themselves drifting away from this modern world due to a dynamic cultural shift. Their everyday needs should not be taken lightly as they are different from the mass population. Thus, the objective of the research is to develop the idea of a retirement community where the urban golden-agers can live in a self-sustaining environment and

independently with their peer group. The retirement community focuses on the design process that involves juxtaposed dwelling units, a partially assisted medical assistance facility and a community centre. Through precedent study, universal housing design and an innovative design approach, the research proposed mixed mode community living that addresses the needs of golden-aged citizens in physiological, mental and spiritual aspects. The retirement community aims to give the senior citizens a living environment that is holistic and relates back to the urban context.

Mohd Ali, A. N., Yeon, A. L., & Hussain, M. A. (2016). Private retirement scheme in Malaysia: Legal analysis. *International Journal of Economics and Financial Issues*, 6(7), 290-295.

The Government recognizes the significance of savings to guarantee sufficient savings after retirement. In this regard, the Malaysian Government established the private retirement scheme (PRS) in 2012 as a complementary scheme to the existing pension schemes. PRS seeks to provide alternatives for employed or self-employed Malaysian citizens, to enhance a well-structured and regulated scheme. By using a legal research approach, this study seeks to analyze the existing legislations governing PRS in Malaysia. The study found that the PRS is mainly regulated by Capital Markets and Services Act (CMSA) 2007 and other legislations. There are several legal challenges that can be observed in PRS system. Among them are PRS Guidelines 2012 only provide a minimum standard in relation to the governance policy of PRS providers and CMSA is silent in the matters regarding PRS scheme based on Shariah principles to be offered by the providers.

Mohd Fakhruddin, N. N. I. N., Shahar, S., Aziz, N. A. A., Yahya, H. M., & Rajikan, R. (2016). Which aging group prone to have inadequate nutrient intake?: TUA Study (Kumpulan penuaan yang mana lebih cenderung terhadap pengambilan nutrien yang tidak mencukupi?: Kajian TUA). *Sains Malaysiana*. 45(9), 1381-1391.

Older adults quite often had an inadequate diet leading to micronutrient deficiencies and impaired immune response with subsequent development of degenerative diseases. This study aimed to determine the adequacy of energy and nutrient intake and its distribution among three aging groups i.e. successful aging (SA), usual aging (UA) and mild cognitive impairment (MCI). This is a cross-sectional study involving a large sample size ($n = 2322$) of older adults recruited through multistage random sampling from four states of Malaysia. An interview was conducted to measure dietary intake, neurocognitive status and functional status by using the Diet History Questionnaire (DHQ), Mini-Mental State Examination (MMSE), Rey Auditory Learning Test (RAVLT), Geriatric Depression Scale (GDS), Instrumental Activity of Daily Living (IADL) and Quality of Life Questionnaire. For comparison of dietary intake, a sub-sample of 173 respondents from each aging groups were matched and selected using a comparative cross-sectional approach. Women in SA group had the highest mean intake of Vitamin A, calcium ($p < 0.05$), Vitamin C, riboflavin and iron ($p < 0.001$). The same aging group also achieved the highest RNI percentage for the same nutrients. More than 80% of respondents for all aging groups did not met the recommended nutrient intake (RNI) for Vitamin E, thiamin, niacin, folate, calcium and zinc. In women, MCI respondents were more likely to have an inadequate intake of Vitamin A, C, riboflavin and iron followed by UA and SA. Inadequate Vitamin E, niacin, folate and calcium were prevalent among all gender and aging groups. There is a need to further distinguish specific dietary

patterns associated with these three aging groups to promote optimal nutrient intake for cognitive health.

Mohd Mokhtar, M. A., Tan, M. P., Zakaria, M. I., Hairi, N. N., Kamaruzzaman, S. B., Chin, A.V., & Poi, P. J. H. (2015). Utilization of the emergency department by older residents in Kuala Lumpur, Malaysia. *Geriatrics and Gerontology International*, 15(8), 944–950.

To determine the pattern of utilization of emergency department (ED) services by older patients in Kuala Lumpur, Malaysia, compared with younger patients in the same setting. The sociodemographics, clinical characteristics and resource utilization of consecutive patients attending the adult ED at the University Malaya Medical Center were recorded during a typical week. A total of 1649 patients were included in the study; 422/1649 (25.6%) were aged ≥ 60 years and 1077 (74.4%) were aged < 60 years. Older adult patients were more likely to be diagnosed with ischemic heart disease (12.6% vs 2.5%, $P < 0.001$), and more likely to require investigations such as electrocardiogram (68.1% vs 16.6%, $P < 0.001$) or chest X-rays (67.6% vs 24.0%, $P < 0.001$) than their younger counterparts. Logistic regression methods showed that older adults remained an independent predictor of hospital admission (OR 2.75, 95% CI 2.11-3.57). The ratio of older adult patients attending our ED over the proportion of older people in the general population was 26:6, which is far higher than reported in previous published studies carried out in other countries. Older ED attenders are also more likely to require investigations, procedures and hospital admissions. With the rapidly aging population in Malaysia, reconfiguration of resources will need to occur at a compatible rate in order to ensure that the healthcare needs of our older adults are met.

Mohd Nor, N. M. (2011). Understanding older adults learners in distance education: The case of Universiti Sains Malaysia. *Turkish Online Journal of Distance Education*, 12(3), 229–240.

World population ageing is unprecedented and pervasive which will affect all countries in the world. According to a United Nation report (2010): By 2045, the number of older persons in the world will exceed the number of young for the first time in history. The number of the older adult learners in distance education programs is also expected to increase in tandem with the growth of ageing population throughout the world. As such distance education institutions and instructors should be vigilant to this new emerging group of learners. The objectives of this study were to identify factors related to older adult learners' participation in the distance education degree programs and their characteristics. Data were collected by using interviews and questionnaires. Respondents for the study were older adult learners age 50 and over who enrolled in degree programs at the School of Distance Education (SDE), Universiti Sains Malaysia in Malaysia. Five older adult learners were interviewed and 72 out of 123 respondents completed the questionnaires. The findings indicated that older adult learners' participation in the distance education degree programs is mainly due to career advancement and to seek knowledge. The older adult learners' distinct characteristics are high motivation, eager to learn, health conscious, effective time management, good social skills, no financial difficulties and have strong family support.

Mohd Sidik, S., Mohd Zulkefli, N. A., & Shah, S. A. (2003). Factors associated with depression among elderly patients in a primary health care clinic in Malaysia. *Asia Pacific Family Medicine*, 2(3), 148–152.

To identify the factors associated with depression among elderly patients attending a primary health care clinic in Malaysia. A cross sectional study was conducted on patients aged 60 years and above in Klinik Kesihatan Butterworth, Seberang Perai Utara, Pulau Pinang, Malaysia from April to September 1999. The Geriatric Depression Scale questionnaire was used as a screening instrument. The response rate was 99.0%. A total of 18% of the patients were found to have depression. The associated factors were females (odds ratio (OR) 2.87, 95% confidence interval (CI) 1.37–6.02), those who were unmarried (OR 3.46, 95% CI 1.66–7.21), without formal education (OR 8.0, 95% CI 2.97–21.48), low total family income (OR 7.97, 95% CI 2.71–23.46) and urban residence (OR 2.23, 95% CI 1.09–4.58). Depression is very common among the elderly. As this is an important problem in primary care practice, primary care doctors should be aware of this problem so that early detection and management can be implemented.

Mohd Tobi, S. U., Fathi, M. S., & Amaratunga, D. (2017). *Ageing in place, an overview for the elderly in Malaysia*. Paper presented at the 2nd International Conference on Applied Science and Technology 2017 (ICAST'17). AIP Conf. Proc. 1891, 020101–1–020101-6. <https://doi.org/10.1063/1.5005434>

Population ageing is a worldwide phenomenon experienced by developed and developing countries. It occurs when the median age of a country rises and shifts the distribution of that country's population towards older ages. Malaysia is experiencing a dramatic increase in the number of elderly people. Recent medical advances and improvements in hygiene and food supply have led to the people of Malaysia having a longer life expectancy. This paper comprehensively reviews articles and journals to discover the concepts, definitions and issues regarding the ageing population globally and in Malaysia, particularly looking at how elderly people can age in place. The concern over ageing is not just about the size of the old age population but, more importantly, about their health, welfare, care and living arrangements as well as the implications for infrastructure, housing, income and economic growth. The built environment plays a role in defining the conditions for people to live healthy lives, and older people require high-quality built environments that suit their needs across the whole life course – a building stock and infrastructure that supports independent living and enhances quality of life for the ageing population. Lifetime houses which fulfil the desires and vital requirement of most households whilst considering the changing essentials of households with elderly and aged people require careful consideration. This paper will review the key areas of housing for elderly people to support the concept of ageing in place as an independent living lifestyle.

Mohd, S. (2015). Provident fund for the informal sector: A case study of the informal sector workers in Kuala Lumpur, Malaysia. *Kajian Malaysia*, 33, 53–67.

Workers in the informal sector are known not to have a formal social security retirement scheme to protect them from the loss of income at old age. One of the reasons for this is the difficulty to regulate a common scheme for both the informal and the formal sectors in terms of contributions and benefits. As a result, most informal sector workers depend on informal schemes such as family support, personal savings and loans after their retirement

which leaves them vulnerable to poverty. However, through the Employees Provident Fund (EPF) Malaysia Retirement Scheme, workers in the informal sector in Malaysia can now save for the future. This paper investigates the acceptance of 400 informal sector workers in Kuala Lumpur towards this scheme; covering three main kinds of workers i.e. service workers, shop and market sales workers; craft and related trade workers; and those in elementary occupations. Acceptance is measured under two situations: (1) perception on the role of old age protection and provident fund; and (2) willingness to contribute to the fund. A variety of contribution values ranging from a low RM10 to a high RM70 together with their expected returns were presented to the respondents. A logit model is employed to estimate the informal sectors workers willingness to contribute to the EPF. The mean value on the perception of old age program estimated by the study is above average. The study found that amount of contribution and savings behaviour of respondents statistically influenced their willingness to contribute in the EPF.

Mohd, S. (2014). Poverty issues among Malaysian elderly. Proceedings of the 2nd International Conference on Social Sciences Research (pp. 123–133).

Using the 2009 Household Income Expenditure Survey (HIES), this paper estimated the poverty incidence among the elderly in Malaysia. Poverty incidence was based on the national Poverty Line Income (PLI) differentiated by region (Peninsular Malaysia, Sabah and Sarawak) and by strata (urban and rural). Analysis of poverty incidence was investigated in various categories of elderly to include all elderly, elderly as head of household and elderly living in a poor household; regardless whether the elderly is the head of household or a member of household. Analysis of poverty incidence and the relationship between poverty and some socio demographic factors was demonstrated using descriptive and chi square analyses. Although the study found less than 10 percent of elderly lived in poverty, pocket of poverty still exists among the elderly, known to be vulnerable at this stage of their lives. Logit analysis was performed to estimate the factors that influence the probability of elderly living in poverty. Age, marital status, ethnicity, education, strata and employment status were found to be statistically significant in influencing elderly's poverty.

Mohd, S. (2013). Old age financial security of the informal sector. *Journal of WEI Business and Economics*, 2(2), 34–41.

While many countries currently have a very structures old age protection program to smooth elderly's consumption at retirement, the programs are tailored made for the formal sector and not for the informal sector. The workers in the informal sector are often left without formal old age protection and have to turn to other means of protection to finance their retirement expenses. We assess the old age financial security in a sample of 400 urban informal sector workers in the capital city of Malaysia, Kuala Lumpur. The aim of this paper is twofold. The first is to analyze the characteristics of informal sector workers and, in particular the availability of old age protection for the workers. The second is to propose policy for old age protection of the informal sector workers. The study finds that the workers of the informal sector do worry and plan for old age. Nevertheless, only a few are currently being protected by formal old age plans and plan to depend on personal savings, family support and insurance in the future. The article concludes in providing some policy implications on how the well being of the informal sector could be improved through a more structured old age protection. Some policy implications to ensure the existence of old age

programs for the workers in the informal sector include revising the performance of the EPF through high dividends, increase confidence to the fund, encourage contributions and make contribution via cooperatives.

Mohd, S. (2013). Provident fund in Malaysia: Sustainability of retirement income provision. *Proceedings of the 3rd Asia-Pacific Business Research Conference*. Kuala Lumpur, Malaysia.

The Provident Fund in Malaysia is the first provident fund established in the world in 1951. The aim of the fund is a scheme to provide non-labour income to the elderly upon retirement. This fund a defined contribution scheme funded through the contribution of the employee and the employer. Given the increasing number of elderly in the world as well as Malaysia, a scheme like the provident fund is necessary as a mechanism to continue providing income to the elderly to finance their retirement expenses. This paper assesses the equity, efficiency and efficacy of the fund in its ability to continue providing non-labour income to the elderly. Areas of assessment include adequacy of retirement benefits, return on investments, nature of the scheme and coverage level. The study concludes that at present the accumulated savings in the provident fund is inadequate to provide continuous retirement income to the elderly. This situation is worsened by the low return on investment of the fund. In addition, the nature of a provident fund itself does not encourage a stable savings fund after retirement. Moreover, the fund fails to be extended to the whole population, in which the informal sector is neglected from receiving retirement benefits.

Mohd, S., Azman, A., Sulaiman, J., & Baba, I. (2010). Financial security protections in Malaysia, Singapore and Philippines: A perspective of two generations. *The Hong Kong Journal of Social Work*, 44(2), 89–104.

Southeast Asian countries are experiencing a rapid aging of the population. This study investigated the formal and informal financial security protections of the elderly and how that compares with financial security preparedness of the younger generations in Malaysia, Singapore and the Philippines. The role of family support as important source of old-age protection in Asian countries was also investigated. Data were collected by means of interviews of working people aged 18 to 59 years and elderly people aged over 60 years in all 3 countries. The participants were: 250 working and 250 elderly people in Kuala Lumpur, Malaysia; 250 working and 250 elderly people in Manila, Philippines; and 206 working and 161 elderly people throughout Singapore. Venn diagrams were constructed to analyse the overlapping of availability of the various financial security protections for the 2 generations and their relative sizes among the 3 regions. The findings showed similar financial protection in all 3 countries. There was general agreement on the inadequacy of the formal old-age benefits, and many participants reverted to informal protections such as insurance, savings and family support. With the exception of Manila, reliance on the family support as perceived by the younger generations has lost its importance.

Mohd, S., Ismail, N. A., & Senadjki, A. (2014). *Perception and preparation for old age: Case studies in Kuala Lumpur, Singapore and Manila*. Paper presented at the International Conference on Contemporary Economic Issues 2014: Stimulating Economic Growth, Improving Quality of Life & Enhancing Youth Involvement, 10-12 December 2014 (pp. 199–206). Kuala Lumpur.

It is commonly argued that old age protection schemes in many Southeast Asia countries are less developed as compared to the overall development of the nation. As such, familial support remains the number one source of old age protection, be it monetary or social support. Nevertheless, with industrialization and rural-urban migration on the rise, familial support is slowly losing its importance for old age protection. The objectives of this paper are twofold; namely, i) to compare and contrast the existing old-age protection plans in Malaysia, Singapore and Philippines; and ii) to determine views of the working population on retirement and retirement planning. The study interviewed the elderly and working population between the age of 18 - 54 years old in Kuala Lumpur, Singapore and Manila by using a structured questionnaire. In general, the study indicates that youth in all three major cities plan to shift away from traditional familial support for old age with support from other means such as personal savings and insurance. The major reason for the change in perception of familial support is inadequacy of retirement benefits provided by formal old-age programs currently available to their parents. Incidentally, youth in Manila still feel that familial support is highly needed for old age protection.

Mohd, S., Mansor, N., Awang, H., & Shamsulbahriah, K. A. R. (2016). *Population ageing, poverty and social pension in Malaysia*. In *Revisiting Malaysia's Population-Development Nexus: The Past in its Future* (pp. 151–170).

In reviewing the situation in Malaysia, this chapter provides a snapshot of the country's ageing population. It then addresses issues relating to social security and attempts to estimate the financial cost of a comprehensive social pension scheme and quantify its potential role in alleviating poverty among the older people in Malaysia.

Mohd. S., Senadjki, A., & Mansor, N. (2017). *Living arrangements of elderly: Evidence from Household Income Expenditure Survey*. *Journal of Population Ageing*, 10(4), 323-342.

An increase in the number of elderly has many social implications and demands from a nation to ensure that their well-being and welfare are well taken care of. The purpose of this paper is to determine the factors influencing living arrangements for the elderly in Malaysia. The traditional notion that children will have to take care of their parents when they grow old is slowly changing due to urbanization and high cost of living. We see that more and more of the elderly are independently taking care of themselves. The 2009 Household Income Expenditure (HIES) survey data was used to understand the living arrangements of Malaysia's elderly population. The study found that 64.17 % of elderly co-resided with at least one adult child, indicating that familial support was still important despite modernization. Almost a quarter of the elderly live by themselves, either with spouse only (17.94 %) or lived alone (6.18 %). A multinomial logistic regression was performed to understand the factors influencing the living arrangements of the elderly. Predictive probability was run to compute the marginal change in the probability of living arrangement. It is predicted that male elderly and elderly who lived in rural area are more likely to live alone while older and Chinese

elderly are more likely to co-reside with an adult child. As would be expected, still married elderly is more likely to co-reside with their spouses. Elderly who is still working and having received at least primary education is least likely to co-reside with an adult child.

Mohd. S., Senadjki, A., & Mansor, N. (2016). Trend of poverty among elderly: Evidence from Household Income Surveys. *Journal of Poverty*, 1-19.

Elderly poverty is a major concern because of the changing in demographic pattern and the fact that elderly people have limited capacity and capability to prolonged employment. This article investigates poverty incidence among people who are elderly and nonelderly in Malaysia and analyzes the factors influencing elderly poverty. This article uses household income surveys of 2009 and 2012. Data indicates that poverty incidence among elderly heads of households is relatively low. Elderly poverty is high among elderly's female head of household, other marital status, rural area, no or informal education, live alone, not working and in states whose main economic activity is agriculture.

Mok, T. Y., Gan, C., & Sanyal, A. (2007). The determinants of urban household poverty in Malaysia. *Journal of Social Sciences*, 3(4), 190–196.

Since independence in 1950s Malaysia has been recognized as one of the more successful countries in fighting poverty: head count ratio came down to 5.7% by 2004. However the recent process of rapid urbanization has led to an increase of urban poverty aggravated further by the 1997 Asian financial crisis. It is important to understand the nature and scale of urbanization, the various driving forces that affect it and the determinants of urban poverty as linked to this process. Our research identified the determinants of urban poverty in Malaysia using a logistic regression. A sample of 2,403 urban households from the 2004-05 Household Expenditure Survey (HES) had been used in this research. We first estimated the probability of households with specified characteristics to fall below Malaysia's official poverty line. Then we analyzed the sensitivity of the probability estimated to shift of the poverty line over a reasonable range. Results showed that human capital significantly reduced the chance of being poor while migrant workers are more prone to poverty. Household size, race and regions were also important determinants of poverty outcome in urban Malaysia. The findings had important policy implications for Malaysian government which had pledged to reduce overall poverty rate to 2.8% and eradicated hardcore poverty by 2010 under the Ninth Malaysian Plan.

Momtaz, Y. A. (2010). *Moderating effects of religiosity on predictors of psychological well-being among older Malay Muslims (Doctoral dissertation)*. Universiti Putra Malaysia, Malaysia. Retrieved from http://psasir.upm.edu.my/19676/1/IG_2010_2_F.pdf

Malaysia, an Islamic country in South East Asia, is experiencing the population aging phenomenon. The existing body of knowledge on the predictors of psychological well being, as one of the most important indicators of aging well, is limited to western cultures and with inconclusive findings. The overall purposes of this thesis were to identify factors contributing to psychological well-being as well as examine moderating effect of religiosity on the psychological well-being of elderly Malays. The sample for this study was a subset of 1415 older Malay Muslims, obtained from a cross-sectional survey entitled "Patterns of Social Relationship and Psychological Well-being among Older Persons in Peninsular Malaysia"

which conducted from 2007 to 2009. Data analysis was conducted with “The Statistical Package for Social Sciences” (SPSS 13) and the “ModGraph-2” software program. A multiple regression analysis and two 4-step moderated hierarchical regression analyses were used to test hypotheses. The mean psychological well-being score of the respondents was 62.3 (SD=22.54). Majority of the respondents (66.1%) reported good psychological well being. Using multiple regression analysis a significant model emerged ($F(11, 1402) = 23.96, p \leq .001, R^2 = .16$), where social support and physical health as well as age, household income, sex, and marital status significantly contributed to the prediction of psychological well being. Next, two 4-step moderated hierarchical regression analyses were conducted to examine the moderating effects of religiosity. The first 4-step moderated hierarchical regression analyses revealed that social religiosity ($Beta = .07, p \leq .01$) and personal religiosity ($Beta = .06, p \leq .05$) significantly moderate relationship between physical health decline and psychological well being. The second 4-step moderated hierarchical regression analyses revealed that only social religiosity ($Beta = .07, p \leq .01$) statistically moderates relationship between social isolation and psychological well being. The results provide both theoretical and practical implications. Theoretically, findings supported and extended the Social Production Function Theory of psychological well-being by adding religiosity as a moderating factor to attenuate negative effects of age related changes on psychological well-being in later life. From the practical perspective, social and health policy makers should pay special attention and provide opportunities to vulnerable elderly groups to poor psychological well-being including older women, widowed, the poor, socially isolated, chronically ill older persons, and the oldest old. Another important practical implication is that social workers, counselors and other mental health professionals working with older persons should integrate religiosity as an important resource into their therapeutic work for the development and maintenance of psychological well-being of older persons facing age related problems.

Momtaaz, Y. A., & Ibrahim, R. (2010). Effects of chronic comorbidity on psychological well-being among older persons in Northern Peninsular Malaysia. *Applied Research in Quality of Life*, 5(2), 133–146. <https://doi.org/10.1007/s11482-010-9098-2>

Comorbidity is found to be more prevalent among older people and increases the need for health care. This study examined the effects of chronic comorbidity on psychological well-being of elderly people. A cross-sectional, descriptive study among Northern Malaysians was conducted, involving 385 older people aged 60 years and above randomly selected through multistage random sampling. All respondents completed a questionnaire booklet containing socio-demographic characteristics, self-reported chronic morbidity, and WHO-5 Well-Being Index. Findings of this study demonstrated the prevalence and the mean morbidity were 77.7% and 1.62 (SD=1.48), respectively. The mean score for the psychological well-being was 57.96 (SD=22.97). Results of multiple regression analysis indicated psychological well-being is negatively affected by the number of concurrent chronic conditions. The results also showed that chronic comorbidity has the most negative effect on psychological well-being. Therefore, it is important to identify mediating factors and coping strategies that might improve psychological well-being of elderly people with coexisting morbid conditions.

Momtaz, Y. A., Hamid, T. A., & Ibrahim, R. (2014). Gastritis may boost odds of dementia. *American Journal of Alzheimer's Disease & Other Dementias*, 29(5), 452-456. doi: 10.1177/1533317513518654.

Given the high prevalence of dementia and its devastating consequences, identifying risk factors for dementia is a public health priority. The present study aims to assess whether gastritis increases the odds of dementia. The data for this study, consisting of 2926 community-dwelling older adults, were obtained from the National survey entitled "Mental Health and Quality of Life of Older Malaysians." Dementia was diagnosed using the Geriatric Mental State-Automated Geriatric Examination for Computer-Assisted Taxonomy. Prevalence of dementia was considerably higher among older adults with gastritis (29.5%) compared to those without gastritis (13.2%). After adjusting for age, gender, marital status, educational attainment, hypertension, stroke, and diabetes, gastritis was significantly associated with more than twice odds of dementia (adjusted odds ratio $\frac{1}{4}$ 2.42, $P < .001$, 95% confidence interval $\frac{1}{4}$ 1.68-3.49). The findings from this population-based observational study showing evidence that gastritis may increase the risk of dementia provide avenue for further inquiries into dementia.

Momtaz, Y. A., Hamid, T. A., & Ibrahim, R. (2013). The impact of mild cognitive impairment on sexual activity. *American Journal of Alzheimer's Disease & Other Dementias*, 28(8), 759-762.

The aim of this study was to identify the unique impact of mild cognitive impairment (MCI) on sexual activity among older adults. Data for the study were drawn from a national survey entitled the "Determinants of Wellness among Older Malaysians: A Health Promotion Perspective" conducted in 2010. According to the Mini-Mental State Examination education-adjusted cutoff points, 15.6% of the 1046 respondents were identified as having MCI. Older adults with MCI had a significantly lower level of sexual activity than the healthy cognitive group (chi-square $\frac{1}{4}$ 50.20, $P < .001$, 32.5% vs 62.3%). The results of 3-step hierarchical logistic regression model revealed that MCI is significantly associated with decreased sexual activity in community-dwelling older adults, over and beyond demographic factors, and age-related medical conditions affecting sexual activity (odds ratio 0.33, $P < .001$, 95% confidence interval 0.23-0.49). Findings from the present study support the significant role of cognitive functioning to perform sexual activity in later life.

Momtaz, Y. A., Hamid, T. A., & Ibrahim, R. (2013). Theories and measures of elder abuse. *Psychogeriatrics*, 13(3), 182-188.

Elder abuse is a pervasive phenomenon around the world with devastating effects on the victims. Although it is not a new phenomenon, interest in examining elder abuse is relatively new. This paper aims to provide an overview of the aetiological theories and measures of elder abuse. The paper briefly reviews theories to explain causes of elder abuse and then discusses the most commonly used measures of elder abuse. Based on the reviewed theories, it can be concluded that elder abuse is a multifactorial problem that may affect elderly people from different backgrounds and involve a wide variety of potential perpetrators, including caregivers, adult children, and partners. The review of existing measurement instruments notes that many different screening and assessment instruments have been developed to identify elders who are at risk for or are victims of abuse. However,

there is a real need for more measurements of elder abuse, as the current instruments are limited in scope.

Momtaz, Y. A., Hamid, T. A., & Ibrahim, R. (2012). Unmet needs among disabled elderly Malaysians. *Social Science & Medicine*, 75(5), 859–863.

Unmet need as a significant factor affecting quality of life in later life has recently received considerable attention in gerontological research. The main aim of this study was to identify the prevalence, predicting factors, and negative consequence of unmet need among older Malaysians. The findings may be useful to reduce unmet need and the burden of its adverse consequence. The sample for this study consists of 400 functionally disabled elderly people aged 60 and over was obtained from a large national survey. Unmet need was operationally defined based on Manton's (1989) criteria. The findings from the present study showed about 18.0% of functionally disabled older Malaysians suffer from unmet need. Logistic regression revealed that gender (being male) and chronic health conditions are statistically associated with increased odds of unmet need after adjusting for other possible risk factors. Further results indicated that unmet need statistically increases odds of fall as a negative consequence of unmet need. The high prevalence rates of unmet need among disabled elderly men and chronically ill older persons suggest that policy makers should pay more attention to this vulnerable group to achieve good quality of life. The implications and limitations of the present study are discussed.

Momtaz, Y. A., Hamid, T. A., & Yahaya, N. (2009). The role of religiosity on relationship between chronic health problems and psychological well-being among Malay Muslim older persons. *Research Journal of Medical Sciences*, 3(6), 188–193.

It is recognized that religiosity contributes to psychological well-being of older persons, however, effects of religiosity on psychological well-being older person with chronic health problems is lacking. This study aimed to examine the mediating effect of religiosity on the relationship between chronic health problems and psychological well-being among Malay Muslim older persons aged 60 years and over. Data for this study came from the national survey (PSRPWO) that employed a cross-sectional research design conducted from 2007 until 2008 in Peninsular Malaysia. Religiosity, psychological well-being and morbidity were measured using intrinsic/extrinsic revised scale, WHO-S well-being index and a checklist of 6 chronic health problems, respectively. In this study, the reliability test for WHO-S Well-Being Index revealed 0.84 Cronbach's alpha and 0.85 for the religiosity scale. Out of 1415 subjects examined in this study 51.0% were female and 49.0% male. The mean score for religiosity found 471 (SD 5.87). The mean of psychological well-being was 62.36 (SD 22.47). The mean number of chronic health problems computed was .3 (SD .33). The results of multiple regression analysis and Sobel-test ($t = -2.61, p < .01$) indicated that relationship between chronic health problems and psychological well-being is significantly moderated by religiosity. This study implies that religiosity is an important resource in improving psychological well-being of older persons with chronic health problems.

Momtaz, Y. A., Hamid, T. A., & Yusoff, S. (2012). Gastritis as a major risk factor for dementia in older adults. *Alzheimer's & Dementia*, 8(4), 138–139.

Dementia is a common and serious health problem that affects older adults. The present study aims to examine association between gastritis and dementia in later life. Data for this study were obtained from the National survey titled “Mental Health and Quality of Life of Older Malaysians”. The survey collected social and health information from 2980 randomly selected community-dwelling elderly people across Malaysia. The study diagnosis of dementia was based on the AGE-CAT-GMS algorithms. History of gastritis was assessed using self report method. Data analysis is carried out using the Statistical Package for Social Sciences (SPSS) version 19.0. The prevalence of dementia was considerably higher among elderly people with gastritis (29.5%) compared those without gastritis (13.7%). The findings from the multiple logistic regression analysis revealed an overall significant model (Model $\chi^2(8) = 253.87, P \leq .001$), where gastritis is significantly associated with increased odds of dementia (adjusted OR = 2.28, $P \leq .001$, 95% CI=1.60-3.26) after adjusting for history of hypertension, stroke and sociodemographic characteristics including age, sex, marital status, ethnicity, and place of residence. The results show gastritis as a major risk factor for dementia and call for health care professionals to be aware of the negative effects of gastritis in old age. It seems that gastritis results in deficiencies of iron and vitamin B12 which consequently may contribute to dementia.

Momtaz, Y. A., Hamid, T. A., Haron, S. A., & Bagat, M. F. (2016). Flourishing in later life. *Archives of Gerontology and Geriatrics*, 63(Supplement C), 85–91.

Flourishing is a relatively new concept in positive psychology that considers hedonic and eudaimonic aspects of well-being. The current study aims to identify the prevalence and socio-demographic and health factors associated with flourishing among older Malaysians. The sample for this study consisting of 2202 community-dwelling older Malaysians was obtained from a national survey entitled “Identifying Psychosocial and Identifying Economic Risk Factor of Cognitive Impairment among Elderly”, conducted from May 2013 to April 2014. Data analyses were conducted using the IBM SPSS Version 22.0 and AMOS Version 22.0. The average age of the respondents was 69.05 (SD = 6.24) years. Descriptive results showed that 50.1% of the respondents were flourishing in life, 36.3% were languishing, 8.4% were struggling, and 5.2% were floundering in life. The results of Multiple logistic regression analysis revealed that gender, employment status, level of education, having living children, and chronic medical conditions are significantly associated with flourishing. However, age, marital status, living alone, and economic status did not have much impact on flourishing. To the best of our knowledge, the current study is one of the first studies that conceptualizes and assesses flourishing among older adults in Malaysia. The findings from the present study make important contributions to the existing literature on well-being. It is suggested that health and social care professionals working with older adults adopt a comprehensive approach to identify and propel non-flourishing people toward flourishing in life.

Momtaz, Y. A., Hamid, T. A., Haron, S. A., Bagat, M. F., & Mohammadi, F. (2017). Prevalence of hypotension and its association with cognitive function among older adults. *Aging and Mental Health*, 1-6.

The negative effect of hypertension has overshadowed possible health problems associated with hypotension. The purposes of this study were to describe the prevalence of

hypotension in older adults and to determine the association between hypotension and cognitive function, after adjusting for possible covariates. The data for the study consisting of 1067 community-dwelling older adults were obtained from a national survey entitled "Identifying Psychosocial and Identifying Economic Risk Factor of Cognitive Impairment among Elderly", conducted in Malaysia. The hypotension was considered as blood pressure <120/75 mm Hg, measuring by standard mercury manometer. Data analysis was performed using the SPSS Version 22.0. The mean age of the respondents was 68.27 (SD = 5.93). Mean score of cognitive function as measured by MMSE was 22.70 (SD = 4.95). The prevalence of hypotension was 29.3%. The prevalence of cognitive impairment for hypotension group was 25.6%. Results of multiple linear regression analysis revealed that hypotension is negatively associated with cognitive function (Beta = -0.11, $p < .01$), after adjusting for age, gender, education, marital status, employment status, diabetes, heart disease, stroke and gastritis. The study showing hypotension is significantly associated with decreased cognitive function in later life, implies more attention to low blood pressure in old age.

Momtaz, Y. A., Hamid, T. A., Ibrahim, R., & Akahbar, S. A. N. (2014). Racial and socioeconomic disparities in sexual activity among older married Malaysians. *Archives of Gerontology and Geriatrics*, 58(1), 51–55.

Sexuality as an important part of life has not been well studied in Malaysia, particularly among older adults. The main aim of this study was to investigate the racial and socioeconomic differences in sexual activity among older married Malaysians. Data for this study consisting of 1036 older married adults aged 60 years and older were obtained from the nationwide community-based cross-sectional survey entitled "Determinants of Wellness among Older Malaysian: A Health Promotion Perspective", conducted in 2010. Data were analyzed using SPSS version 21 for Windows. The results showed that 57.3% (95% CI: 54.3–60.3) of the respondents (61.6% of men and 50.6% of women) had engaged in sexual intercourse during the last 12 months. The adjusted multivariate logistic regression analysis revealed that ethnicity and educational attainment were independently and significantly associated with sexual activity, after controlling for the possible confounding effects of chronic medical conditions and demographic characteristics. The findings from this study do support the notion that sexuality is a lifelong need and cultural teachings and formal education may have important role in maintaining the quality of sexuality in later life.

Momtaz, Y. A., Hamid, T. A., Ibrahim, R., Yahaya, N., & Abdullah, S. S. (2012). Moderating effect of Islamic religiosity on the relationship between chronic medical conditions and psychological well-being among elderly Malays. *Psychogeriatrics*, 12(1), 43–53.

Research has found that physical health decline in later life is associated with poor psychological well-being. This study aimed to examine the possible moderating effect of Islamic religiosity on the relationship between chronic medical conditions and psychological well-being. The sample for this study consisted of 1415 elderly Malay Muslims. It was obtained from a cross-sectional survey entitled 'Patterns of Social Relationship and Psychological Well-Being among Older Persons in Peninsular Malaysia', which conducted from 2007 to 2009, using a multistage stratified sampling procedure. Data collection was performed through face-to-face interviews. A four-step moderated hierarchical regression analysis using SPSS software for Windows and the 'ModGraph-2' software program was used

to test the hypothesis. Results of bivariate analysis showed, at certain levels of chronic medical conditions, older persons with a high level of religiosity reported significantly higher levels of psychological well-being compared to their counterparts with a low level of religiosity. Four-step moderated hierarchical regression analysis revealed that the negative effect of chronic medical conditions on psychological well-being is reduced by both personal and social religiosity ($\beta = 0.07, P \leq 0.01$), after controlling for selected sociodemographic factors. Taken together, these findings indicate that the depressogenic effect of physical illness is decreased by religiosity in chronically ill elderly people. The implications and limitations of the current study are discussed and recommendations for future research are proposed.

Momtaz, Y. A., Hamid, T. A., Ibrahim, R., Yahaya, N., & Chai, S. T. (2011). Moderating effect of religiosity on the relationship between social isolation and psychological well-being. *Mental Health, Religion & Culture, 14*(2), 141–156.

It is known that social isolation is negatively associated to psychological wellbeing. Hence, it is imperative to identify factors that may moderate this association. This study aimed to examine the moderating effect of religiosity on the relationship between social isolation and psychological well-being among a sample of 1415 community-dwelling older Malay Muslims age 60 years and over. The data for this study came from a national survey entitled Patterns of Social Relationship and Psychological Well Being among Older Persons in Peninsular Malaysia, which was conducted using a cross-sectional research design. Three scales namely WHO-5 Well-being Index, Revised Intrinsic Extrinsic Religiosity Scale, and Lubben Social Network Scale were utilised to measure psychological well-being, religiosity, and social isolation, respectively. A four-step moderated hierarchical regression analysis using SPSS (version-13) was employed to test moderating effect of religiosity. The results of this study demonstrated that religiosity significantly moderates relationship between social isolation and psychological well-being, after controlling for age, sex, marital status, level of education, employment status, household income, and place of residence. Based on the findings from this study, the possible educational and therapeutic implications are discussed.

Momtaz, Y. A., Hamid, T. A., Masud, J., Haron, S. A., & Ibrahim, R. (2013). Dyadic effects of attitude toward aging on psychological well-being of older Malaysian couples : An actor – partner interdependence model. *Clinical Interventions in Aging, 8*, 1413–1420.

There is a growing body of literature indicating that attitudes toward aging significantly affect older adults' psychological well-being. However, there is a paucity of scientific investigations examining the role of older adults' attitudes toward aging on their spouses' psychological well-being. Therefore, the present study aimed to examine the dyadic effects of attitude toward aging on the psychological well-being of older couples. Data for the present study, consisting of 300 couples aged 50 years and older, were drawn from a community-based survey entitled "Poverty among Elderly Women: Case Study of Amanah Ikhtiar" conducted in Peninsular Malaysia. An actor-partner interdependence model using AMOS version 20 (Europress Software, Cheshire, UK) was used to analyze the dyadic data. The mean ages of the husbands and wives in this sample were 60.37 years (± 6.55) and 56.33 years (± 5.32), respectively. Interdependence analyses revealed significant association between older adults' attitudes toward aging and the attitudes of their spouses (intraclass correlation = 0.59; $P < 0.001$), and similar interdependence was found for psychological well-being (intraclass correlation = 0.57; $P < 0.001$). The findings from AMOS revealed that the

proposed model fits the data (CMIN/degrees of freedom =3.23; goodness-of-fit index =0.90; confirmatory fit index=0.91; root mean square error of approximation =0.08). Results of the actor-partner independence model indicated that older adults' psychological well-being is significantly predicted by their spouses' attitudes toward aging, both among older men (critical ratio =2.92; $P<0.01$) and women (critical ratio =2.70; $P<0.01$). Husbands' and wives' own reports of their attitudes toward aging were significantly correlated with their own and their spouses' psychological well-being. The findings from this study supported the proposed Spousal Attitude-Well-Being Model, where older adults' attitudes toward aging significantly affected their own and their spouses' psychological well-being. The theoretical and practical implications of the findings are discussed.

Momtaz, Y. A., Hamid, T. A., Yahaya, N., & Ibrahim, R. (2010). Religiosity among older Muslim Malaysians: Gender perspective. *Journal of Muslim Mental Health*, 5(2), 210–220.

Gender differences in religiosity have been studied in non-Islamic countries and it has been noted consistently that women tend to be more religious than men. However, the role of gender in relation to religiosity is not clear among adherents of the Islamic faith. This study aimed to explore gender differences in religiosity among 1,415 ($n = 722$ women; $n = 693$ men) Muslim Malaysians aged 60 years and older. Data for this study came from a national survey. Patterns of Social Relationship and Psychological Well-Being Among Older Persons in Peninsular Malaysia (PSRPWO), which was conducted in peninsular Malaysia during 2007-2008. Religiosity was measured using 11 items from the Intrinsic/Extrinsic Religiosity Scale-Revised. In this study, the reliability test of the scale was established with Cronbach's alphas of 0.85. The Statistical Package for the Social Sciences (SPSS Version 13) was used in data analysis and was performed in two stages. First, gender differences in religiosity were assessed using t-test and bivariate correlations. In the second stage, a hierarchical regression analysis was utilized to examine gender differences in religiosity by controlling for household income, location of residence, marital status, and age. Independent t-test and bivariate correlations showed a significant mean difference in which older men were more religious than older women. In addition, the results of hierarchical regression analyses revealed that gender was a significant predictor of religiosity.

Momtaz, Y. A., Hamid, T. A., Yahaya, N., & Ibrahim, R. (2009). Widowhood and psychological well-being among older Malaysians mediating effect of social network. *The Indian Journal of Social Work*, 70, 375–390.

Previous studies in gerontology posit that widowhood significantly affects the psychological well-being of the elderly. This study examines the mediating effect of social network on the relationship between widowhood and psychological well-being. Data for this study consisted of 1,409 widowed and married older Malaysians. The results of a 3-step multiple regression analysis and Sobel-test ($t=-2.22$, $p<.05$) indicated that the negative effects of widowhood on psychological well-being is significantly mediated by social network.

Momtaz, Y. A., Hamid, T. A., Yusoff, S., & Ibrahim, R. (2013). Do depression and educational attainment mediate the association between ethnicity and dementia? *Gerontology, 59*(3), 206-212.

Research shows marked differences in the prevalence of dementia among different ethnic groups. However, there is a relative dearth of studies focusing on how ethnicity may influence dementia. The main aim of the current study is to test potential mediating effects of depression and level of education on the association between ethnicity and dementia. The sample for this study, consisting of 2,796 community-dwelling elderly people aged 60 years and older, was drawn from a cross-sectional national survey entitled 'Mental Health and Quality of Life of Older Malaysians'. The Malaysian adapted version of the Geriatric Mental State-Automated Geriatric Examination for Computer-Assisted Taxonomy was used to assess dementia and depression. Data analysis was conducted using IBM SPSS version 19. As expected, the result of the χ^2 analysis revealed significant ethnic difference in the prevalence of dementia ($\chi^2 = 58.05, p \leq 0.001$). The results of the mediational analyses revealed that depression ($Z = 4.05, p \leq 0.001$) and education ($Z = 2.78, p \leq 0.01$) significantly, but partially, mediate the association between ethnicity and dementia. This suggests that disparities of depressive symptoms and education contribute to ethnic difference in the prevalence of dementia. These findings provide more insight into how ethnicity may influence an individual's vulnerability to dementia. The limitations of the study along with implications of the findings and needs for further study are discussed.

Momtaz, Y. A., Hamid, T. A., Yusoff, S., Ibrahim, R., Chai, S. T., Yahaya, N., & Abdullah, S. S. (2012). Loneliness as a risk factor for hypertension in later life. *Journal of Aging and Health, 24*(4), 696–710. <https://doi.org/10.1177/0898264311431305>

The present study aims to determine the impact of loneliness on hypertension in later life. Data for this study are derived from a sample of 1,880 older Malaysians via a cross-sectional survey entitled "Patterns of Social Relationships and Psychological Well-Being Among Older Persons in Peninsular Malaysia." Loneliness is assessed by the PGCMS item, "How much do you feel lonely?" Data analysis is carried out using the Statistical Package for Social Sciences (SPSS) version 19.0. Nearly one third of respondents report high level of loneliness. The overall prevalence of hypertension is 39% (95% CI = 36.9-41.3). Logistic regression, controlling for socio-demographic factors and several chronic medical conditions, shows that loneliness significantly increases likelihood of hypertension in later life (OR = 1.31, $p \leq .05$, 95% CI = 1.04-1.66). The results show loneliness as a major risk factor for hypertension and call for health care professionals to be aware of the negative physiological effects of loneliness in old age.

Momtaz, Y. A., Haron, S. A., Hamid, T. A., Ibrahim, R., & Tanjani, P. T. (2018). Body Mass Index (BMI) and cognitive functions in later life. *Current Alzheimer Research, 15*(2), 195-200. <https://doi.org/10.2174/1567205014666171004114246>

The findings from previous studies exploring the association between BMI and cognitive function in the elderly are conflicting. The purpose of the present study is twofold; to verify the association between BMI and cognitive functions and examine whether this association is impacted by height, when adjusted for possible covariates. The data for this study, consisted of 2287 older adults aged 60 years and above, drawn from a nationally representative population-based survey entitled "Determinants of Wellness among Older

Malaysians: A Health Promotion Perspective” conducted in 2009. The mean age of the respondents was 68.7 (SD=6.6) years. The average score of cognitive function, measured by MMSE was 24.5 (SD=5.6). About 40% of the respondents were classified as overweight. Results of the multiple linear regression analysis revealed a significant association between BMI and cognitive function (Beta=.10, $p<.001$). The Factorial ANCOVA revealed significant interaction effect between BMI and height on cognitive function ($F= 10.8$, $p<.001$), after adjusting for possible covariates. The findings from the current study indicating the positive association between BMI and cognitive function depends on height, therefore it is suggested that short people might be targeted for dementia prevention.

Momtaz, Y. A., Haron, S. A., Hamid, T. A., Ibrahim, R., & Masud, J. (2015). Does food insufficiency in childhood contribute to dementia in later life? *Clinical Interventions in Aging, 10*, 49–53.

Despite several studies attempting to identify the risk factors for dementia, little is known about the impact of childhood living conditions on cognitive function in later life. The present study aims to examine the unique contribution of food insufficiency in childhood to dementia in old age. Data for this study of 2,745 older Malaysians aged 60 years and older was obtained from a national survey entitled "Mental Health and Quality of Life of Older Malaysians" conducted from 2003 through 2005 using a cross-sectional design. The Geriatric Mental State-Automated Geriatric Examination for Computer Assisted Taxonomy was used to measure dementia. A multiple binary logistic regression using Statistical Package for Social Sciences version 21 was conducted to assess the unique effect of food insufficiency in childhood on developing dementia in old age. A notably higher prevalence of dementia was found in respondents who indicated they had experienced food insufficiency in childhood than in their food-sufficient counterparts (23.5% versus 14.3%). The findings from multiple logistic regression analysis revealed that food insufficiency in childhood would independently increase the risk of developing dementia in old age by 81%, after adjusting for sociodemographic factors (odds ratio =1.81, 95% confidence interval 1.13-2.92, $P<0.01$). Findings from the present study showing that food insufficiency in early life significantly contributes to dementia in later life highlight the importance of childhood living conditions in maintaining cognitive function in old age. It is, therefore, suggested that older adults with childhood food insufficiency might be targeted for programs designed to prevent dementia.

Momtaz, Y. A., Haron, S. A., Ibrahim, R., & Hamid, T. A. (2015). Spousal death anxiety in old age gender perspective. *Omega-Journal of Death and Dying, 72*(1), 69–80.

Anxiety toward one's own death has been extensively studied and conceptualized. However, the fear of death of others particularly of spouse in later life, which may be worse than individual's death anxiety, has not been investigated. The present research aims to study spousal death anxiety among Malaysian middle-aged and older couples. The study subjects, consisting of 300 couples aged 50 years and older, were obtained from a national cross-sectional survey entitled "Poverty among Elderly Women: Case Study of Amanah Ikhtiar" conducted in Peninsular Malaysia. Women reported significantly higher levels of spousal death anxiety than their partners $t(299) = 2.48$, $p < .05$. About 45% of older men and 52% of their spouses reported high spousal death anxiety. The results of two separate stepwise regression analyses yielded a two-variable model for men and a four-variable model for women. The most important concern of older men that may increase spousal death anxiety

was caregiving issues. For older women, financial security following widowhood was most important factor toward spousal death anxiety. The findings suggest that the majority of the older couples are prone to death anxiety of their spouse and factors contributing to the fear of death of spouse are different for men and women.

Momtaz, Y. A., Haron, S. A., Ibrahim, R., & Hamid, T. A. (2014). Social embeddedness as a mechanism for linking social cohesion to well-being among older adults: Moderating effect of gender. *Clinical Interventions in Aging, 9*, 863-870.

The positive effect of social cohesion on well-being in older adults has been well documented. However, relatively few studies have attempted to understand the mechanisms by which social cohesion influences well-being. The main aim of the current study is to identify social pathways in which social cohesion may contribute to well-being. The data for this study (taken from 1,880 older adults, aged 60 years and older) were drawn from a national survey conducted during 2008–2009. The survey employed a two-stage stratified sampling process for data collection. Structural equation modeling was used to test mediating and moderating analyses. The proposed model documented a good fit to the data (GFI =.98; CFI =.99; RMSEA =.04). The findings from bootstrap analysis and the Sobel test revealed that the impact of social cohesion on well-being is significantly mediated by social embeddedness ($Z=5.62$; $P<0.001$). Finally, the results of a multigroup analysis test showed that social cohesion influences well-being through the social embeddedness mechanism somewhat differently for older men than women. The findings of this study, in addition to supporting the importance of neighborhood social cohesion for the well-being of older adults, also provide evidence that the impact of social cohesion towards well-being is mediated through the mechanism of social embeddedness

Momtaz, Y. A., Ibrahim, R., Hamid, T. A., & Chai, S. T. (2015). Smoking and cognitive impairment among older persons in Malaysia. *American Journal of Alzheimer's Disease and Other Dementias, 30*(4), 405–411.

Previous studies have shown conflicting results on the association between smoking and cognitive function. This study aims to examine the relationship of smoking with cognitive function. Data for the study, consisting of 2553 older adults aged 60 years and older, were drawn from a nationwide household survey entitled "Determinants of Wellness among Older Malaysians: A Health Promotion Perspective" conducted in 2010. Current smokers had lower rates of cognitive impairment compared to never smokers (17.4% vs 25.9%), while cognitive function in former or ex-smokers was almost similar to that of the never smokers. Findings from multiple logistic regression analysis showed that current smokers were 37% less likely to be cognitively impaired, compared to the never smokers (odds ratio [OR] = .63; 95% confidence interval [CI]: .46-.86) while controlling for potential confounders. No difference in cognitive function was observed between former smokers and never smokers (OR = .94; 95% CI: .71-1.25). Although the findings indicated a negative association between cigarette smoking and cognitive impairment, we are unable to conclude whether this relationship is causal or affected by other unmeasured confounding factors, especially survival bias.

Momtaz, Y. A., Ibrahim, R., Hamid, T. A., & Yahaya, N. (2011). Sociodemographic predictors of elderly's psychological well-being in Malaysia. *Aging & Mental Health, 15*(4), 437–445.

Psychological well-being as one of the most important indicators of successful aging has received substantial attention in the gerontological literature. Prior studies show that socio-demographic factors influencing elderly's psychological well-being are multiple and differ across cultures. The aim of this study was to identify significant socio-demographic predictors of psychological well-being among Malay elders. The study included 1415 older Malays (60-100 years, 722 women), randomly selected through a multistage stratified random method from Peninsular Malaysia. WHO-Five well-being index was used to measure psychological well-being. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 13.0. Using multiple regression analysis a significant model emerged ($F(7, 1407) = 20.14, p < 0.001$), where age, sex, marital status, and household income were significant predictor variables of psychological well-being among Malay elders. However, level of education, employment status, and place of residence failed to predict psychological well-being. This study showed that the oldest old, elderly women, unmarried, and the poor elderly people are at risk for experiencing low psychological well-being. Therefore, they need special attention from family, policy makers, and those who work with elderly people.

Momtaz, Y. A., Ibrahim, R., Hamid, T. A., & Yahaya, N. (2010). Mediating effects of social and personal religiosity on the psychological well-being of widowed elderly people. *OMEGA-Journal of Death and Dying, 61*(2), 145–162.

Spousal death is one the most stressful life events that seriously affects the psychological well-being of widowed. This study examined the mediating effects of social and personal religiosity on the psychological well-being of widowed elderly people. The sample for this study was comprised of 1367 widowed and married elderly Muslims from Malaysia. Psychological well-being, religiosity, and physical health were measured using WHO-5 Well-being Index, Intrinsic Extrinsic religiosity scale, and a checklist of 16 physical health problems, respectively. Data analysis was conducted using the Statistical Package for Social Sciences (version-13). As expected, bivariate correlation analysis revealed that widowhood is statistically and negatively associated with psychological well-being. Results of multiple hierarchical regression analyses and Sobel test showed that only the indirect effect of widowhood through personal religiosity was statistically significant (Sobel = -2.79, $p < .01$). Sobel test for social religiosity was not significant (Sobel = -1.54, $p > .05$). The results of this study confirmed earlier studies, which found that widowhood negatively affects psychological well-being of elderly people. Overall, the findings show that the potential solace provided by religiosity can decrease the negative effects of widowhood on the psychological well-being of widowed elderly people.

Momtaz, Y. A., Yahaya, N., & Hamid, T. A. (2009). Determination of psychological well being status among older persons in Northern Peninsular Malaysia. *Indian Journal of Gerontology, 23*(2), 193–214.

To determine the psychological well-being status and identify predictor variables significantly contribute towards the psychological well-being among older persons in Northern Peninsular Malaysia. A cross-sectional predictive correlational design was used for

this study. The population comprised of 385 older persons with an average age of 69.3. Respondents completed a questionnaire booklet containing socio demographic variables; self-rated health, WHO-5 Well-Being Index, Intrinsic/Extrinsic-Revised Scale (I/ER), Duke Social Support and Stress Scale and WHODAS II 12. The Statistical Package for Social Sciences (version 11.5) was used for data analysis. A total of 62.6 percent of elderly persons had good psychological well-being status. Results of multiple regression analysis by enter method revealed that 46.3% of variance in psychological well-being was explained by all predictor variables of the study. In addition, stepwise multiple regression analysis indicated seven significant predicting variables and measures namely physical health, disability, religiosity, social support, gender, housing quality, and employment status contributed to psychological well-being. It is found that chronological age is not the cause of declining in psychological well-being so psychological well-being among older persons can be maintained and enhanced on condition that their social and physical needs are met well.

Moorthy, M. K., & Kai, N. Z. (2012). A study on the retirement planning behaviour of working individuals in Malaysia. *International Journal of Academic Research in Economics and Management Sciences*, 1(2), 14.

This cross-sectional study is an explanatory research intended to establish the relationship between the retirement planning behavior and the various factors affecting the retirement planning behavior. A total of 300 working individuals in the age group of 26 to 55 years had participated in this study. The objectives of this study are to examine the retirement planning behavior of working individuals. This study contributes a clear view through the symbolic interaction theory and several past relevant empirical studies. The results identified several significant variables in the prediction of working individuals' retirement planning behavior, including age, education level and income level. The findings of this research support the research model in which potential conflict in retirement planning, attitude toward retirement and retirement goal clarity are the significant predictors of retirement planning behavior. The results of this study have implications for working individuals to do early planning for retirement to enable them to have a strong financial base after retirement.

Moschis, G. P., & Ong, S. F. (2011). Religiosity and consumer behavior of older adults: A study of subcultural influences in Malaysia. *Journal of Consumer Behaviour*, 10(1), 8–17.

Although differences in consumption patterns across countries are often inferred to be the result of different cultural values and religious orientations, they raise issues of validity because of the many country-specific factors that may affect behavior. Furthermore, the effects of religiosity are confounded with those of variables that are associated with religiosity such as age. This paper examines the effects of religiosity on well-being and changes in consumer preferences of 645 adults age 50 and older living in different regions of Malaysia who were surveyed via personal interviews. The results confirm the positive effects of religiosity on well-being but show differences across the three main ethnic subcultures of Malaysia (Malays, Indians, and Chinese), and they provide little support for the hypotheses that the consistency of consumer brand and store preferences is influenced by religious values. It is suggested that the relationship between religiosity and consumer behaviors warrants additional research, focusing also on variables that relate to religiosity, method of analysis, and on mechanisms that link religiosity to consumer behaviors.

Motalebi, S. A., & Loke, S. C. (2014). Efficacy of progressive resistance tube training in community dwelling older adults: A pilot study. *International Journal of Gerontology*, 8(4), 213–218. <https://doi.org/10.1016/j.ijge.2013.12.007>

Falls are known to be one of the most prevalent public health problems in older adults. Currently, the aging population is growing fast. It is essential to use low cost, time-efficient exercise intervention programs for increasing strength, functional mobility, and balance in older adults, and subsequently decrease the risk of falls. This is a pilot study to assess the effects of a 12-week progressive resistance tube training session on the lower limb muscle strength, dynamic balance, and functional mobility in elderly people. Seventeen community dwelling older adults with a mean age of 69.2 ± 4.62 years were recruited among residents of a senior day care center in Malaysia to participate in this pilot study. Eight out of 17 participants completed their lower extremity resistance tube training sessions three times per week for 12 weeks. Lower limb muscle strength and functional mobility were tested by five times sit to stand test (FRSTST), and timed up and go test (TUG), respectively. Functional reach test (FRT) and four square step test (FSST) were applied to measure dynamic balance. *Results:* The results revealed significant increases in lower limb strength (30.3%), dynamic balance (29.6% in FRT and 15.3% in FSST), and functional mobility (27.1%) (all significant at $p < 0.05$). It was concluded that the use of a simple and inexpensive strength training program may improve leg muscle strength and consequently dynamic balance and mobility in elderly people and make them independent in their daily activities.

Moy, F. M., Chang, E. W. H., & Kee, K. W. (2011). Predictors of handgrip strength among the free living elderly in Rural Pahang, Malaysia. *Iranian Journal of Public Health*, 40(4), 44–53.

Reduced handgrip strength is an aging process that significantly influences the living activities of elderly. It is linked to premature mortality, disability and other health complications among elderly. Therefore, we aim to determine the associated predictors with handgrip strength among the free living elderly in Malaysia. This was a cross sectional study conducted in a rural state in Malaysia. A total of 434 elderly individuals performed handgrip assessment. Socio-demographic characteristics, medical conditions, occupational history, functional ability (ADL) and depression (GDS) were enquired. Anthropometric measurements (weight and height) were also obtained. Majority of the respondents were Malays with mean age of 67.9 ± 6.3 years. Maximum handgrip strength of males and females were 28.8 ± 9.2 kg and 18.9 ± 6.9 kg respectively ($P < 0.05$). The aborigines had significantly lower handgrip strength ($P < 0.05$) compared to Malays, Chinese and Indians. Handgrip strength was positively correlated ($P < 0.05$) with weight, height and ADL, while negatively associated ($P < 0.05$) with GDS for both gender. In the multivariate linear regression analysis; weight, height and race significantly predicted handgrip strength among both male and female elderly after adjustment for all potential confounders. However, GDS and ADL were only found to significantly predict handgrip strength among the male elderly; while age was only significant among the females. Our sample population has significantly lower handgrip strength than the Western counterpart. Weight, height and race significantly predict handgrip strength among both male and female elderly. GDS, ADL are only found to be significant in males while age was only significant among the females.

Moy, F. M., Darus, A., & Hairi, N. N. (2015). Predictors of handgrip strength among adults of a rural community in Malaysia. *Asia-Pacific Journal of Public Health*, 27(2), 176–184. <https://doi.org/10.1177/1010539513510555>

Handgrip strength is useful for screening the nutritional status of adult population as it is strongly associated with physical disabilities and mortality. Therefore, we aimed to determine the predictors of handgrip strength among adults of a rural community in Malaysia using a cross-sectional study design with multistage sampling. All adults aged 30 years and older from 1250 households were invited to our study. Structured questionnaire on sociodemographic characteristics, medical history, occupation history, lifestyle practices, and measurements, including anthropometry and handgrip strength were taken. There were 2199 respondents with 55.2% females and majority were of Malay ethnicity. Their mean (standard deviation) age was 53.4 (13.2) years. The response rate for handgrip strength was 94.2%. Females had significantly lower handgrip strength than males ($P < .05$). In the multiple linear regression models, significant predictors of handgrip strength for males were age, height, job groups, and diabetes, while for females, the significant predictors were age, weight, height, and diabetes.

Muhamad, M., & Kamis, M. (2002). *Policy and learning program for the Malaysian elderly: An analysis*. Paper presented at the 21st Annual Conference on Adult Education and the Contested Terrain of Public Policy, Canadian Association for the Study of Adult Education (CASAE) Conference, 30th May–1st June.

After more than four decades of gaining Independence, Malaysia is showing a trend of graduating to become an older nation. The population is undergoing an aging process. However, with an uncertain global economy, early retirement age, and better healthcare system, the growing older population has the potential to become a liability to the nation. Is it possible to turn this potential liability into an asset? Does the infrastructure for such turnover processes exist? If so, are they adequate? To address these questions, analysis on various documents related to the elderly in Malaysia was carried out. This paper presents the deliberation. The Asian Bureau of Adult Education (ASPBAE) partly funded the study.

Muhamad, M., & Merriam, S. B. (2000). Aging and learning in a non-western culture : The case of Malaysia. *Proceedings of the 41 St Annual Adult Education Research Conference*, 287–291.

A case study on older Malaysian men and women revealed that from their perspective, aging is seamless and a period of contentment. They are concerned about their health, spiritual, and community. They learn informally to meet the changing demands of their life. The learning is shaped by their cultural value.

Mukari, S. Z. M. S., Wahat, N. H. A., & Mazlan, R. (2014). Effects of ageing and hearing thresholds on speech perception in quiet and in noise perceived in different locations. *Korean Journal of Audiology*, 18(3), 112-118. doi: 10.7874/kja.2014.18.3.112

This study investigated the effect of ageing on speech perception in quiet and in noise, with noise directed from front, right and left. Sixty Malay native adults with normal or near normal hearing comprising of 20 young adults (21 to 39 years old), 20 middle aged (40 to 59 years old) and 20 older adults (60 to 74 years old) participated in this study. Their speech

perception ability was measured using the Malay Hearing in Noise Test (HINT) in four test conditions; 1) in quiet (HINT Q), 2) with noise from front (HINT NF), 3) with noise from right (HINT NR), and 4) with noise from left (HINT NL). Reception thresholds for sentences (RTSs) were measured in each of the aforementioned conditions using an adaptive method. The results showed that, 1) genuine age-related decline was found in speech perception performance in HINT (NF), 2) hearing threshold was a major determinant differentiating speech perception performance for HINT (Q) and HINT (NL) conditions, and 3) speech perception performance for HINT (NR) was determined by both age and hearing threshold. This study suggests that, in older adults, while hearing thresholds affect speech perception in quiet, other factors such as central auditory processing and cognitive functions might be more important determinant factors for speech perception performance in noise.

Musa, G., & Ong, F. S. (2010). Travel behaviour: A study of older Malaysians. *Current Issues in Tourism*, 13(2), 177–192.

The worldwide demographic shift towards population ageing has made older adults an attractive market segment not only for developed countries but also for developing countries such as Malaysia. This study explores travel behaviour among older adults living in Malaysia. Using non-probability quota sampling, 1356 older adults responded to the personal interviews carried out in Peninsular Malaysia. The main travel motivations were ‘to spend time with friends or family’ and ‘relaxation’, and the most preferred destinations were big cities. The majority of the respondents preferred to travel in tour groups. Their decision to travel was largely influenced by cost and recommendations from their family. During their holiday, common problems faced by them were tiredness, health problems and worries over safety and security. There were significant differences with respect to their travel behaviour, among the different ethnic groups and religions. Based on the results, this paper provides some management implications to marketers and other tourism organisations.

Naing, D. K. S., Dharanaj, P., Naing, W., Noor, M. T. M., & Ali, O. (2011). Magnitude of elderly male morbidities in selected hospitals of Northern Borneo, Sabah. *Journal of Men's Health*, 8 (Supplement 1), 63–66.

As the Malaysian population has reached up to 28.25 million in 2010 and life expectancy of Malaysia has attained up to 71.6 for males and 76.4 for females, a significant increase in elderly morbidity is expected in the coming years. State health department of Sabah, Malaysia, is trying hard to improve the health of its 3.5 million people in Northern Borneo. Kudat and Kota Belud hospitals are covering the medical care needs of about 81,000 and 93,000 populations respectively. To highlight the hospital burden borne by elderly morbidities in two selected hospitals of Northern Borneo, a review of in-patient records from the above hospitals was done for 2009. All male in-patients aged 60 and above were included. The study revealed the illness pattern of elderly males in two district hospitals. Although hypertension and heart diseases took the highest rank, malaria, tuberculosis and diarrhoea were still found to be a problem for elderly in both hospitals. The male admission for Chronic-obstructive pulmonary disease was significantly higher than female, whereas hospital fatality among male elderly was lower than their female counterparts. Universally, priorities are given to women and children, and hence men's health is often left out of the focus. This study presented a glimpse of male morbidities among elderly population of Sabah, Malaysia. However, results may not reflect the actual morbidity of elderly males in the community as

this study was a hospital based retrospective case review. Thus, we recommend a community based survey.

Narayanan, S. (2002). Old age support for private sector employees in Malaysia: Can the Employees Provident Fund do better? *Hitotsubashi Journal of Economics*, 43(2), 119–134.

The Employees Provident Fund of Malaysia is the largest provident fund scheme available to private sector employees. This paper argues that with the low retirement age, the trend towards population ageing, a longer life expectancy and the erosion of the informal safety net for the aged, the Fund's protection is becoming inadequate. This is aggravated by the fact that many permitted pre-retirement withdrawals undermine old age savings and the Fund's returns on investments are declining. To upgrade protection, the Fund must minimize pre-retirement withdrawals, revamp its investment and portfolio strategies and be supplemented by other measures including capital market reforms.

Nasir, M. H. N. M., Hassan, H., & Jomhari, N. (2008). The use of mobile phones by elderly: A study in Malaysia perspectives. *Journal of Social Sciences*, 4(2), 123–127.

Mobile phone has become essential part of personal and business life crosses all age and gender boundaries. The of mobile phone usage can potentially play a significant role in assisting older people in many ways especially in terms of maintaining social relationship, providing sense of safety and accessibility. However, older people seem to be the neglected user group in the design of mobile phone devices and services. Hence, this paper attempts to report the issues which are related to the design of mobile devices and services for the elderly aged 56 years old and above specifically in Malaysia's context. The findings can be served as a reference to the mobile manufacturer and service provider to put into account during designing mobile devices and services for older people. This research used a survey instrument to gather data from older people across all states in Malaysia with the total of 176 of them responded. The questionnaires were mainly distributed to older person who directly use mobile phones in their daily routine.

Ng, S. F., & Confessore, G. J. (2015). Learner autonomy and selected demographic characteristics as they relate to life satisfaction among older adults in Malaysia. *Educational Gerontology*, 41(5), 361–372. <https://doi.org/10.1080/03601277.2014.970422>

Malaysia currently has about three million senior citizens. United Nations statistics show that Malaysia is likely to reach aging nation status by the year 2035. It is important to address the issues that may have impact on the needs and concerns of this growing population. This study examined the relationships of life satisfaction, learner autonomy, and selected demographic variables of older adults in the state of Kelantan, Malaysia. A convenience sample of 111 adults, age 50 or older, participated in this survey. Statistical analyses assessed relationships of demographic variables to Learner Autonomy Profile and Life Satisfaction Scores. Findings reveal ethnicity, education level and living area correlate significantly with the learner autonomy scores. Only education level was found to significantly correlate with life satisfaction. Results indicate a significant relationship of learner autonomy scores and life satisfaction scores. Implications for practice and recommendations for further study and public policy emphases are discussed.

Ng, S. T. (2012). Effects of quality of service and activities on life satisfaction of residents in nursing homes. *Wulfenia Journal*, 19(9), 153–163.

With the ageing of population and social changes, more and more older people are living in nursing homes in Malaysia. Yet there is still a dearth of research on institutional living arrangement among older Malaysians. This paper aims to examine the effects of quality of service, and number of daily activities on the life satisfaction of older persons living in nursing homes to provide some inputs for service providers to improve their services to cater to the needs of the residents. A survey was carried out in 2010 to solicit information from 173 residents of 24 nursing homes in the Klang Valley, the administrative, commercial and industrial hub of Malaysia. The finding shows that seven independent variables, age, sex, education, marital status, health status, quality of service, and daily activity participation, accounted for 22.6% of the variation in the life satisfaction. Quality of service is the most important predictor in the life satisfaction of residents, and hence it is crucial to have quality service in the nursing homes. Having recreational activities in the homes is also one of the ways to enrich the life of residents in nursing homes.

Ng, S. T., & Hamid, T. A. (2013). Effects of work participation, intergenerational transfers and savings on life satisfaction of older Malaysians. *Australasian Journal on Ageing*, 32(4), 217–221. <https://doi.org/10.1111/j.1741-6612.2012.00619.x>

To examine the effects of work participation, intergenerational transfer and savings on life satisfaction of community-dwelling older Malaysians. Data from the 1999 Survey on Perceptions of Needs and Problems of the Elderly on older persons aged 60+ were used. The life satisfaction score is constructed based on the 10 questions adopted from Life Satisfaction Inventory-A by Neugarten, Havighurst and Tobin. Multiple regression analysis is used to estimate the expected level of life satisfaction. Controlling for other variables in the model, respondents who provided and received assistance to/from children, with savings have significantly higher life satisfaction compared to their counterparts, while work participation does not have any significant effect on life satisfaction. Intergenerational transfer and savings are important predictors of life satisfaction. The interdependence between generations should remain and savings habit needs to be cultivated to ensure a higher life satisfaction in old age.

Ng, S. T., Hamid, T. A., & Tey, N. P. (2011). Perceived health status and daily activity participation of older Malaysians. *Asia-Pacific Journal of Public Health*, 23(4), 470–484.

This article investigates the influence of perceived health status on the daily activity participation of older Malaysians. Data from the Survey on Perceptions of Needs and Problems of the Elderly, which was conducted in 1999, were used. The negative binomial regression results show that older persons with good perceived health status reported more varieties of daily activity participation, especially among the uneducated and those with below-average self-esteem. The multinomial logistic regression model suggests that older persons with good perceived health status tended to engage daily in paid work only or with leisure activities, whereas those perceived to have poor health were more likely to engage in leisure activities only or leisure and family role activities. Promotion of a healthy lifestyle at a younger age encourages every person to monitor and take responsibility for their own health, which is a necessary strategy to ensure active participation at an older age, and thus improve their well-being.

Ng, S. T., Tey, N. P., & Asadullah, M. N. (2017). What matters for life satisfaction among the oldest-old? Evidence from China. *PLOS ONE*, 12(2), 1–16.

The world population is aging rapidly and the well-being of older people is of great interest. Therefore, this study investigates the determinants of life satisfaction among the oldest-old (i.e. individuals aged 80 or over) in China. We use the 2011/2012 Chinese Longitudinal Healthy Longevity Survey data (n = 6530) for this paper. Logistic regression is used to analyse the effects of socio-demographic, economic, health, instrumental activities of daily living, family and community factors on life satisfaction and depression among the oldest-old in China. Our analysis confirms the significance of many factors affecting life satisfaction among the oldest-old in China. Factors that are correlated with life satisfaction include respondent's sex, education, place of residence, self-rated health status, cognitive ability (using mini mental state examination), regular physical examination, perceived relative economic status, access to social security provisions, commercialized insurances, living arrangements, and number of social services available in the community ($p < 0.05$ for all these variables). Although life satisfaction is negatively associated with instrumental activities of daily living ($\beta = -0.068$, 95%CI = $-.093$ — $.043$), and depression ($\beta = -0.463$, 95%CI = $-.644$ — $.282$), the overall effect of self-rated health status is positive ($p < 0.001$). This confirms the primacy of health as the determinant of well-being among the oldest-old. Majority of the oldest-old in China rated their life satisfaction as good or very good. Our findings show that health and economic status are by far the most significant predictors of life satisfaction. Our finding on the primacy of health and relative income as determinants of well-being among the oldest-old, and the greater influence of self-rated health status over objective health measures is consistent with the findings of many past studies. Our results suggest that efforts should be directed at enhancing family support as well as health and social service provisions in the community to improve life satisfaction of older people.

Ng, T. H., Tay, W. Y., Tan, N. L. & Lim, Y. S. (2011). Influence of investment experience and demographic factors on retirement planning intention. *International Journal of Business and Management*, 6(2), 196–203.

This paper analyses the effect of demographic factors and investment experience on retirement planning intention. As noted in many discussions, issues surrounding retirement have emerged as one of the main topics in public debate, mainly because the world population continues to age. The loss of regular income during the golden years apparently becomes an obstacle for one to chase and realise his or her dream. Seemingly, post-working life is a completely new experience and the adaptation to this new living style is challenging especially with longer life expectancy. Recognising the importance of retirement planning, 300 structured questionnaires were administered in April 2009. The final sample consists of 216 after the account for non-replied questionnaires and the removal of incomplete data. Pertinently, Malaysia represents a unique platform for this research due to its multiracial cultures. Overall, the results of this research show that demographic characteristics affect behavioural intention, i.e. marital status, age, and income level. Investment experience is another factor reported to have significantly affected retirement planning intention in this study.

Ng, T. P. (2016). Cognitive health of older persons in longitudinal ageing cohort studies. *Sains Malaysiana*, 45(9), 1351-1355.

Dementia poses a major global burden of care to society and health systems in ageing populations. The majority (over 60%) of persons with dementia in the world are found in Asia and developing countries with rapid rates of population ageing. Improving and maintaining the cognitive health of older persons is vital to national strategies for dementia prevention. Increasing numbers of population-based ageing cohort studies in the past decade have provided a better understanding of the factors that contribute to cognitive function and decline in old age. The roles of major demographic, psychosocial, lifestyle, behavioral and cardiovascular risk factors contributing to cognitive health were discussed using examples from the Singapore Longitudinal Ageing Studies. They include socio-demographic factors, particularly education and marital status, leisure time activity such as physical activity, social engagement and mental activities, psychological factors such as depression, cardiovascular and metabolic risk factors: obesity, diabetes, hypertension and dyslipidemia, and the metabolic syndrome, under-nutrition, low albumin, low hemoglobin, nutritional factors such as blood folate, B12 and homocysteine, omega-3 poly-unsaturated fatty acids, tea drinking and curcumin-rich turmeric in curry meals. These factors are found to be associated variously with cognitive functions (memory and learning, language, visuospatial, attention and information processing speed), rates of cognitive impairment and cognitive decline, or increased risk of developing MCI and progression to dementia.

Ng, T. P. (2010). The unparalleled challenge of aging populations. *Dementia and Geriatric Cognitive Disorders*, 30(6), 454-454.

Two thirds of the world's population live in the Asia-Pacific region, where the population is aging rapidly. Of the estimated 24.3 million persons with dementia living today, most are found in rapid growth nations like India, China and the surrounding Western-Pacific and South-Asian countries [Ferri CP, et al: *Lancet* 2005;366:2112–2117]. Here the numbers of persons with dementia are expected to increase fourfold between 2001 and 2040. The burden of dementia with its major medical, social and economic challenges in Asian-Pacific countries is unparalleled in the world. As governments and societies rise to the challenges of ageing populations and dementia, are researchers in the region paving the way to help solve a global problem by providing information that guide policy decisions and clinical practice? The research published in this special issue shows that investigators in China, India, Japan, Korea, Malaysia, Singapore and Australia are indeed addressing research issues in dementia and cognitive disorders in the elderly population with vigor and ingenuity. The cutting edge of research in Australia is as expected, but gratifying advances are being made in the rest of Asia, too.

The research topics in this issue span the range from basic clinical science to epidemiology and dementia care delivery. The ethnic and cultural diversity of the populations studied in this collection of works is particularly interesting and remarkable, and speaks of the diversity in economic, demographic, religious, cultural and geo-political characteristics in the countries where the research was conducted. As countries in the Asia Pacific make rapid strides in economic and social developments, their growing research efforts and their contributions will enrich the field of dementia research and further advance understandings and solutions globally.

Ng, Y. M. (2016). *Managing social support for childless older Malaysians who are poor*. (Doctoral dissertation). The University of Queensland, Australia. Retrieved from https://espace.library.uq.edu.au/view/UQ:414743/s4304725_phd_finalthesis.pdf

Although the vast caregiving literature shows that adult children generally play a key role in providing social support to ageing parents, research on how childless people manage to get their social support needs met in old age is quite limited. The emerging demographic and sociological literature on childlessness among older people, primarily located in western countries, gives limited attention to those who are poor, as well as childless. In countries such as Malaysia, with a strong policy focus on care provision by family and limited state provision for older people, how older childless people who are poor manage to get their social support needs met is of significant policy and research interest. To date, there is no research that focuses on this topic within this context.

The older population in Malaysia is heterogeneous, having experienced major social, economic and historical changes and development since the country gained independence in 1957. Older people who are childless and poor have remained largely “invisible” in the changing Malaysian social and policy contexts. The aim of this study is to explore the life experiences of childless and poor older Malaysians. The study provides an insight into the pathways to childlessness, the opportunities and constraints in life which resulted in them being childless and poor in older age, and, under these circumstances, how social support needs are managed in old age. A Life Course Perspective frames the study as this locates experiences in a social, historical, cultural and political context, is useful in understanding how the past shapes the future, and incorporates core concepts such as cumulative effects, linked lives, timing and agency.

Thirty-four childless and poor participants aged 62–82 years old of different gender, ethnic group and marital status were recruited and interviewed using semi-structured interviews. These interviews were conducted by the researcher in three languages, and participants were able to choose the language used. Recruitment was conducted in the welfare office in Kuala Lumpur. All interviews were translated and transcribed into English. The thematic analysis of the data identified themes and patterns in relation to childlessness, accumulated advantages and disadvantages, and managing social support needs. The overall story was developed using deduction and then induction processes closely linked to the conceptual framework that drove the study.

In all cases, a combination of individual, family, and structural constraints contributed to childlessness in old age. Poor family relationships in the family of origin, poverty and structural impediments to adoption, suggested that childlessness in older age is not simply an individual choice. In most cases, childlessness was affected by the environment and context in which they lived, as well as by the timing of transitions. Opportunities and constraints across their life course affected the accumulation of resources to provide for social support in old age. In most cases, characteristics such as gender, marital status and ethnic group have enabled or constrained the process of accumulation of resources. The ability to accumulate financial, housing and social networks resources was influenced by their educational opportunities and attainment, employment types, intergenerational poverty, historical events and policy constraints. For most, it was a picture of accumulated disadvantage. Those who were managing better had accumulated earlier advantages in the form of affordable and stable housing, which was linked to past employment, as well as having good relationships with

their social networks, such as family and friends. The analysis also revealed the importance of the state, religious and non-government organisations (NGOs) in the provision of assistance to support continued subsistence level living in the community.

Although the availability of resources and access to support is important, individuals' expectations and acceptability are also essential in managing needs. The older person's definition of what help is acceptable and the source of assistance matter. In some cases, where managing needs challenged self-identity and esteem, older people adjusted their needs rather than accepting assistance from the networks. A surprising finding, given the policy and cultural context, was the limited expectation of support from extended family members.

This study shows that for this group of older people, their lives are shaped by the structural context, the accumulation of advantages and disadvantages, and their agency. This study contributes to, and challenges, the literature regarding family support for older people, and draws attention to the experiences of this vulnerable group. The findings potentially inform the development of policies in Malaysia related to the development of resources for support in old age across the life course. This study also adds to the emerging literature on childlessness among older people and the use of Life Course Perspective in accounting for the experiences of older people in diverse social, cultural, historical and political contexts.

Ngeow, W. C., Dionysius, D. D., Ishak, H., & Nambiar, P. (2010). Effect of ageing towards location and visibility of mental foramen on panoramic radiographs. *Singapore Dental Journal*, 31(1), 15–19.

Mental foramen is an opening of the mental canal onto the lateral surface of the mandible. In this pilot radiographical study, in Malay population the effects of ageing towards the location and visibility of the mental foramen were determined. Most of the mental foramina were found to be located inferior to the apex of the second premolar. Non-visibility of the foramen was greatly increased in patients aged 50 years and above (Pearson Chi-square; $p = 0.00$). This finding may provide a guide to dental surgeries in Malay patients of different age groups.

Ngoh, H. J., Chen, S. T., & Harith, S. (2011). Anthropometric measurements among institutionalized elderly men in Northern Peninsular Malaysia. *Journal of Men's Health*, 8 (Supplement 1), S58–S62.

Ageing often accompanied by a decline in nutritional status significantly contributes to undernutrition. However, the anthropometric characteristics and the risk of undernutrition among institutionalized elderly men in Northern Peninsular Malaysia are not known. Therefore, the aims of this study are to investigate (1) the age differences of anthropometric characteristic in elderly men, (2) the magnitude of undernutrition among institutionalized elderly men in Northern Peninsular Malaysia, and (3) the use of body mass index and mid-upper arm circumference in detecting undernutrition. A cross-sectional study was conducted at four residential homes in Northern Peninsular Malaysia. A total of 135 male residents aged ≥ 60 years were recruited in this study. Anthropometric parameters of body weight, standing height, body mass index (BMI) and mid-upper arm circumference (MUAC) were measured according to standard techniques. Results showed that age-related declines were statistically significant in body weight, BMI and MUAC ($p < 0.05$), but not in standing height ($p = 0.067$).

Based on BMI < 18.5, 14.5% of the participants had undernutrition while 11.9% of the participants were malnourished (MUAC < 23 cm). Regression analysis revealed that there was a close relationship between BMI and MUAC ($r = 0.84$). A BMI of 18.5 was found to be equivalent to a MUAC of 22.9 cm. This study revealed that there was a risk of undernutrition among institutionalized elderly men in Northern Peninsular Malaysia. This study also showed that MUAC correlates closely with BMI and can be used alternately to evaluate malnourishment among institutionalized elderly men.

Ngoh, H. J., Sakinah, H., & Harsa Amylia, M. S. (2012). Development of demi-span equations for predicting height among the Malaysian elderly. *Malaysian Journal of Nutrition*, 18(2), 149–159.

This study aimed to develop demi-span equations for predicting height in the Malaysian elderly and to explore the applicability of previous published demi-span equations derived from adult populations to the elderly. A cross-sectional study was conducted on Malaysian elderly aged 60 years and older. Subjects were residents of eight shelter homes in Peninsular Malaysia; 204 men and 124 women of Malay, Chinese and Indian ethnicity were included. Measurements of weight, height and demi-span were obtained using standard procedures. Statistical analyses were performed using SPSS version 18.0. The demi-span equations obtained were as follows: Men: Height (cm) = $67.51 + (1.29 \times \text{demi-span}) - (0.12 \times \text{age}) + 4.13$; Women: Height (cm) = $67.51 + (1.29 \times \text{demi-span}) - (0.12 \times \text{age})$. Height predicted from these new equations demonstrated good agreement with measured height and no significant differences were found between the mean values of predicted and measured heights in either gender ($p > 0.05$). However, the heights predicted from previous published adult-derived demi-span equations failed to yield good agreement with the measured height of the elderly; significant over-estimation and underestimation of heights tended to occur ($p > 0.05$). The new demi-span equations allow prediction of height with sufficient accuracy in the Malaysian elderly. However, further validation on other elderly samples is needed. Also, we recommend caution when using adult-derived demi-span equations to predict height in elderly people.

Nikmat, A. W., Hawthorne, G., & Al-Mashoor, S. (2011). Dementia in Malaysia: Issues and challenges. *ASEAN Journal of Psychiatry*, 12(1), 95–101.

The number of people surviving until old age has been increasing worldwide. Reductions in both fertility and mortality rates, better living standards, nutrition and health care are claimed to be the key factors that increase the proportion of aged people within the population. Nevertheless, growing numbers of older adults also increases the susceptibility to diseases that commonly afflict the elderly, such as dementia. In this article, we discuss on the current issues of dementia in Malaysia and its challenge in providing a better management and services for this population. Review of literature by searching the databases CINAHL, SCOPUS, MEDLINE and PsychINFO from June 2010 to November 2010 was done on the issues involving dementia patients in Malaysia such as ageing trend, awareness and availability of services. Despite a limited number of studies on dementia in Malaysia, literature revealed the importance of acknowledging the issues and improving the services for the patients. Efforts should be made by the government and private sectors to promote healthy ageing in Malaysia.

Nor, N. H. M., Amin, N. F., Latif, A. A., & Arsat, M. (2017). Competencies framework for elderly caregivers in Malaysia based on 21st century skills and green skills. *Man in India*, 97(17), 367-380.

Malaysia needs skilled workers to achieve the vision 2020. The Malaysian government has created more job opportunities that require highly-skilled workers. The demographics of population ageing in Malaysia demand the knowledgeable, skilled and dedicated elderly caregivers. However, the main hindrance remains the shortage of trained and competent elderly caregivers in Malaysia. The problem that this study addresses is that to date research has not presented a competency framework for 21st-century job skills and green job skills for healthcare workers in the aged care industry. Therefore, the study will investigate the constructs and sub-constructs of the 21st-century job skills and green skills competency framework for elderly caregivers in the care and community services. The reason is that these skills will be needed and demand for the future human resources. The Iceberg Model by Spencer and Spencer (1993), 21st-century job skills and green job skills will be guided and presented as a conceptual framework for which this study rests. This study employed an exploratory sequential mixed method design comprising both qualitative and quantitative.

Noor, N. M., Alwi, A., & Iqbal, M. I. M. (2016). Development and effectiveness of a community-based intervention program for elderly women in Malaysia. *International Journal of Behavioral Science*, 11(2), 1-20.

The present study, using a health empowerment approach, developed a community-based intervention program for elderly women, and evaluated its effectiveness. The program covered five areas-physical health, cognitive functioning, affect and control, social functioning, and religion-and ran for 10 weeks, 90 minutes per week. Using an experimental design, a group of 18 elderly women were placed in the intervention group while another 18 served as controls (Group). Four well-being measures (memory and attention, religiosity, social engagement, and anxiety and depression) were used to assess the effectiveness of the program, before and after the program (Time). Qualitative interview data from participants and family members were also gathered to provide additional input on the effectiveness of the program. Results showed significant main effects of Time for religiosity and memory and attention. More importantly, results indicated significant Group x Time interactions for religiosity as well as memory and attention, with the intervention group reporting more changes in their mean scores over time compared to the control group. These quantitative findings were generally supported by the qualitative interviews. These findings are deemed beneficial in building women's personal and social resources.

Noor Hassim, I., & Rampal, K. G. (1994). Prevalence of hearing loss and hearing impairment among rural males in Selangor, 1993. *Medical Journal of Malaysia*, 49(1), 78-85.

A cross sectional study to determine the prevalence of hearing loss and hearing impairment was conducted on 286 male subjects from a rural area. The sample was chosen by using a simple random sampling method. Prevalence of symptoms of tinnitus, ear disease, ear drum perforation and infection of external auditory meatus was 19.0 per cent, 6.7 per cent, 3.5 per cent and 0.4 per cent respectively. Air conduction audiometry tests showed the prevalences of hearing impairment of the left, right and both ears (aged 15-30 years) were

5.9%, 8.8% and 0% respectively. The prevalence of hearing loss increased with age. The higher frequencies (> 4 KHz) appeared to be more affected than the lower frequencies.

Noran, N. H., Izzuna, M. G., Bulgiba, A. M., Mimiwati, Z., & Ayu, S. M. (2009). Severity of visual impairment. *Asia Pacific Journal of Public Health*, 21(1), 43–50.

This study aimed at evaluating the relationship between severity of visual impairment and depression among elderly Malaysians attending an eye clinic. This was a cross-sectional study. The study population included patients, aged ≥ 60 years who attended the Eye Clinic in University Malaya Medical Centre. Exposure measurement was based on ophthalmologic examinations by an ophthalmologist. Data on outcome were measured using the Geriatric Depression Scale. After adjusting for important confounders, severity of visual impairment either having low vision or blind were independent risk factors of depression. The odds of developing depression among elderly with low vision were 2 times more than those with normal vision, and elderly who were blind had almost 5 times the odds to be depressed compared with those having normal vision. Findings from this study suggest a positive relationship between the severity of visual impairment and depression among elderly Malaysians.

Norazizan, S. A. R. S., Roznah, M. Y., Hamid, T. A., Lina, G. S. C., & Rizal, H. M. (2006). Ageing-in-place: Towards an ergonomically designed home environment for older Malaysians. *Gerontechnology*, 5(2), 92–98.

The study of the home environment is a domain within the field of environmental gerontology that addresses issues related to ageing-in-place. Ageing-in place is one of the highest priorities of the elderly, and those who wish to do so should be enabled to remain in their own home as long as possible. An ergonomic approach to its designing would improve the relationship between the elderly user and his/her environment, thus encouraging ageing-in-place. The main objective of the paper is to describe the difficulties faced by older Malaysians in their present home environment. A total of 386 respondents currently residing in five urban locations were interviewed, mostly pertaining to factors associated with problems faced in their home. Six areas in the home were investigated to identify barriers that impede the performance of basic daily living for the respondents. Findings of research will be used to recommend adjustments to improve comfort and safety of the elderly. The basic tenet of the research is to put centre stage the idea of optimising the person-environment interaction of the older person, linking gerontechnology and ergonomics in supporting the older Malaysians to age-in-place.

Norlaily, H., Azidah, A. K., Asrenee, A. R., Rohayah, H., & Juwita, S. (2009). Proportion of dementia and its associated factors among elderly patients attending outpatient clinics of Universiti Sains Malaysia Hospital. *Medical Journal of Malaysia*, 64(2), 140–145.

The increase in life expectancy observed over the last decade has particular relevance for conditions such as cognitive decline and dementia. This is a cross sectional study to determine the rate of dementia and to identify its associated factors among 399 elderly patients attending outpatient clinics of Universiti Sains Malaysia Hospital. This study was conducted in 2 phases. In the first phase, the literate subjects were screened using validated Malay version of Mini Mental State Examination (MMSE) and the illiterate subjects with Malay

version of Elderly Cognitive Assessment Questionnaire (ECAQ). All subjects suspected to have dementia were selected for further evaluation in phase 2 of this study. The second phase involved full clinical examination in order to establish clinical diagnosis of dementia. The proportion of dementia in this study was 2.5% (10). Although history of exposure to pesticide ($p < 0.05$) and history of stroke ($p < 0.05$) were significant, they were not significant factors. These were because vast discrepancy in number between those exposed to pesticide and having stroke between dementia and non dementia.

Nur Asyura Adznam, S. Shahar, S., Rahman, S. A., Yusof, N. A., Arshad, F., Yassin, Z., Salleh, M., Samah, A. A., & Sakian, N. I. (2009). An action research on promotion of healthy ageing and risk reduction of chronic disease: A need assessment study among rural Elderly Malays, care givers and health professionals. *The Journal of Nutrition Health and Aging*, 13(10), 925–930.

Prior to the development of a healthy ageing and risk reduction of chronic diseases intervention package for older people in Malaysia, a need assessment study was conducted to identify nutritional knowledge status and information needs, as part of an action research process. A cross sectional study was conducted among 267 elderly people, 54 care givers and 66 health professionals in two rural areas of Peninsular of Malaysia (i.e Sabak Bernam, Selangor and Kuala Pilah, Negeri Sembilan). Information on nutritional knowledge was obtained from an interview based questionnaire for older subjects and caregiver and through self-administered questionnaire from the health professionals. Anthropometric and functional measurements were also conducted among elderly subjects. It was found that the elderly subjects had poor nutritional knowledge with 43.8% of them classified as having unsatisfactory nutritional knowledge, followed by moderately satisfactory (33.7%), very unsatisfactory (15.7%) and good (6.7%). Talks, counselling sessions with health professionals and electronic media such as television and radio were the most preferred nutrition education sources among elderly subjects and their care givers. The majority of health professionals studied (98.5%) had good nutritional knowledge. Although most of them (93.6%) were involved in management of the elderly, only 45.5% incorporated nutritional information component in this activity. Most of the health professionals used the guidelines for management of elderly patients (63.6%). However, nutritional knowledge was very minimal in these guidelines. Multiple regression analysis indicated that 'level education', involvement in 'social activities', presence of 'hearing problems', the Instrumental Activities of Daily Living (IADL) score, having previous 'nutritional information' and 'participation in healthy eating programme' were the major predictors of nutritional knowledge score among elderly subjects. Based on the above findings it is thus, imperative that an appropriate nutritional intervention package and programme be developed so as to help improve nutritional knowledge and subsequently the nutritional status of the rural elderly Malays.

Nur, A. M., Aljunid, S. M., Ismail, N., Haron, S. A., Shafie, A. A., Nur, N. M. Salleh, M. Koris, R., & Maimaiti, N. (2017). Provider costs of treating dementia among the elderly in government hospitals of Malaysia. *Malaysia Journal of Public Health Medicine*, 17(2), 121-127.

The increased use of health care services by elderly has placed greater pressure to an already strained health care resources. Thus, an accurate economic cost estimation for specific age-related diseases like dementia is essential. The objectives of this project are to estimate

costs of treating patient dementia among Malaysian elderly in the hospital settings. Two types of data were collected: Hospital costing data (using costing template) and patient clinical data (using questionnaire). The cost analysis for hospital setting was carried out using a step-down costing methodology. The costing template was used to organize costing data into three levels of cost centers in hospitals: overhead cost centers (e.g. administration, consumables, maintenance), intermediate cost centers (e.g. pharmacy, radiology), and final cost centers (all wards and clinics). In estimating the cost for each cost center, both capital cost (building, equipment and furniture cost) and recurrent cost (staff salary and recurrent cost except salary) were combined. Information on activities which reflects the workload such as discharges, inpatient days, number of visit, floor space etc., are gathered to determine an appropriate allocation factor. In addition, for each final cost center, the fully allocated costs are then divided by the total unit of in-patient days to obtain the cost of providing services on a per-patient per-day of stay basis, referred as unit cost. The unit cost is finally multiplied with the individual patient's length of stay to obtain the cost of care per patient per admission. All these steps were simplified by using the Clinical Cost Modeling Software Version 3.0 (CCM Ver. 3.0). The mean cost of dementia cases per episode of care was RM 12,806 (SD=10,389) with the length of stay of 14.3 (SD=9.9) days per admission. The top three components of cost for the treatment of dementia were the ward services 8,040 (SD=7,512), 62.78% of the total cost, followed by the pharmacy 1,312 (SD=1,098), 10.25% of the total cost and Intensive Care Unit 979 (SD=961), 7.64% of the total cost. A multivariable analysis using multiple linear regressions showed that factors which significantly influence ($p < 0.05$) the treatment costs of dementia cases were the length of stay ($p < 0.001$), followed by age ($p = 0.001$), case type severe ($p = 0.005$) and study location ($p = 0.032$). However, the factor length of stay is the tremendous parameter. In conclusion, data collection from selected hospitals as well as patient level data from medical record unit were successfully used to estimate the provider costs of hospital for the elderly with dementia disease. Results from the project will enable an assessment on the economic impact and consequences of cognitive impairment in an aged population. A cost quantification and distributive mapping of the burden of care can assist in policy implementation through targeted intervention for at-risk groups, which will translate into savings by means of delayed onset or progression of dementia.

Nurfatihah, O. A., Rahmah, M. A., & Rosnah, S. (2013). Informal social support and caregiver burden of caregivers of elderly with dementia, 8(5), 68–72.

Social support is a crucial factor in caregiving of dementia patients. The existence of informal social support has been shown to reduce the caregiver burden. However little is known about its existence and its influence on caregiver burden of dementia especially in local setting. Therefore the objectives of this study were to identify the association between social support and burden. A cross sectional study was done using validated questionnaires via guided interview was conducted among informal primary caregivers of dementia patients from five major hospitals in Sarawak, Malaysia. Hundred and forty-five informal primary caregivers were recruited. The overall mean score of social support was 57.1 (± 13.06) whereby 49% of caregivers perceived that they had good informal social support and 51% had poor informal social support. There are significant association between informal social support from family and caregiver burden ($p < 0.05$). These group of caregivers received all the informal social support from family, friends and significant others. However it was found that only informal social support from family was associated with caregiver burden.

Strengthening of family relationship, responsibility and development of formal social support services should exist in addition to help the caregivers whom lack of the social support.

Nurfatihah, O. A., Rahmah, M. A., Rosnah, S., Ismail, D., & Khadijah, S. (2013). Quality of life among caregivers of elderly with dementia and its associated factors, *I*(2), 7–13.

Dementia is a progressive illness and it imposed a great challenge for the caregivers. The daunting tasks have an impact to the quality of life of these caregivers. A cross sectional study was conducted in five major hospitals in Sarawak, Malaysia from June until December 2011. The objectives were to determine the quality of life among informal primary caregivers of elderly diagnosed with dementia and its associated factors. The respondents were informal primary caregivers of dementia patients who were on follow-up at the psychiatric clinic in five selected hospitals. They were recruited purposively from a list of elderly dementia cases. Guided interview was carried out either during clinic appointment or home visit for those who were not present during clinic follow-up. A set of questionnaire including socio-demographic characteristics, caregiving characteristics, patient characteristics and SF 36 questionnaire for measurement of quality of life was administered. Hundred forty five primary caregivers were interviewed. They had significant poor physical composite score (PCS) as compared to mental composite score (MCS ($p < 0.05$)). Behaviour problem among patients and being a Chinese carer were significantly associated with poor mental score ($p < 0.05$). Meanwhile being unemployed ($p < 0.05$) and taking care of severe type of dementia patients ($p < 0.05$) were significantly associated with poor physical score. Dementia caregivers, experiencing poor physical and mental health. It was associated with Chinese race, behaviour problems of the patients, employment status and type of dementia.

Nurul Shahida, M. S., Siti Zawiah, M. D., & Case, K. (2015). The relationship between anthropometry and hand grip strength among elderly Malaysians. *International Journal of Industrial Ergonomics*, 50, 17-25.

It is known that the ageing process will result in a decrease in anthropometric dimensions as well as loss of hand grip strength, which is natural among elderly people. Previous studies have shown that the decrease in anthropometric dimensions may influence hand grip strength of elderly people. Hence, this paper seeks to determine the relationship between anthropometric dimensions and hand grip strength among elderly Malaysians. A total of 112 elderly subjects aged 60 years and above residing in Petaling Jaya, Selangor, are recruited in this study. The subjects comprise 56 males (age range 60–79 years, mean: 66.88, SD: 5.35) and 56 females (age range: 60–82 years, mean: 66.98, SD: 5.16). In this study, 38 anthropometric dimensions are measured, along with hand grip strength. The anthropometric dimensions are measured using a professional standard anthropometry set whereas hand grip strength (in Newtons) is measured using a dynamometer. The mean values, standard deviations and percentiles are determined and the data are analysed by correlation analysis. The results show that there is a significant correlation between the following anthropometric dimensions (stature, sitting hip breadth, wrist circumference, hand circumference and heel ankle circumference) and hand grip strength. These findings of this study are indeed useful for product designers to design and develop ergonomic hand-held products for elderly Malaysians.

Ong, F. S. (2007). Health care and long-term care issues for the elderly. In C. H. Leng & S. Barraclough (Eds.), *Health Care in Malaysia – The dynamics of provision, financing and access*. Routledge Malaysian Studies Series.

Ong, F. S. (2002). Ageing in Malaysia: A review of national policies and programmes. In D. R. Phillips & Alfred C M Chan (Eds.), *Ageing and Long-Term Care: National Policies in the Asia-Pacific* (pp. 107–149). ISEAS, IDRC.

This report reviews the national policies on ageing. It provides a review of the situation of ageing in Malaysia from the perspectives of social security, health, and community care and social services; a review of policies and programs for the elderly; an examination of the main features of the policies and programs; an examination of the role of civil society or NGOs in providing inputs into the formulation of policy, and a discussion of the likely developments with respect to policies and programs for the elderly and suggest recommendations for the consideration of policy makers.

Ong, F. S., & Hamid, T. A. (2010). Social protection in Malaysia – Current state and challenges towards practical and sustainable social protection in East Asia: A compassionate community. In *Social Protection in East Asia – Current State and Challenges. ERIA Research Project Report 2009-9*, (pp. 182–219). Jakarta: ERIA.

The paper noted the decreasing labour force participation rate of older people as a result of a shift from the informal to formal sector, where workers are subject to mandatory retirement age. It also noted that about 30% or about 3 million workers are not covered by any formal retirement scheme. With population ageing, health care cost will be escalating, and Malaysia has yet to institute a national health insurance scheme. The formal social protection schemes include the civil service pension scheme, the EPF, SOCSO, Armed Forces Fund (LTAT) and Workers Compensation Scheme. In addition there are public welfare programs administered by the Ministry of Women, Family and Community Development. Issues of coverage, benefits level, sustainability, issues and challenges are discussed in the paper. It concludes with some recommendations for improving social protection.

Ong, F. S., & Moschis, G. P. (2009). Stress, coping, and well-being: A study of ethnic differences among older adults. *Journal of International Consumer Marketing*, 21(3), 219–229.

The present research builds on findings of recent studies, which suggest to marketers the value of understanding consumers' experience of and responses to life-changing events. This article reports the results of a large-scale survey in Malaysia, a country comprised of diverse cultures. We examine how consumers of the country's three main ethnic subcultures (Malays, Chinese, and Indians) of different religions (Muslims, Buddhists, and Hindus respectively) differ in consumption activities in response to stress-induced life events. Specifically, we examine cultural differences in emotion-focused coping responses to stress as well as the consequences of these responses to consumers' well-being. We find that the three ethnic groups, which differ with respect to their degree of religious commitment, also differ with respect to their employment of emotion-focused strategies. Some moderating effects of emotion-focused coping responses to stressful life events are noted, and implications of findings are drawn for marketing practitioners and consumer researchers.

Ong, F. S., & Phillips, D. R. (2007). Older consumers in Malaysia. *International Journal of Ageing and Later Life*, 2(1), 85–117.

The main objective of this study was to understand the concerns and problems faced by older people in an industrializing middle-income country, Malaysia, in their process of acquiring products to meet their everyday needs. Respondents aged 55 and over were interviewed in eight states throughout Peninsular Malaysia providing 1356 usable questionnaires; two-thirds from urban and one-third from rural areas. Education, health status, and life satisfaction were recorded. Service patronage behaviour was examined for four main categories of commonly-sought consumer goods: groceries, health supplements, apparel, eating outlets, plus selected services (public transport, vacation packages and financial services). The findings showed that older adults in Malaysia are rather discerning consumers. Many respondents are price conscious and have developed consumer attitudes with regard to attitude of staff and assistance rendered. Many display a good ability to discriminate and to select, especially on the basis of price and durability of products and many appear to be acting as effectively as consumers in any other age group.

Ong, F. S., & Philips, D. R. (2003). Stress, resources, and life satisfaction among older adults in Malaysia. *Hallym International Journal of Aging*, 5(2), 111–129.

This article examines the relationships between chronic stress and depression, and between chronic stress, depression and life satisfaction among older adults in Malaysia. In addition, the effect of social support and health as resources is examined. Although research in the past has found that health could also be a consequence of a change in life stage, this study has limited the effect of health as a protective function. In addition, the effect of demographic variables: age, gender, and race, is tested to see if significant differences exist with respect to stress, depression, resources, and life satisfaction. Data analyses were based on a total of 645 responses collected from major urban areas in Malaysia. Research findings confirmed the hypothesized positive relationship between chronic stress and depression; and that chronic stress and depression were negatively correlated with life satisfaction. The hypothesized relationships between health and chronic stress, depression and life satisfaction were supported. Health was also found to have a mediating effect on chronic stress and life satisfaction. The hypothesized relationships between social support and chronic stress, depression and life satisfaction had mixed results. There was no evidence of the mediating effect of social support on chronic stress and life satisfaction. The three main racial groups in Malaysia differed significantly with respect to chronic stress, depression, and support received.

Ong, F. S., Kitchen, J. P., & Jama, A. T. (2008). Consumption patterns and silver marketing: an analysis of older consumers in Malaysia. *Marketing Intelligence & Planning*, 26(7), 682–698. <https://doi.org/10.1108/02634500810916663>

The purpose of this paper is to examine the expenditure patterns of grey or older consumers with comparisons among different demographic groups to establish important factors in terms of consumption behaviour. The findings are of relevance in the context of marketing to older consumers. Based on non-probability quota sampling, 1,500 older people from three ethnic groups in eight geographical regions in Peninsular Malaysia participated in the survey. Findings: Research results show that these consumers spent most on food, followed by rent, fuel and power in that order. These categories of items accounted for 67 per

cent of their monthly expenditure, leaving relatively little disposable or discretionary income for other potential purchase decisions. With an exception of items such as healthcare expenses, and food and beverage away from home, there were hardly any significant differences in terms of monthly expenditure patterns among the grey market in Malaysia. Limited to research in one developing country, i.e. Malaysia, whose population is showing aging patterns in the demographic mix, similar to those in advanced industrial/post industrial economies. The findings, and indeed the research approach, can be compared cross culturally. Illustrates the value and significance of demographic variables in analysing a complex societal phenomenon. Also indicates the need for marketing strategies targeted toward this growing sector of the Malaysian economy. The first paper to consider the marketing implications in research and practical terms to address issues of aging in developing economy. Research concerning older consumers (i.e. the grey consumer market) is growing in academic and managerial importance.

Ong, F. S., Laily, P., & Phillips, D. R. (2009). Empowerment among older consumers in Malaysia. *Hallym International Journal of Aging*, 11(2), 135–154.

Older people as consumers have tended to be a neglected market segment with needs assumed to be the same as other age groups. However, it is increasingly clear that older people, as consumers of both goods and services, can have somewhat different specific requirements, for life-stage and lifestyle reasons. While some markets are becoming more age-segregated in Western economies, there has been little age differentiation in middle-income economies, especially with regard to older consumers. This study of 387 respondents aged 55+ in Peninsular Malaysia investigated three potential groups of older consumers: those who become upset and complain; those who become upset but do not complain; and those without any unhappy consumption-related experiences. Consumer purchasing knowledge, understanding of rights, and redress-seeking were examined in the context of empowerment. About one-third of respondents had not experienced any dissatisfaction. Of those who had experienced an unhappy episode, 72% had engaged in various responses to seek redress. They had a higher level of understanding of consumer matters compared with the other two groups. Contrary to assumed learned helplessness, many older adults here could be described as empowered from the perspective of consumer complaint behavior. This engagement could be a positive factor in active and successful ageing. As the "silver market" develops in countries such as Malaysia, such evidence-based information will become valuable for producers, consumers, and regulators.

Ong, F. S., Lu, Y. Y., Abessi, M., & Phillips, D. R. (2009). The correlates of cognitive ageing and adoption of defensive-ageing strategies among older adults. *Asia Pacific Journal of Marketing and Logistics*, 21(2), 294–305.

The purpose of this paper is to test the relationship between cognitive age and the adoption of defensive ageing consumption activities and its effect on life satisfaction in an Asian context. The relationship between the antecedent variables of chronological age, biological age and transitional life events and cognitive age is examined. The study was conducted in Malaysia, an Asian country that is characterized as collectivistic. Data collection method used is convenience sampling method, using a sample of adults aged 40 years or older based on previous research. Measures used include cognitive age developed by Barak and Schiffman and validated by Wilkes. Life stage transitional events include a list of ten major

life events that respondents experienced in the past 12 months. Biological changes are summated index of the number of biological changes (e.g. lengthy hospitalization or rehabilitation, hearing impairment) adopted from Mathur and Moschis. Defensive ageing consumption activities include skin care products, health supplements, beauty treatment and exercising, that are commonly adopted to fight ageing. The paper finds that in the context of an Asian country, consumers view themselves to be several younger than their chronological age, consistent with past research. Biological changes, transitional life events and chronological age had a significant positive relationship with cognitive age, consistent with the findings of past research. To the extent that cognitive age was found to be positively related to transitional life events, regression analysis showed that life event was not a predictor of cognitive age, further contributing to the inconclusive evidence regarding the effect of life events on cognitive age. Research results supported the negative relationship between cognitive age and anti-ageing consumption behaviour. Study of this nature will help to shape marketers' approach to attract older consumers. Marketers should shift their focus away from regarding older consumers as old since older consumers tend to view themselves as younger than their chronological age. An understanding of how consumers perceive themselves in terms of their cognitive age is useful for segmentation. Knowing how older adults view "age" is useful for communication strategies. This paper examines the effect of cognitive age on defensive ageing consumption activities in an Asian country, a collectivist society. The defensive consumption strategies included in this study were a range of products were commonly known but not tested. It extends the research by looking at the effect of defensive ageing consumption activities on life satisfaction.

Ong, F. S., Phillips, D. R., & Chai, S. T. (2013). Life events and stress: do older men and women in Malaysia cope differently as consumers? *Journal of Cross-Cultural Gerontology*, 28(2), 195–210.

The study of major life events and their effects on well-being has considerable relevance for scientific disciplines and policy making in understanding the consumer behaviour of older people. There is evidence of differences in reactions to and coping with stress between males and females but relatively little knowledge about such gender differences amongst older people, especially in middle-income countries. This study of older Malaysians looked at both coping strategies and gender differences in reactions to stress when people are confronted with certain life events. Seventeen major life events were used in interviews with 645 respondents aged 50 years or older in five major urban areas in Peninsular Malaysia. The analysis showed older women tended to experience higher levels of chronic stress than older men. They also had more health problems, had lower levels of self-esteem and were less satisfied with life. Whilst the results showed little support for gender differences in coping behaviours, stress had a significant influence on the way older men and women change store preferences. A hypothesis that older women would use more emotion-focused coping strategies was not supported. Knowledge of how older Malaysians cope with life events and stress and especially in this instance with regard to consumption behaviour, is likely to be of considerable academic and policy related interest.

Ong, H. T., Oung, L. S., Ong, L. M., & Tan, K. P. (2010). Hypertension in a residential home for the elderly in Penang, Malaysia. *Medical Journal of Malaysia*, 65(1), 18–20.

A study of residents at the Silver Jubilee Home for the Aged was conducted to determine the prevalence, awareness and control of hypertension in this elderly community in Penang, Malaysia. Prevalence of hypertension was 36%, with 81% of patients being initially aware of this diagnosis. This relatively low hypertension prevalence rate may be because residents have a fairly sheltered lifestyle with less social stress and a daily routine that incorporates adequate exercise. Similarly, the high hypertension awareness rate compared to reported figures in the community may be because residents are more regularly monitored by the attending medical care-givers. At the beginning of the study, only 34% of hypertensive patients were well controlled with a blood pressure less than 140/90 mm Hg. This proportion rose to 53% at the end of study period. Compliance is better at a residential home because medication is served by their care-givers and cost is absorbed in this charitable organization. Our study suggests that hypertension awareness and control can be reasonable for the elderly in a residential home.

Onunkwor, O. F., Al-Dubai, S. A. R., George, P. P., Arokiasamy, J., Yadav, H., Barua, A., & Shuaibu, H. O. (2016). A cross-sectional study on quality of life among the elderly in non-governmental organizations' elderly homes in Kuala Lumpur. *Health and Quality of Life Outcomes*, 14(1), 6. <https://doi.org/10.1186/s12955-016-0408-8>

There is a rapid increase in the population of the elderly globally, and Malaysia is anticipated to become an ageing nation in 2030. Maintaining health, social participation, reducing institutionalization, and improving quality of life of the elderly are public health challenges of the 21st century. Quality of life among elderly in Elderly Homes in Malaysia is under researched. This study aims to determine the quality of life and its associated factors among the Elderly in Elderly Homes in Kuala Lumpur. This was a cross-sectional study among 203 residents aged 60 years or more in eight randomly selected Elderly Homes in Kuala Lumpur in September 2014. Stratified simple random sampling was used to select participants. Study instruments included World Health Organization Quality of Life Questionnaire-Brief Version (WHOQOL-BREF), Multidimensional Scale for Perceived Social Support, and a questionnaire for Socio-demographic variables. Data collection was by face to face interview. Univariate and Multivariate analysis were used to determine associations, and P-value <0.05 was considered statistically significant. The mean (Standard deviation) for the physical domain was 14.3 (± 2.7), 13.7 (± 2.5) for the psychological domain, 10.8 (± 3.4) for the social domain, and 13.0 (± 2.5) for the environment domain. Factors significantly associated with quality of life included age, gender, level of education, economic status, outdoor leisure activity, physical activity, duration of residence, type of accommodation, co-morbidities, and social support. This study confirms that multiple factors are associated with quality of life among elderly in elderly homes. Social support, chronic co-morbidities, gender and outdoor leisure activity were significantly associated with all the domains of quality of life. Among the four domains of quality of life, the physical domain had the highest score while the social domain had the lowest score. This emphasizes the need for more social support-related interventions in these homes.

Ooi, C. C. P., Loke, S. C., Zaiton, A., & Zaitun, Y. (2011). Cross-sectional study of older adults with type 2 diabetes mellitus in two rural public primary healthcare facilities in Malaysia. *Medical Journal of Malaysia*, 66(2), 108–112.

Knowledge of the characteristics of older adults with type 2 diabetes mellitus (T2DM) is indispensable for improvement of their care. A cross-sectional study in two rural public primary healthcare centres in Malaysia identified 170 actively engaged older patients with T2DM, with suboptimal glycaemic control and frequent hypoglycaemia. The prevalence of multiple co-morbidities, complications of T2DM, high cardiovascular risk, neurological, musculoskeletal and visual deficits suggested high risk of disabilities and dependency but not yet disabled. This short window for interventions presents as an opportunity for development of a more comprehensive approach extending beyond glycaemia control to risk management, preventing functional loss and continuity of social participation.

Othman, A. A., Yusof, Z., & Saub, R. (2014). Malaysian government dentists' experience, willingness and barriers in providing domiciliary care for elderly people. *Gerodontology*, 31(2), 136-144.

To assess Malaysian government dentists' experience, willingness and barriers in providing domiciliary care for elderly people. A descriptive cross-sectional study was conducted using a self-administered postal questionnaire targeting government dentists working in the Ministry of Health in Peninsular Malaysia. Seven hundred and eleven out of 962 dentists responded with a response rate of 74.0%. Only 36.1% of the dentists had experience in providing domiciliary care for elderly people in the past 2 years with mean number of visit per year of 1. Younger dentists below the age of 30 and those with confidence in providing the service were the most willing to undertake domiciliary care for elderly patients (OR=13.5, $p<0.05$). The 3 most reported barriers were patient's complex medical history (74.1%), patient's poor attitude towards oral health service (67.5%), and dentist's unfavourable working condition (64.4%). The majority of Malaysian government dentists had not been involved in providing domiciliary care for elderly patients. Apart from overcoming the barriers, other recommendations include improving undergraduate dental education, education for elderly people and carers, improving dentist's working condition, and introducing domiciliary financial incentive for dentist.

Othman, A. R., & Fadzil, F. (2015). Influence of outdoor space to the elderly wellbeing in a typical care centre. *Procedia-Social and Behavioral Sciences*, 170, 320–329.

Ageing population of Malaysia will continue to increase, hence accommodating their needs is imperative, as they will form a significant portion of the future society. The study was to identify and understand the need of having outdoor space in a care centre; how the elderly physically, emotionally, psychologically and socially behave towards their environment. There is a correlation between the wellbeing of residents of elderly care centre with a well-designed outdoor space. The investigation is expected to raise awareness amongst the elderly, public and even professionals regarding the significance and implication of having well-designed outdoor spaces at elderly care centre.

Paim, L., Masud, J., & Haron, S. A. (2012). Research on consumer well-being in Malaysia. *Journal of Family and Economic Issues*, 33(2), 227-230.

This research note provides an overview of consumer well-being research in Malaysia, and highlights a major research study on consumer well-being by Masud et al. (2010). Masud et al.'s data indicate that Malaysian consumers enjoyed their rights as consumers, held some level of acceptable consumer values, possessed reasonable levels of knowledge, and practiced good consumer principles. Nevertheless, some consumers indicated a low level of overall well-being. The data also revealed the need for strong support from government and market sectors to enhance the well-being of consumers in Malaysia. More studies on consumer well-being in Malaysia are suggested and universities and research institutes are urged to intensify their efforts to convince policy makers and grant providers to appropriate funds for research on consumer well-being in Malaysia.

Paim, L., Ong, F. S., & Sulaiman, H. (2012). Expenditure patterns of older consumers. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 99–123). Universiti Putra Malaysia: Institute of Gerontology.

It cannot be denied that older consumers have certain level of consumer literacy which can help them in market transactions. However, research have shown that even in developed nations such as the United States, the consumers are found to have low level of financial literacy (AARP: “A Report to the Nation on Consumers in the Marketplace,” 2004) as well as health literacy (Sofaer, 1999). According to research on the elderly consumers, the following aspects are essential and need to be addressed: high dependency, lower human capital and assets, poorer health, uncertainty of health, lower mobility, longer life expectancy, the ability to manage own household, have more time, reduce income and reduce consumption. The following section presents a review on demographic and economic profiles of the older consumers, especially in regard to consumer behavior, the expenditure patterns and consumer perception towards their understanding concerning consumer rights and responsibilities.

Panmial P. D., Minhat H. S., & Anita A. R. (2015). Factors associated with knowledge of ageing among healthcare related students in Universiti Putra Malaysia. *International Journal of Public Health and Clinical Sciences*, 2(4), 75-87.

With the global increase in elderly population, the quality of care given to older people must be improved. Also, the knowledge that healthcare practitioners and their students possess regarding the elderly is vital to the services provided. A cross-sectional study was employed using the proportional Stratified random sampling method encompassing 504 medical students and 64 nursing students. A validated guided self-administered questionnaire was used to collect data among year one to year five medical students and year one to year three nursing students, consisting of socio-demographic characteristics, Facts on Ageing Quiz 2 (FAQ2), filial responsibility, experience living with elderly, exposure to geriatric module. After data collection, only 519 responded (456 Medicine students and 63 Nursing students) bringing about a response rate of 91.4%. The respondents had good knowledge (74%) on ageing. Knowledge of ageing was found to be significantly associated with age ($X^2=8.622, p = 0.003$), year of study ($X^2=15.882, p = 0.003$), marital status ($X^2=7.532, p = 0.023$), cared for ill elderly at home ($X^2 =9.193, p = 0.002$), taken geriatric module ($X^2 =15.025, p = 0.001$), home visits ($X^2 =19.804, p = 0.001$), and nursing home visits ($X^2=15.943, p = 0.001$).

However, there was no predictor found for knowledge of ageing. The results of the study showed that the students had good knowledge of ageing and several factors influenced this good knowledge, nevertheless, further intervention programs should be considered as regards knowledge of ageing and geriatric modules in healthcare related programs in order to improve their future performance in practice.

Pee, N. C., Maksom, Z., & Norizan, A. R. (2014). Factor influencing the use of smart phone by Malaysian's elderly. *Journal of Theoretical and Applied Information Technology*, 59(2), 421–425.

The smart phone has become essential part of personal and business life across all age boundaries. The smart phone usage can potentially play a significant role in assisting the elderly in many ways especially in terms of maintaining social relationship, providing a sense of safety and accessibility. However, elderly seems to be the neglected user group in the design of recent smart phone interface and the penetration of the technology to the elderly are very low. Hence this paper attempt to report issues that are related to why this particular group of user aged 40 years old and above was influenced to own the smart phones and the data gathering was done specifically in Malaysia context. This research used an interview and survey instrument to obtain the data from the intended target group of user whom are using smart phones. The result indicates three main factors that influence the respondents to own their smart phone which is family encouragement, the use of mobile internet and social networking.

Phua, C. E., Bustam, A. Z., Yip, C. H., & Taib, N. A. (2010). Prognostic factors for elderly breast cancer patients in University Malaya Medical Centre, Malaysia. *Asian Pacific Journal of Cancer Prevention*, 11(5), 1205–1211.

Information about elderly breast cancer patients' outcome is limited. This study aimed to evaluate the treatment outcomes in women aged 70 and above with specific analysis on prognostic clinicopathological features and treatment modalities. This retrospective study examined breast cancer patients between 1st January 1994 and 31st December 2004 in UMMC. Survival analysis was performed using the Kaplan-Meier method and comparisons between groups using the log-rank test. Univariate and multivariate analysis on prognostic factors were carried out using the Cox's proportionate hazard model for patient demographics, and tumour and treatment factors. One hundred and thirty six patients were identified, with a median age at diagnosis of 75 years. Most had at least one co-morbidity (61.8%). Only 75.0% had a good performance status (ECOG 0-1). Mean tumour size was 4.4cm. Primary tumour stages (T stages) 3 and 4 were present in 8.1% and 30.1% of patients respectively, and 30.9% had stage III and 8.8% had stage IV disease based on overall AJCC staging. ER positivity was 58.1%. PR status was positive in 30.1%. Surgery was performed in 69.1% of the patients and mastectomy and axillary clearance were the commonest surgical procedures (50.7%). Some 79.4% of patients received hormonal therapy, 30.1% radiotherapy and only 3.6% chemotherapy. Nonstandard treatment was given to 39.0% of patients due to a variety of reasons. The cumulative 5 years overall, relapse free and cause specific survivals were 51.9%, 79.7% and 73.3% respectively. Performance status, T3-4 tumour, presence of metastasis, tumour grade and ER status were independent prognostic factors for overall survival. For cause specific survival they were T4 tumour, presence of metastasis and ER status. The 5 years overall survival rate was 51.9% and 41.8% of deaths were non-breast cancer related

deaths. Low survival rate was related to low life expectancy in this population. Locally advanced disease, metastatic disease and high ER negative rates play a major role in the survival of elderly breast cancer patients in Malaysia.

Phua, K. L. (2007). Greying Malaysians: Strategies for promoting and supporting healthy and productive ageing. *Journal of Community Health*, 13(1), 16–21.

Population ageing is inevitable in Malaysia as a result of declining fertility rates. Steps can be taken to face this challenge. These include ways to promote “healthy ageing” and “compression of morbidity” and ways to promote “productive ageing”, i.e., keeping the elderly economically and socially engaged. This article, based on a review of the literature, argues that it is illogical to force people into compulsory retirement at an arbitrary age when they can continue to contribute actively to society. Instead, ways can be devised to promote healthy ageing, prolonging independence and encouraging productive ageing through gradual economic and social disengagement of the individual depending on the individual’s physical health, mental health, contribution to society and personal inclination and preferences. Public policy in general and public health policy in particular can be designed or redesigned to help achieve this.

Phui, V. E., Wong, H. S., Suryati, Y., Goh, C. Y., Esther, T., Bee, B. C., Goh, C. H., Jothiswaran, N., Zawawi, S. N. A. S. A., & Jasmine, A. R. (2017). 131 Acute kidney injury in the elderly in Hospital Selayang: epidemiology and risk factors. *Kidney International Reports*, 2(4), S19–S20. <https://doi.org/10.1016/j.ekir.2017.06.069>

The aging kidney undergoes important anatomic and physiologic changes that increase the risk of acute kidney injury (AKI) in the elderly. Improvements in life expectancy resulted in aging population in Malaysia. Multiple studies have demonstrated that the elderly are more susceptible to developing AKI but data on elderly Malaysians is lacking. To determine the incidence and risk factors of developing AKI in elderly patients. This single-centre, prospective, observational study was performed on all patients who were admitted from 1st till 31st March 2017. Elderly was defined as individual aged 65 year or more at time of admission while AKI was defined as a raised serum creatinine (SCr) of at least 26.5 $\mu\text{mol/L}$ within 48 hours or 1.5 times increment from baseline within 7 days. Laboratory SCr results of all adult patients admitted during the study period were retrieved from the hospital Laboratory Information System (LIS). Demographic, patient characteristics and clinical data were collected for all adult patients. Results were analyzed using SPSS Version 23. Of a total of 4845 adult admissions during the study period, 874 (18.0%) admission involved the elderly. A total of 283 adults had AKI where 126 cases involved the elderly. The incidence rate of AKI among the hospitalized elderly was 14.4% compared to 3.9% in hospitalized adults aged less than 65 ($p < 0.001$). The mean age of elderly AKI was 74.8 ± 6.5 years with a male preponderance [81(64.3%)]. Malay accounted for 55 (43.7%) cases, followed by Chinese 53 (42.1%) and Indian 17 (13.5%). Comorbidities were common with 74(58.7%) having both diabetes mellitus (DM) and hypertension and 35 (27.8%) had chronic kidney diseases (CKD). The mean baseline SCr was $145.6 \pm 95.5 \mu\text{mol/L}$. The two most causes of AKI in the elderly were infection (39.7%) and hypovolemia (33.3%) and this is followed by obstructive uropathy (11.1%), cardiac (7.9%) and others (8%). Compared to elderly without AKI, elderly with AKI were older (74.7yrs vs 72.8yrs, $p < 0.001$) and had a longer duration of hospitalization (10.1 days vs 4.5 days; $p < 0.001$). The incidence of AKI in the hospitalized elderly patients

was 3.7 times higher than those aged less 65 years. More than half of the elderly AKI had both DM and hypertension and a quarter had CKD. Infections and hypovolemia resulted in AKI in 73% of cases. Older age and longer duration of hospitalization appeared to be associated with AKI in the elderly.

Pijukkana, K., & Sahachaisaeree, N. (2012). Graphical design and functional perception on technology-driven products: Case study on mobile usage of the elderly. *Procedia - Social and Behavioral Sciences*, 42, 264–270.

Three features-complexity of iconic, the visual limitation of the aged, and the interpretation of iconic symbols are investigated. The research finds that respondents are proved to be equally able to learn complicated level as younger users. With reading glasses, the elderly are able to visualize and understand simple icons as small as 5-10 mm, complicated ones as 30 mm, graphical ones with textual as 10-15 mm bright color for simple ones and cooler tone for complicated ones. 2D icons are for familiar objects while 3D and realistic ones are not. Textual representation could enhance the understanding of representation as well.

Poi, P. J. H., Forsyth, D., & Chan, D. K. Y. (2004). Services for older people in Malaysia: Issues and challenges. *Age and Ageing*, 33(5), 444–446.

There are many issues and challenges that face geriatric services in Malaysia including the recruitment, development and retention of key medical and paramedical staff. Providing an answer to all the challenges should incorporate the best aspects of the many models of healthcare delivery in the developed world. Malaysia will need to swiftly develop systems to cope with ageing population, at the same time recognizing any ethnogenic factors that will influence future health and social care needs (e.g. high prevalence of hypertension and diabetes, and falling birth rates). Other sociological factors also need to be considered.

Puteh, F., Radzuan, N. I. R. A., & Ghafar, N. S. S. A. (2011). New retirement policy and impact towards public sector employee retirement preparations: Malaysian perspective. *Proceedings of the 2nd International Conference on Business and Economic Research (ICBER 2011), 14-16 March 2011 (pp. 69–77). Langkawi Island, Kedah, Malaysia.*

When CUEPACS called for Malaysian Government to increase the retirement age from 56 to 60, many believes that the bold moves provides more rooms for the civil servants to have prudent financial security for the retirement preparation. On 1st July 2008, government has approved the raising of retirement age from 56 to 58 years old and it was gazetted in PKPA 6/2008 (Reference No: JPA/PEN/228/25/1/Jld 4). However, many research shows that there are mixture feeling between those who prefer to retire early and those who do not. This paper aims to look at the association between the effects of new retirement age policy with the variables. This study involves 200 public sector employees from Majlis Amanah Rakyat (MARA) Headquarter in Kuala Lumpur as our respondents using questionnaire. Our objectives are (1) we want to determine whether there are relationship between new retirement age with job performance, career advancement, financial security and also job satisfaction, (2) what is the level of perception among the public sector employees on the factors affected by the new retirement age policy. The findings show that there are positive relationship between the new retirement age with job performance, career advancement, financial security and job satisfaction. Job performance and job satisfaction shows a moderate

relationship with the value of 0.424 and 0.576 while career advancement and financial security shows a low relationship with the value of 0.256 and 0.388. High total mean score of career advancement (4.0286) and job performance (3.9075) shows that these two factors are highly affected by the new retirement age policy while financial security and also job satisfaction have moderate mean scores. We also found out that the percentage of civil servants that agree to the new retirement age (44%) is not much different from those who disagree (42%).

Rafiey, H., Momtaz, Y. A., Alipour, F., Khankeh, H., Ahmadi, S., Khoshnami, M. S., & Haron, S. A. (2016). Are older people more vulnerable to long-term impacts of disasters? *Clinical Interventions in Aging, 11*, 1791–1795.

Despite the growing interest in the study of disasters, there is limited research addressing the elderly population that lead to prejudiced beliefs that older adults are more vulnerable to disasters than younger adults. This study aimed to compare positive mental health between elderly and young earthquake survivors. Data for this study, consisting of 324 earthquake survivors, were obtained from a population-based cross-sectional survey conducted in Iran, 2015. The long-term effect of earthquake was assessed using the Mental Health Continuum-Short Form questionnaire. A one-way multivariate analysis of covariance (MANCOVA) using SPSS (version 22) was used in data analysis. Older adults scored significantly a higher level of overall positive mental health (mean [M]=34.31, standard deviation [SD]=10.52) than younger age group (M=27.48, SD=10.56, $t=-4.41$; $P,0.001$). Results of MANCOVA revealed a statistically significant difference between older and young adults on the combined positive mental health subscales ($F(3,317)=6.95$; $P,0.001$), after controlling for marital status, sex, and employment status. The present findings showing a higher level of positive mental health among elderly earthquake survivors compared with their younger counterparts in the wake of natural disasters suggest that advancing age per se does not contribute to increasing vulnerability.

Rahim, A., Amirah, N., & Samad, A. (2010). Accessible built environment for the elderly and disabled in Malaysia : Hotels as Case Studies. *Journal of Construction in Developing Countries, 15(2)*, 1–21.

In Malaysia, it has become of increasing importance to study ways to improve the level of accessibility in buildings for the elderly and disabled people in the built environment, especially in hotels and resorts. The methods used in this study to identify areas to improve are access audits, table research and interviews. The data from these studies are analysed using a descriptive analysis based on access audits, observations, plan analysis, photographs and questionnaires. Access audits were carried out in two hotels and resorts in July and November 2007 in selected areas of East Malaysia. The selected hotels and resorts were constructed in the 1980s; one is located at the countryside and the other in the city centre. The findings will allow the building provider to upgrade existing facilities in order to accommodate accessible built environment for the elderly and disabled people. This will allow the elderly and disabled people to move freely, safely and being more easily integrated with the society in areas of public building and public spaces.

Rahim, M. S., Yusof, M. A., & Ismail, M. S. (2011). The reporting of employee retirement benefits in Malaysia prior to FRS119, *International Journal of Business and Social Science*, 2(5), 249–258.

As a developing economy, Malaysian companies provide pension-like retirement benefits scheme to its employees along with a much simpler defined contribution scheme. However, disclosures of such plans are lacking and vary between companies. Moreover, some companies reported huge pension liabilities that would be difficult to sustain in longer terms with possibilities of curtailment of such plans in the future.

Rahim, N. A., Roslan, S. N. A., Amiruddin, S., Wan Yahya, W. R., & Sujud, A. (2009). Silence and the elderly in Malaysia. *International Journal of the Humanities*, 6(11), 95–100.

The elderly in Malaysia have not played a major role in the society. This is due to fact that the boom of ICT has made them felt insecure and decreased in level of confidence. Communication has gone down due to small gadgets like the mobile phones to computer. This study investigates the pattern in using ICT amongst the elderly in Malaysia. 60 elderly from two states in Malaysia participated in this study. A set of questionnaire was given to the elderly where the pattern of using the ICT would be found. This study too, investigates the language use while using the ICT. The words or phrases used were identified and listed and therefore helped with the set up of a module for the elderly in using the ICT. It is found that the elderly have high interactions while using ICT. It is hoped that this study will help all the elderly in the world in using the ICT to communicate with the world.

Rahim, N. A., Salleh, C. I., Sujud, A., Hamzah, Z. A. Z., Alias, N., Roslan, S. N. A., Roslan, A. M., Affendi, N. R., Su, N. C., Omar, S. Z., & Yacob, Y. (2008). Breaking the silence: ICT and the elderly in Malaysia. *Journal of the World Universities Forum*, 1(2), 125–128.

This study investigates the pattern in using ICT amongst the elderly in Malaysia. 60 elderly people from two states in Malaysia participated in this study. A questionnaire was given to the elderly where the pattern of using the ICT would be found. The words or phrases used were identified and listed. Interview sessions were carried out to find out the number and balance of interaction while using the ICT. The model used for the nature and balance of interaction was developed by Normaliza Abd Rahim (2005). The results found that the elderly have positive interactions while using ICT. It is hoped that this study will help all the elderly in Malaysia to use the ICT to communicate.

Rahim, N., & Mamat, R. (2009). Elderly and the mobile phones: Do they click? *International Journal of Interdisciplinary Social Sciences*, 3(11), 43–47.

This study investigates the pattern in using the mobile phones amongst the elderly in Malaysia. 60 elderly from a state in Malaysia participated in this study. A set of questionnaire was given to the elderly where the pattern of using the mobile phones would be found. This study too, investigates the language use while using the mobile phones. The words or phrases used were identified and listed and therefore helped with the set up of a module for the elderly in using the mobile phones. Interview sessions were carried out to find out the Nature, number and balance of interaction (Normaliza Abd Rahim, 2005) while using the

mobile phones. It is found that the elderly have high interactions in using the mobile phones. It is hoped that this study will help all the elderly in Malaysia in using the mobile phones to communicate with the world.

Rahimah, A. A. (2007). Grandparenting: Issues and challenges. *Akademika*, 70, 103-115.

Generally, discussions regarding family solidarity and relationships between generations have tended to focus on the relationships and care giving role of adult children to the elderly parents/ parents-in-law. However, studies have also shown that many older persons are themselves involved in activities both inside and outside the home and that they do contribute to the family as well as to the society. In short, support also flow from the elderly to their children and other members of the family in the form of goods, labour and services. One of the services provided by the elderly parents is caring for the grandchildren and grandparenting, that is basically raising their grandchildren in the absence of both the natural parents. Grandparents raising or caring for the grandchildren are nothing new. However, this is an increasing phenomenon within and outside the country and which needs to be understood and addressed. This article discusses the relationship of grandparents to their grandchildren as well as the care and support transferred to the grandchildren. It also briefly discusses the issues and challenges such care giving entails and are faced by the grandparents in their informal care role.

Rahimi, R., Ali, N., Md Noor, S., Mahmood, M. S., & Zainun, K. A. (2015). Suicide in the elderly in Malaysia. *The Malaysian Journal of Pathology*, 37(3), 259–263.

Suicidal feelings and a sense of hopelessness have been regarded as part of the ageing process more so in the context of being elderly and having physical difficulties. As older adults are the fastest growing population in the world, suicides among this population is also expected to increase. The authors retrospectively reviewed all cases recorded by the National Suicide Registry Malaysia (NSRM) for the year 2009. Suicide in victims 65 years and older totaled 23 in number and accounted for 7.1% of all suicides. All the cases were autopsied. The case records were retrospectively analyzed with respect to age, gender, ethnicity and method of death. Comparisons were also made between males and females, levels of education, presence of stressor and life events antecedent to suicide. The ages of these suicide victims ranged from 65 to 94 years. Men comprised almost 70% of the cases. The average age of the victim was 73 years. Hanging was the most common method of suicide, accounting for 56.5% of the cases. Other methods included jumping from height (13.1%), exposure to unspecified chemicals (13.1%), jumping/lying before moving object (4.3%), exposure to pesticides (4.3%) and injuring oneself using sharp object (4.3%). Death of a loved one, legal problems, financial problems and physical illness were the stressors identified contributing to the suicide act.

Rahmah, M. A., Aniza, I., & Che Engku Nor Bahiyah, C. E. M. (2013). Do elderly women in Malaysia go for mammogram screening? *Malaysian Journal of Public Health Medicine*, 13(2), 20–26.

Despite the debates of the benefits of continuing mammography screening among elderly women, studies in Malaysia have shown that the prevalence of breast examination declines after age 45 years and for mammogram per se, the prevalence of examination

increases until age of 64. This study aims to determine the prevalence of mammogram screening among elderly women in Hulu Langat, Selangor and its relationship with factors such as demographic factors, family history of breast cancer, perceived health status, perceived general psychological factor and lifestyle factors. Data used were from a cross sectional study of health status among community in Hulu Langat area by the Department of Community Health, Universiti Kebangsaan Malaysia carried out from the year 1998 till 2002. However this paper focused on the database involving elderly women age 60 and above. The sample population was 652. The mean (standard deviation) age was 67.17 (5.995). Only 8.3% of the elderly women claimed to ever had mammogram screening done. Hence, the prevalence of mammogram screening is still low among elderly women in Hulu Langat. Having family history of breast cancer ($p < 0.001$) and perceived positive psychological status ($p=0.003$) had shown significant associations with mammogram screening among them. It is therefore important for researcher to further look into the reasons behind this and qualitative exploration is highly recommended.

Rahman, M. S., & Hussain, B. (2014). Perceptual differences of older customers' to purchase from online: Malaysian Perspective. *International Journal of Business & Society*, 15(1), 171–190.

This paper aims to examine how older customers are differed their perception to purchase any products or services from online in Malaysian multiracial older generation's perspective. A total of 400 (235 males and 165 females) respondents response were collected by using mall intercept survey methods from the Klang Valley area in Malaysia. The statistical result showed that older consumer perception to purchase from online mostly influenced by the ease of use of the site followed by safety concern in their transaction. A major limitation lies in the self-reported nature of the survey used in this study. Future studies should be included with assessments such as observations or other-reported survey of the older customer's behaviors (male and female) separately of the subjects' of specific types of products or services. Given the substantial number of the elderly population in Malaysia this study will help online marketers to focus this segment which was previously unexplored by most of the researchers under Malaysian perspective.

Rahman, S. A., Zalifah, M. K., Zainorni, M. J., Shafawi, S., Mimie Suraya, S., Zarina N., & Wan Zainuddin, W. A. (1998). Anthropometric measurements of the elderly. *Malaysian Journal of Nutrition*, 4, 55–63.

Body composition was assessed in a group of 344 free-living elderly between 60 and 89 years by means of anthropometry. The height, weight and body mass indexes of the elderly were reduced with advancing age in both the males and females. Skinfold thickness measurements also declined with age. Overall, the female elderly had a greater tricep skinfold thickness but smaller mid-arm circumferences, mid-arm muscle circumference and mid-arm muscle area compared to the male.

Raja, G. (2012). Circumventing the marginalization of older citizens. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 225–257). Universiti Putra Malaysia: Institute of Gerontology.

There's lacking discussion on development as the focus on the position of elders in society is rare. The aim of the paper highlights the forces which create such marginalization and suggested ways of empowering elders in order to minimize the risks. From this study, this chapter will first consider the position of elders today compared to the less developed time, highlighting some worrying observations which do not bode well for the future. This study is given to the picture emerging from a broad-based research study in Sarawak. The data given has a deeper insight into older people's position and factors which put them at risk of being marginalized. It also discusses the emerging risk factors in a wider context and to help identify major forces which propel older people to the margins of society. Lastly, it is also given some suggestions on how to counteract such forces for the older citizens.

Ramely, A., Ahmad, Y., & Harith, N. H. M. (2016). Productive ageing: The opportunities and challenges faced by the labour workforce in Malaysia. *International Journal of Business, Economics and Law*, 11(3), 27–32.

In Malaysia, the victory of social and economic development, public health and modern medicine have attributed to the longer life expectancy of its people, thus resulting in an increase of the elderly population. Consequently, this situation propels Malaysia into becoming an aged nation by 2030, where it is estimated that 15% of its overall population comprises people aged 60 and above. Thus, in stimulating the philosophy of 1Malaysia - people first, performance now; optimising the well-being of the elderly has become one of the primary objectives of the government. Hence, the involvement of elderly in economic dimensions that concentrate on productive ageing urged by the government is immensely important. This concept paper reviews relevant literature on initiatives implemented by the government to increase the opportunities for elderly to be a constituent in Malaysian labour workforce by carrying out productive activities. Optimising and utilising the employment opportunities for the elderly is crucial in utilising human resources in this country alongside reducing burdens encircling them (e.g. monetary problems, isolated by family, and loneliness). Also, two exemplary countries, Japan and Singapore, in terms of on creating working opportunities for their elderly, it is highlighted as best practices in enhancing productive ageing in developed countries. These practices can be the good examples for Malaysia in implementing the same. Then, besides opportunities, this concept paper also focuses on the challenges, which act as barriers to healthy elders to participate in the labour workforce, which are inclusive of ageism and stereotyping. Lastly, this concept paper suggests a number of viable recommendations in enhancing productive ageing in Malaysia; simultaneously to promote their participation in society through employment.

Ramli, F. A. (2011). *Family caregivers of older people with mental health problems: an exploratory study in Kelantan, Malaysia* (Doctoral dissertation). The University of Queensland, Australia. Retrieved from <https://espace.library.uq.edu.au/view/UQ:266727>

Despite extensive literature on caregiving for older people and for people with mental health problems, little attention has been paid to those who provide care and assistance to older family members in need of support due to mental health conditions. Even more limited

has been the focus on such care in developing countries such as Malaysia. In terms of policy and practice their contributions remain unrecognised. In a context of global mental health problems, location, religion and culture are theorized as intersecting to impact on the meaning and practicalities of providing care to family members with a mental illness in Malaysia. In the Malay family context, culture and religion are important in framing the care of aged parents or spouses as well as reciprocity, obligation, respect and values inherited from their older family members. Yet, the impact of modernisation changes family structures and roles and puts pressure on caregivers in negotiating the systems between modern, traditional and religious views. The aim of this study is to explore and identify Malay caregivers' perspectives on their experiences of providing caregiving for older people with mental health problems in Kelantan, Malaysia, a rural and less developed state with fewer services available as well as a strong influence of culture and religion. The study provides the opportunity for participants to share views of caregiving of older people with mental health problems in the context of the role of family, community and government in helping to provide support and assistance to the caregiver and the care recipient. It looks at the intersections between formal and informal support systems. Participants were recruited through a psychiatric hospital to ensure that a care recipient has a diagnosis of mental illness. Fourteen Malay caregivers of older people diagnosed with schizophrenia, depression and bipolar disorder were interviewed using semi-structured interviews. As the researcher shares the same culture, language and religion, the Malay language was used as a medium of communication to ensure participants engaged in the study. All interviews were fully transcribed into the Malay language before being translated into English. All transcriptions were analysed using a thematic analysis supported by the qualitative software (NVivo8). Identifiable themes and patterns of experiences were reviewed to develop an overall story. Quotations from all participants are presented accordingly in the analysis to maintain rigor and trustworthiness. In conducting the research across cultures and languages, the researchers' journey with regards to translation and other matters is also discussed. A key issue discussed by all the participants is the need for other people to realize that looking after older people with mental health problems with minimal support and assistance is a challenging responsibility. Greater understanding of mental health problems rather than negative labelling is important for the caregiver. Despite all the positive and negative experiences faced by the caregivers, the family network, then network of friends and some local informal networks supported their roles although there were contested beliefs between traditional, religious and modern perspectives. The health care system is identified by the caregivers as a medium in playing and connecting with other agencies in supporting the caregiving. Caregivers address the need for appropriate support and resources to help them in managing and providing 'good quality care' to their mentally ill family member. In understanding the mental health problems, there were different meanings given by participants based on their cultural belief system. Getting started and organising the caregiving roles also differs according to their social background, family values and support, commitment, availability, practicality and the needs of the care recipient. Caregivers' religious beliefs/faith and Malay customs heritage are inseparable and became dominant when making meaning of caregiving for a mentally ill family member. Cultural values and religion shaped meaning and helped explain their caregiving experiences. Different views about the illness, including the causes and treatments and the way caregivers try to balance and integrate with traditional, religion and modern approaches influences their understanding of the mental illness as well. The traditional healer becomes the first choice in seeking help together with the religious healer. The psychiatric system provides support to both caregivers and their mentally ill family members but the caregivers' understanding of the

support is more from the aspect of medication. Religion is the main way of coping for all participants. Caregivers organised the 'skills' accordingly and made some 'changes' along the way but they always make sure there is someone to look after the older people. A difference between the spouses and adult children in terms of the caregiving experiences for their mentally ill family members is discussed accordingly. The findings of this study are highly relevant to contribute to the developments in the area of mental health awareness and mapping the policy framework for family care, aged care and mental health in Malaysia. At the same time they provide valuable information in the context of global perspectives on caregiving from a different culture and religious background.

Ramli, F. Z. A. (2013). Malay caregivers' responses to depression among older adults. *Advances in Natural and Applied Sciences*, 7(4), 405–412.

World Health Organization (WHO) have been identified older people as a vulnerable group that suffers from a range of different types of mental health problems particularly depression. Thus, providing caregiving for older people with depression has an impact on caregivers' family life. This study sought to understand the Malay caregivers' experiences of caregiving in the context of caring for older people with depression in Kelantan, Malaysia, as well as caregivers' responses to them. In-depth interviews were conducted with eight Malay caregivers of older people with depression recruited from the outpatient psychiatric clinic. Data were digitally recorded and fully transcribed before being analyzed using thematic analysis. Participants reported that depression was particularly challenging, requiring a lot of attention and supervision because of the continuous distressed behaviour.

Rashid, A., & Tahir, I. (2014). The prevalence and predictors of severe depression among the elderly in Malaysia. *Journal of Cross-Cultural Gerontology*, 30(1), 69–85.

The population of Malaysia is relatively young, due to this there is a dearth in research conducted among the elderly especially relating to depression. The aim of this study is to determine the prevalence and the predictors of severe depression among the elderly in Malaysia. A sample of 2005 older adults randomly selected from the Penang State government's list of elderly receiving aid participated in the study. The Geriatric Depression Scale was used to screen for depression. Socio-demographic, social support, disease, functional and other factors were looked at as possible predictor variables. The prevalence of severe depression was 19.2%. Indians (aOR = 2.0), being married (aOR = 10.5), widowed & divorced (aOR = 5.2), having poor (aOR = 2.7) or moderate social support (aOR = 2.7), having no one (aOR = 2.9), relatives (aOR = 2.3) or religious figures & others (aOR = 1.9) as compared to a spouse as a source of emotional support, feeling extremely lonely (aOR = 3.4), not socially active (aOR = 2.3), cognitively impaired (aOR = 2.5), activities limited due to illness or disability (aOR = 1.6) and poor sleep quality (aOR = 3.6) were significant predictor variables. The prevalence of severe depression was high. It is pertinent that older adults, especially those with risk factors identified in this study be screened for depression at every opportunity.

Rashid, A. K., & Rahmah, M. A. (2011). Role of family support in older adults defaulting treatment for depression: A case-control study. *Asian Journal of Gerontology & Geriatrics*, 6(1), 29–34.

Only 10% of older adults who need mental health care receive it, and most default the treatment. We therefore evaluated the role of family support in compliance of depression treatment among older adults. A case-control study was conducted. 148 depressed older adults (aged ≥ 60 years) who had defaulted treatment were the cases. Two control groups were used: one consisted of 148 depressed older adults who were followed up regularly and another consisted of 148 non-depressed older adults who were followed up for other psychiatric illness. Factors associated with defaulting treatment for depression were being unemployed (odds ratio [OR], 2.64), low education level (OR, 2.64), low income (OR, 1.61) and lack of family support (OR, 12.85). Multivariate logistic regression showed lack of family support (OR, 12.72; 95% confidence interval [CI], 7.00-23.12), being unemployed (OR, 3.83; 95% CI, 1.74-8.40), and being illiterate (OR, 2.49; 95% CI, 1.06-5.87) as significant predictors. Family members should be aware that family support plays an important part in patient adherence to treatment.

Rashid, A. K., & Rahmah, M. A. (2009). Negative perception and poor awareness as risk factors to the default of depression treatment among the elderly - A case control study. *The Internet Journal of Geriatrics and Gerontology*, 5(2), 1–7.

It is estimated that only a fraction among the elderly receive mental health care and large proportion of them default the treatment. The objective of the study was to determine the risk of defaulting depression treatment among the elderly patients who have negative perception and poor awareness of their illness. This ethically conducted case control study using two controls in four major hospitals in northern Malaysia was conducted among elderly depressed patients who had defaulted treatment. Having an opinion of no family support (OR=6), having a perception that the family members do not think they have the illness (OR=3), negative perception (OR=10) and poor awareness of illness (OR=5) were found to be risk factors to defaulting depression treatment among the elderly. These modifiable risk factors can be remedied by involving the patient and family members in the patient's treatment plan.

Rashid, A. K., Azizah, A. M., & Rohana, S. (2012). Cognitive impairment among the elderly Malays living in rural Malaysia. *Medical Journal of Malaysia*, 67(2), 186–189. <https://doi.org/10.4066/AMJ.2011.660>

Cognitive impairment is a common psychiatric problem among the elderly. The objective of the study was to determine the prevalence of cognitive impairment among the elderly Malays living in a rural community in north Malaysia. A cross sectional study was conducted among the elderly population of 22 villages in north Malaysia. Elderly cognitive assessment questionnaire was used to determine the cognition status. Analysis was done using SPSS version 13. The prevalence of cognitive impairment among the older adults in these villages was 11% (n=46). There was an increasing prevalence of cognitive impairment with increasing age ($p < 0.05$). Being unmarried (OR 2.31), unemployed (OR 2.74) and living alone (OR 2.32) were significantly associated with the risk of being cognitively impaired. Being unemployed (OR 2.29) was a significant predictor variable for cognitive impairment.

Similar to other studies conducted in Malaysia the prevalence of cognitive impairment was high.

Rashid, A., Azizah, M., & Rohana, S. (2012). Risk factors for depressive symptoms among elderly Malays Living in rural North Malaysia. *Indian Journal of Gerontology*, 26(4), 462–473.

The objective of the study was to determine the risk factors for depressive symptoms among the elderly Malays living in rural north Malaysia. This case control study was conducted in 22 villages located in a north-western state in Malaysia called Kedah. The Geriatric Depression Scale was used to determine whether the respondents had depressive symptoms. Cases and controls were matched for race where 113 elderly Malays with depressive symptoms were taken as cases and another 113 elderly Malays with no depressive symptoms were used as controls. Univariate factors which were found to be significantly associated with depressive symptoms among this group of elderly participants included being unemployed (OR 1.43 .95%, CI 1.09; 1.86), earning less than or equal to RM 600 (OR 2.05 .95%, CI 1.15; 3.67), unmarried (OR 2.47 .95%, CI 1.25; 4.89) and living alone (OR 1.49 .95%, CI 1.13; 1.97). Multivariate logistic regression showed only income of less than or equal to RM 600 (OR 2.21 .95%, CI 1.21; 4.03) as a significant predictor. Elderly with lower income need to earn fair wages. Governmental and non-governmental agencies should consider this and provide ample employment opportunities for the elderly who wish to work.

Rashid, A., Manan, A., & Rohana, S. (2010). Depression among the elderly Malay living in rural Malaysia. *The Internet Journal of Public Health*, 1(2), 1–10.

Most countries including Malaysia are facing an ageing population phenomenon and depression is a common psychiatric problem among the elderly. The objective of the study was to determine the prevalence of depression among the elderly Malays living in rural Malaysia. A cross sectional study was conducted among the elderly population in 24 villages in north Malaysia. Geriatric Depression Scale was used to screen for depression among the participants. Analysis was done using SPSS version 13 Results: The prevalence of depression was 30.1%. Being unmarried (OR 2.06), unemployed (OR 1.81), earning less than RM 600 (OR 2.16) and living alone (OR 2.32) were significantly associated with the risk of being depressed. Being unemployed (1.82) and earning less than RM 600 (OR 1.79) were significant predictive variables. Employment opportunities which can provide reasonable income are important for the elderly.

Rashid, A., Ong, E. K., & Wong, E. S. Y. (2012). The attitude towards ageing among residents of an elderly care institution in Penang Malaysia. *International Journal of Collaborative Research on Internal Medicine and Public Health*, 4(6), 1069–1083.

Negative attitude towards ageing has been linked to detrimental psychological, physical and health outcomes for older adults. The objective of this study was to determine the attitude towards ageing among the residents of one of the largest privately owned elderly care institution in Penang, Malaysia. This cross sectional study was conducted among the elderly residents of a non-governmental charity elderly care residential institution in Penang, Malaysia. The Attitude towards Ageing Questionnaire (AAQ) was used. In addition sleep quality, quality of life, functional independence in the activities of daily living and body mass

index was measured. Data was analysed using PASW version 18. Out of the total 200 residents, 151 responded to the survey. Majority considered age group 60 to 69 and health status, appearance and level of fitness as the criteria to consider someone aged. The mean AAQ score (76.6) as well as the mean scores for the psychosocial loss (24.3), physical change (25.8) and psychological growth (26.5) domains were slightly above average suggesting a positive trend in the attitude towards ageing. The differences for the scores for marital status ($p=0.007$), musculoskeletal pain past 12 months ($p=0.03$), education ($p=0.007$), people that could be counted on for help ($p=0.001$), feasibility of getting practical help from fellow residents ($p=0.01$) and self-perception of health ($p=0.02$) were found to be statistically significant. Linear regression showed that the increase in the quality of life ($p=0.011$) and positive sleep quality ($p=0.032$) was associated with a positive attitude towards ageing. Family and informal social caring networks are essential to the care of the elderly.

Rashid, A., Ong, E. K., & Wong, E. S. Y. (2012). Sleep quality among residents of an old folk's home in Malaysia. *Iranian Journal of Nursing and Midwifery Research*, 17(7), 512–519.

Sleep is an essential part of life. Lack of sleep has been linked with increased morbidity and mortality. The objective of this study was to determine the sleep quality of older adults residing in a private elderly care institution in Malaysia. This cross sectional study was conducted among consenting residents of a 200-bed non-governmental charity old folks home in Penang, Malaysia. The sleep quality of the respondents was measured using the Pittsburgh Sleep Quality Index (PSQI). Quality of life (WHOQOL-BREF), their attitude to ageing (AAQ), Barthel index (Activities of Daily Living) and body mass index were also measured. Data was analysed using PASW. The PSQI score ranged from 0 to 16 with a mean score of 7.1 (SD 3.4) and 76.8% (116) had scores ≥ 5 . The differences in the mean score for chronic illness ($t = 0.14/P = 0.04$), the people that could be counted on for help ($t = 4.09/P = 0.02$) and the feasibility of getting practical help from fellow residents ($t = 4.41/P = 0.01$) were statistically significant. There was a negative correlation between the PSQI score and the WHOQOL-BREF score ($-0.318/0.00$) and AAQ score ($-0.332/0.00$). Staff working in an elderly care institution should understand the important relationship of illnesses, social support and sleep hygiene in the wellbeing of the residents.

Rashid, A.K., & Rahmah, M. A. (2010). Treatment related risk factors associated with the default of depression treatment among the elderly - A case control study. *The Open Geriatric Medicine Journal*, 3, 11–16.

We are living in an ageing world. Depression is a serious psychiatric disorder especially when the elderly are inflicted with it. The prevalence of depression in Malaysia ranges from eight to 67%. Depression leads to a decreased quality of life and it is a risk factor for suicides among the elderly. Geriatric depression can be treated effectively but only ten percent of those who need psychiatric help receive it and 40 to 70% of those who receive treatment are not compliant. The objective of this study was to determine the treatment related risk factors associated with the default of depression treatment among the elderly. This study was ethically conducted using a case control study design with two controls in four major hospitals in northern Malaysia. Cases made up of 148 elderly depressed patients who had defaulted treatment. One control group comprised of 148 depressed elderly patients who did not default treatment and another comprised of 148 non depressed psychiatric patients who

were on regular follow up in the same hospitals. The type of antidepressant medication prescribed ($p=0.04$), not given a choice to choose the treating doctor (OR 1.5) and the preference to traditional/complimentary medicine (OR 6.08) was identified as significant risk factors. A comprehensive treatment plan made with the involvement of the patient and their caregivers, flexible follow up dates and a choice to choose the place and the treating doctor and the usage of newer generation antidepressant drugs can help prevent depression treatment default among the elderly.

Rashid, A. K., Narayan, K. A., & Azizah, A. M. (2006). The prevalence of cognitive impairment and depression and their associated factors in an elderly population in two villages in Kedah. *Malaysian Journal of Public Health Medicine*, 6(1), 29–37.

The population of the world is ageing and Malaysia is no exception. The proportion of those above 60 will be 9.5% by the year 2020. Cognitive impairment and depression are two common problems in this age group. The objective of this study was to determine the prevalence of cognitive impairment and depression and their associated factors in the elderly population in a rural community in Kedah. The study design was descriptive cross sectional study. A standardized questionnaire was used in two villages in Mukim Kota Kuala Muda. Barthel's index, geriatric depression scale and elderly cognitive assessment questionnaire were also used. The prevalence rate of cognitive impairment was 18.5%. Cognitive impairment was higher among females (22.6%) than males (12.8%). 34.8% of the widowed were cognitively impaired and it increases with age 15.1% within age groups 60 to 69 years, 42.9% in age groups 80 to 89 years and the one and only participant above 90 years was cognitively impaired. Among those with disability, the only one with very severe disability had cognitive impairment, 40% among the severely disabled and 33.3% among the moderately disabled ($p<0.05$). Those with cognitive impairment were living with some functional disabilities involving feeding ($p<0.05$), bathing ($p<0.05$), grooming ($p<0.05$), dressing ($p<0.05$), bladder control ($p<0.05$), toilet use ($p<0.05$), transfer from bed to chair ($p<0.05$), mobility on level surfaces ($p<0.05$) and climbing stairs ($p<0.05$). The prevalence of depression was found to be 46.4%. Higher among males (48.4%) as compared to females (44.7%). Depression was 50.0% among the age groups 80 to 89 and 52.4% among the age groups 70 to 79. 63.6% of those living alone were depressed as were 54.8% of the unemployed. 43.8% of those depressed had functional disability. The only one with severe disability was depressed and 66.7% of those with severe disability were depressed. 47.5% of those with hypertension were depressed. It is a matter of concern that even in a small population the rate of cognitive impairment and mental depression is very high. Health screening is an important aspect of health promotion and disease prevention in people over 60 years. Although screening for many conditions cannot conclusively prove benefit, special attention to these factors can decrease morbidity and improve quality of life in aging population.

Rashid, S. A., Ghani, P. A., Daud, N., Hilmi, Z. A. G., Azemi, S. N. A. N., Wahid, S. N. S., & Razak, M. R. (2014). Malaysia's ageing population trends. *Proceedings of the Regional Conference on Science, Technology and Social Sciences (RCSTSS 2014)* (pp. 981-990).

Population ageing has been on the policy agenda for over a decade, and it will become a more important policy issue in the future. Malaysia has completed its demographic transition in less than four decades. Declining in fertility and mortality rates has led to an improvement

in the life expectancy of the population which has resulted an ageing population in Malaysia. The age distribution of Malaysia's population had changed dramatically from 1970 to 2010 where the percentage of the population aged less than 20 years old had decreased by 18.3 % from 55.6 % in 1970 to 37.3 % in 2010. On the other hand, the share of elderly population (age 60 years or over) had increased from 5.5 to 7.9 % for the same period. The proportion of elderly is projected to reach 16.3 % of the total population by the year 2040. Furthermore, the old age index of Malaysia's population has grew from 11.7 in 1970 to 28.7 in 2010. Malaysia is expected to become an ageing nation by the year 2030 where the elderly population comprises 15 % of the total population. This paper analyses ageing population trends and its changes in Malaysia. In addition, the implication of ageing population to societies and nation is also being discussed.

Rashid, S. N. S. A. (2015). Active ageing in Malaysia. In A. Aspalter & W. Christian (Eds.), *Active Ageing in Asia* (pp. 132–150). New York: Routledge.

It is this concept of active ageing that this chapter focuses on representing a new direction in older persons and development. Active ageing depends on a variety of factors that exist in the many domains of human activity. The focus of Priority Direction 1 is the two-over arching social and economic domains. Against this background, the chapter provides a situation analysis of the ageing situation in Malaysia and the government's effort to promote active ageing. The chapter highlights the changes and challenges in the social and economic domains that have significant effects on active ageing as suggested by WHO.

Rashid, S. N. S. A. (2013). Planning a barrier free environment and better quality of life based on the predictors of out-of-home activities of rural older Malaysians. *International Review of Social Sciences and Humanities*, 5(1), 20–29.

Engaging in more out-of-home activities are important elements in the quality of life of the older persons. The older persons have a wide range of social and physical constraints to participate in out-of-home activities and these have implications that require accurate interpretations of an ageing society which impacts on the whole built environment. Based on the study entitled 'Activities, Access and Ageing of Older Malaysians' conducted by the author, factors that hinder or support the participation of older persons in out-of-home activities were identified. The purpose of the paper is to identify the patterns and predictors of out-of-home activities of rural older Malaysians and to understand their needs and expectations in barrier-free environment. The study found that there are significant relationships between age, perceived barriers to town and the number of out-of-home activities participated. Results highlight important factors relevant for the urban planners and policy makers in creating high quality barrier free environment that would enhance the older persons' quality of life.

Rashid, S. N. S. A. (2012). Issues and challenges of information communication technology (ICT) and the older Malaysians. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 258–279). Universiti Putra Malaysia: Institute of Gerontology.

The growing number of the older community in Malaysia has increased as in many other developing countries across the world. This demographic trend is generally regarded as a positive signal of improved living conditions with the majority of the people enjoying higher

life expectancies. New information technologies are part and puzzle of our lives now. Many older citizens are now open to new technologies. However, there are still barriers that keep them from learning and using computers and internet. The purpose of this study provides an overview of the current 'state of the art' with regard to the use of ICT by the older Malaysians. Evidence from past researches on the issues and problems of ICT applications and the perceived barriers of learning the ICT by older people are critically evaluated. This study also proposes the policies and programs to address issues and barriers of learning the ICT by older Malaysians, with the hope that the integration of older Malaysians into the information society becomes a reality at the earliest opportunity.

Rashid, S. N. S. A. (2011). Prevalence of hypertension among the elderly Malays living in rural Malaysia. *Australasian Medical Journal*, 4(6), 283–290.

We are living in an ageing world. The prevalence of hypertension which is an established risk factor for cardiovascular disease and stroke increases with age. The aim of the study was to determine the prevalence of hypertension among the elderly Malays living in rural parts of north Malaysia. This cross-sectional study was conducted among the elderly (aged ≥ 60) Malay residents living in 22 villages in a northwestern state called Kedah in Malaysia from 2007 to 2009. Kedah has one of the highest rates of elderly population in the country. Data was collected by trained research assistants. Besides the baseline demographic information, blood pressure was measured using standardised methods using a manual sphygmomanometer. The response rate was 97.7%. The prevalence of hypertension among the elderly in these villages was 54.5% (228), 118 (28.2%) were known to be hypertensive and were on medication and an additional 110 (26.3%) respondents were newly diagnosed. Elevated mean systolic (146.17 ± 25.23) and diastolic (89.68 ± 15.60) blood pressure was noted among the known hypertensive. There was an almost fourfold risk (OR 3.64) of having uncontrolled blood pressure among the known hypertensive on treatment. Those with malnutrition were at an almost twofold at risk of being hypertensive (OR 1.73). Binary logistics regression showed occupation (OR 1.65), marital status (OR 2.32) and body mass index (BMI) (OR 1.62) as significant predictor variables. Screening the elderly for hypertension will benefit this group of people by reducing the morbidity and mortality associated with this condition.

Rashid, S. N. S. A. (2010). Ergonomic design and assistive technology for residents ageing in Malaysian public funded shelter homes. *Gerontechnology*, 9(2), 24

One of the most deeply held desires as a person grows old is to be able to remain independent whether living in homes or institutions. However, the latter is often referred to as 'houses for the poor or forgotten people'. Institutions are a particularly poor way of caring for the aged, but for some, this is the only housing option. These residents have to 'age-in-institutions' that often fail to meet their physical, cognitive strength, capabilities and limitations. In response to the need to reduce dependency while also improving Quality of Life, this study proposes ergonomic design solutions and technological innovations which may reduce cost burden and the declining ratio of the elderly to the care giver. The prolongation of self-sufficiency of the elderly in performing daily activities independently is possible by creating an ergonomic elderly friendly environment based on the anthropometric measurements of the elderly, and also technological environments to support the users. The objectives of the study were to investigate the present living environments of the ten public

funded shelter homes in Malaysia, and the technology available to assist independent living. The aim is to provide design guidelines for ergonomic designed institutions based on the anthropometric measurements of the elderly and to determine the attitudes and the readiness of the residents towards the use of assistive technologies that are available as well as the social factors influencing their attitudes. There are two parts for data collection in the study. Firstly, data on the living environments which include selected facilities, fixtures and the available technological devices provided in the institutions were collected via observations, measurements and interviews. Interviewing provided information on the residents' interpretations of independent living and their readiness and attitudes towards assistive technology available. Secondly, an anthropometric data set on 230 Malaysians aged 60 years and above was collected which consisted of 24 body dimensions relevant to design living facilities and fixtures provided in the institutions. Computer aided engineering software was used to validate the extent to which the current design of the selected facilities and fixtures provided in these institutions match the anthropometric data of the elderly. Respondents consisted of 129 males (56.1%) and 101 females (43.9%), with a mean age of 67 years. The mean values, standard deviations, medians, range, coefficients of variations and percentile values for the various body dimensions were estimated. Findings showed that the design and measurements of the selected fixtures and facilities do not meet the requirements and needs of the residents causing discomfort and a threat to safety. With regards to assistive technology, the survey results showed that the majority of the residents view advances in technology in a positive light for better QoL and expressed a willingness to use and adapt to the technology. This study provides insights for better design guidelines and the readiness to use and adapt to assistive technology for authorities to improve on the living and technological environments of those aging in institutions.

Rashid, S. N. S. A., & Hamid, T. A. (2007). *Active ageing of older persons: The case for Malaysia*. Paper presented at the Seminar on the Social, Health and Economic Consequences of Population Ageing in the Context of Changing Families. Bangkok, Thailand.

Active ageing has become a new catchword and most countries have been promoting its virtues. Adopting the WHO perspective, active ageing in Malaysia is the process of optimizing opportunities for physical, social, mental well being throughout life, in order to extend healthy life expectancy, productivity and good quality of life as people age. This is reflected in the Malaysian National Policy for the Elderly (NPE) which aims to improve the potentials of the elderly as they continue to be active and productive in national development, and to create opportunities to assist them to continue be self reliant. This paper examines the status of active ageing in the various life domains of the older Malaysians. The paper seeks to identify and remove the barriers to the promotion of active ageing. Both primary and secondary data sources have shown that changing cultural norms, values, attitudes and lifestyles have great impact on the various life domains. It is thus necessary to take cognizance of these changes in the characteristics and expectations of the elderly to rethink on the various key policy domains addressing active ageing.

Rashid, S. N. S. A., Hussain, M. R., & Yusuff, R. (2008). Designing homes for the elderly based on the anthropometry of older Malaysians. *Asian Journal of Gerontology & Geriatrics*, 3(3), 75–83.

To provide guidelines for ergonomically designed living environments for older Malaysians. The designs of 10 publicly funded welfare homes for the elderly were collected through observations, measurements and interviews. Anthropometric measurements of older Malaysians were taken; 24 body dimensions were applicable to designing an ergonomic living environment. Computer-aided engineering software was used to validate the extent to which the designs of the present fixtures and facilities match the anthropometric measurements of older Malaysians. The designs of all 10 homes did not take the anthropometric measurements of older Malaysians into account and may therefore cause discomfort. Elderly people should be provided with specifically designed facilities to meet their physical and cognitive strengths, capabilities and limitations, and to match their body dimensions.

Rashid, S. N. S. A., Yeoh, S. F., Chan, B, Y. F. (2010). Environmental barriers and correlations of self-rated driving confidence among older Malaysian drivers. *Asian Social Science*, 6(7), 18. <https://doi.org/10.5539/ass.v6n7p18>

As population age, it is becoming more important to identify the environmental aspects of driving among the older persons. This study aims to investigate the driving confidence and the influence of environmental barriers on driving among older Malaysian drivers. The cross-sectional data was obtained via face-to-face interview protocol. A total of 400 older adults aged 50 years and above were used in the quota sampling stratified by gender and age in the states of Perak and Selangor. Multiple Linear Regression analysis showed the ten predictor variables (gender, ethnicity, employment status, self-rated health status, driving ability, psychomotor ability, driving distance, weekly driving frequency, driving knowledge, perceived environmental barriers) which accounted for 32.1 percent of variance in driving confidence ($F = 18.28, p < 0.05$). Information about the determinants of driving confidence and environmental factors is significant providing insights for future road planning system and as input for driving training programs.

Rasiah, R., Noh, A., & Tumin, M. (2009). Privatising healthcare in Malaysia: Power, policy and profits. *Journal of Contemporary Asia*, 39(1), 52–62.

This article examines the hypothesis that interest groups are behind the increasing privatisation of healthcare services in Malaysia. The evidence supports the instrumentalist argument that powerful interest groups seeking profits, rather than real concerns for allocative efficiency, have been the prime drivers of healthcare privatisation in Malaysia. Not only have private healthcare expenditures risen more swiftly than government healthcare expenditure but, from 1982, public funds have also been used to purchase private services from public hospitals. However, unlike simple class analyses, class contention manifesting through alliances between politicians, bureaucrats and capitalists has been a major force behind healthcare privatization in Malaysia. The source of these developments can be traced to power wielded by the government to quicken the creation of a Bumiputera capitalist class that began to gain momentum from the late 1970s.

Razak, I. A., & Ali, M. M. (1989). Unperceived dental needs in a group of Malaysian elderly patients. *Ann Acad Med Singapore, 18(5), 516–518.*

The present study analysed the records of 342 elderly subjects aged 55 years and above of different ethnic groups to ascertain the types and level of their unperceived dental needs. The overall percentage of unperceived needs was highest among the Malays (96.1% or 74/77 subjects) and among the men (88.5% or 139/157 subjects). The unperceived need for prosthetic treatment was highest among the Malays and Chinese as well as among women, whereas the unperceived need for treatment for periodontal disease was highest among the Indians. The data for unperceived needs for prosthetic treatment as well as for treatment for caries and periodontal disease were somewhat similar among men. Within each ethnic group, variations among sex in the unperceived needs for the various dental symptoms were also noticeable. Further research is indicated to ascertain the role of traditional and cultural concepts and dogmas in determining the importance attached to the various dental health symptoms within each ethnic group.

Razak, I. A., & Ali, M. M. (1988). Ethnic and sex variations in dental care utilization patterns in a group of Malaysian elderly. *Gerodontology, 7(2), 77–80.* <https://doi.org/10.1111/j.1741-2358.1988.tb00308.x>

The purpose of this study was to identify the ethnic and sex variations in the motives for seeking dental care in a group of Malaysian elderly. Three hundred and forty-two patients aged 55 years and above who presented themselves for treatment for the first time at the Dental Faculty, University of Mayala, Kuala Lumpur in 1986 were screened for their chief dental complaints. Request for dentures and extractions and complaints of toothache were the more frequent dental motives in all the ethnic groups. However, there exist ethnic and sex variations among these dental complaints. The Chinese were found to be high utilizers of rehabilitative services whereas the Malays and Indians were more frequent utilizers of emergency services. The only consistent feature between sex among all the ethnic groups for the more frequent dental complaints was that more females complained of toothache than males.

Razali, R., Ariffin, J., Aziz, A. F. A., Puteh, S. E. W., Wahab, S., & Daud, T. I. M. (2016). Sleep quality and psychosocial correlates among elderly attendees of an urban primary care centre in Malaysia. *Neurology Asia, 21(3), 265-273.*

Sleep quality can vary in relation to one's general well-being and in the elderly, it is often affected by the presence of medical or psychological conditions. This study aims to determine the frequency of different components of sleep quality in the elderly, and their relationships with psychosocial and medical attributes. A cross-sectional study was conducted on 123 attendees aged 60 years and above at Pusat Perubatan Primer Universiti Kebangsaan Malaysia. Sleep quality and psychological distress were assessed using the validated Malay versions of Pittsburgh sleep quality index (PSQI) and Hamilton anxiety depression scale (HADS) respectively. Information on medical comorbidities and medications were obtained from the participants, their doctors and medical notes. Almost half of the patients experienced poor sleep quality (47.2%) which was significantly associated with older mean age (69.5 ±4.55). There was no statistical significance between sleep quality and other sociodemographic characteristics (gender, ethnicity and living arrangement). Most patients described their sleep quality as subjectively generally “fairly good” (69.1%) despite PSQI

scores indicating poor sleep quality. A majority of the patients (59.3%) were on follow-up for 3 or more medical illnesses, with heart disease as the only medical comorbidity significantly associated with poor sleep quality. Most of them also complained of only “mild difficulty” with their sleep. Among the 7 sleep components of PSQI, “sleep disturbance” was the most frequent experience. Most experienced mild sleep disturbance (87.8%) and usage of hypnotic agents was low (6.5%). Only 23.6% of patients had significant psychological distress (HADS scores ≥ 8), with positive correlation with sleep quality.

Razali, R., Baharudin, A., Jaafar, N. R. N., Sidi, H., Rosli, A. H., Hooi, K. B., Shin, L. T., Bahari, N. H. S., & Elias, N. A. (2012). Factors associated with mild cognitive impairment among elderly patients attending medical clinics in Universiti Kebangsaan Malaysia Medical Centre. *Sains Malaysiana*, 41(5), 641–647.

Mild cognitive impairment (MCI) is a common condition among the elderly and is believed to be a precursor to Alzheimer disease. This study aims to detect the prevalence of MCI and factors associated with it. A cross-sectional study was conducted on a group of elderly patients attending various medical clinics in Universiti Kebangsaan Malaysia Medical Centre (UKMMC) in 2010. Only patients aged 60 years and above, literate with no hearing or visual impairments were included. Screening instruments included the Mini Mental State Examination (MMSE) and a questionnaire on sociodemographic and clinical data. The cut-off points for MMSE for MCI was 21/30 to 28/30. The prevalence rate based on MMSE score for ‘normal’ and MCI were 35.3% and 64.7%, respectively. Most of the 346 patients (33.9%) had only one type of medical illness and on one type of medication. MCI was significantly associated with low educational achievement ($p < 0.05$) and rheumatological diseases ($p = 0.05$). However, it is not associated with the number of medical illnesses suffered by patients and the number of medications prescribed. This study highlighted that MCI was a common condition among the elderly UKMMC Medical clinic attendees and was significantly associated with their low education level.

Razali, R., Bee, P., & Gan, G. (2013). Survey of willingness to accept chemotherapy among elderly Malaysian patients. *Asian Pacific Journal of Cancer Prevention*, 14(3), 2029–2032.

The geriatric population in Malaysia is predicted to increase from 4% of the total population in 1998 to 9.8% by 2020, in parallel with developments in the socioeconomy. Cancer is expected to be a major medical issue among this population. However, the decision for treatment in Malaysia is always decided by the caregivers instead of the elderly patients themselves. The aim of the study was to assess the willingness to accept chemotherapy among elderly Malaysians. In this cross-sectional study, patients aged 60 and above from various clinics/wards were recruited. Those giving consent were interviewed using a questionnaire. A total of 75 patients were recruited, 35 patients (47%) with a history of cancer. The median age was 73 years old. There were 29 Chinese (38.7%), 22 Indian (29.3%), 20 Malay (26.7%) and four other ethnicity patients. Some 83% and 73% of patients willing to accept strong and mild chemotherapy, respectively. Patients with cancer were more willing to accept strong and mild chemotherapy compared to the non-cancer group (88.6% vs 62.5%, $P = 0.005$, 94% vs 80%, $P = 0.068$). On sub-analysis, 71.4% and 42.9% of Chinese patients without a history of cancer were not willing to receive strong and mild chemotherapy, respectively. The majority of elderly patients in UMMC were willing to receive chemotherapy if they had cancer.

Experience with previous treatment had positive influence on the willingness to undergo chemotherapy.

Razali, R., Jean-Li, L., Jaffar, A., Ahmad, M., Shah, S. A., Ibrahim, N., Din, N. C., Jaafar, N. R. N., Midin, M., Sidi, H., & Ahmad, S. (2014). Is the Bahasa Malaysia version of the Montreal Cognitive Assessment (MoCA-BM) a better instrument than the Malay version of the Mini Mental State Examination (M-MMSE) in screening for mild cognitive impairment (MCI) in the elderly? *Comprehensive Psychiatry*, 55, 70–75.

Mild Cognitive Impairment (MCI) is a known precursor to Alzheimer disease, yet there is a lack of validated screening instruments for its detection among the Malaysian elderly. To compare the Bahasa Malaysia version of the Montreal Cognitive Assessment (MoCA-BM) with the Malay version of the Mini Mental State Examination (M-MMSE) in the detection of MCI among the Malaysian elderly. This is a cross-sectional study conducted at the primary care centre of Universiti Kebangsaan Malaysia, Kuala Lumpur from December 2011 to mid-January 2012. Subjects aged 60 and above were recruited using systematic sampling method. Cut-off scores of 22/23 for MoCA-BM and 25/26 for M-MMSE were adopted. Kappa value and Pearson's correlation coefficient were used to ascertain the correlation between MOCA-BM and M-MMSE. Data were analysed using Mann-Whitney and Chi Square tests. The mean age of the 180 subjects enrolled was 65.3 years (SD = 5.4). They had a median of 6 years (IqR 25-75 = 5-11) total formal education. The prevalence of MCI using MoCA-BM and M-MMSE was 55.6% and 32.8% respectively. The odds of developing MCI were 1.153 (95% CI = 1.055, 1.261; $p < 0.05$) for every 1 year increase in age, 0.813 (95% CI = 0.690, 0.959; $p < 0.05$) with every extra year of education. Increasing age and lower education level were significantly associated with MCI. The MoCA-BM showed good internal consistency with Cronbach's alpha of 0.80. It had moderate correlation with M-MMSE (Pearson correlation coefficient = 0.770, $p < 0.001$) and moderate agreement for detecting MCI with Kappa values of 0.497 ($p < 0.001$). The prevalence of MCI was higher using MoCA-BM compared to M-MMSE. Both instruments showed moderate concordance for screening MCI with correlation of their scores.

Ridhwan, A. F., Mohamed, M., Masdinar, S. N., & Hisyam, W. M. N. (2017). Saving for retirement behavior among private sector's employees in Malaysia: Dungun, Terengganu case. *The Social Sciences*, 12(2), 313-318.

In Malaysia, awareness in retirement is still an indistinct issue among society. There are a lot of retirement products being introduced by financial institutions and yet the initiatives to save for retirement are step sided by many. This is where most of us think that companies and government retirement plan should be enough to cover us for golden year's expenses. However, many studies have shown that money saved in companies and government pension plan may not be adequate for future consumption. Therefore, this study subjectively aimed at discussion on saving retirement behavior among private sector's employees in Dungun, Terengganu. A theoretical framework is developed to illustrate the relationship between financial risk tolerance, financial and investment knowledge and religiosity. This study utilized questionnaire based surveys to solicit responses from employees who are working in private sectors in Dungun, Terengganu. Data collected from 200 employees were analyzed by using statistical procedures of Statistical Package for the Social Science (SPSS) version 19. Based on the investigation, the result reveals that there is significant relationship between all

independent variables towards dependent variables. As a whole, the whole model is demonstrated that all the independent variables are able to explain 18.4% of the total variation dependent variables. The rest of 81.6% can be explained by undefined variables in this research. The analysis of this research was determined by the factors that influence savings for retirement among private sector's employees in dungun, terengganu. The factors that influence to the savings for retirement are financial risk tolerance, financial investment knowledge and religiosity that represent as independent variables.

Rizawati, M., & Mas Ayu, S. (2008). Home environment and fall at home among the elderly in Masjid Tanah province. *Journal of Health and Translational Medicine (JUMMEC)*, 11(2), 72–82.

The aim of this study was to determine whether the home environment was a risk factor for falls occurring at home among the elderly in the Masjid Tanah community, Malaysia. An analytical cross-sectional study conducted from early June 2006 until May 2007 in six randomly selected villages in Masjid Tanah Province. A total of 516 participants were included in this study. Overall prevalence of falls among the study participants was 27.3%. Home falls accounted for 66.7% of the total falls. In conclusion, there was no association between home environment and home fall in this study. Logistic regression analysis showed that having a depressive mood was the main determinant for home falls among the elderly in this study.

Rohaizat, B. Y., Hassan, M. O. N. M., & Davis, J. (2012). Approaches and future direction of social security system: Malaysian perspective. *Malaysian Journal of Public Health Medicine*, 12(1), 1–13.

Social security traditionally means a social insurance program providing social protection, or protection against socially recognized conditions, including poverty, old age, disability, unemployment and others. It also hovers around the subject of social insurance, where people receive benefits or services in recognition of contributions to an insurance scheme. Providing services for medical care, aspects of social work and even industrial relations may be included as part of social security services. Lately, the term is also used to refer to basic security, a term roughly equivalent to access to basic necessities. The 1 World Conference on Social Security organised by the Brazilian Government on 1st to 5th of December 2010 stimulates the countries to adopt universal, comprehensive and equitable social security systems as a valid, ethical and feasible option in the process of national reforms and regional integration. The main challenge to achieving the noble objective of universal social security system is financial sustainability and social cohesion supported by political will. As seen in a number of countries, Malaysia has a mixed social security schemes comprising state and private schemes, statutory obligatory requirements on the part of employers as well as state social assistance programmes. Maintaining the quality of life of the individuals and their dependents has become the primary focus of policies and programmes in providing social security. Among the critical pressures on the population's standard of living is the provision of health care. Extension of the coverage for social security is critical in ensuring social inclusion.

Romli, M. H., Tan, M. P., Mackenzie, L., Lovarini, M., Kamaruzzaman, S. B., & Clemson, L. (2017). Factors associated with home hazards: Findings from the Malaysian Elders Longitudinal Research study. *Geriatrics & Gerontology International*, 1–9. <https://doi.org/10.1111/ggi.13189>

Previous studies have investigated home hazards as a risk factor for falls without considering factors associated with the presence of home hazards. The present study aimed to determine patterns of home hazards among urban community-dwelling older Malaysians, and to identify factors contributing to home hazards. Cross-sectional data from the initial wave of the Malaysian Elders Longitudinal Research study were used. Basic demographics were obtained from the Global Questionnaire. Basic and instrumental activities of daily living were measured using the Katz and Lawton–Brody scales, and home hazards were identified using the Home Falls and Accidents Screening Tool. Participants were also asked if they had fallen in the previous 12 months. Data were analyzed from 1489 participants. Hazards were frequently identified (>30%) in the toilet and bathroom areas (no grab rail, no non-slip mat, distant toilet), slippery floors, no bedside light access and inappropriate footwear. Lower educational attainment, traditional housing, Chinese ethnicity, greater number of home occupants, lower monthly expenditure, poor vision and younger age were the factors independently associated with home hazards. This study provides evidence that home hazards are a product of the interaction of the individual's function within their home environment. Hazards are also influenced by local sociocultural and environmental factors. The relationship between home hazards and falls appears complex and deserves further evaluation.

Romli, M. H., Tan, M. P., Mackenzie, L., Lovarini, M., Suttanon, P., & Clemson, L. (2017). Falls amongst older people in Southeast Asia: A scoping review. *Public Health*, 145, 96–112. <https://doi.org/10.1016/j.puhe.2016.12.035>

The older population in the Southeast Asian region is accelerating and is expected to surpass the proportion of the ageing population in North America and Europe in the future. This study aims to identify the research literature related to falls among older people in Southeast Asia, to examine current practice and discuss the future direction on falls prevention and interventions in the region. Study Design A scoping review design was used. A systematic literature search was conducted using the Medline, CINAHL, AMED, Ageline, PsycINFO, Web of Sciences, Scopus, Thai-Journal Citation Index, MyCite and trial registries databases. Thirty-seven studies and six study protocols were included, from Thailand, Malaysia, Singapore, Vietnam, Indonesia and the Philippines. One-sixth of the studies involved interventions, while the remainder were observational studies. The observational studies mainly determined the falls risk factors. The intervention studies comprised multifactorial interventions and single interventions such as exercises, educational materials and visual correction. Many of the studies replicated international studies and may not have taken into account features unique to Southeast Asia. Our review has revealed studies evaluating falls and management of falls in the Southeast Asian context. More research is required from all Southeast Asian countries to prepare for the future challenges of managing falls as the population ages.

Rosdina, A. K., Leelavathi, M., Zaitun, A., Lee, V. K. M., Azimah, M. N., Majmin, S. H., & Mohd, K. A. (2010). Self reported hearing loss among elderly Malaysians. *Malaysian Family Physician*, 5(2), 91–94.

A cross-sectional study was conducted on patients attending a primary care facility to determine the prevalence of self reported hearing loss using a single question, “Do you have hearing loss?” Pure tone audiometry was performed to compare the accuracy of the self report. A total of 111 patients were recruited. The prevalence of self reported hearing loss using a single question and pure tone audiometry was 24.3% and 36.9% respectively. By using pure tone audiometry at a cut-off level of 25 dBHL (decibels Hearing level), the single question yielded a sensitivity of 41.4% and specificity of 85.0%. The single question performed better at 40 dBHL pure tone audiometry with sensitivity of 55.0% and specificity of 82.0%. In conclusion, the prevalence of hearing loss in elderly was high and the single question self reported hearing loss performed satisfactorily with moderate hearing loss.

Roslan, A. H., & Mustafa, M. M. (2006). Globalisation, unemployment, and poverty: The need for a new perspective on social protection in Malaysia. *Malaysian Management Journal*, 10(1&2), 49–65.

The integration of an economy to the global market, even when it leads to a higher standard of living, usually results in economic uncertainties, as well as eroding social values and traditions of the society. Some people may gain, while some others may lose out from it, which may cause distributive conflicts to emerge. The economic uncertainties and insecurity, as well as the distributive conflicts that arise from globalisation, could disrupt the economy from securing the benefits of globalisation, and consequently could pose an impediment to economic growth. Hence, some scholars have argued that globalisation also increases the demand for greater role of government to stabilise the economy in terms of providing adequate social protection, if the benefits from globalisation are to be realised. This paper attempts to examine the impact of globalisation on the welfare of the Malaysian society, particularly on unemployment and poverty, and discusses the issues and challenges with regards to the provision of social protection in Malaysia. The paper argues that Malaysia needs a new perspective on social protection, as the existing institutions are deemed inadequate in providing protection to the society in the globalised economy.

Rosmah, M., Siti-Farina, S. M., & Safiah, Y. (2010). *Lifelong learning opportunities for elderly in Malaysia: Present and future*. Paper presented at the South East Asian Conference on Ageing (SEACA2010), 17-18 July 2010. Grand Millennium Hotel KL.

Population ageing is one of the current global challenges. The United Nations Population Division (released at the end of February 2002), among its conclusions, highlighted that by 2050 the trend towards an ever older population will affect every continent, not only developed countries. For example, this division estimated that the proportion of elder population is more than double from 10 percent to 22 percent globally. In addition, the number of persons aged 60 years or over will triple in 45 years' time, charting a rise from the 672 million in 2005 to more than 2 billion by 2050. The statistical data on the observed and forecasted percentages of the elder population in selected areas, regions, and countries of the world for 1950, 2000 and 2050 is shown in Figure 1. Although the ageing population is not growing as fast as in other neighbouring Asian countries, Malaysia cannot be shielded from having to face similar issues and challenges. According to the 2000 Census, by 2020, 9.5

percent of Malaysia's population will be aged 60 or over, which would be roughly 3 million of its population (Gavrilov and Heuveline, 2003). Therefore, it is imperative that measures must be taken to ensure that the elderly will lead quality and productive lives either through formal, informal or non-formal lifelong learning.

Rosnah, M. Y., Mohd Rizal, H., & Sharifah Norazizan, S. A. R. (2009). Anthropometry dimensions of older Malaysians: Comparison of age, gender and ethnicity. *Asian Social Science*, 5(6), 133–140. <https://doi.org/10.5539/ass.v5n6p133>

Studies have indicated that body dimensions differ for various populations. To determine whether there are differences in the anthropometric data of the elderly population in Malaysia, the anthropometric data collected from a previous project was used. These comparisons can give some indications of the relative sizes between age, gender and ethnicity in Malaysian elderly populations. The results showed that some anthropometric dimensions were influenced by age, gender and ethnicity. Regression analysis showed that age and ethnicity were significant predictors ($p < 0.01$) of Malaysians elderly BMI's. The analysis has provided important information in designing and planning of facilities and products for elderly populations.

Rosnah, M. Y., Sharifah Norazizan, S. A. R., Hamid, T. A., & Hussain, M. R. (2008). Home living environment design and perceptions of safety of older Malaysians. *Gerontechnology*, 7(2), 201.

A living environment that is safe and comfortable is especially important for older persons to avoid injuries and other related problems. Studies have shown that diminishing physical and functional capabilities of the elderly have made them more vulnerable to accidents in the home. Reduced visual, hearing, strength and other physical capabilities require special considerations if the elderly were to maintain self-sufficiency and independence. The home is a place where the elderly should feel secure, comfortable and safe from accidents and injuries. If accidents in the home are frequent, it is physically and mentally more distressing the older we get. Thus, certain precautions should be taken to prevent accidents from occurring. A study was conducted to identify safety problems of the living spaces in the home environment and to determine the perceptions of the elderly on the safety of their home environment. A total of 386 respondents comprising of 168 males and 218 females aged 60 years and above were identified through purposive sampling. The homes represent the various races in Malaysia and reside in three urban areas of Kuala Lumpur, Shah Alam and Johor Bahru. Data was obtained through the completion of self-administered questionnaires. The results showed that the mean age of subjects was 68.89, primarily, female (56.5%), and married (60.7%). Most participants have primary school education (51.4%), stay in detached and semi-D type housing (54.6%) and owned their own house (66.8%). Generally, the respondents did not have speech, hearing and physical impairment. However, over 70% had sight impairment, with presbyopia (short sighted) being the most common type. Though eighty one percent of the respondents perceived that their home living environment as safe (Figure 1), the study found that the majority of the homes did not install or have safety appliances such as smoke detectors, peep-holes, alarms, emergency numbers near the telephone, fire extinguishers and first aid box. Among factors that cause fear or insecurity identified by the elderly were fear of intruders, fire, flood and fainting. The common occurrences of accidents were in the toilets and bathrooms. Most of the toilets and bathrooms

were not installed with grab bars. The use of squat toilets and slippery floors are major problems in their home environment. Even though the majority of the respondents feel comfortable with their six living areas in the home, the results of the study clearly showed that the home living environment of the elderly respondents require considerable improvements to increase their safety and comfort. This becomes especially important as the Malaysian elderly population is increasing.

Rosnah, M. Y., Sharifah Norazizan, S. A. R., Nurazrul, S. H., Hamid, T. A., Ahmad, H. H., Aini, M. S., Lina, G. S. C., Lo, W. C., & Mohd Rizal, H. (2006). Comparison of elderly anthropometry dimensions amongst various populations. *Asia-Pacific Journal of Public Health, 18*(1S), 20–25.

The lack of anthropometric dimensions for the elderly can severely limit the ability to design suitable products and living facilities for them. In this paper, the static anthropometry data of 230 elderly people in Malaysia (male and female) aged 60 and above was compared with the anthropometric dimensions of various populations obtained from the literature. These comparisons can give some indications of the relative sizes of various populations in the world and provide guidelines when designing in this globalised economy. Using mean stature, it was found that the female elderly Malaysian has an average height of 148.9 cm as compared to the Polish (152.4 cm), Chilean (151.2 cm), Dutch (154.3 cm), British (151.5 cm) and Australian (152.8 cm) elderly female. For the elderly Malaysian male, the average height is 162.4 cm as compared to the Chilean (165.8 cm), Dutch (165.6 cm), British (164 cm) and Australian (165 cm) elderly male. This variation in stature amongst populations clearly demonstrates the need to collect anthropometric data to match the living environment with the body dimensions of the expected users. Properly designed, the living environment can increase the comfort, safety and health of the elderly.

Royan, S. J., Hamid, A. L., Kovilpillai, F. J., Junid, N. Z., & Mustafa, W. M. W. (2008). A prospective study on elderly patients with facial fractures in a developing country. *Gerodontology, 25*(2), 124–128.

This paper describes the incidence, aetiology, treatment and complications of facial fractures seen among the elderly in a developing country. A prospective study evaluated 85 patients over 60 years of age who were diagnosed with facial fractures over a period of 12 months in 23 public hospitals nationwide. The elderly accounted for 4.5% of the total number of patients seen with facial fractures during the study period. Elderly men outnumbered women by a ratio of 4.31:1. Of the elderly patients, 35.3% had at least one medical condition, the commonest of which was hypertension. Road traffic accidents were the main cause of injury. The fractures were treated in only 26.2% of cases. Complications were uncommon. With a low incidence, and conservative treatment often being practised, the healthcare burden of treating facial fractures among the elderly in Malaysia is at present still low.

Saad, Z. M., Hatta, Z. A., & Mohamad, N. (2010). The impact of spiritual intelligence on the health of the elderly in Malaysia. *Asian Social Work and Policy Review, 4*(2), 84–97.

In an attempt to study the impact of spiritual intelligence on the health of the elderly, research has been carried out on 378 elderly people in Perlis, Malaysia. The primary

objectives of the study were: (i) to identify the levels of spiritual intelligence and general health of the elderly; (ii) to examine the relationships between spiritual intelligence and health of elderly; (iii) to examine the differences in the level of spiritual intelligence and health based on selected demographic factors; and (iv) to predict the most dominant dimension of spiritual intelligence that affects health. Sets of questionnaires were distributed to gather data. The findings showed that the majority of respondents were in good health, and had excellent spiritual intelligence. It also suggested that spiritual intelligence was positively associated with general health. Those who had higher levels of spiritual intelligence tended to have higher levels of health. The ability to conduct daily life with sanctification based on one's spiritual belief was the most dominant factor of good health. The study suggested that spirituality is related to health and has a positive effect on participants' overall health. Based on our findings, we recommend that health practitioners introduce the biopsychosocial-spiritual model when assessing the health of the elderly.

Saedon, N. I., Zainal-Abidin, I., Chee, K. H., Khor, H. M., Tan, K. M., Kamaruzzaman, S. K., Chin, A. V., Poi, P. J. H., & Tan, M. P. (2016). Postural blood pressure electrocardiographic changes are associated with falls in older people. *Clinical Autonomic Research*, 26(1), 41–48. <https://doi.org/10.1007/s10286-015-0327-5>

To determine the magnitude of postural blood pressure change, differences in ECG between fallers and non-fallers were measured. Postural blood pressure change is associated with symptoms of dizziness, presyncope, and syncope. In this cross-sectional study were included participants from The Malaysian Falls Assessment and Intervention Trial: fallers, aged 65 years or older with two or more falls or one injurious fall in 12 months, from a teaching hospital; and non-fallers, aged 65 years and older found through word-of-mouth and advertising. Noninvasive beat-to-beat blood pressure was measured at 10 min supine rest and 3 min standing. The maximal drop in systolic and diastolic pressure was calculated from a 12-lead ECG interpreted by a cardiologist. Basic demographics, medical history, and symptoms of dizziness, presyncope, and syncope were recorded for all patients. We recruited 155 fallers and 112 non-fallers. Fallers had a significantly longer PR interval (179 ± 32 vs. 168 ± 27 ms, $p = 0.013$) and a longer corrected QT interval (449 ± 41 vs. 443 ± 39 msec, $p = 0.008$), and larger change in SBP (28 ± 14 vs. 19 ± 9 mmHg, $p < 0.001$) with posture change. SBP drop of ≥ 30 mmHg associated with recurrent and injurious falls [odds ratio [95 % confidence interval] = 7.61 (3.18-18.21)]. The changes remained significant after adjustment for symptoms of dizziness, presyncope and syncope. Older individuals with recurrent and injurious falls have significantly longer PR and QT intervals and larger SBP reduction with posture change as compared to non-fallers, and these are not explained by the presence of dizziness, presyncope, or syncope. SBP cut-off of ≥ 30 mmHg considered for postural measurements using continuous BP monitors, the significance of this value needs to be evaluated.

Saleh, H. A. A. (2013). Social support among elderly people: Case study focused on the silver jubilee home in Penang, Malaysia, *American International Journal of Social Science* 2(1), 65–76.

The purpose of the study is to examine the level of social support from family and friends for elderly residents of the Silver Jubilee Home in Penang, Malaysia. In this study, the Lubben Social Network Scale (LSNS) was used to assess three dimensions of social support:

the frequency of visitation and communication, confidante relationships, and the quality of decision-making processes involving families and friends. Participants in this study reported low levels of social support received from their families and friends across the three social network dimensions of visitation and communication, confidante relationships, and involvement in decision making processes. In addition, the study subjects, whether males or females, received low levels of social support in all types of confidante relationships and involvement in decision-making processes. However, male residents received more visitors and established higher levels of communication with their families and friends than their female counterparts.

Salimah, O., Rahmah, M. A., Rosdinom, R., & Shamsul Azhar, S. (2008). A case control study on factors that influence depression among the elderly in Kuala Lumpur Hospital and Universiti Kebangsaan Malaysia Hospital. *Medical Journal of Malaysia*, 63(5), 395–400.

Depressive illness is common among the aged population. A case control study was conducted, focusing on risk factors influencing depression among the elderly. This study involved 130 elderly patients diagnosed to have depressive illness from the psychiatric clinics of Kuala Lumpur Hospital (HKL) and Universiti Kebangsaan Malaysia Hospital (HUKM). Another group of 130 elderly patients with no history of depressive illness were recruited from the medical specialist clinics. The majority of cases were female (75.4%), aged 60-74 years (92.3%) and from Chinese ethnic group (59.2%). Non-Malay elderly has three times risk (AOR 2.537, 95% CI 1.439-4.471) of suffering the depressive illness compared to the Malay elderly, the elderly with chronic health problems are more likely to be depressed compared to those who do not suffer from any chronic illness (p trend <0.001). Other risk factors identified were family history of depression with four times risk (AOR 4.225, 95% CI 2.017-8.848) and lower social support with eight times risk (AOR 7.949, 95% CI 2.588-24.417). Social support is not only important in encouraging the elderly to practice healthy life style but proven to influence the risk of getting depression among them. Hence, it is very crucial that the elderly is given total attention, respect and love from all parties to ensure prosperity and meaningfulness in life.

Salleh, C. I., Rahim, N. A., Sujud, A., & Affendi, N. R. N. (2009). Sit and chat with me! An insight into the elderly. *Journal of the World Universities Forum*, 2(4), 155–160.

Everyone in the world needs someone to talk to and somebody to be there all the time. This scenario seems to be different for the elderly in Malaysia although Malaysia has taken the problems of the elderly as the first priority of humanism. The National Welfare Policy (1990) identified older persons under one of its many target groups. The policy, however, was more welfare-oriented rather than development-oriented. It was only in 1995 that the policy for the elderly was formulated to cater for the developmental needs of the older population. Therefore the objectives of the present study are to investigate the content of discussion between the elderly and the researcher and to find out their feelings and emotions while chatting. Three elderly from a government home for the elderly in Malaysia participated in this study. The study was done for two hours daily in three weeks. The conversations were taped and analyzed by using the pragmatic approach. Selected conversations were chosen for the purpose of this study. It is found that the elderly needed somebody to chat with and the chatting was actually made them moved on with their lives. This study is a research based

paper to encourage university lecturers to experience community service with the elderly and at the same time be with them in order to understand and have a feel about their lives.

Samad, S. A., & Mansor, N. (2013). Population ageing and social protection in Malaysia. *Malaysian Journal of Economic Studies*, 50(2), 139–156.

The New Economic Model for Malaysia (NEM) 2010 defines inclusiveness as one of the three pillars of a developed society in the next decade and beyond. The underlying principle of the inclusiveness objective of the plan is to enable every Malaysian to have access to opportunities in order to contribute to the economy and to ensure that essential needs of the people are met. The question is to what extent does the present scenario support this objective of equalising opportunities? Also, in ensuring that essential needs of the people are met without marginalising any group, are the existing social safety nets policies adequate to support every Malaysian to sustain a decent living standard? This is of particular concern to the old age group that is getting bigger due to a very low population growth and an increasing average life span of 71.7 years for males and 75 years for females. Hence, this paper attempts to answer these questions and other related issues. It is divided into three parts: the first part defines the key concepts and framework employed in this paper; the second part examines the existing social protection schemes in Malaysia and analyses some case studies of NGOs working with the elderly and the final part offers some policy recommendations as a way forward.

Samah, A. A. (2012). Non-government organizations and participatory model for the empowerment of older people in Malaysia. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 304–320). Universiti Putra Malaysia: Institute of Gerontology.

This study focuses on the potential role of the NGOs in promoting well-being and as a medium of empowering older people in Malaysia. It also deliberates the capabilities and potentials of NGO to care for the elderly in the future.

Samsudin, S., & Abdullah, N. (2017). Healthcare utilization by older age groups in northern states of Peninsular Malaysia: The role of predisposing, enabling and need factors. *Journal of Cross-Cultural Gerontology*, 32(2), 223-237.

Determining factors that affect healthcare utilization by the elderly is vital for the health system to be more responsive in providing care to this vulnerable group. The main objective of this paper is to identify the effect of the predisposing, enabling, and need factors on doctor visits and in-patient care for the elderly residing in the northern region of Malaysia. A multistage cluster sampling was used in selecting the sample for the study. A total of 1414 respondents aged 60 and over were interviewed face-to-face using a structured questionnaire. A probit model was used in estimating the utilization equations. At a significance level of 0.05, except for age, all predisposing and enabling factors were not statistically significant in affecting the doctor visits. On the other hand, being a male, smoker, medical insurance holder or had not actively involved in social interaction within the reference period increases the likelihood of being in-patient. Health-related variables remain the most significant factors that determine healthcare utilization, including both doctor visits and in-patient stays, in the area of study, which suggests that government policies to improve population health may influence the level of healthcare use in the future.

Sandosham, A. A. (1977). The problems of the aged and a life worth living. *Asian Medical Journal*, 20(12), 5–9.

In Malaysia, a Senior Citizen Society specially catering for the middle and higher income groups was found. Among the specific undertakings of this Society are: The study of their needs and rouse the social conscience of the public and government towards the elderly, especially the middle and higher income groups; Try and induce government and the big firms to postpone the compulsory retiring age if workers are medically fit for the job; Organise pre-retirement classes to help people near retiring age to develop suitable hobbies and train themselves for jobs they can undertake after retirement; Maintain an employment bureau to find part-time jobs for the retired; Advise on suitable housing and furnishing; Find suitable homes to take in aged boarders; Organise a squad of volunteers in various places to call on old people to relieve loneliness and boredom; Build and encourage the building of suitable Grouped Dwellings with communal facilities in different parts of the country for groups of 30 or 50 old people; Publish circulars and newsletters giving advice on how to prevent old age ailments, inform the aged of recent developments in the medical field and new gadgets and appliances suitable for them.

Sathasivam, J., Kamaruzzaman, S. B., Hairi, F., Ng, C. W., & Chinna, K. (2015). Frail elders in an urban district setting in Malaysia. *Asia Pacific Journal of Public Health*, 27(8_suppl), 52S–61S. <https://doi.org/10.1177/1010539515583332>

In the past decade, the population in Malaysia has been rapidly ageing. This poses new challenges and issues that threaten the ability of the elderly to independently age in place. A multistage cross-sectional study on 789 community-dwelling elderly individuals aged 60 years and above was conducted in an urban district in Malaysia to assess the geriatric syndrome of frailty. Using a multidimensional frailty index, we detected 67.7% prefrail and 5.7% frail elders. Cognitive status was a significant correlate for frailty status among the respondents as well as those who perceived their health status as very poor or quite poor; but self-rated health was no longer significant when controlled for sociodemographic variables. Lower-body weakness and history of falls were associated with increasing frailty levels, and this association persisted in the multivariate model. This study offers support that physical disability, falls, and cognition are important determinants for frailty. This initial work on frailty among urban elders in Malaysia provides important correlations and identifies potential risk factors that can form the basis of information for targeted preventive measures for this vulnerable group in their prefrail state.

Satvin, K., Sun, P. L., & Leong, Y. M. (2014). Prevalence of metabolic syndrome and its relation to body composition in Chinese elderly. *Asian Journal of Gerontology and Geriatrics*, 9(1), 21–26.

This study evaluated the prevalence of metabolic syndrome (Mets) and its relation to body composition, dietary intake, and physical activity among Chinese elderly. 67 men and 63 women residing in primary care centres in the Klang Valley, Malaysia were included in this cross-sectional study. Their body weight, height, body mass index, waist circumference, mid-upper arm muscle circumference, and blood pressure were measured, as were visceral fat level and total body fat percentage, as well as fasting blood glucose, high-density lipoprotein cholesterol, total cholesterol, and triglycerides. Dietary intake was evaluated through a semi-quantitative food frequency questionnaire. Physical activity was assessed using the physical

activity scale for elderly questionnaire. In this cohort, the prevalence of Mets was 46%; those with Mets had an increased prevalence of obesity ($p < 0.001$), as characterised by higher body mass index, total body fat, visceral fat adiposity, mid-upper arm circumference, and waist-to-height ratio. Dietary intake was not significantly different in those with and without Mets, but physical activity level was significantly higher in the latter. After controlling for age and gender, physical activity was a predictor of Mets (odds ratio, 0.989; 95% CI, 0.979-0.999). Mets was prevalent among Chinese elderly residing in primary care centres in Klang Valley, Malaysia, and its severity was associated with body composition.

Sazlina, S. G., Browning, C. J., & Yasin, S. (2012). Promoting physical activity in sedentary elderly Malays with type 2 diabetes: A protocol for randomised controlled trial. *BMJ Open*, 2(6), 1–9.

Like many countries Malaysia is facing an increase in the number of people with type 2 diabetes mellitus (T2DM) and modifiable lifestyle factors such as sedentary behaviour are important drivers of this increase. The level of physical activity is low among elderly Malay people. In Malaysia, strategies to promote physical activity in elderly Malay people with T2DM are not well documented in the research literature. This paper discusses an intervention to increase physical activity in elderly Malay people with T2DM. The aim of our study was to evaluate the effectiveness of personalised feedback alone and in combination with peer support in promoting and maintaining physical activity in comparison with usual care. A three-arm randomised controlled trial will be conducted among sedentary Malay adults aged 60 years and above with T2DM attending an urban primary healthcare clinic in Malaysia. The participants will be randomised into three groups for a 12-week intervention with a follow-up at 24 and 36 weeks to assess adherence. The primary outcome of this study is pedometer-determined physical activity. Glycaemic and blood pressure control, body composition, cardiorespiratory fitness, balance, lipid profile, health-related quality of life, psychological well-being, social support and self-efficacy for exercise are the secondary measures. Linear mixed models will be used to determine the effect of the intervention over time and between groups.

Sazlina, S. G., Mastura, I., Ahmad, Z., Cheong, A. T., Adam, B. M., Jamaiyah, H., Lee, P. Y., Syed-Alwi, S. A., Chew, B. H., & Sriwahyu, T. (2014). Control of glycemia and other cardiovascular disease risk factors in older adults with type 2 diabetes mellitus: Data from the adult diabetes control and management. *Geriatrics & Gerontology International*, 14(1), 130–137. <https://doi.org/10.1111/ggi.12070>

The aims of the present study were to assess the control of glycemia and other cardiovascular disease risk factors, and the association between age and these controls among older adults with type 2 diabetes in Malaysia. A cross-sectional study was carried out using cases notified to the Adult Diabetes Control and Management database between 1 January and 31 December 2009. A total of 10 363 people aged over 60 years with type 2 diabetes mellitus were included in the analyses. A standard online case report form was used to record demographic data, clinical factors (diabetes duration, comorbid condition and treatment modalities), cardiovascular disease risk factors, diabetes complications and laboratory assessments. The cardiovascular disease risk factors controls assessed included glycosylated hemoglobin (HbA1c) $< 7.0\%$, blood pressure, body mass index, waist circumference and lipid profiles. Results: The proportion of older adults who achieved target HbA1c ($< 7.0\%$) was

41.7%. A greater proportion of older adults aged ≥ 80 years significantly achieved the targets of HbA1c $< 7\%$ ($P < 0.001$), waist circumference ($P < 0.001$), low-density lipoprotein cholesterol < 2.6 mmol/L ($P = 0.007$) and triglycerides < 1.7 mmol/L ($P = 0.001$) when compared with the younger elderly groups. They were also associated with achieving target HbA1c $< 7.0\%$ (OR = 1.90, 95% CI 1.68-2.26) and triglycerides < 1.7 mmol/L (OR = 1.20, 95%CI 1.04-1.46) than those aged 60-69 years. The control of cardiovascular disease risk factors was suboptimal in older adults with type 2 diabetes. The oldest elderly were more likely to achieve target HbA1c ($< 7.0\%$) and triglycerides (< 1.7 mmol/L) than older adults aged 60-69 years.

Sazlina, S. G., Zaiton, A., Nor Afiah, M. Z., & Hayati, K. S. (2012). Predictors of health related quality of life in older people with non-communicable diseases attending three primary care clinics in Malaysia. *The Journal of Nutrition Health and Aging*, 16(5), 498–502.

To determine the health related quality of life and its predictive factors among older people with non-communicable diseases attending primary care clinics. Cross-sectional study. Three public primary care clinics in a district in Selangor, Malaysia. Registered patients aged 55 years and above. A face-to-face interview was conducted using a validated questionnaire of Medical Outcome Study 36-item short form health survey (SF-36). The outcome measure was the health related quality of life (HRQoL) and other factors measured were socio demography, physical activity, social support (Duke-UNC Functional Social Support Questionnaire), and presence of non-communicable diseases. A total of 347 participants had non-communicable diseases which included hypertension (41.8%), type 2 diabetes (33.7%), asthma (4.8%), hyperlipidaemia (1.7%), coronary heart disease (1.2%), and osteoarthritis (0.2%). Age ≥ 65 years old (OR = 2.23; 95%CI=1.42, 3.50), single (OR=1.75; 95%CI=1.06, 2.90), presence of co-morbid condition (OR=1.66; 95%CI=1.06, 2.61), and poorer social support (OR=2.11; 95%CI=1.27, 3.51; $p=0.002$) were significant predictors of poorer physical component of HRQoL. In predicting lower mental health component of HRQoL, the significant predictors were women (OR=2.28; 95%CI=1.44, 3.62), Indian ethnicity (OR=1.86; 95%CI=1.08, 3.21) and poorer social support (OR=2.71; 95%CI=1.63, 4.51). No interactions existed between these predictors. Older people with non-communicable diseases were susceptible to lower health related quality of life. Increasing age, single, presence of co-morbid conditions, and poorer social support were predictors of lower physical health component of HRQoL. While the older women, Indian ethnicity and poorer social support reported lower mental health component of HRQoL.

Sazlina, S., Mastura, I., Cheong, A. T., Bujang Mohamad, A., Jamaiyah, H., Lee, P. Y., Syed Alwi, S. A. R., & Chew, B. H. (2015). Predictors of poor glycaemic control in older patients with type 2 diabetes mellitus. *Singapore Medical Journal*, 56(5), 284–290.

We assessed the predictors of poor glycaemic control among older patients with type 2 diabetes mellitus (T2DM) in Malaysia. This cross-sectional study used the data of 21,336 patients aged ≥ 60 years with T2DM from the Adult Diabetes Control and Management Registry 2008–2009. Predictors of poor glycaemic control were: age groups 60–69 years (odds ratio [OR] 1.96, 95% confidence interval [CI] 1.66–2.33) and 70–79 years (OR 1.43, 95% CI 1.20–1.71); Malay (OR 1.53, 95% CI 1.41–1.66) and Indian (OR 1.32, 95% CI 1.19–1.46) ethnicities; T2DM durations of 5–10 years (OR 1.46, 95% CI 1.35–1.58) and > 10 years

(OR 1.75, 95% CI 1.59–1.91); the use of oral antidiabetic agents only (OR 5.86, 95% CI 3.32–10.34), insulin only (OR 17.93, 95% CI 9.91–32.43), and oral antidiabetic agents and insulin (OR 29.42, 95% CI 16.47–52.53); and elevated blood pressure (OR 1.10, 95% CI 1.01–1.20), low-density lipoprotein cholesterol (OR 1.48, 95% CI 1.38–1.59) and triglycerides (OR 1.61, 95% CI 1.51–1.73). Hypertension (OR 0.71, 95% CI 0.64–0.80), hypertension and dyslipidaemia (OR 0.68, 95% CI 0.61–0.75), pre-obesity (OR 0.89, 95% CI 0.82–0.98) and obesity (OR 0.76, 95% CI 0.70–0.84) were less likely to be associated with poor glycaemic control. Young-old and middle-old age groups (i.e. < 80 years), Malay and Indian ethnicities, longer T2DM duration, the use of pharmacological agents, and elevated blood pressure and lipid levels were associated with poor glycaemic control. The presence of comorbidities, pre-obesity and obesity were less likely to be associated with poor glycaemic control.

Selvaratnam, D. P., & Poo, B. T. (2008). Consumption patterns among the elderly in urban Malaysia: The case study of Selangor. *Malaysian Journal of Consumer and Family Economics*, 11(1), 48-57.

As one retires from formal work the most worrying aspect is balancing one's daily budget. The consumption lifecycle theory argues that after retirement from a paid job a person will either maintain their lifestyle or face a decline in the consumption pattern due to loss of income. The elder lies who are not prepared and who used to be robust in their working days will be the hardest hit. This burden is escalated when poor diet and lack of exercise causes a decline in the general health of the individual leading to a rise in demand for health facilities and medicine. Poor eating habits and low exercise levels correlates to faster physical ageing characteristics. This paper investigates the consumption pattern among the elderly in urban areas in Selangor. A sample of 100 respondents were interviewed and the analysis shows a difference in consumption pattern among the male and female respondents and also those from differing age groups of the elderly although the majority of the respondents had good networking between family members relatives or friends.

Selvaratnam, D. P., & Poo, B. T. (2007). Lifestyle of the elderly in rural and urban Malaysia. *Annals of the New York Academy of Science*, 1114, 317–325.

Malaysia is steadily progressing toward an aging population demographic pattern. While aging is a natural process, its impact can be painful individually as well as for the nation. Individually there is a loss of a paying job after retirement, loss of physical and mental fitness, and also occasionally the loss of social integration due to lack of mobility. For a nation, an aging population means a growing dependency ratio, a greater need of care, and more medical facilities for this age group. This article looks at the various economic and social implications of the aging population in Malaysia in general, and in the rural and urban setting specifically. The paper focuses on a research sample of 132 (66 rural, 66 urban) elderly persons. The findings suggest that the demographic patterns of the elderly vary from the rural to the urban setting, with differing issues that need to be addressed to alleviate problems encountered related to loneliness, lack of financial stability, and emotional strain. Policy suggestion will be geared toward providing a solution to problems at hand as well as aiding the working group members to prepare and sustain a comfortable livelihood for the aged in their later years.

Selvaratnam, D. P., Bakar, N. A., & Idris, N. A. H. (2012). The health determinants of elderly Malaysian population. *PROSIDING PERKEM*, 7(2), 1195–1199.

Improved living conditions and advances in the medical field have helped to increase the ageing population of the world. While the developed countries are better equipped to cushion the burden of caring and sustaining the medical expenses of their growing number of elderly population, developed countries face challenges to support and care for their elderly. Earlier elderly studies focused on morbidity, psychological and economic sustainability conditions of the elderly. While more recent studies have begun to emphasise importance of social networking, community participation and health and its implications for government expenditure. This paper is part of a nationwide research. A total of 10 percent of total elderly population was interviewed to obtain detailed socioeconomic and lifestyle information. A total of 1410 elderly respondents aged 60 and above were interviewed from the regions of northern, eastern, middle and southern Peninsular Malaysia and also from Sabah and Sarawak. The respondents were stratified by gender and locality. The data was analysed using the SPSS 16 programme. Quantitative analysis based on mean, standard deviation and multiple regressions was done. Findings show that the health determinants of the elderly were exercise, regular medical check-ups and having health problems.

Selvaratnam, D. P., Bakar, N. A., Aini, N., & Idris, H. (2010). Economic well-being and morbidity of the elderly in Malaysia. *Journal of Modern Accounting and Auditing*, 6(4), 45-51.

Studies about the elderly are mostly focused on morbidity and psychological conditions of the elderly. Effects of social relations have been noted to be important for the well-being of an elderly person. Later studies have begun to look at socioeconomic status of the elderly to see its relation to the level of morbidity. This paper is based on a nationwide survey. A total of 1410 elderly respondents aged 60 and above were interviewed from the regions of northern, eastern, middle and southern Peninsular Malaysia and also from Sabah and Sarawak. Findings show that higher morbidity rate lowers ones economic well-being. Females report higher morbidity than males, while those who are married and residing in rural area also report lower morbidity.

Seman, K., Abdul Manaf, H., & Ismail, A. R. (2007). Association between functional dentition with inadequate calorie intake and underweight in elderly people living in “Pondok” in Kelantan. *Archives of Orofacial Sciences*, 2, 10–19.

This study was to investigate the association between functional dentition with inadequate calorie intake and underweight in elderly people living in “Pondok” in Kelantan. A cross-sectional study participated by 369 elderly people was carried out. A simple random sampling method was utilized for the selection of the subjects. Subjects were interviewed using a structured form to collect information about subjects’ demographic background and self-reported health status. The 24-hour recall method was used to provide information on the subject’s exact food intake during the previous 24 hours. Body mass index was calculated from subjects’ weight and height, followed by oral assessment. The “Nutrical Software” was used for nutrient calculation, followed by SPSS version 11.5 for data analysis. The response rate was 95.6%. Majority of the respondents were female (92.4%). The percentage of subjects who had inadequate calorie intake and underweight was 71.0% and 25.7% respectively. The percentage of edentulism was 81.0%. The proportion of elderly with compromised functional

dentition was 48.2% and majority was edentate elderly without wearing any complete dentures or wearing defective dentures, 23.6% and 56.2% respectively, while 20.2% was dentate elderly. The odds of having inadequate calorie intake and getting underweight among elderly with a compromised functional dentition was 3.7 times and 42.0 times respectively, compared to elderly with a non-compromised functional dentition. There was a significant association between inadequate calorie intake and underweight with functional dentition among elderly living in “Pondok” in Kelantan.

Shahar, S., & Pooy, N. S. (2003). Predictive equations for estimation of stature in Malaysian elderly people. *Asia Pacific Journal of Clinical Nutrition*, 12(1), 80–84.

Height is an important clinical indicator to derive body mass index (BMI), creatinine height index and also to estimate basal energy expenditure, basal metabolic rate and vital capacity through lung function. However, height measurement in the elderly may impose some difficulties and the reliability is doubtful. Equations estimating height from other anthropometric measures have been developed for Caucasians, but only one study has developed an equation (based on arm span only) for an Asian population. Therefore, a cross sectional study was conducted to develop equations using several anthropometric measurements for estimating stature in Malaysian elderly. A total of 100 adults (aged 30 to 49y) and 100 elderly subjects (aged 60 to 86y) from three major ethnic groups of Malays (52%), Chinese (38.5%) and Indians (9.5%) participated in this study. Anthropometric measurements included body weight, height, arm span, half arm span, demi span and knee height were carried out by trained nutritionists. Inter and intra observer errors and also % Coefficient Variation (%CV) were calculated for each anthropometric measurement. Equations to estimate stature were developed from the anthropometric measurements of arm span, demi span and knee height of adults using linear regression analysis according to sex. Elderly subjects were shorter and lighter compared to their younger counterparts. The %CV of anthropometric measurements in adults and elderly subjects ranged between 5 to 6%, with standing height having the lowest %CV. When the equations derived from adults were applied to elderly subjects, it was found that percentage difference between actual height and the estimated value ranged from 1.0 to 3.3%. However, the percentage difference between estimated height from the equations developed in this study compared to those derived from the equations of other populations ranged between 0.2 to 8.7%. In conclusion, standing height is an ideal technique for estimating the stature of individuals. However, in cases where its measurement is not possible or reliable, such as in elderly subjects, height can be estimated from proxy indicators of stature. In this study arm span showed the highest correlation with standing height, which is in agreement with other studies. It should be borne in mind that equations derived from taller statured populations (e.g. Caucasians) may be less accurate when applied to shorter statured populations.

Shahar, S., & Siti Saifa, H. (2007). Validation of nutritional screening tools against anthropometric and functional assessments among elderly people in Selangor. *Malaysian Journal of Nutrition*, 13(1), 29–44.

This cross sectional study was conducted to determine the validity of three screening tools, Mini Nutritional Assessment Short Form (MNA-SF), Malnutrition Risk Screening Tool for Community (MRST-C) and Malnutrition Risk Screening Tool for Hospital (MRST-H) among elderly people at health clinics. The screening tools were validated against

anthropometric and functional assessments. The anthropometric assessments that were carried out included body weight, height, arm span, body mass index (BMI), calf circumference (CC) and mid upper arm circumference (MUAC). A set of questionnaire on manual dexterity, muscular strength, instrumental activities daily living (IADL) and cognitive status was used to assess functional abilities. A total of 156 subjects were recruited from rural (38 subjects) and urban (118 subjects) health clinics at Sabak Bernam and Cheras respectively. Subjects' age ranged from 60 to 83 years old, with 44.2% were men and 55.8% women. The prevalence of muscle wasting among the subjects assessed from MUAC and CC were both 7.0%. MNA-SF had the highest correlation with BMI ($r = 0.497$, $p < 0.001$), followed by MUAC ($r = 0.398$, $p < 0.001$), CC ($r = 0.473$, $p < 0.001$), cognitive assessment ($r = 0.229$, $p < 0.001$) and handgrip strength ($r = 0.209$, $p < 0.001$). Whilst MRST-C had the highest correlation with IADL score ($r = -0.320$, $p < 0.001$) and MRST-H had the highest correlation with the lock and key test ($r = -0.325$, $p < 0.01$). Sensitivity was the highest for MNA-SF (93.2%), followed by MRST-H (52.5%) and MRST-C (25.8%). Specificity was the highest for MRST-H (97.3%), followed by MRST-C (90.8%) and MNA-SF (79.4%). Positive predictive value (PPV) for MRST-H, MNA-SF and MRST-C was 55.5 %, 18.2 % and 14.1 %, respectively. In conclusion, among the screening tools being validated, MNA-SF is considered the most appropriate tool to be used in health clinics for identification of elderly individuals who are at high risk of malnutrition.

Shahar, S., Adznam, S. N., Lee, L. K., Mohd Yusoff, N., Salleh, M., & Mohamed Sakian, N. (2013). A nutrition education intervention for anthropometric and biochemical profiles of rural older Malays with metabolic syndrome. *Public Health Nursing, 30*(2), 140–149.

This study aimed to determine the effectiveness of a nutrition education intervention package in improving anthropometric, clinical and biochemical indicators of rural older Malays with metabolic syndrome (MS). In this study, 47 older Malays diagnosed with MS were assigned to either the intervention group ($n = 24$) or the control group ($n = 23$) based on their geographical site. Intervention: The intervention group received nutrition education via group counseling sessions, talks, and cooking and exercise demonstrations using a specifically developed healthy aging package for 6 months. The efficacy of the nutrition education intervention on anthropometric and biochemical parameters was assessed. Women in the nutrition education group showed a significant reduction in waist circumference ($p < .01$) compared to the control group. Men who received the nutrition education intervention maintained their total cholesterol (TC) level ($p < .05$) compared to the control group. The nutrition education intervention showed potential for improving TC levels in men and waist circumference in women with MS. Similar intervention studies could be initiated among the older adults in the community as a preventive measure.

Shahar, S., Adznam, S. N., Rahman, S. A., Mohd Yusoff, N. A., Yassin, Z., Arshad, F, M. Sakian, N. I., Salleh, M., & Samah, A. A. (2012). Development and analysis of acceptance of a nutrition education package among a rural elderly population: An action research study. *BMC Geriatrics, 12*-24.

It is well known that older adults are often vulnerable to malnutrition. This action research was conducted to develop a nutrition education package for promoting healthy ageing and reducing risk of chronic diseases among older adults in a rural area of Malaysia.

This study was designed and conducted in three stages, including needs assessment, development of the package and analysis of acceptance among 33 older adults aged 60 years and over in rural communities, and 14 health staff members at rural health clinics. Subjects completed a questionnaire including socio-demographic factors and acceptance evaluation of the nutrition education package with respect to content, graphics and design. Data were analysed descriptively using numbers and percentages. A nutrition education package comprising a booklet, flipchart and placemats was developed. A total of 42.4% of the older adults expressed that the sentences in the flipchart needed to be simplified and medical terms explained. Terminology (60%), illustrations (20%) and nutrition recommendations (20%) were the aspects that prevented elderly subjects from fully understanding the booklet. Information on the placemats was easily understood by subjects. A well accepted nutrition education package for promoting healthy ageing and reducing risk of chronic diseases was developed that incorporated modifications based on feedback from older adult subjects and health clinic staff in a rural area. It is a tool that can effectively be used for health education in this population.

Shahar, S., Ahmad, M. H., Teng, N. I. M. F., Mohd Sakian, N. I., Omar, B., & Abd Manaf, Z. (2014). Applying theory of planned behavior to predict exercise maintenance in sarcopenic elderly. *Clinical Interventions in Aging, 9*, 1551.

This study aimed to determine the factors associated with exercise behavior based on the theory of planned behavior (TPB) among the sarcopenic elderly people in Cheras, Kuala-Lumpur. A total of 65 subjects with mean ages of 67.5±5.2 (men) and 66.1±5.1 (women) years participated in this study. Subjects were divided into two groups: 1) exercise group (n=34; 25 men, nine women); and 2) the control group (n=31; 22 men, nine women). Structural equation modeling, based on TPB components, was applied to determine specific factors that most contribute to and predict actual behavior toward exercise. Based on the TPB's model, attitude ($\beta=0.60$) and perceived behavioral control ($\beta=0.24$) were the major predictors of intention to exercise among men at the baseline. Among women, the subjective norm ($\beta=0.82$) was the major predictor of intention to perform the exercise at the baseline. After 12 weeks, attitude (men's, $\beta=0.68$; women's, $\beta=0.24$) and subjective norm (men's, $\beta=0.12$; women's, $\beta=0.87$) were the predictors of the intention to perform the exercise. "Feels healthier with exercise" was the specific factor to improve the intention to perform and to maintain exercise behavior in men ($\beta=0.36$) and women ($\beta=0.49$). "Not motivated to perform exercise" was the main barrier among men's intention to exercise. The intention to perform the exercise was able to predict actual behavior regarding exercise at the baseline and at 12 weeks of an intervention program. As a conclusion, TPB is a useful model to determine and to predict maintenance of exercise in the sarcopenic elderly.

Shahar, S., Dixon, R., & Earland, J. (1999). Development of a screening tool for detecting undernutrition and dietary inadequacy among rural elderly in Malaysia: Simple indices to identify individuals at high risk. *International Journal of Food Sciences and Nutrition, 50*(6), 435–444. <https://doi.org/10.1080/096374899101003>

Undernutrition and the consumption of poor diets are prevalent among elderly people in developing countries. Recognising the importance of the early identification of individuals at high nutritional risk, this study aimed to develop a simple tool for screening. A cross-sectional study was conducted on 11 randomly selected villages among the 62 in Mersing

District, Malaysia. Undernutrition was assessed using body mass index, plasma albumin and haemoglobin on 285 subjects. Dietary inadequacy (a count of nutrients falling below two-thirds of the Recommended Dietary Allowances) was examined for 337 subjects. Logistic regression analysis was performed to identify significant predictors of undernutrition and dietary inadequacy from social and health factors, and to derive appropriate indices based on these predictions. The multivariate predictors of undernutrition were 'no joint disease', 'smoker', 'no hypertension', 'depended on others for economic resource', 'respiratory disease', 'perceived weight loss' and 'chewing difficulty', with a joint sensitivity of 56% and specificity of 84%. The equivalent predictors of dietary inadequacy were 'unable to take public transport', 'loss of appetite', 'chewing difficulty', 'no regular fruit intake' and 'regularly taking less than three meals per day', with a joint sensitivity of 77% and specificity of 47%. These predictions, with minor modification to simplify operational use, led to the production of a simple screening tool. The tool can be used by public health professionals or community workers or leaders as a simple and rapid instrument to screen individuals at high risk of undernutrition and/or dietary inadequacy.

Shahar, S., Earland, J., & Rahman, S. A. (2000). Food intakes and habits of rural elderly Malays. *Asia Pacific Journal of Clinical Nutrition*, 9(2), 122–129.

A cross-sectional nutritional survey was carried out on 350 elderly Malays aged 60 and above from 11 randomly selected villages in a rural area on the east coast of Malaysia. The findings indicated that the mean intakes of energy and of all of the nutrients investigated were below the Malaysian Recommended Dietary Allowances, except for protein and vitamin C. With respect to dietary habits, almost all of the subjects reported that they had breakfast (99.3%), lunch (97.9%) and dinner (90.4%) daily or almost daily (5–6 times/week). However, approximately half of the subjects, especially women, had particular beliefs and prohibitions about specific foods. Most of the subjects usually ate their meals at home, particularly dinner, with 99.3% always having dinner in their own home. Thus, although the rural elderly Malays studied had regular meal intakes, the dietary intake was inadequate. There is a need to plan community-based intervention programs in order to prevent the subsequent consequences of malnutrition that lead to increased morbidity and mortality.

Shahar, S., Earland, J., & Rahman, S. A. (2000). Validation of a dietary history questionnaire against a 7-d weighed record for estimating nutrient intake among rural elderly Malays. *Malaysian Journal of Nutrition*, 6(1), 33–44.

Energy and nutrient intake estimated using a pre-coded dietary history questionnaire (DHQ) was compared with results obtained from a 7-d weighed intake record (WI) in a group of 37 elderly Malays residing in rural areas of Mersing District, Johor, Malaysia to determine the validity of the DHQ. The DHQ consists of a pre-coded dietary history with a qualitative food frequency questionnaire which was developed to obtain information on food intake and usual dietary habits. The 7-d WI requires subjects to weigh each food immediately before eating and to weigh any leftovers. The medians of intake from the two methods were rather similar and varied by less than 30% for every nutrient, except for vitamin C (114%). For most of the nutrients, analysis of group means using the Wilcoxon matched pairs signed rank sum test showed no significant difference between the estimation of intake from the DHQ and from the WI, with the exceptions of vitamin C and niacin. The DHQ significantly overestimated the intake of vitamin C compared to the WI ($p < 0.05$), whilst, the intake of

niacin was significantly underestimated ($p < 0.05$). The consistency of ranking as assessed using the Spearman's rank correlation coefficient (r) was satisfactory since there were positive correlations between all of the investigated nutrients estimated using the DHQ with those assessed using the WI, except for niacin. Furthermore, both the DHQ and the WI classified approximately 38 to 62% of the subjects into the same tertile for all nutrients, except vitamin C. Therefore, the DHQ was modified by adding a checklist of foods rich in vitamin C and niacin. In conclusion, the DHQ was fairly valid for obtaining the usual intake of most nutrients, particularly on a group basis. These findings indicate that in an elderly population with a high prevalence of illiteracy, a specially designed DHQ can provide very similar estimations to that obtained from 7-d WI.

Shahar, S., Earland, J., Powers, H. J., & Rahman, S. A. (1999). Nutritional status of rural elderly Malays: Dietary and biochemical findings. *International Journal for Vitamin and Nutrition Research*, 69(4), 277–284.

A cross-sectional nutritional survey was carried out on 350 elderly Malays aged 60 and above from 11 randomly selected villages in a rural area on the East Coast of Malaysia. The findings indicated that the mean intakes of energy and all of the nutrients investigated were below the Malaysian Recommended Dietary Allowances, excepts for protein and vitamin C. Nutrients most likely to be inadequate were vitamin A, thiamine, riboflavin, niacin and calcium, with more than 50% of the subjects having estimated intakes of below two-third of the recommendations. However, vitamin A status was adequate, with only 2 subjects being biochemically deficient (plasma retinol ≤ 0.7 mmol/l). Approximately a third of the subjects had hypoalbuminaemia (plasma albumin < 3.3 g/dl) and anaemia (Haemoglobin < 12 g/dl for men; < 13 g/dl for women). Riboflavin deficiency, as assessed by an erythrocyte glutathione reductase activation coefficient (EGRAC) of more than 1.35 was identified in 77% of the subjects. The prevalence of vitamin E deficiency (plasma α -tocopherol ≤ 12 mmol/l) was 27%, with men being at a greater risk. In conclusion, the dietary intakes of these rural elderly Malays was inadequate. Over three quarters of the sample were biochemically deficient in riboflavin, the functional consequences of which need to be further investigated.

Shahar, S., Earland, J., Suriah, A. R., & Warnes, A. M. (2002). Social and health factors influencing poor nutritional status among rural elderly Malays. *The Journal of Nutrition Health and Aging*, 6(6), 363–369.

Older people especially those residing in rural areas are at a greater risk of malnutrition. To assess nutritional status and social and health factors influencing poor nutritional status among rural elderly Malays. Cross-sectional study on 350 elderly Malays, aged 60 years and above selected from 11 traditional villages in a rural area of Malaysia. Nutritional status was assessed using anthropometric measurements such as body weight, height, demispan and mid-upper arm circumference (MUAC). A questionnaire was administered to obtain information on social and health aspects. Multiple regression analysis was used to determine social and health predictors of poor nutritional status as assessed by Body Mass Index (BMI) and mid-upper arm circumference (MUAC). In this sample, 38% of the subjects were underweight according to BMI < 18.5 kg/m², particularly women. Women were also found to be four and three times more likely to be peripherally wasted, as assessed respectively by MUAC ($p < 0.05$), and by corrected arm muscle area ($p < 0.005$). It was found that 12% of subjects were overweight, the majority of whom were women. The predictors of

BMI were unable to cook, reported insufficient money to buy food, smokers and perceived weight loss. The predictors of MUAC were: unable to cook, single, reported insufficient money to buy food, smokers, loss of appetite, depended on others for main economic resources, and perceived weight loss. The nutritional status of the elderly is rather unsatisfactory. Recognition of social and health factors associated with the poor nutritional status will allow appropriate intervention to enhance the quality of life of the elderly.

Shahar, S., Hassan, J., Sundar, V. V, Kong, A. Y. W., Chin, S. P., Ahmad, S. A., & Lee, L. K. (2011). Determinants of depression and insomnia among institutionalized elderly people in Malaysia. *Asian Journal of Psychiatry*, 4(3), 188–195.

Depression and insomnia are common psychiatric disorders among elderly people and reported to be related to several social and health factors. However, their occurrences in relation to food intake have rarely been investigated. Therefore, this study was to identify determinants of depression and insomnia, with emphasised on food intake among 71 elderly people residing in a government funded institution in Malaysia. An interview based questionnaire was used to obtain information on socio-demography, health and functional status, depression, insomnia and food intake. A total of 71.8% subjects had depression and 53% had insomnia. Subjects who had insomnia [Adjusted Odds Ratio (AOR) 19.55, 95% CI = 4.04–94.64], needed help/unable to perform >4 items of IADL (AOR = 16.65, 95% CI = 3.95–70.22), had hypertension (AOR = 7.66, 95% CI = 1.37–42.76), had >50% wastage of poultry or fish (AOR = 3.66, 95% CI = 1.06–12.60) and wastage of vegetables (AOR 3.31, 95% CI = 1.03–10.60) were more likely to have depression. Subjects who had depression (AOR 19.55, 95% CI = 4.04–94.64), needed help/unable to perform >4 items of IADL (AOR 2.97, 95% CI = 1.12–7.84), needed help/unable to handle financial matters (AOR 5.01, 95% CI = 1.37–18.27) and had >50% wastage of vegetables (AOR 3.91, 95% CI = 1.42–10.82) were at a higher risk to develop insomnia. Depression and insomnia affected more than half of the subjects, interrelated, and associated with functional inability, socioeconomic factor and high food wastage of specific foods.

Shahar, S., Ibrahim, Z., Fatah, A. R. A., Rahman, S. A., Yusof, N. A. M., Arshad, F., Yassin, Z., & Adznam, S. N. A. (2007). A multidimensional assessment of nutritional and health status of rural elderly Malays. *Asia Pacific Journal of Clinical Nutrition*, 16(2), 346–353.

A multidimensional assessment of nutritional and health status comprised of subjective global assessment (SGA), anthropometry function, biochemistry, dietary intake, social and health aspects was carried out on 820 older people (52.8% men and 47.2% women) from four rural areas of Peninsular Malaysia. A proportion of the subjects had been classified as either overweight (25.7%) or chronic energy deficient (20.3%). Although 49% of subjects had normal body weight, 68.4% have been classified as having mild to moderate malnutrition according to the SGA. Only 1.1% and 2.3% had low serum albumin and ferritin, respectively. Almost 80% of subjects, especially men, were at high risk of cardiovascular diseases on the basis of the assessment of total cholesterol and LDL-cholesterol. The majority of the subjects (87.2%) were fully independent in performing daily tasks, with men having a significantly higher score compared to women ($p < 0.001$). However, men were less likely to be able to perform a flexibility test (50.7%) than were women (27.0%) ($p < 0.05$). The mean energy intake for men (1412 +/- 461 kcal/d) and women (1201 +/- 392 kcal/d) were below the

Recommended Nutrient Intake (RNI) for Malaysia, although this is a difficult assertion to make in an age-group which generally experiences declining energy expenditure. Moreover, 52.5% of men and 47.5% of women might have underreported their food intake. Dietary micronutrients most likely to be deficient were thiamin, riboflavin and calcium. It is concluded that a substantial proportion of rural elderly Malays had problems related to both undernutrition and overnutrition. An appropriate nutrition intervention program is needed to improve the nutritional status of rural elderly Malays.

Shahar, S., Lee, L. K., Rajab, N., Lim, C. L., Harun, N. A., Noh, M. F. N. M., Mian-Then, S., & Jamal, R. (2013). Association between vitamin A, vitamin E and apolipoprotein E status with mild cognitive impairment among elderly people in low-cost residential areas. *Nutritional Neuroscience, 16*(1), 6–12.

The influence of nutritional parameters and genetic susceptibility on poor cognitive impairment has been documented; however, the association between lipid-soluble vitamins with genetic susceptibility on mild cognitive impairment (MCI) has not yet been studied extensively. The aim of the present study was (i) to determine the prevalence of MCI and its associated risk factors and (2) to investigate the influence of the apolipoprotein E (APOE) $\epsilon 4$ allele on peripheral vitamin A and E concentration in MCI and non-MCI groups. A total of 333 subjects aged 60 years and above, residing in public housing areas in Kuala Lumpur, Malaysia were interviewed to obtain information on their neuropsychological status. Fasting venous blood was taken for determination of vitamin A and vitamin E concentration using high-performance liquid chromatography. Restriction fragment length polymorphism analysis was performed to determine the APOE genotypes. The prevalence of MCI was 21.1%. Binary logistic regression indicated that the predictors of MCI were being married, overweight or obesity, and had vitamin A deficiency. In non-MCI subjects, vitamin E levels were lower among APOE $\epsilon 4$ allele carriers as compared to the non-carriers ($P < 0.05$). The study highlighted the importance of maintaining good nutritional status and vitamin A status for optimal cognitive function. The presence of APOE $\epsilon 4$ allele has a prominent role in affecting vitamin E levels, particularly among cognitively healthy elderly in our unique population.

Shahar, S., Omar, A., Vanoh, D., Hamid, T. A., Mukari, S. Z. M.-S., Din, N. C., Rajab, N. F., Mohammed, Z., Ibrahim, R., Loo, W. H., Meramat, A., Kamaruddin, M. Z. A., Bagat, M. F., & Razali, R. (2016). Approaches in methodology for population-based longitudinal study on neuroprotective model for healthy longevity (TUA) among Malaysian older adults. *Ageing Clinical and Experimental Research, 28*(6), 1089–1104.

A number of longitudinal studies on aging have been designed to determine the predictors of healthy longevity, including the neuroprotective factors, however, relatively few studies included a wide range of factors and highlighted the challenges faced during data collection. Thus, the longitudinal study on neuroprotective model for healthy longevity (LRGS TUA) has been designed to prospectively investigate the magnitude of cognitive decline and its risk factors through a comprehensive multidimensional assessment comprising of biophysical health, auditory and visual function, nutrition and dietary pattern and psychosocial aspects. At baseline, subjects were interviewed for their status on sociodemographic, health, neuropsychological test, psychosocial and dietary intake. Subjects were also measured for anthropometric and physical function and fitness. Biospecimens

including blood, buccal swap, hair and toenail were collected, processed and stored. A subsample was assessed for sensory function, i.e., vision and auditory. During follow-up, at 18 and 36 months, most of the measurements, along with morbidity and mortality outcomes will be collected. The description of mild cognitive impairment, successful aging and usual aging process is presented here. A total 2322 respondents were recruited in the data analysis at baseline. Most of the respondents were categorized as experiencing usual aging (73 %), followed by successful aging (11 %) and mild cognitive impairment (16 %). The LRGS TUA study is the most comprehensive longitudinal study on aging in Malaysia, and will contribute to the understanding of the aging process and factors associated with healthy aging and mental well-being of a multiethnic population in Malaysia.

Shahar, S., Shari Kamaruddin, N., Badrasawi, M., Sakian, N. I. M., Manaf, Z. A., Yassin, Z., & Joseph, L. (2013). Effectiveness of exercise and protein supplementation intervention on body composition, functional fitness, and oxidative stress among elderly Malays with sarcopenia, *Clinical Interventions in Aging*, 8, 1365–1375.

Sarcopenia, characterized as muscle loss that occurs with aging, is a major health problem in an aging population, due to its implications on mobility, quality of life, and fall risk. Protein supplementation could improve the physical fitness by increasing protein anabolism, and exercise has a documented evidence of positive effect on functional status among the elderly. However, the combined effect of both protein supplementation and exercise has not been investigated among sarcopenic elderly in the Asian population. Thus, this study aimed to determine the effectiveness of exercise intervention and protein supplementation either alone or in combination for 12 weeks, on body composition, functional fitness, and oxidative stress among elderly Malays with sarcopenia. Sixty five sarcopenic elderly Malays aged 60-74 years were assigned to the control group, exercise group (ExG), protein supplementation group (PrG), or the combination of exercise and protein supplementation group. A significant interaction effect between body weight and body mass index (BMI) was observed, with the PrG (-2.1% body weight, -1.8% BMI) showing the highest reductions. Further, there was a decrease in % body fat (-4.5%) and an increase in fat-free mass (kg) (+5.7%) in the ExG after 12 weeks ($P < 0.05$). The highest increments in lower and upper body strength were observed in the PrG (73.2%) and ExG (47.6%), respectively. In addition, the ExG showed a reduction in superoxide dismutase (SOD) levels, and both interventions did not alter either lipid or protein oxidation. In conclusion, the exercise program was found to improve muscle strength and body composition, while protein supplementation reduced body weight and increased upper body strength, among sarcopenic elderly in Malaysia.

Shahar, S., Earland, J., & Abd Rahman, S. (2001). Social and health profiles of rural elderly Malays. *Singapore Medical Journal*, 42(5), 208–213.

To evaluate the social and health functions of rural elderly Malays. A survey was carried out on 350 elderly Malays aged 60 and above using a set of socio and health questionnaires. The majority of elderly people in the study were married (64%), unemployed with no pension (76%), relied on children for their main economic resources (62%) and perceived that they have sufficient money to buy the food they require (61%). Most of the subjects felt healthy, contented and satisfied with their everyday life, were able to do most of the Activities of Daily Living (ADL) tasks and were actively involved in community

activities. However, most of the subjects (60%) had either one or two diagnosed chronic diseases. Thus, only 15% of the subjects had not taken any type of medicines during the previous 12 months. Although the majority of the elderly in this study was able to perform all the ADL tasks and perceived their health as good, physical impairments (eg. sight, hearing and chewing difficulties) are prevalent and the use of medicines is widespread. It is expected that in future a greater proportion of rural elderly Malays will live alone and will face economic and health problems because of the lack of sufficient and satisfactory programs for this age group.

Shamdol, Z., Ismail, N., Ismail, A., & Hamzah, N. (2009). Prevalence of dentate elderly and the relationship of number of remaining teeth and oral health related quality of life of elderly people in Kota Bharu Kelantan, Malaysia. *International Medical Journal*, 16(1), 65–66.

The aim of this study was to determine prevalence of dentate elderly and the relationship between the number of remaining teeth with oral health related quality of life (OHRQoL) among elderly aged 60 years and older in Kota Bharu, Kelantan. This cross sectional study involved 506 randomly sampled community-dwelling elderly in Badang district. Consented participants were interviewed at their homes in the local dialect by a single trained interviewer. Impacts of oral conditions were gathered using the Malay translated version of the Short Oral Health Impact Profile [S-OHIP(M)]. Oral examination was carried out to record dentate status. The prevalence of dentate elderly was 44.1% (95%CI = 39.69, 48.52) and mean age was 68.1 (SD = 7.02) years. The mean number of remaining teeth was 12.0 (SD = 8.37) and 76.4% of participants have 20 or less teeth. Significant impacts were noted in four items of S-OHIP(M) which were 'difficulty in chewing' ($p < 0.001$), 'uncomfortable to eat' ($p < 0.001$), 'food stuck in mouth' ($p = 0.001$) and 'avoid food' ($p < 0.001$). The number of remaining teeth was significantly related to total S-OHIP(M) score. For every one tooth present OHRQoL improved by 0.15 units. Further research is required to probe into factors influencing the OHRQoL among adults and intensive efforts are needed to educate them to retain as many natural teeth into old age.

Shamsulbahriah, K. A. R. (2015). *Framing social protection analysis in Malaysia: Issues for consideration* (SSRC Working Paper Series No. 2015-1) Kuala Lumpur: SSRC, UM.

This working paper discusses the framing of social protection analysis in Malaysia around four main themes that are not directly addressed, especially in the Malaysian social protection literature, to raise issues for consideration. The first focus is on the apparent neglect of endogenous and structural issues in the analysis of social protection. The endogenous and structural factors in this case refer to the systemic occupational structure that places the majority of workers at the bottom of the occupational hierarchy, hence creating a structure of inequality, presented here as inequality pyramids. Constructed from a social stratification perspective, this self-perpetuating inequality pyramid appears to reproduce inequality and vulnerability over time, making employment-based social protection instruments built on such a structure limited in effectiveness. Theme two probes the ability of this employment-based social protection strategy to ensure long-term human security through the labour market or formal employment. As this strategy is already considered inadequate in Malaysia due to low coverage of formal workers while those in the informal sector remain largely unprotected, it raises a further question as to whether human security should be placed as the ultimate

objective of social protection provision. If we accept that an employment-based social protection strategy is limited, the third theme then raises the importance of having a universal social protection system or strengthening the existing social protection foundation that could serve as a basis for a universal one. This is done by assessing preliminary evidence of such possibilities by benchmarking Malaysia on the Social Protection Floor Initiative (SPF-I) in terms of access to universal health care, income security for children, the elderly and those in active age who are unable to earn sufficient income. The fourth and final theme logically follows the third by questioning Malaysia's ability to provide universal social protection for her citizens by exploring her fiscal space and contemplating her potential to do so. This is done by using a common social protection performance indicator in the form of social protection expenditure as a percentage of Gross Domestic Product (GDP). This theme is encouraged by increasing evidence that even developing countries could afford to provide universal social protection.

Sharifah Norazizan, S. A. R., Hamid, T. A., Yusuff, R., Hashim, A. H., Mat Said, A., Mohd Rizal, H., & Lina, G. S. C. (2006). Anthropometric data of older Malaysians. *Asia-Pacific Journal of Public Health*, 18, 35–41.

With a rapidly growing older population in Malaysia, there is an urgent need in determining reference values that meet the minimum requirements for designing an ergonomically friendly home environment for the elderly. A comfortable, safe and satisfactory match between the artefact and the elderly can be achieved if such reference values are available. A study was conducted to develop an anthropometric database of older Malaysians to be used as a standard reference in designing the home for the elderly. This paper presents some of the anthropometric data obtained and highlights the design implications for an elderly friendly home environment and the potential use of the anthropometric data. Thirty-nine anthropometric body dimensions were measured and recorded for 230 respondents aged 60 years and over in five urban locations (Kuala Lumpur, Shah Alam, Petaling Jaya, Ampang and Johor Bahru). Respondents consisted of 129 males (56.1 %) and 101 females (43.9%), with a mean age of 67 years. With the availability of anthropometric dimensions of the elderly, better home environments can be designed for older Malaysians in the population.

Sharoni, S. A., Razi, M. M., Rashid, N. A., & Mahmood, Y. E. (2017). Self-efficacy of foot care behaviour of elderly patients with diabetes. *Malaysian Family Physician*, 12(2), 2-8.

Elderly patients with diabetes are at a high risk of contracting diabetic foot problems. Self-efficacy is essential to help improve foot care behaviour. To identify levels of self-efficacy and foot care behaviour and their relationship with demographic characteristics in elderly patients with diabetes. A cross-sectional study was conducted in two general hospitals in Malaysia from May to June 2015. Diabetes patients aged 60 years with specific inclusion criteria were invited to participate in this study. The respondents were interviewed using a set of validated questionnaires. Data were analysed with descriptive and inferential statistics (multiple linear regression) using Statistical Package for the Social Sciences version 20.0. Results: Levels of foot self-efficacy (mean=31.39; standard deviation=7.76) and foot care behaviour (mean=25.37; SD=5.88) were high. There was a positive significant relationship between foot self-efficacy ($\beta = 0.41, p < 0.001$) and gender ($\beta = 0.30, p < 0.001$) with foot care

behaviour. Self-efficacy can be incorporated in diabetes education to improve foot care behaviour. High-risk patients should be taught proper foot inspection and protection as well as the merits of skin care to prevent the occurrence of diabetic foot problems.

Sharoni, S. A., Shdaifat, E. A., Majid, H. M. A., Shohor, N. A., Ahmad, F., & Zakaria, Z. (2015). Social support and self-care activities among the elderly patients with diabetes in Kelantan. *Malaysian Family Physician*, 10(1), 34–43.

Diabetes is common among the elderly and can significantly affect their lives including the issues related with social support and diabetic self-care activities. The objective of this study was to examine the social support and self-care activities among the elderly patients with diabetes. A survey involving 200 patients was conducted from March 2013 to May 2013 in three hospitals in Kelantan. Data were obtained through self-administered questionnaires and clinical characteristics were acquired from the patients' records. The scores for social support (mean = 19.26; SD = 2.63) and self-care activities (mean = 14.83; SD = 4.92) were moderate. Higher social support was associated with high levels of glycated haemoglobin (HbA1c), fasting blood sugar (FBS) level, the duration of diabetes and a decrease in body mass index (BMI) ($p < 0.05$). It was observed that the patients with low educational, Hb1Ac and FBS level, with other chronic diseases and who have had diabetes for some time had low self-care activities ($p < 0.05$). There was a significant negative relationship between an increase in social support and decrease in self-care activity ($p < 0.05$). Healthcare providers, family and friends have to strengthen their relationship with the elderly patients with diabetes to provide more social support and promote the compliance with diabetic self-care activities to improve clinical outcomes.

Sherina, M. S., Lekhraj, R., & Mustaqim, A. (2004). Functional status of the elderly in a rural community in Malaysia. *Malaysian Journal of Public Health Medicine*, 4(1), 55–58.

Functional dependence is common in late life and may be due to the normal process of ageing or associated with physical disorders. This study was done to determine the prevalence and factors affecting functional dependence among the elderly in a rural community setting. A cross sectional study design using stratified proportionate cluster sampling method was used in this study. All elderly residents aged 60 years old and above in the selected kampungs in Mukim Sepang were selected as respondents. The Barthel's Index (BI) was used to screen for functional dependence among the respondents. Functional dependence in basic Activities of Daily Living (ADL) implies that the respondent needs assistance in one or more of these tasks. Out of the 263 elderly residents, 223 agreed to participate giving a response rate 84.8%. The mean age was 69.7 years with a SD of 6.8 years. Age ranged from 60-99 years. Thirty-five (15.7%) of the respondents were dependent in at least one function of the ADL. The most common problem identified was urinary incontinence (9.9%). Functional dependence is common among our elderly population. This problem needs to be addressed by the health care personnel to improve the quality of life of the elderly.

Sherina, M. S., Rampal, L., & Mustaqim, A. (2004). Factors associated with chronic illness among the elderly in a rural community in Malaysia. *Asia-Pacific Journal of Public Health*, 16(2), 109–114. <https://doi.org/10.1177/101053950401600206>

Chronic illness is one of the major causes of mortality and morbidity among the elderly. To determine the prevalence and factors associated with chronic illness among the elderly in a rural community setting. A cross sectional study design was used. Stratified proportionate cluster sampling method was used to select respondents in Mukim Sepang, Sepang, Selangor, Malaysia. Out of 263 elderly residents (6.2% of the total population), 223 agreed to participate in the study giving a response rate of 84.8%. The prevalence of chronic illness among the elderly in Mukim Sepang was 60.1 %. Out of 223 respondents, 134 were diagnosed as having chronic illness such as hypertension, diabetes mellitus, ischaemic heart disease, bronchial asthma or gout. Chronic illness was found to be significantly associated with functional dependence among the elderly ($\chi^2=6.863$, $df=1$, $p<0.05$). The prevalence of chronic illness among the elderly in the rural community is very high. Problems facing this age-group should be addressed comprehensively in order to formulate appropriate programmes for the health care of the elderly.

Sherina, M. S., Rampal, L., & Mustaqim, A. (2004). Cognitive impairment among the elderly in a rural community in Malaysia, *Medical Journal of Malaysia* 59(2), 252–257.

Cognitive impairment in late life is common and maybe due to the normal process of ageing or associated with physical or mental disorder. The aim of this study was to determine the prevalence of cognitive impairment among the elderly in a rural community setting. A cross sectional design using stratified proportionate cluster sampling method was used in this study. A questionnaire similar to the Elderly Cognitive Assessment Questionnaire (ECAQ) was used as a screening instrument for cognitive impairment. The prevalence of cognitive impairment was 22.4% (50/223) among the elderly respondents aged 60 years and above. Cognitive impairment among the elderly was significantly associated with age, gender, ethnicity, marital status and level of education.

Sherina, M. S., Rampal, L., & Mustaqim, A. (2004). The prevalence of depression among the elderly in Sepang, Selangor. *The Medical Journal of Malaysia*, 59(1), 45–49.

To determine the prevalence of depression among the elderly and to identify its associated factors. A cross sectional study design was used. Stratified proportionate cluster sampling method was used to select the respondents. A 30 item Geriatric Depression Scale questionnaire was used as a screening instrument. *Results:* 7.6% of the elderly were found to have depression. Only employment status was found to be significantly associated with depression. The prevalence of depression in the elderly was 7.6%. Primary Care providers need to be vigilant when treating elderly patients as depression is commonly found in this age group.

Sherina, M. S., Rampal, L., Aini, M., & Norhidayati, M. (2005). The prevalence of depression among elderly in an urban area of Selangor, Malaysia. *The International Medical Journal of Malaysia*, 4(2), 57-63.

Depression is a disorder that is characterized by sadness, changes in appetite, altered sleep patterns, feelings of dejection or hopelessness and sometimes suicidal tendencies. It can

occur at any age; however it is the most common mental health disorder in the elderly. To determine the prevalence of depression and its associated factors among the elderly (60 years old and above) in an urban area in Selangor. A cross sectional study design was done. All the elderly in an urban area of the state of Selangor, Malaysia were interviewed during a two-month period. A 30-item Geriatric Depression Scale (GDS) questionnaire was used as the main screening instrument. Out of 316 elderly subjects, 300 were interviewed giving a response rate of 94.9%. The results showed that 6.3% of the elderly respondents were found to have depression. Gender ($p=0.015$), ethnicity ($p=0.028$), chronic illness ($p=0.028$), functional disability ($p=0.000$) and cognitive impairment ($p=0.000$) were found to be significantly associated with depression among the elderly respondents. The prevalence of depression among the elderly respondents in this study was 6.3%. Gender, ethnicity, presence of chronic illness, functional disability and cognitive impairment were identified as important factors to be emphasized on when assessing for depression in the elderly.

Sherina, M. S., Rozali, A., Shiran, M. S., & Sam, A. A. (2004). The association of nutritional risk with physical and mental health problems among elderly in a semi-urban area of Mukim Kajang, Selangor, Malaysia. *Malaysian Journal of Nutrition*, 10(2), 149–158.

Imbalances and deficiencies of nutrients are particularly prevalent among the elderly, resulting in increased risk of illness and impaired outcome, as well as reduced quality of life. A cross-sectional study was conducted to assess the nutritional risk and to determine its association with physical and mental health problems among the elderly in a semiurban community in the District of Hulu Langat, Selangor. Elderly people aged 60 years and above were included in the study, conducted from 11th March to 10th May 2004. Data were collected using a questionnaire-guided interview method. The Nutrition Screening Initiative Checklist (NSI-13) was used to assess the level (low, moderate, high) of nutritional risk of the subjects. The questionnaire also included the Barthel Index, Geriatric Depression Scale (GDS-30) and Elderly Cognitive assessment Questionnaire (ECAQ) to identify functional status, depressive symptoms and cognitive impairment respectively, among the respondents. Out of 316 elderly residents, 300 agreed to participate in the study (response rate 94.9%). Respondents aged from 60 to 93 years old and the mean age was 67.08 ± 6.6 . Prevalence of moderate and high nutritional risks were 25.3% and 36.3% respectively. Nutritional risks were found to be significantly associated with age ($p=0.015$), marital status ($p=0.00$), chronic illness ($p=0.000$), functional disability ($p=0.000$) and depressive symptoms ($p=0.010$). In conclusion, the health status of the elderly strongly depends on their nutritional risk. Age, marital status, chronic illness, functional disability and depressive symptoms are factors to be emphasised when assessing the nutritional risk of the elderly.

Sherina, M. S., Rampal, L., Hanim, M. A., & Thong, P. L. (2006). The prevalence of depression among elderly warded in a tertiary care centre in Wilayah Persekutuan. *Medical Journal of Malaysia*, 61(1), 15–21.

Depression is characterized by symptoms like disturbance in behavior, cognition and mood. This is commonly known to affect people aged 60 years and above especially those who are also afflicted with illnesses. The objectives of this study were to determine the prevalence of depression and its associated factors among the elderly in a tertiary care centre in Wilayah Persekutuan. A cross sectional study design was done. Stratified cluster sampling

method was used to select the respondents. All elderly patients were selected from the orthopaedic, surgical, gynaecology and medical wards in a government hospital in Wilayah Persekutuan. A 30-item Geriatric Depression Scale questionnaire was used as a screening instrument. Out of the 246 elderly subjects, 198 were interviewed giving a response rate of 80.5%. The results showed that 54% of the elderly respondents were found to have depressive symptoms. Age ($p=0.022$), sex ($p=0.008$), ethnicity ($p=0.022$) and functional disabilities in bathing ($p=0.001$), grooming ($p=0.007$), dressing ($p=0.007$), using the toilet ($p=0.002$), transferring from bed to chair and back ($p=0.000$), mobility ($p=0.000$) and climbing stairs ($p=0.000$) were all found to be significantly associated with depression among the elderly respondents. The outcome of this study will have an important impact on the implementation of the health policy for the elderly patients admitted to hospitals.

Shim, Y. M., Chua, S. S., & Morisky, D. E. (2017). Psychometric properties of the simplified Chinese version of the Malaysian Medication Adherence Scale (C-MALMAS) on elderly patients. *International Journal of Gerontology*, 5–9.

Poor medication adherence is a concern among elderly patients. One of the convenient measures of medication adherence is by using a validated instrument. Therefore, this study aimed to examine the psychometric properties of the Simplified Chinese version of the Malaysian Medication Adherence Scale (C-MALMAS) for assessing medication adherence of elderly patients. The C-MALMAS consists of 8 items which measure one domain. It was translated into the Simplified Chinese version and validated on a convenience sample of 100 elderly outpatients in Malaysia. Internal consistency of the C-MALMAS was evaluated based on Cronbach's alpha value. A retest was conducted a month later to assess its stable reliability. Validity was assessed using convergent validity by comparing C-MALMAS to the Simplified Chinese translation of the 8-item Morisky Medication Adherence Scale (MMAS-8) and concurrent validity was confirmed by comparing the medication adherence determined using C-MALMAS with that using pill count. The C-MALMAS has an acceptable internal consistency, with Cronbach's alpha of 0.586 and a test-retest correlation of 0.405 ($p < 0.001$), indicating fair correlation. A good correlation between the C-MALMAS and MMAS-8 was found (Spearman's rho = 0.717; $p < 0.001$). A significant association between medication adherence based on the C-MALMAS and pill count was observed. The C-MALMAS has a sensitivity and specificity of 94.4% and 33.3%, respectively, with positive and negative predictive values of 67.3% and 80.0%, respectively. C-MALMAS is a reliable and valid instrument for measuring medication adherence of elderly patients, especially when a specific recall period is required.

Sidik, S. M., Rampal, L., & Afifi, M. (2004). Physical and mental health problems of the elderly in a rural community of Sepang, Selangor. *Malaysian Journal of Medical Sciences*, 11(1), 52–59.

The prevalence of aging population is increasing not only in developed countries, but also in developing countries like Malaysia. The aim of this study was: (1) to determine the prevalence of physical and mental health problems, and (2) to determine the association of these health problems with socio demographic factors among the elderly in a rural community in Sepang, Selangor. A cross sectional study design was used. Five out of nine villages were selected via random sampling. The elderly in the selected villages were interviewed using a pre-tested structured questionnaire which included the GDS-30, ECAQ and Barthel Index.

Out of 263 elderly residents (6.2% of the total population), 223 agreed to participate in the study giving a response rate of 84.8%. The mean age of the respondents was 69.7 + 6.8 years with a median of 68 years. The prevalence of physical health problems such as chronic illness and functional dependence were 60.1% and 15.7%, respectively. While the prevalence of mental health problems such as depression and cognitive impairment were 7.6% and 22.4%, respectively. Among the health problems studied, depression was found to be significantly associated with unemployment ($p < 0.05$), whereas cognitive impairment was significantly associated with age, gender, ethnicity, marital status and level of education ($p < 0.05$).

Sidik, S. M., Zulkefli, N. A. M., & Mustaqim, A. (2003). Prevalence of depression with chronic illness among the elderly in a rural community in Malaysia. *Asia Pacific Family Medicine*, 2(4), 187–243.

Depression is the most common psychiatric disorder among the elderly. The hallmark of depression in the elderly is its comorbidity with medical illness. To determine the prevalence of depression and its association with chronic illness among the elderly in a rural community setting. A cross sectional study design was used. A 30-item Geriatric Depression Scale questionnaire was used as a screening instrument. The prevalence of depression was higher among elderly with chronic illness (9.0%) compared to elderly without chronic illness (5.6%). Depression among the elderly was significantly associated with ischemic heart disease. The prevalence of depression among the elderly with chronic illness in the community is high. Primary care providers need to be vigilant when treating elderly patients in their care as depression is commonly found in this group.

Sin, A. K., Ahmad, A., Zaman, H. B., & Sulaiman, R. (2014). A wearable device for the elderly: A case study in Malaysia. *Proceedings of the 2014 International Conference on Information Technology and Multimedia (ICIMU)* (pp. 318–323). Putrajaya, Malaysia.

Malaysia is expected to reach population ageing in year 2021. There are many ways to tackle with the problems of population ageing and technology is one of them in supporting elderly in their daily life. However, elderly have problem when using technology because of their decreasing ability. In this research, we carried out 2 interviews with different groups of elderly to identify their problems of using technology, and their daily activities based on their location in a house. Based on the finding, we listed down all the important requirements in designing a wearable device. They are (a) Replacing Graphical User Interface (GUI) with Tangible User Interface (TUI) (b) Considering mental model of elderly when designing interaction and user interface, an (c) Able to provide implicit interaction to elderly.

Singh, D. K. A., Pillai, S. G. K., Tan, S. T., Tai, C. C., & Shahar, S. (2015). Association between physiological falls risk and physical performance tests among community-dwelling older adults. *Clinical Interventions in Aging*, 10, 1319–1326. <https://doi.org/10.2147/CIA.S79398>

Physical performance and balance declines with aging and may lead to increased risk of falls. Physical performance tests may be useful for initial fall-risk screening test among community-dwelling older adults. Physiological profile assessment (PPA), a composite falls risk assessment tool is reported to have 75% accuracy to screen for physiological falls risk. PPA correlates with Timed Up and Go (TUG) test. However, the association between many

other commonly used physical performance tests and PPA is not known. The aim of the present study was to examine the association between physiological falls risk measured using PPA and a battery of physical performance tests. One hundred and forty older adults from a senior citizens club in Kuala Lumpur, Malaysia (94 females, 46 males), aged 60 years and above (65.77 ± 4.61), participated in this cross-sectional study. Participants were screened for falls risk using PPA. A battery of physical performance tests that include ten-step test (TST), short physical performance battery (SPPB), functional reach test (FRT), static balance test (SBT), TUG, dominant hand-grip strength (DHGS), and gait speed test (GST) were also performed. Spearman's rank correlation and binomial logistic regression were performed to examine the significantly associated independent variables (physical performance tests) with falls risk (dependent variable). Approximately 13% older adults were at high risk of falls categorized using PPA. Significant differences ($P < 0.05$) were demonstrated for age, TST, SPPB, FRT, SBT, TUG between high and low falls risk group. A significant ($P < 0.01$) weak correlation was found between PPA and TST ($r = 0.25$), TUG ($r = 0.27$), SBT ($r = 0.23$), SPPB ($r = -0.33$), and FRT ($r = -0.23$). Binary logistic regression results demonstrated that SBT measuring postural sways objectively using a balance board was the only significant predictor of physiological falls risk ($P < 0.05$, odds ratio of 2.12). The reference values of physical performance tests in our study may be used as a guide for initial falls screening to categorize high and low physiological falls risk among community-dwelling older adults. A more comprehensive assessment of falls risk can be performed thereafter for more specific intervention of underlying impairments.

Siop, S. A. J. (2007). *Disability and quality of life of community-dwelling older people (Doctoral dissertation)*. Universiti Putra Malaysia, Malaysia.
Retrieved from <http://psasir.upm.edu.my/5395/>

With the increase of life expectancy, more Malaysian will live to old ages. The rapid ageing of the population is leading to an increasing number of disabled older people as disability is associated with increasing age. The study on the prevalence, risk factors for disability and consequences of disability on quality of life is important in the face of the prevailing ageing population. This study assessed disability prevalence and determined factors that predict disability and quality of life among the older people who lived in the community. In this study, Verbrugge and Jette's model of disablement process has been used as a conceptual frame of reference. Data from the Mental Health and Quality of Life of Older Malaysians Survey (MHQoLOM) were used in this study, which was a national survey conducted from 2003 through 2005 that employed a cross-sectional design. A multi-stage proportional stratified sample of 2980 older persons living in the community in Malaysia, ranging in age from 60 to 104 years were interviewed in the respondent's home. Statistical procedures for the analyses included descriptive statistics, univariate logistic regression and multivariate logistic regression. The prevalence of disability in at least one of the activities of daily living (ADL) and instrumental activities of daily living (IADL) items was 22.8 percent. Higher prevalence of disability was observed in older women (31%) compared to older men (14.5%). The predictors for disability in men were age, ethnicity, marital status, self-rated health, heart disease, eye disorder and functional limitation. While age, ethnicity, marital status, smoking, self-rated health, respiratory disorders and functional limitation predicted disability in women. Increasing age, being of the other ethnicity compared with the Malay for men and being of Indian ethnicity compared to the Malay for women, being unmarried, poor self-rated health and functional limitations increased the risk of disability in both men and

women. The predictors of perceived good quality of life for men were ethnicity, education, income, urban/rural residence, physical activity and self-rated health. Among women, ethnicity, self-rated health and functional limitation predicted perceived good quality of life. Being of Indian and Chinese ethnicity compared to the Malay were associated with reduced perceived good quality of life for both men and women, while being of Bumiputera and other ethnicity compared to the Malay increased the odds of perceived good quality of life among men. Very poor self-rated health compared to excellent self-rated health was associated with lower perceived good quality of life in both men and women. These findings confirmed the independent contribution of risk factors, medical conditions or disease, and functional limitation in the disablement process. The examination of perceived quality of life in relation to the disablement process indicated that risk factors and functional limitation contributed to lower perceived good quality of life. The findings of the study will be relevant for program development to improve functional abilities and to minimize risk factors by early intervention, improve or maintain the quality of life of older people and to promote the use of appropriate health and social resources. Moreover, policy makers and service providers could effectively focus on those factors that are crucial in maintaining functional ability and quality of life of the older Malaysians.

Siop, S. A. J., & Hamid, T. A. (2008). *Disability and quality of life among older Malaysians*. Paper presented at the Population Association of America 2008 Annual Meeting Program, Session 173: Disability and Active Life Expectancy in Asian Populations.

This study assessed disability prevalence and determined factors that predict disability and quality of life among older Malaysians (ages 60+) who are community-dwelling. Data from the Mental Health and Quality of Life of Older Malaysians Survey (MHQoLOM) were used in this study, conducted from 2003 through 2005. The prevalence of disability in one or more of 13 ADL/IADLs was 22.8 percent. Older women had notably higher disability prevalence (31%) than older men (14%). Very poor self-rated health is associated with lower perceived quality of life for both men and women. These findings confirm the independent contribution of risk factors, medical conditions or disease, and functional limitations for disability and low quality of life in the disablement process in Malaysia. The findings of the study are relevant for program development to improve functional abilities and quality of life among older Malaysians, and also to minimize modifiable risk factors by early intervention.

Siu, O. L. (2012). *Engaging adolescents to care for elderly safety in the community*. *Procedia - Social and Behavioral Sciences*, 38(Supplement C), 7–14.

In Hong Kong, a study of the trends and characteristics of accidents involving older persons was undertaken in a railway system. As part of a wider objective of engaging staff and students to help older persons to achieve safe and healthy journeys, a team of gerontologist and psychologists and their students was engaged to review accidents and incidents involving older persons and undertake research into possible underlying causes and mitigation measures. The aim of the study was to conduct a community project with older railway passengers to identify key factors related to accidents including physical environmental conditions. (c) 2012 Published by Elsevier B.V. Selection and/or peer-review

under responsibility of Centre for Environment-Behaviour Studies(cE-Bs), Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA, Malaysia

Soh, C. S. (2014). *Social security: Challenges and issues* (No. SSRC Working Paper Series No. 2014-1). Kuala Lumpur: SSRC, UM.

This article seeks to discuss the underlying issues in an attempt to provide an understanding and perspective of the challenges of social security.

Soh, K. C., Kua, E. H., & Ng, T. P. (2009). Somatic and non-affective symptoms of old age depression: Ethnic differences among Chinese, Indians and Malays. *International Journal of Geriatric Psychiatry*, 24(7), 723–730.

Somatic and other non-affective symptomatology characterizes late life depression and contributes to its under-diagnosis, especially in some ethnic groups. We examined variations in non-affective presentation and its health and functional significance across different ethnic groups of Chinese, Malays and Indians. We analyzed data from the National Mental Health Survey for Elderly, a population-based cross-sectional study of older adults aged 60 and above (N=1092). Compared to the depressed Chinese as the reference group, depressed Malays were more likely to endorse symptoms of appetite decrease (OR=5.19), sleep disturbances (OR=2.93), disabling pain (OR=3.12), psychomotor slowing (OR=2.73) and anergia (OR=3.70), while concurrently reporting poorer general health status and greater role limitations resulting from their mental and emotional problems (OR from 2.13 to 3.31). These differences were not influenced by anxiety, dementia or physical comorbidity. We revealed striking differences in the somatic and non-affective symptomatology of geriatric depression among different Asian ethnic groups. Non-affective symptoms in depression have large health and functional significance and important implications for the diagnosis and management of depression among elderly in primary care.

Sooryanarayana, R., Choo, W. Y., Hairi, N. N., Chinna, K., Hairi, F., Ali, Z. M., Ahmad, S. N., Razak, I. A., Aziz, S. A., Ramli, R., Mohamad, R., Mohammad, Z. L., Peramalah, D., Ahmad, N. A., Aris, T., & Bulgiba, A. (2017). The prevalence and correlates of elder abuse and neglect in a rural community of Negeri Sembilan state: Baseline findings from The Malaysian Elder Mistreatment Project (MAESTRO), a population-based survey. *BMJ Open*, 7(8), e017025. <http://doi.org/10.1136/bmjopen-2017-017025>

As Malaysia is fast becoming an ageing nation, the health, safety and welfare of elders are major societal concerns. Elder abuse is a phenomenon recognised abroad but less so locally. This paper presents the baseline findings from the Malaysian Elder Mistreatment Project (MAESTRO) study, the first community-based study on elder abuse in Malaysia. Cross-sectional study, analysing baseline findings of a cohort of older adults. Kuala Pilah district, Negeri Sembilan state, Malaysia. To determine the prevalence of elder abuse among community dwelling older adults and its associated factors. A total of 2112 community dwelling older adults aged 60 years and above were recruited employing a multistage sampling using the national census. Elder abuse, measured using a validated instrument derived from previous literature and the modified Conflict Tactic Scales, similar to the Irish national prevalence survey on elder abuse with modification to local context. Factors associated with abuse and profiles of respondents were also examined. The prevalence of

overall abuse was reported to be 4.5% in the past 12 months. Psychological abuse was most common, followed by financial, physical, neglect and sexual abuse. Two or more occurrences of abusive acts were common, while clustering of various types of abuse was experienced by one-third of abused elders. Being male (adjusted OR (aOR) 2.15, 95% CI 1.23 to 3.78), being at risk of social isolation (aOR 1.96, 95% CI 1.07 to 3.58), a prior history of abuse (aOR 3.28, 95% CI 1.40 to 7.68) and depressive symptomatology (aOR 7.83, 95% CI 2.88 to 21.27) were independently associated with overall abuse. Elder abuse occurred among one in every 20 elders. The findings on elder abuse indicate the need to enhance elder protection in Malaysia, with both screening of and interventions for elder abuse.

Sooryanarayana, R., Choo, W. Y., & Hairi, N. N. (2013). A review on the prevalence and measurement of elder abuse in the community. *Trauma, Violence, & Abuse* 14(4), 316–325. <https://doi.org/10.1177/1524838013495963>

Aging is a rising phenomenon globally and elder abuse is becoming increasingly recognized as a health and social problem. This review aimed to identify the prevalence of elder abuse in community settings, and discuss issues regarding measurement tools and strategies to measure elderly abuse by systematically reviewing all community-based studies conducted worldwide. Articles on elder abuse from 1990 to 2011 were reviewed. A total of 1,832 articles referring to elders residing at home either in their own or at relatives' houses were searched via CINAHL and MEDLINE electronic databases, in addition to a hand search of the latest articles in geriatric textbooks and screening references, choosing a total of 26 articles for review. Highest prevalence was reported in developed countries, with Spain having 44.6% overall prevalence of suspicion of abuse and developing countries exhibiting lower estimates, from 13.5% to 28.8%. Physical abuse was among the least encountered, with psychological abuse and financial exploitation being the most common types of maltreatment reported. To date, there is no single gold standard test to ascertain abuse, with numerous tools and different methods employed in various studies, coupled with varying definitions of thresholds for age. Current evidences show that elder abuse is a common problem in both developed and developing countries. It is important that social, health care, and legal systems take these findings into consideration in screening for abuse or reforming existing services to protect the health and welfare of the elderly.

Sor, Y. C., & Zaitun, Y. (2008). Relationship between skeletal muscle mass, functional status and physical activity among elderly aged 60 years and above in a government health clinic. *Malaysian Journal of Nutrition*, 14(2(supplement)), S35.

A cross-sectional study was carried out to determine the relationship between skeletal muscle mass (SMM), functional status and physical activity among elderly aged 60 years and above in a government health clinic. A total of 107 elderly were recruited from the Jinjang Health Clinic using purposive sampling. The sample consisted of 60 males and 47 females whose age ranged from 60 to 86 years old. Data on personal background and general health characteristics were collected using a face-to-face interview. Elderly Mobility Scale (EMS), manual dexterity, cognitive function test were observed and measured using appropriate instruments. Physical activity for seven days was analysed using the International Physical Activity Questionnaire (IPAQ). Weight, height, waist, hip, calf and thigh circumferences, body fat mass, body fat percentage and handgrip strength were measured using standard procedures and appropriate equipments. The data were analysed using SPSS 14.0. The results

revealed significant differences in the EMS score, cognitive function score, handgrip strength, body fat percentage and SMM ($p < 0.05$) between the male and female subjects. The males were significantly heavier (66.03 ± 9.72 kg vs 56.10 ± 10.24 kg), taller (165.20 ± 5.97 cm vs 150.91 ± 8.26 cm), had larger waist circumference (92.79 ± 8.18 cm vs 86.89 ± 9.71 cm), higher waist-hip ratio (0.95 ± 0.06 vs 0.88 ± 0.09) and heavier SMM (24.54 ± 0.36 kg vs 17.95 ± 7.35 kg) compared to females. The mean weight was significantly higher among the younger subjects compared to the older subjects ($p < 0.05$). SMM was significantly correlated with weight ($r = 0.816$, $p < 0.01$), height ($r = 0.835$, $p < 0.01$), waist circumference ($r = 0.589$, $p < 0.01$) and handgrip strength ($r = 0.712$, $p < 0.01$). SMM was also significantly associated with manual dexterity ($r = 0.285$, $p < 0.01$), body mass index (BMI) ($r = 0.285$, $p < 0.01$), hip circumference ($r = 0.344$, $p < 0.01$), waist-hip ratio ($r = 0.373$, $p < 0.01$), thigh circumference ($r = 0.242$, $p < 0.05$) and body fat mass ($r = 0.379$, $p < 0.01$). Age was found to be negatively correlated to EMS score ($r = -0.485$, $p < 0.01$), cognitive score ($r = -0.278$, $p < 0.001$), weight ($r = -0.287$, $p < 0.01$), SMM ($r = -0.325$, $p < 0.01$) and handgrip strength ($r = -0.268$, $p < 0.01$). However, there was no significant correlation between SMM and age with physical activity level among the subjects. In conclusion, there was significant correlation between SMM and functional status among the subjects. The males and the younger age groups had higher SMM, functional status, physical activity level, and handgrip strength compared to the females. With increasing age, quality of life and health status of the elderly may be affected due to a decline in SMM and functional status. Therefore, appropriate interventions need to be carried out to address the consequences of low SMM to prevent associated morbidity and mortality among the elderly.

Srinivas, P., Chia, Y. C., Poi, P. J., & Ebrahim S. (1999). Peak expiratory flow rate in elderly Malaysians. *Medical Journal of Malaysia*, 54(1), 11–21.

An epidemiological survey was conducted among 1,414 healthy ambulatory elderly persons aged 55 years and above in the Kuala Langat district, Selangor. The relationship between peak expiratory flow rate (PEFR), demographic variables, socioeconomic status, smoking, alcohol use and respiratory symptoms were examined. The peak expiratory flow declined with age and were lower in women of all ages. Smoking had a modest effect on PEFR in men but not on PEFR in women. The combination of respiratory symptoms of cough, phlegm and wheeze were related to lower PEFR values. Prediction equations are presented derived from the population sample which may be of assistance in assessing observed to expected ratios among elderly people in Malaysia.

Srinivas, P., Wong, K. S., Chia, Y. C., Poi, P. J., & Ebrahim S. (1998). A profile of hypertension among rural elderly Malaysians. *The Southeast Asian Journal of Tropical Medicine and Public Health*, 29(4), 821–826.

The main objective of this study was to survey the prevalence of hypertension in Malaysians aged 55 years and above who responded to a public health screening campaign in Kuala Langat district, Selangor, Malaysia. The relationship between the detection, treatment and control in the study population was also examined. An epidemiological survey of the elderly was conducted in Kuala Langat, a rural district in Malaysia for a consecutive period of six weeks. The survey was conducted using a standardized questionnaire and interview by trained research assistants. The medical students and nurses were trained on the correct protocol of measuring blood pressure based on the recommendations of the British

Hypertension Society. Newly detected persons with blood pressure readings 160/95 mmHg and above, were given a green card to return to the nearest health center for a further 2 visits to check his/her blood pressure. A total of 1,392 people with a mean age of 65 years and comprising of 53.1% males and 46.9% females responded to the health survey. Based on the history 335 (24.1%) of the respondents were known hypertensives and 82.1% of this hypertensive group were on regular treatment. However good control of hypertension was achieved only in 161 (48.1%) of them. Newly detected hypertension was found in 204 (14.6%) of the respondents. The overall prevalence of hypertension in our sample of respondents was 25.6%. There was no significant difference between the sexes and the races in terms of their detection, treatment and control. However there was a significant difference between the persons aged less than 65 years of age and those older than 65 years. There was a large proportion of previously known hypertensives among the survey population. Of those detected, not all were on regular medications and the majority on medications were not well controlled. Education of the public through intensive public health campaigns is vital to improve their knowledge on hypertension and the need for effective control. More community studies are needed to formulate better methods in the detection, treatment and control of hypertension.

Su, Y. P., & Ferraro, K. F. (1997). Social relations and health assessments among older people: Do the effects of integration and social contributions vary cross-culturally? *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 52(B(1)), S27–S36.

Research on health assessments has shown the importance of social relations as a factor influencing health, especially among older people. Drawing upon sociological theories of social integration and social exchange, this research examines two domains of social relations which are expected to influence assessed health. In addition, the study uses a cross-national sample (N = 3,407) of non-institutionalized older people from the Republic of Korea, Fiji, Malaysia, and the Philippines to determine if modernization conditions the relationships between social relations and health. Results indicate that social integration has a positive effect on subjective health assessments in all nations, whereas social contributions are significant only in Korea. Findings suggest that health assessments by elders in the most modernized nations appear to be much more influenced by the contributions they make to the social order than is the case in nations which are less modernized.

Sulaiman, H., & Masud, J. (2012). Determinants of income security of older persons in Peninsular Malaysia. *Pertanika Journal of Social Sciences & Humanities*, 20(1), 239–250.

This study explored factors determining income security of older Malaysians aged between 55 to 75 years, using a nationwide database on the economic and financial aspects of ageing. The sample comprised 1,841 older respondents in Peninsular Malaysia. Logistic regression analysis was performed (Nagelkerke R Sq.= 0.48) to test the likelihood of selected socio-demographic and economic factors contributing to income security. The results indicated that 53% of the elderly were in the income secure category, earning per capita income above the poverty level. The three strongest predictors were current work, being male and of Malay origin. The findings suggest that income security of older Malaysians can be strengthened by providing work opportunities with decent pay and self-employment opportunities to the elderly in informal urban and rural sectors. Such strategies are of

paramount importance to help reduce poverty and vulnerability, increase income security and ultimately the quality of life of the elderly.

Sulaiman, H., Masud, J., & Hamid, T. A. (2012). Pattern of intergenerational supports exchange in Malaysia. In *Profile of Older Malaysians: Current and Future Challenges*. Universiti Putra Malaysia: Institute of Gerontology.

This study highlights findings on trends and forms of intergenerational exchange of supports rendered by Malaysian family members from one generation to another. This is also discusses the review from past research in Asia and South East Asia on filial piety, family obligations, the monetary and non-monetary exchange of supports as well as other factors that influence intergenerational exchange provides the input for comparison. Last but not least, it discusses on the possible changing role of families in caring for the elderly.

Sulaiman, N., Baldry, D., & Ruddock, L. (2006). *Housing and social policy in Malaysia: Provision for the elderly*. Paper presented at the 13th Annual European Real Estate Society, 7-10 June 2006. Weiwar, Germany.

The aged population is increasing in Malaysia. Malaysia was categorized as an ageing nation when the elderly population reached 7.2% (1.8 million) by 2005. In a society where aging is progressing, and where even among elderly people there is an increasingly larger class of older senior citizens, the increasing number of elderly people requiring appropriate housing and personal care (board or personal care) will be an even greater issue of importance. To cope with the increase in elderly, Malaysia needs to have a careful housing and social policy plan to fulfill the housing needs, especially for the aging citizens. However, it seems as if there an ambiguous relationship between housing and social policy in Malaysia towards the elderly society. Hence, this paper seeks to discuss the provision of housing and social policy structure for the elderly to be housed in Malaysia. Past and current propositions on housing for the elderly will also be reviewed.

Sulaiman, N., Baldry, D., & Ruddock, L. (2006). Issues concerning housing for the elderly in Malaysia. *Proceedings of the 6th International Postgraduate Research Conference* (pp. 6–7).

Malaysia has laid down its social and housing policies in its Development Plans since the Colonial Administration and Pre Independence period (1950-1954) until the latest Eight Malaysian Plan (2001-2005). In general, the delivery of social service in Malaysia has been divided into two main categories consisting of housing and other social services such as local authorities, fire & rescue services, sports, culture, library services, information and broadcasting, and community and family development. The needs of the elderly in housing seem to lack attention in the housing programmes of Malaysia. The separation between housing and home for the elderly under the different social programmes has contributed many issues regarding 'adequate shelter' for the elderly in Malaysia. This paper seeks to identify the issues concerning housing for the elderly in Malaysia from both of the social policy programmes in Malaysia. This paper presents the justifications leading to the PhD research project which is titled of Opportunities for the Transfer of Best United Kingdom (UK) Practices to the Provision of Homes for the Elderly in Malaysia.

Sulaiman, N., Baldry, D., & Ruddock, L. (2006). *Best practice transfer for the care homes for the elderly: Case study methodology*. Paper presented at the 13th Annual European Real Estate Society Conference 2006. Weiwar, Germany.

A Case Study can be defined as empirical inquiry that investigates a contemporary phenomenon within its life context and copes with the technically distinctive situation in which there will be many more variables of interest than data points and relies on multiple sources of evidence. This paper presents a discussion on the philosophical stance of the case study as a methodology leading to the PhD research project which is titled Opportunities for the Transfer of United Kingdom (UK) Best Practices for the Provision of Care Homes for the Elderly in Malaysia. The case study technique consists of document analysis, observation and focus group interviews and their use will be justified.

Sulaiman, R., Taha, Z., & Dawal, S. Z. M. (2013). *Application of anthropometric dimensions for estimating stove height, stove depth and cooking task envelope for Malaysian elderly population*. *Pertanika Journal of Science and Technology*, 21(1), 15–28.

Elderly are exposed to physical impairment. This has a strong impact on their daily activities including frying, which is one of the most popular cuisine preparations. The stove height and work envelope are two major ergonomic issues in performing cooking task. There has been little research focusing on Malaysian elderly task performing in addressing these issues. The objectives of this study were to identify the acceptable stove height and depth and to determine the working envelope among Malaysian elderly using anthropometric data. A total of 55 Malaysian elderly (25 male and 30 female) aged between 60 to 85 years participated in this study. Five body measurements were taken from each subject using an anthropometer. The measurements are stature height, shoulder height, arm span, arm reach forward and waist height. Apart from these anthropometric measurements, their present stove height was also measured. The acquisition of stove height dimensions was performed through a series of door to door visit of the elderly homes in Kg. Sg. Merab. These variables were used to estimate the elderly working envelope and determine the stove height, width and depth. Data were analysed using SPSS software. The waist height dimension was to estimate the stove height, the arm reach forward for the depth and the arm span for the length of the table-top where the stove was placed. Meanwhile the stature and shoulder height were used for estimating the position of the overhead compartment or placement of cooking utensils. The 5th percentile was chosen since it is appropriate to accommodate 90% of the studied population. The 5th percentile was also applied for the setting of the working envelope so as to provide better reaching tolerances. Meanwhile, standard was used to compare the present state of the studied kitchen setting. The results show that 56.4% of the elderly waist height is lower than the standard table-top height which is 36 inches (91.4cm) and 36.4% of the stove height was found higher than that of the standard. This could apparently cause fatigue and discomfort to shoulders, the neck, the arm and the back of the user. Anthropometrics measurements can be used for estimating the stove height, length and depth. These could also calculate a space taken for certain physical activities, such as frying task envelope. Providing a good combination of stove height, length, depth and ergonomic working envelope could hopefully improve the elderly cooking task and increase their quality of life.

Suriah, A. R., Zainorni, M. J., Shafawi, S., Mimie Suraya, S., Zarina, N., Wan Zainuddin, W. A., & Zalifah, M. K. (1996). Nutrient intake among elderly in Southern Peninsular Malaysia. *Malaysian Journal of Nutrition*, 2(1), 11–19.

Studies were conducted in selected areas in three states namely Johor (n=117, male=55, female=62), Negeri Sembilan (n=130, male=52, female=78) and Malacca (n=97, male=33, female=64) involving free living elderly (age range from 60 to 93 years old). Respondents were divided into three age cohort groups that is 60 to 69 years, 70 to 79 years and above 80 years old. Assessment of macro and micronutrients were obtained from 24-hour diet recall for three consecutive days. Household measurements were used to estimate the amount of food consumed. Mean energy intake for both sexes were lower than the Malaysian RDA. Mean energy intake were also found to decline with age increment. The percentage of carbohydrate from total calories is higher compared to fat and protein. No respondents were found to consume less than 1/3 RDA for protein. Although no significant difference in nutrient intake was noted among age cohort groups, there was a decline in the intake of protein, fat and carbohydrate. Significantly ($p < 0.05$) lower carbohydrate intake was noted in cohort group above 80 years. As for vitamins and minerals consumption, more than 50% of the elderly population studied consumed less than 2/3 RDA for vitamin A, thiamine, riboflavin, niacin and calcium. Very low intake of nutrient may lead to many health problems. Overall mean energy intake indicate the respondents consume less than the Malaysian RDA for all three age cohort groups. Total mean energy intake were also found to decline with age increment for both sexes. Due to the low energy intake, higher percentage of elderly were found consuming less than 2/3 RDA for thiamine (65%), riboflavin (63%) and niacin (90%). Other nutrients which were also being consumed less than 2/3 RDA by the respondents are vitamin A (67%) and calcium (65%). The intake of calcium which was found to be to be extremely low (ranged from 277 to 303 mg) could lead to problems like osteoporosis.

Surjit, S., Singh, O. U., Rahim, M., & Bahaman, A. S. (2005). Encouraging voluntary work among public service retirees: How policy intervention can help. *Pertanika Journal of Social Science and Humanities*, 13(2), 219–230.

This paper is part empirical and part theoretical. It argues that for volunteerism to be a permanent feature in the society there must be a public policy that encourages, motivates and appreciates the value of volunteerism, and that it should be consciously acknowledged in the community. To be able to create this sense, a new developmental view on the contributive roles of the ageing population must be in place in the policy intervention. Malaysia, a rapidly industrializing country in the Asian region, must recognize the fact that a great number of willing and committed retirees could be tapped as potential volunteer workers for the continuing development of the broader community.

Sushama, P. (1992). Health and welfare services for elderly people in Malaysia. In D. R. Phillips (Ed.), *Ageing in East and South-East Asia* (pp. 167–184). London, UK: Edward Arnold.

Outlines the available health and welfare services as provided by government and non-government organizations. Note is taken of studies already conducted so as to develop an understanding of the people and the situation, and to ascertain the needs of the elderly. Finally, possible directions for future service developments are considered. Established services indicate an extremely narrow view of the needs of elderly people.

A more specific focus, developing from careful studies of the issues involved, must precede the planning and implementation of programmes. Elderly people can form a vulnerable group, who deserve more services and a better quality of care,

Suzana, S., Kee, C. C., Jamaludin, A. R., Noor Safiza, M. N., Khor, G. L., Jamaiyah, H., Geeta, A., Ahmad Ali, Z., Rahmah, R., Ruzita, A. T., & Ahmad Fauzi, Y. (2012). The Third National Health and Morbidity Survey: Prevalence of obesity, and abdominal obesity among the Malaysian elderly population. *Asia-Pacific Journal of Public Health*, 24(2), 318–329.

Obesity is an emerging public health threat in the elderly population in developing countries. Hence, the Third National Health and Morbidity Survey has assessed 4746 individuals aged 60 years and older recruited through a household survey to determine the prevalence of adiposity using body mass index and waist circumference. The national's prevalence of overweight and obesity in men was 29.2% (95% confidence interval [CI] = 27.2-31.3) and 7.4% (95% CI = 6.4-8.6), respectively. However, the prevalence decreased with age. The figures in women were 30.3% (95% CI = 28.5-32.1) and 13.8% (95% CI = 12.5-15.2), respectively. The prevalence of abdominal obesity was 21.4% (95%CI = 20.2-22.6), with 7.7% (95% CI = 6.7-9.0) in men and 33.4% (95% CI = 31.4-35.3) in women. Predictors of adiposity include the following: Malay and Indian ethnicity, higher education level, higher household income, from urban area, and being married. In conclusion, adiposity affects about one third of the Malaysian elderly population, especially those of the younger age group, women, and those with higher socioeconomic status.

Swarna, N. Y. (2012). Influence of diabetes mellitus and risk factors in activating latent tuberculosis infection: A case for targeted screening in Malaysia. *Medical Journal of Malaysia*, 67(5), 467–472.

A review of the epidemiology of tuberculosis, its contributing risk factors (excluding HIV) and the role of screening latent tuberculosis infection in Malaysia was done. Despite the global and domestic decrease in prevalence rates of tuberculosis in the past decade, there is an alarming increase in the trend of non-communicable diseases in the country. High prevalence rates of major risk factors leading to reactivation of tuberculosis were seen within the population, with diabetes mellitus being in the forefront. The rising numbers in the ageing population of Malaysia poses a further threat of re-emergence of tuberculosis in the years to come. Economically, screening of diabetic patients with comorbidities for latent tuberculosis infection (LTBI) using two major techniques, namely tuberculin sensitivity (TST) and Interferon gamma release assay tests (IGRA) could be a viable option. The role of future research in the detection of LTBI in the Malaysian setting might be necessary to gauge the disease reservoir before implementing prophylactic measures for high risk groups involved.

Taha, Z., & Sulaiman, R. (2011). A biomechanical study of grip and pinch strength among Malaysian elderly population. *Pertanika Journal of Science and Technology*, 19(2), 293–305.

The physical strength of the elderly aged above 60 years is typically 10 to 30% less than the young adult population of ages between 25 to 35 years. This reduction of strength has a strong impact on the activity of the daily living (ADL) of the elderly population. There

has been little research done studying on the physical strength of the elderly population in Malaysia. The objective of this study was to determine the static strength of the elderly population in Malaysia. In particular, the grip and pinch strength were investigated as these two static strengths are extensively used in their instrumental activity of daily living (IADL). The results were then compared to the strength of the university students. A total of 30 subjects (15 males and 15 females) participated in the study. Their age ranged between 60 to 83 years, with the mean of age of 67.1 years. The comparison group comprised a total of 30 university students (20 male, 10 female) aged between 23 to 24 years, with the mean of age of 23.2 years. Grip and pinch strengths of both groups were measured and analysed using a descriptive statistics. It was found that the elderly male subjects are stronger in both strength measurements than their female counterpart. The 95th percentile of the female grip strength was slightly lower than that of the male while the male pinch strength was 31.07% higher. It was also found that the male students had higher strengths compared to the females. The grip strength of the elderly was 30.66% lower than the university student, while their pinch strength was 13.42% lower. Both static strengths of the elderly were found to be lower than those of the university students. This supported the research hypotheses postulating that the static strength had a negative correlation with age. In terms of gender differences, the male subjects were found to be stronger than the females.

Taha, Z., & Sulaiman, R. (2010). Perceived kitchen environment among Malaysian elderly. *American Journal of Engineering and Applied Sciences*, 3(2), 270–276.

Kitchen is the most important room in a house. Its environment should be highly conducive especially for the elderly when performing daily kitchen activities. There has been little research focused on the environment quality of the elderly kitchen in Malaysia. Only a few researches have been done on general home environment although our preliminary findings shown that the elderly spend 60% of their daily time in the kitchen. Due to this concern, a study was conducted to investigate the quality of Malaysian elderly kitchen environment and how they perceive different thermal levels. The kitchen temperature, humidity and light level were measured as these three variables are important factors in the environmental quality determination. Thirty houses were visited and a set of questionnaire was used to measure elderly task performance. The measured values were then compared to previous recommended findings and comfort level of working environment. The results show that 80% of the kitchen temperature is higher than 28.43°C. In terms of brightness level, 56.67% of the kitchens had lower than 323 lux. But the humidity was found remains within the range. The temperature of Malaysian kitchen is higher than moderate level which contributed to discomfort. The kitchen brightness level is lower than required by the elderly. Both variables could affect to the elderly task performance.

Tai, M. L., Jivanadham, J. S., Tan, C. T., & Sharma, V. K. (2012). Primary headache in the elderly in South-East Asia. *The Journal of Headache and Pain*, 13(4), 291–297.

Headache aetiology and presentation are considerably different in elderly individuals. However, literature on headache characteristics among Asians is limited. The objective of this study was to evaluate the headache characteristics among elderly in an outpatient clinic setting in Malaysia, a South-East Asian country with diverse ethnicity. In this prospective cross-sectional study, patients presenting with headache to Neurology and Primary Care Clinics of University Malaya Medical Centre between February 2010 and July 2010 were included. Data

for consecutive eligible adult patients were entered in a prospective headache registry. International Headache Criteria II (ICHD-II) were used to classify various headache subtypes. Patients with headache due to intracranial space occupying lesions were excluded. Patients were divided into two age groups-elderly (55 years and above) and younger (less than 55 years of age). Of the 175 screened patients, 165 were included in the study-70 in elderly age group and 95 in younger group. Tension-type headache was the commonest subtype (45.7 %) among the elderly while Migraine without aura (54.7 %) was more common in young adults. More elderly patients suffered from chronic daily headache as compared to younger patients (47.1 vs. 28.4 %; $p = 0.015$). Headache subtypes and frequency differ considerably among elderly South East Asian patients.

Talib, N. F. M., & Manaf, H. A. (2017). Attitude towards retirement planning behaviour among employee's. *Journal of Business and Management*, 1(1), 15–21.

This study is to examine the relationship between retirements planning behaviour with the factors affecting the retirement planning behaviour among EPF's employees. This paper, specifically focus to the individual understanding about the importance of retirement planning. The study was conducted in the Employees Provident Fund (EPF), North Zone covering Penang, Kedah and Perlis. The subjects consisted of 172 people comprising of staff positions that include a diverse group of the Professional Management Group until the Support Group working within the organization. Pearson(r), and One-way variance analysis (ANOVA) was used to analyze the data. The results identified that age group were not significant with the retirement planning behaviour. The study also revealed that the awareness among the staff personally do not significant relationships with retirement planning behaviour. This is commonly seen among the people in Malaysia as they still have lack of knowledge about retirement planning behaviour. Therefore, it is encouraged for many pre-retirement planning programs should be provided and conducted by organization and government.

Tan, H. K., & Folk, J. Y. (2011). Knowing when to retire: The first step towards financial planning in Malaysia. *Educational Gerontology*, 37, 854–884.

This article draws upon expected retirement age cohorts as a main determinant to financial planning preparation in Malaysia. The return rate was 55% from 600 questionnaires distributed. Five hypotheses were analyzed using hierarchical and stepwise regression analysis. The results revealed that expected retirement age cohort variables made significant contribution to financial planning preparation as well as personal orientation towards retirement planning, particularly the younger age cohort. There is an effect on personal orientation towards retirement planning. No significant effect was found between expected retirement age cohort and current financial resources, but older age cohorts were relatively more significant predictors.

Tan, M. P., Kamaruzzaman, S. B., & Poi, P. J. H. (2013). Mortality and morbidity associated with fall in older patients attending an emergency room in Malaysia. *Journal of Health and Translational Medicine*, 16(2), 7.

Injuries resulting from falls in older people incur large economic, social and psychological burdens to individuals, careers and the society. The consequences of falls in the

older population in Malaysia have not been defined previously. To determine the effects of falls in terms of injury rate, activities of daily living and mortality in older fallers attending the Accident and Emergency (A&E) department at the University of Malaya Medical Centre. Consecutive patients over the age of 65 years presenting to A&E over a 6 month period were included in the study. Activities of daily living (ADLs) were assessed at presentation and oneyear follow-up, using the Barthel Index. Injury rates at presentation were recorded. Vital status was determined at one-year. 72/198 (37%) sustained fractures, 32/72 (44%) of which were hip fractures. Mortality data was available in 168 patients. 41/168 (24%) had died at 12-month follow-up, with 41% of deaths occurring in the first 4 weeks. Survivors showed reductions in all ADL domains at one year, with a significant reduction in total Barthel score (20 vs 18, $p < 0.001$). The older fallers presenting to our A&E department had a 16% hip fracture rate and a 24% oneyear mortality rate, while survivors experienced significantly increased dependency. Studies to develop effective interventions for this highly vulnerable group of patients are urgently required as the number of older fallers are likely to increase with our rapidly ageing population.

Tan, O. S. L., Khan, S., Vergara, R. G., & Khan, N. (2016). Policies and protections for ageing society in Malaysia. *Journal of Southeast Asian Research*, Article ID 974366, 8 pages. doi: 10.5171/2016.974366.

The 4th Malaysian Population and Family Study by the National Population and Family Development Board (1), which was matched with the result of the population and housing census in 2010, found that about 23%, or 538,000 of the 2.4 million senior citizens in Malaysia suffered from the 'empty nest' syndrome. A report issued by the UN Development Programme (UNDP) stated that 90% of the contributors towards the Employees Provident Fund (EPF) in Malaysia did not even have enough money to live a simple lifestyle for a period of five years after retirement. United Nation projected that the country will achieve the status (ageing country) in year 2030. Malaysia in an upper middle-income country and as of 1 January 2016, the population of Malaysia was estimated to be 31,127,247 people. This is an increase of 1.58 % (482,954 people) compared to 30,644,293 people the year before. In 2015, the natural increase was positive, as the number of births exceeded the number of deaths by 494,905. Due to external migration, the population declined by 11,951. The sex ratio of the total population was 1.029 (1,029 males per 1,000 females), which is higher than the global sex ratio. The global sex ratio in the world was approximately 1,016 males to 1,000 females as of 2015. (2) This paper analyses the Malaysia government's and people social responsibilities in overcoming ageing society and preparing to support and assist the ageing population by 2035. The researcher uses doctrinal research methodology and secondary statistic from the authorities for this research to gather the data and examine the policies. Interestingly, despite the social responsibilities and challenges encountered and policies implemented by the government, there is still much more the government needs to do to overcome the challenges faced by the ageing society in Malaysia.

Tan, P. C., & Ng, S. T. (2000). Ageing in Malaysia: Issues and policies. In D. R. Phillips (Ed.), *Ageing in the Asia-Pacific region: Issues, Policies and Future Trends* (pp. 284-298). New York: Routledge.

Malaysia's population has grown rapidly, more than doubling over the past three decades, from about 8 million in 1960 to about 18.4 million in 1991 (Department of Statistics

Malaysia 1995). The current population is projected to increase to about 22 million by the turn of the century, and around 29 million by 2020 (United Nations 1994). Population growth rate has remained high despite declining fertility because of its young age structure, and mortality has declined to a low level.

Tan, P. C., & Tey, N. P. (2005). PJCC- A model for community participation and active ageing in Malaysia. *Journal of Intergenerational Relationships*, 3(2), 125–131.

This article describes the setting up of the PJCC to promote self-sustaining programs at community level involving the old and the young. Activities and achievements of PJCC are highlighted in the paper. The success of PJCC testifies that a smart partnership of the government, non-government and private agencies is workable and is a great way to encourage inter-generational participation for community and national development.

Tan, P. J., Khoo, E. M., Chinna, K., Hill, K. D., Poi, P. J., & Tan, M. P. (2014). An individually-tailored multifactorial intervention program for older fallers in a middle-income developing country: Malaysian Falls Assessment and Intervention Trial (MyFAIT). *BMC Geriatrics*, 14(1), 78. <https://doi.org/10.1186/1471-2318-14-78>

In line with a rapidly ageing global population, the rise in the frequency of falls will lead to increased healthcare and social care costs. This study will be one of the few randomized controlled trials evaluating a multifaceted falls intervention in a low-middle income, culturally-diverse older Asian community. The primary objective of our paper is to evaluate whether individually tailored multifactorial interventions will successfully reduce the number of falls among older adults. Three hundred community-dwelling older Malaysian adults with a history of (i) two or more falls, or (ii) one injurious fall in the past 12 months will be recruited. Baseline assessment will include cardiovascular, frailty, fracture risk, psychological factors, gait and balance, activities of daily living and visual assessments. Fallers will be randomized into 2 groups: to receive tailored multifactorial interventions (intervention group); or given lifestyle advice with continued conventional care (control group). Multifactorial interventions will target 6 specific risk factors. All participants will be re-assessed after 12 months. The primary outcome measure will be fall recurrence, measured with monthly falls diaries. Secondary outcomes include falls risk factors; and psychological measures including fear of falling, and quality of life. Previous studies evaluating multifactorial interventions in falls have reported variable outcomes. Given likely cultural, personal, lifestyle and health service differences in Asian countries, it is vital that individually-tailored multifaceted interventions are evaluated in an Asian population to determine applicability of these interventions in our setting. If successful, these approaches have the potential for widespread application in geriatric healthcare services, will reduce the projected escalation of falls and fall-related injuries, and improve the quality of life of our older community.

Tan, P. L., Baah, R., & Subramaniam, G. (2005). *Perception of the younger generation towards elderly care: A case study among undergraduates. (August 2005). Technical Report. Institute of Research, Development and Commercialization, Universiti Teknologi MARA.*

In the year 2020, it is expected that the population in Malaysia which is above 60 years old will be 20.8 per cent. As such it will become a burden to the younger generation if the elderly population is not provided earlier for their own safety net both in terms of physical and financial terms. In other words the burden need not be thrust upon the younger generation if it is carefully and properly planned by the state as well as the individual. As women join the career path and couples face severe work pressure, it is a social phenomenon where support from extended family members is slowly eroding and becoming a thing of the past. The younger generation hence may have to be the "sandwich generation" who has to not only take care of their children but also their elderly parents and themselves. This study was carried out to find out the perception on intergenerational care and support among the youth in our country so that a more effective approach could be undertaken by the government in the issue of care giving for the elderly in the near future. The sample consisted of 1000 respondents who are undergraduates from public universities and private universities and colleges. The findings of this study revealed that generally the younger generation still shows filial piety towards their elderly parents. However, with time this strong filial piety value may be reduced as it was noted that many undergraduates indicated that they were unsure whether their elderly parents should stay with them or be sent to the old folk homes.

Tan, W. S., Low, W. Y., Ng, C. J., Tan, W. K., Tong, S. F., Ho, C., Khoo, E. M., Lee, G. Lee, B. C., Lee, V., & Tan, H. M. (2013). *Efficacy and safety of long-acting intramuscular testosterone undecanoate in aging men: A randomised controlled study. BJU International, 111(7), 1130–1140. <https://doi.org/10.1111/bju.12037>*

To evaluate the efficacy and safety of long-acting i.m. testosterone undecanoate (TU) in Malaysian men with testosterone deficiency (TD). A total of 120 men, aged 40-70 years, with TD (serum total testosterone [TT] \leq 12 nmol/L) were randomised to receive either i.m. TU (1000 mg) or placebo. In all, 58 and 56 men in the placebo and treatment arm, respectively, completed the study. Participants were seen six times in the 48-week period and the following data were collected: physical examination results, haemoglobin, haematocrit, TT, lipid profile, fasting blood glucose, sex hormone-binding globulin, liver function test, prostate-specific antigen (PSA) and adverse events. The mean (sd) age of the participants was 53.4 (7.6) years. A significant increase in serum TT ($P < 0.001$), PSA ($P = 0.010$), haematocrit ($P < 0.001$), haemoglobin ($P < 0.001$) and total bilirubin ($P = 0.001$) were seen in the treatment arm over the 48-week period. Two men in the placebo arm and one man in the treatment arm developed myocardial infarction. Common adverse events observed in the treatment arm included itching/swelling/pain at the site of injection, flushing and acne. Overall, TU injections were well tolerated. TU significantly increases serum testosterone in men with TD. PSA, haemoglobin and haematocrit were significantly elevated but were within clinically safe limits. There was no significant adverse reaction that led to the cessation of treatment.

Teh, J. K. L. (2014). *Family support and subjective well-being of older Malaysians (Doctoral dissertation)*, University of Malaya, Malaysia.

Fertility and mortality decline have resulted in the gradual ageing of the population in Malaysia. Traditionally, families are at the forefront of providing old age support. However, demographic and social changes have eroded this traditional pillar of support for older persons. Furthermore, the 'sandwich-generation' phenomenon has increased the likelihood of those in midlife facing the financial burden of supporting older and younger generations simultaneously. This study examined family support of older Malaysians (aged 60 and above), and the effects of this support on two indicators of their subjective well-being: loneliness and self-rated health. Family support was defined as support provided by adult children. Besides co-residence with adult children, this study examined four types of support within households: (1) monetary support, (2) payment of bills, (3) provision of food or other necessities, and (4) housework. Findings revealed that monthly provision of food and co-residence with adult children are common types of support. Co-residence with children significantly reduced loneliness, but monthly monetary support significantly improved self-rated health in elders. Co-residence was also examined as a moderator, and found to be expedient in reducing loneliness among those widowed or divorced. Co-residence also exhibited an antagonistic moderating effect in situations where there was monthly provision of food for elders, or when there was monthly help in the payment of bills. Findings also revealed that older people among the Indigenous population in Sabah and Sarawak fared worse than those of other ethnic groups in terms of loneliness and self-rated health. Low socioeconomic status and higher health/physical limitations in elders, which indicated their 'increased needs', were associated with increased loneliness and poorer self-rated health. 'Increased needs' in older persons predicted more family support, but having closer relationships with children was a stronger predictor of receiving this support. The receipt of more family support reduced loneliness but did not improve self-rated health of older persons. Family support had a partial mediating effect between the relationship with children and loneliness in elders. Findings also suggested a moderated mediation effect of family support, as family support mediated between relationship with children and loneliness among older females, but not among older males. This mediation effect was also present among Chinese elders, but not among elders of other ethnicity. This study also examined factors affecting the provision of support to both parents and parents-in-law, as reported by adult women. Women's education and income were not significant factors in the decision to co-reside with either parent. But women with higher education and higher income were more likely to provide financial/material support to both parents. Women with more offspring were less likely to support both parents. More policies are needed to encourage co-residence with parents, and to engage community services and NGOs in providing in-home care for older parents. More family-oriented activities with emphasis on spending quality time between older and younger generations are needed to strengthen intergenerational relationships. Policies should encourage social mobility in women, flexibility in work hours and work mobility for working mothers.

Teh, J. K. L., Ng, S. T., Tey, N. P., & Ismail, S. N. (2013). *Ethnicity and support for parents in Malaysia*. *Asian Women*, 29(4), 50–72.

This study analyzed support as reported by adult women to parents and parents-in-law in a multi-ethnic setting. It examined ethnic diversity and other influencing factors in the provision of support. Data utilized came from the Women sample of the 2004 Malaysian Population and Family Survey, and was filtered to include the three largest ethnic groups in

Malaysia – Malays, Chinese, and Indians. Analyses were conducted through crosstab and hierarchical logistic regression methods. Findings supported the contingency theory. Most Malaysian women supported parents and parents-in-law, but Malay women appeared more impartial than others. Increased needs of the women's own parents influenced support, but this effect was partially true in support to parents-in-law. Higher socioeconomic status in women partly increased support to both sets of parents. Women with more offspring were found to reduce support to parents, but not to parents-in-law. Socioeconomic development and declining fertility would have significant impact on the support of older persons.

Teh, J. K. L., Tey, N. P., & Ng, S. T. (2014). Ethnic and gender differentials in non-communicable diseases and self-rated health in Malaysia. *PLOS ONE*, 9(3), 1–8.

This paper examines the ethnic and gender differentials in high blood pressure (HBP), diabetes, coronary heart disease (CHD), arthritis and asthma among older people in Malaysia, and how these diseases along with other factors affect self-rated health. Differentials in the prevalence of non-communicable diseases among older people are examined in the context of socio-cultural perspectives in multi-ethnic Malaysia. Data for this paper are obtained from the 2004 Malaysian Population and Family Survey. The survey covered a nationally representative sample of 3,406 persons aged 50 and over, comprising three main ethnic groups (Malays, Chinese and Indians) and all other indigenous groups. Bivariate analyses and hierarchical logistic regression were used in the analyses. Arthritis was the most common non-communicable disease (NCD), followed by HBP, diabetes, asthma and CHD. Older females were more likely than males to have arthritis and HBP, but males were more likely to have asthma. Diabetes and CHD were most prevalent among Indians, while arthritis and HBP were most prevalent among the Indigenous groups. Older people were more likely to report poor health if they suffered from NCD, especially CHD. Controlling for socio-economic, health and lifestyle factors, Chinese were least likely to report poor health, whereas Indians and Indigenous people were more likely to do so. Chinese that had HBP were more likely to report poor health compared to other ethnic groups with the same disease. Among those with arthritis, Indians were more likely to report poor health. Perceived health status and prevalence of arthritis, HBP, diabetes, asthma and CHD varied widely across ethnic groups. Promotion of healthy lifestyle, early detection and timely intervention of NCDs affecting different ethnic groups and gender with socio-cultural orientations would go a long way in alleviating the debilitating effects of the common NCDs among older people.

Teh, J. K. L., Tey, N. P., & Ng, S. T. (2014). Family support and loneliness among older persons in multiethnic Malaysia. *Scientific World Journal*, 2014, Article ID 654382, 11 pages. <https://doi.org/10.1155/2014/654382>

This study investigates factors affecting older persons' state of loneliness in multiethnic Malaysia using data from the 2004 Malaysian Population and Family Survey, the first nationally representative sample in Malaysia. The study sample was extracted to include Malays, Chinese, Indians and other Indigenous groups aged 60 and above, and who had children ($n = 1791$). Cross tabulations and ordinal logistic regression methods were used in the analysis. Among the ethnic groups, older Malays were more likely than their Chinese and Indian counterparts to experience loneliness. Loneliness was found to be associated with age, marital status, education level, sources of income, health status, and physical limitations. Among older people, feelings of loneliness were inversely related with coresidence with adult

children and participation in religious activities. Sociodemographic changes have eroded the traditional family support system for the elderly, while social security remains inadequate. This study shows the important role of family in alleviating loneliness among older people. Hence the need to promote and facilitate coresidence, as well as participation in religious activities, and a healthy lifestyle as a priority strategy is in line with the objectives of the National Policy for the Older People.

Teng, N. I. M. F., Shahar, S., Manaf, Z. A., Das, S. K., Taha, C. S., & Ngah, W. Z. (2011). Efficacy of fasting calorie restriction on quality of life among aging men. *Physiology & Behavior, 104*(5), 1059–1064.

Calorie restriction (CR) has been promoted to increase longevity. Previous studies have indicated that CR can negatively affect mood and therefore the effect of CR on mood and quality of life (QOL) becomes crucial when considering the feasibility of CR in humans. We conducted a three month clinical trial on CR (reduction of 300 to 500 kcal/day) combined with two days/week of Muslim sunnah fasting (FCR) to determine the effectiveness of FCR on QOL among aging men in Klang Valley, Malaysia. A total of 25 healthy Malay men (age 58.8 ± 5.1 years), with no chronic diseases and a BMI of 23.0 to 29.9 kg/m² were randomized to FCR (n=12) and control (n=13) groups. Body composition measurements and QOL questionnaires were ascertained at baseline, week 6 and week 12. QOL was measured using the Short-Form 36, sleep quality was determined using the Pittsburgh Sleep Quality Index, the Beck Depression Inventory II was used to measure mood and the Perceived Stress Scale was used to measure depression. The FCR group had a significant reduction in body weight, BMI, body fat percentage and depression ($P < 0.05$). The energy component of QOL was significantly increased in FCR group ($p < 0.05$). There were no significant changes in sleep quality and stress level between the groups as a result of the intervention. In conclusion, FCR resulted in body weight and fat loss and alleviated depression with some improvement in the QOL in our study and has the potential to be implemented on a wider scale.

Teng, N. I. M. F., Shahar, S., Manaf, Z. A., Haron, H., & Ngah, W. Z. W. (2013). Fasting calorie restriction improved the quality of dietary intake among aging men in Klang Valley, Malaysia. *Pakistan Journal of Nutrition, 12*(7), 2017.

This study used the new model of Fasting Calorie Restriction, which aimed at providing a feasible way of controlling eating. The present study aimed at determining the changes in dietary patterns following a three-month Fasting Calorie Restriction intervention. Twenty-five apparently healthy men (aged 50-70 years, BMI 23.0-29.9 kg/m²) were randomized into Fasting Calorie Restriction or Control groups. Those assigned to the Fasting Calorie Restriction group were instructed to restrict their daily energy intake to 2100 kJ/day and practice Muslim Sunnah fasting for 2 days a week for three months. Dietary data and Healthy Eating Index were obtained using a Diet History Questionnaire at the baseline, 6 and 12 weeks. Statistical analysis was carried out using a repeated measured of Analysis of Covariance using the baseline data as covariate. Energy intake decreased significantly ($p < 0.01$) in the Fasting Calorie Restriction group. We also found a significant increase ($p < 0.05$) in thiamine, riboflavin and niacin intakes in the Fasting Calorie Restriction group throughout the intervention period. Analysis of the Healthy Eating Index showed a significant main effect ($p < 0.05$) for fat, saturated fat and cholesterol scores. Food variability decreased significantly ($p < 0.001$) (9.5 ± 0.9 at the baseline to 8.1 ± 1.1 at week 12) in the Fasting Calorie Restriction

group. Fasting Calorie Restriction in this study was beneficial in reducing overall energy and fat intake. However, it also decreased the food variability among subjects. There is a need to evaluate the long-term effects of Fasting Calorie Restriction on food variability and micronutrient status.

Teng, N. I. M. F., Shahar, S., Rajab, N. F., Manaf, Z. A., Johari, M. H., & Ngah, W. Z. W. (2013). Improvement of metabolic parameters in healthy older adult men following a fasting calorie restriction intervention. *Aging Male, 16*(4), 177–183.

Calorie restriction and intermittent fasting are two dietary interventions that can improve aging. Religious fasting also suggested having similar benefit; however, such studies are still scarce. Thus, this study aimed to determine the effect of fasting calorie restriction (FCR) on metabolic parameters and DNA damage among healthy older adult men. A randomized controlled study was done on men, aged 50-70 years in Klang Valley, Malaysia. Subjects were divided into two groups; FCR (reduction of 300-500 kcal/d combined with 2 days/week of Muslim Sunnah Fasting) and control. Assessment was ascertained at three time point; baseline, weeks 6 and 12. Blood samples were analyzed for lipid profile, DNA damage and malondialdehyde (MDA). The FCR group reduced their energy intake for approximately 18% upon completion of the study. A significant interaction effect was found in body weight, body mass index, fat percentage, fat mass, blood pressure, total cholesterol, low-density lipoprotein cholesterol and the ratio of total cholesterol/high-density lipoprotein cholesterol ($p < 0.05$). A significant improvement ($p < 0.001$) in total DNA rejoining cells and MDA ($p < 0.05$) was also observed in the FCR group. FCR improved metabolic parameters and DNA damage in healthy older adult men. Therefore, there is a need to further examine the mechanism of FCR.

Teo, C., Chung, W., Khaw, C., & Rashid, A. (2009). Hypertension and diabetes mellitus among the residents of an old folks home in North Malaysia. *The Internet Journal of Geriatrics and Gerontology, 6*(1), 1–14.

Hypertension and diabetes are the major threats to the growing elderly population. The existence of either one or both of these conditions markedly increases multi-systemic complications. However, not much epidemiological research has been done concerning these diseases among the elderly in developing countries like Malaysia. To determine the prevalence of hypertension and diabetes mellitus and their associated risk factors among older adults living in an old folks home in Penang, Malaysia. A cross sectional study was conducted among 155 residents who were 60 years old and above. Standard procedure of blood pressure measurement was used based on the American Heart Association guidelines. Fasting blood glucose was measured using a capillary glucometer. Besides the socio demographic information, Elderly Cognitive Assessment Questionnaire (ECAQ), Geriatric Depression Scale (GDS), and Barthel's Index were used to assess other co-morbidities among the elderly and their possible association with hypertension and diabetes. Among the 155 participants, the prevalence of hypertension was 62.6% and 47.6% of them had uncontrolled blood pressure. The prevalence of diabetes mellitus was 25.8% of which 33% of them had uncontrolled blood glucose level. The diabetics were significantly at a higher risk to have hypertension and vice versa (OR=2.56). This study revealed a high prevalence and low awareness rates of both hypertension and diabetes mellitus among the elderly in this

institution. At least one third of them had poor control of their blood pressure and blood glucose levels. Therefore a more vigilant screening program in this population is essential.

Teo, G. S., & Idris, M. N. (1996). Prevalence of hypertension among Chinese elderly and its relationship to behavioural and nutritional factors. *Medical Journal of Malaysia*, 51(1), 33–40.

A cross-sectional study was carried out to determine the prevalence of hypertension in the Chinese elderly and to examine its relationship with various behavioural and nutritional risk factors. This study involved 243 Chinese aged 55 years and older in 2 randomly selected Chinese Villages in Seberang Prai Tengah, Penang. The study included an interview, anthropometric assessment and blood pressure measurement. The prevalence of hypertension was 48.1% and out of this, 65 (55.6%) were on anti-hypertensive treatment. There was a significant rise in the prevalence with age. Hypertension was found to be inversely related to per capita income and physical activity ($p < 0.05$). Hypertension was significantly more common in smokers than non-smokers. Alcohol intake in the elderly was low and not related to hypertension. Obesity was significantly associated with hypertension only among the elderly aged 55-64 years. The dietary intake of sodium, potassium and calcium did not differ significantly between the hypertensive and normotensive elderly.

Tey, N. P. (2017). Population ageing in Malaysia. In A. Abeykoon, N. Murat, G. Rocas, & A. C. Naraval (Eds.), *Ageing Thailand, Malaysia, Indonesia and Cambodia: Demographic Transition, Policy and Programmatic Responses*. International Council on Management of Population Programmes (ICOMP) and International Planned Parenthood Federation (IPPF).

Population ageing is a relatively new phenomenon in Malaysia. The proportion of population aged 60 years and older had been gradually increasing from 5.2% in 1990 to 6.2% in 2000 and 8.0% in 2010. However, the tempo of population ageing will accelerate in the next few decades. Malaysia will be an ageing nation by around 2030 when 14% of the population will be 60 years old and over. By 2050 this will further increase to 24%. Among the older population, the oldest old will be growing at a faster pace. Population ageing is the result of gain in life expectancy and fertility decline to replacement level in 2012. The continuing fertility decline also resulted in labour shortage and erosion of family support for older people. Population ageing poses serious challenges to the health care and social protection systems, but it also presents an opportunity to tap the vast reservoir of human resources of experienced workers for national development, in the light of a tight labour market. To allow older people to work longer, the Government has raised the retirement age for both public and private sector employees to 60 years old since 2014 from 58 years (public sector) and 55 years (private sector). Still, more efforts are needed to promote active and productive ageing. The older population is by no means a homogenous group, and their needs differ widely. Older men are more likely to have a surviving spouse than older women, as the incidence of widowhood increased rapidly with advancing age among older women. About two thirds of older adults co-reside with children, while many also receive remittances from children. Many older adults have had no formal education, and are engaged in informal services and agricultural activities. However, with the rising trend in education, the rapidly increasing number of older people with higher education in the next few decades will constitute a pool of skilled human resources. There are more women than men aged 70 and

over in Malaysia, and the gap widens in older age groups. Older women are also much more likely to be widowed than men. The constitution guarantees equal rights for all, but women are discriminated at the work place, and in terms of inheritance. Although women are the main care providers and they take on multiple roles, only less than one fifth of households are headed by women. Compared to older men, older women are in greater need for financial assistance and support. The National Policy for Women focuses more on younger women, especially those in the labour force. Health programmes also focus more on women in the reproductive years, and there is relative neglect of the health care needs of older women. One of the major challenges in population ageing is the provision of adequate health care services to a rapidly increasing number of older persons with deteriorating health or multiple illnesses. In Malaysia, population ageing has been accompanied by a rise in non-communicable diseases, caused by sedentary lifestyle and food habits. The increasing number of older persons is straining the health care system. Geriatric care in the country is still underdeveloped and available services could not meet the rapidly increasing demand. To meet the health care needs of the rapidly increasing number of older persons, measures are being taken to train more geriatricians and improve geriatric and long term care facilities. There are also efforts to promote healthy living through health education and campaigns to prevent further rise of non-communicable diseases. Another major challenge in population ageing is the provision of adequate social protection. Older persons generally depend on income from work or savings, as well as financial support from children. The incidence of poverty is higher among older adults than the working age population. Are the existing five pillars of social protection adequate in providing for the needs of the increasing number of older persons? The cash and social assistance under pillar zero is rather limited and many who are in need do not receive it. The Employee Provident Fund (EPF) and Pension (for civil servants) which cover a little less than two thirds of the older adults, are inadequate to meet the financial needs for daily living of the older people, as most people used up their EPF savings within 5 years after retirement. Free and subsidized health care services are provided in government hospitals and clinics to older persons to alleviate their financial burdens amid the escalating health care cost.

Many Non-Government Organizations (NGOs) run by older adults and the community have played an important role in the care and well-being of the elderly, especially with the erosion of family support system which is a consequence of shrinking family size, out-migration of adult children and increased female labour force participation in the modern sector. Government, NGOs and the private sector are forging smart partnerships to cater to the needs of older people, including health care, home care and provision of special privileges to older persons.

The National Policy for the Elderly calls for efforts to enable older people to live independently, with respect and dignity, through self-reliance and continuous participation in society. Various government agencies, such as the Department of Social Welfare and the Ministry of Health have been providing health care and social services to safeguard the welfare of older people.

While Malaysia has taken measures to address issues of population ageing, including the adoption of the National Policy for Older Persons and the National Health Policy, the effectiveness of policies and programmes have yet to be evaluated. With increased funding, Gerontology and geriatric research have proliferated in recent years, and the findings from

this research can be used for the formulation, monitoring and evaluation of policies and programmes.

There is a need to promote active and productive ageing from the development perspective, and care and protection from the welfare perspective. Efforts must be made to encourage and facilitate the older persons to participate actively in social and economic activities, as stipulated in the National Policy for Older Persons. Financial and health care needs of the older persons must be provided adequately through improved social protection schemes. Families must be given the needed support to take care of their older members. There is a need to forge a smart partnership between the public and private sector. Efforts must also be stepped up to promote community involvement in the care of older persons, and NGOs must be given the necessary support to play their roles more effectively. In view of the increasing health problems, geriatric health care must be improved, and health education campaigns that promote healthy lifestyle must be given high priority. Research findings can be utilized in formulating, monitoring and evaluation of the policies and programmes.

Tey, N. P. (2017). The demography of ageing of Chinese Malaysians. In *The Change of Malaysian Chinese Society: Chinese Education and Ageing Population*, 14 October 2017. Kuala Lumpur & Selangor Chinese Assembly Hall, Kuala Lumpur.

Population ageing is a relatively new phenomenon in Malaysia, but the tempo of ageing will accelerate from now on. The proportion of population aged 60 years and older had increased from 5.2% in 1990 to 6.2% in 2000 and 8.0% in 2010. Malaysia will be an ageing nation by around 2030 when 14% of the population will be 60 years and older, and this will increase further to 24% in 2050. Between 1990 and 2010, the number of older persons more than doubled from 938 thousands to about 2.25 million, and this is projected to rise to close to 5 million in 2030 and 10 million in 2050.

Among the main ethnic groups, the Chinese are the oldest, and they are also ageing much more rapidly, as the proportion aged 60 and above rose from about 7% in 1990 to 12.2% in 2010, and is projected to increase to 17% in 2020, 22% in 2030 and 26% in 2040. The number of older Chinese will be increasing from 778 thousand, 1.15 million, 1.54 million and 1.85 million over these periods. Of these, 162 thousand, 278 thousand, 447 thousand and 642 thousand will be aged 75 years and older in the respective years. In terms of rate of growth, older Chinese Malaysians will be growing at around 2.9% per annum over the period 2010-2040. The oldest old (aged 75 years and over) will be growing more rapidly at 4.6% per annum as compared to 2.3% among those aged 60-74 years.

The ageing index (proportion aged 60 years and above over those aged below 15) will be rising rapidly from 53.5% in 2010 to 92.6% in 2020, 134% in 2030 (when the number of older persons exceeds those aged below 15), and then 188% in 2040. This means that for every one person aged below 15, there will be almost two older persons aged 60 and over. The old age dependency ratio will be increasing from 11.2% in 2010 to 16.4% in 2020, 24.5% in 2030 and 30.0% in 2040, with a corresponding decrease in the youth dependency ratio from 32.4%, 26.0%, 24.0% and 21% respectively.

There will be a trend towards feminization of ageing. In 2010, among those aged 60-74, there were 91 females per 100 males, but this will increase to 103 in 2040. At very old age (75+),

females outnumbered the males 116 to 100 in 2010, and this will increase to 129 in 2040. Women are much more likely than men to be in widowhood in old age. In 2010, about 31% of Chinese women aged 60 years and older were widowed as compared to 11% among their male counterparts.

Population ageing is the result of gain in life expectancy and fertility decline. The mortality rate of Chinese Malaysians has reached a rather low level, with a crude death rate of 6.1 per thousand population and infant mortality rate of about 4.3 per thousand births in 2015. Between 1970 and 2010, life expectancy at birth had increased from 71.3 years in 1970 to 79.8 years for females, and from 64.0 years to 74.4 years for the males. In 2010, life expectancy at age 60 was estimated at 22.3 years for Chinese females and 19.0 years for Chinese males. The total fertility rate of Chinese Malaysians had declined from 4.6 children per woman in 1970 to 2.5 in 2000, and further to an ultra-low level of 1.4 in 2015. With a crude birth rate of 10.6 per thousand population in 2015, the crude rate of natural increase was estimated at 4.5 per thousand population. The Chinese community will stop growing at around 7.1 million in 2050, although the number of older persons will continue to rise.

Tey, N. P. (2012). Socioeconomic characteristics of older Malaysians. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 33–52). Universiti Putra Malaysia: Institute of Gerontology.

This paper presents an overview of the socio-economic and demographic characteristics of older Malaysia based on the 2000 Population Census data. These characteristics include ethnicity, urban-rural residence, age-sex structure, migration status, marital status, headship and relationship to the heads of household, educational attainment and work status. This is followed by a discussion on issues of population ageing in relation to socio-economic changes. The paper concludes with some recommendations to promote productive and active ageing.

Tey, N. P., & Hamid, T. A. (2014). Gender differentials in work and income among older Malaysians. *Gender and Ageing: Southeast Asian Perspectives*, 229, 267–287.

This paper examines the gender differentials in economic status of older people Malaysia in terms work status, income and perceived adequacy of income. The labour force participation rate of older Malaysians differs markedly by gender, ethnicity, place of residence, region, marital status and health status. Older men are almost three times as likely as older women to be economically active (37 percent versus 14 percent). The majority of older workers are engaged in agriculture or small business. Older people have various sources of income. Older men are more than twice more likely than older women to have an income from their current job and also pension from their previous job (68 percent for the males and 31 percent for the females). However, older women are much more likely than older men to receive financial support from children. The annual mean household income of older Malaysians is considerably lower than that of the national average (RM27, 633 as compared to RM38, 988). Wide variations in income exist across the various socio-demographic sub-groups of the population. Perceived adequacy of income is closely related to the income level. Overall, 16 percent of respondents in the survey stated that they did not have sufficient means to meet their basic needs.

Tey, N. P., & Ng, S. T. (2009). Malaysia: Current research and development on ageing. In P. E. F. Whittington, & S. R. Kundel (Eds.), *International Handbook on Ageing: Current Research and Development*. Greenwood Publishing Group.

This paper begins with a brief description of the trend and patterns of population ageing, and its implications. This is followed by a review of recent research on ageing, with the setting up of the Institute of Gerontology at University Putra Malaysia in 2002 to spearhead research and education in gerontology. Between 2000 and 2010, a total of 23 research projects were undertaken by researchers from the various universities, with funding from the Government. These research projects concentrated mainly on the health and socio-economic aspects of aging. International agencies such as the United Nations Population Fund (UNFPA) and WHO had also supported several projects including “Promoting Active and Productive Aging in Malaysia”, “Integrated Response of Health Care Systems to Rapid Population Aging” and “Lifelong Learning for Older Malaysians”. Courses on gerontology have been offered in many public and private institutions of higher learning in Malaysia. In addition to the formal courses on gerontology and geriatric care, seminars, symposia, and workshops on issues of population aging have also been conducted by the universities, government departments, and NGOs. The paper concludes with a brief discussion of the current policy issues and framework on ageing, and the social security schemes.

Tey, N. P., Siraj, S. B., Kamaruzzaman, S. B. B., Chin, A. V., Tan, M. P., Sinnappan, G. S., & Müller, A. M. (2016). Aging in multi-ethnic Malaysia. *Gerontologist*, 56(4), 603–609. <https://doi.org/10.1093/geront/gnv153>

Aging in Multi-ethnic Malaysia Abstract: Multiethnic Malaysia provides a unique case study of divergence in population aging of different sociocultural subgroups within a country. Malaysia represents 3 major ethnicities in Asia—the Malay, Chinese, and Indian. The 3 ethnic groups are at different stages of population aging, as they have undergone demographic transition at different pace amidst rapid social and economic changes. Between 1991 and 2010, the Malaysian population aged 60 and over has more than doubled from about 1 million to 2.2 million, and this is projected to rise to about 7 million or 17.6% of the projected population of 40 million by 2040. In 2010, the aging index ranged from 22.8% among the Bumiputera (Malays and other indigenous groups), to 31.4% among the Indians and 55.0% among the Chinese. Population aging provides great challenges for Malaysia’s social and economic development. The increasing prevalence of noncommunicable diseases in older adults, coupled with the erosion of the traditional family support system has increased demands on health care services with an overwhelming need for multidisciplinary and specialized geriatric care. Following the adoption of the National Policy for the Elderly in 1995, issues of population aging have gained increasing attention, especially among researchers. There is an urgent need to increase public awareness, develop infrastructure, as well as support action oriented research that will directly translate to comprehensive and cohesive social strategies, policies, and legislation to protect not just the current older Malaysians but the future of all Malaysians.

Thiyagarajan, S. (2012). Targeted multiple physical therapy interventions to improve functional capacity for elderly residing at old age home. *Journal of Yoga & Physical Therapy*, 2(6), 1–4.

Population ageing remains a global phenomenon in this new millennium and is poised to become a major issue in developing countries. Malaysia, an upper middle income country, with a population of 28 million is no exception. Life expectancy among Malaysian has also risen to 71.7 years for men and 76.5 years for women in 2007. By the end of 2009 63.8% of the total population will be aged between 15 and 64, mean while those above 64 will increase to 4.7%. Increased longevity is not only a triumph for a society but a huge challenge for health systems. This study aims to determine the effectiveness of targeted multiple physical therapy interventions to enhance functional capacity of elderly people livelihood in residential care facilities. The total number of 21 elderly individuals ranged from 65 to 97 years (mean age 79 years, 12 men and 9 women) selected by purposive random sampling method at three old age homes in Malaysia. The participants selected with impaired functional performance with various disabilities in orthopaedic, neurological, cardio respiratory and other conditions due to aging, which of them physiotherapy was indicated. The various structured physiotherapy interventions like pain relief, specific muscle strengthening, aerobic exercise, pacing, stretching, group therapy, CPT, gait training were applied for every day continuously 2 months of duration. The outcomes were assessed by the use of (BI) and (MRMI). A non parametric Wilcoxon Singed Rank test used to analyse the data from collected samples. Study results shows continuous home based physiotherapy intervention was effective to improve functional capacity of the elder people living in residential care facilities.

Tin, W. J., & Lee, S. H. (2017). Development of neighbourhood renewal in Malaysia through case study for middle income households in New Village Jinjang, Kuala Lumpur. *Sustainable Cities and Society*, 32, 191–201.

Neighbourhood renewal policy and strategies in Malaysia yet to be established with most of them are ad-hoc. Project selection is fully controlled by the government and have been influenced by economic and political aspects. This paper aimed to establish neighbourhood renewal strategies in Malaysia through lessons learnt from developed countries and case study in New Village Jinjang. Jinjang was selected as it represents middle-low income households that have been sacrificed in urban regeneration due to its history background and current governance system. This study was conducted via literature review, questionnaire survey and site visit. It found that safety is the main concern and willingness to involve in neighbourhood renewal rely heavily on the time spent as middle class treated these programmes as a ‘social interaction’ programme rather than a necessity. Facilities for elderly emphasis on its practicalities in social interaction and as a tool to take care of their grandchildren. A sustainable neighbourhood renewal shall meant for the entire nation in order for them to improve, maintain and upgrade their quality of life whenever is necessary. Hence it shall be initiated by local communities through regulated funding system with local authorities act as resource providers rather than implementers.

Tohit, N., Browning, C. J., & Radermacher, H. (2012). “We want a peaceful life here and hereafter”: Healthy ageing perspectives of older Malays in Malaysia. *Ageing and Society*, 32(3), 405–424.

Healthy ageing concepts have been extensively studied in Western societies but few studies have explored the perceptions of older people from other cultural backgrounds. The aim of the study was to explore the conceptualisations of healthy ageing and perceived influences on ageing well amongst relatively healthy older Malays, a major ethnic group in Malaysia. Eight focus groups were conducted, with 38 participants recruited via community groups and leaders. Six themes were identified: spirituality, physical health and function, peace of mind, financial independence, family, and living environment. In this paper, we focus on the role of spirituality in healthy ageing which was a core resource in participants' lives. Participants reported that good physical health was an important resource that facilitated commitment to their spiritual activities. Furthermore, deteriorating functional ability appeared to provide an opportunity to optimise their spirituality, rather than hinder it. Participants wished for a ‘peaceful life’ and experienced this by enhancing their spirituality. Other ingredients for a peaceful life were financial independence, living in a place they love and having family members who live in harmony. In this community where religious affiliation is a tradition, spirituality can be fundamental for healthy ageing and its inclusion in aged care policy is imperative. However, further exploration on the diversity of individual expression of spirituality is important.

Tolos, H., Wang, P. J., Zhang, M., & Shand, R. (2014). Retirement systems and pension reform: A Malaysian perspective. *International Labour Review*, 153(3), 489-502.

This paper reviews and assesses emerging issues in retirement systems and pension reform in Malaysia. The pension system models proposed by the ILO, the World Bank and the Geneva Association are compared and analysed, providing a useful conceptual framework for the design and reform of pension systems. This framework is then used to assess pension reforms in Malaysia, analysing the relative advantages and disadvantages for workers. The authors conclude by proposing a number of recommendations for retirement system design and reform.

Tung, L. C., & Comeau, J. D. (2012). Perceived benefits and drawbacks of the retirement age policy in Malaysia: HR perspective. *International Journal of Business and Management*, 7(19), 1–15.

Continuing improvements in life expectancy means that people will live longer on average than any previous generation. The combination of increased life expectancy and new retirement age policy in Malaysia has important implications for human resource management. Recently, the Ministry of Human Resource of Malaysia proposed a bill to increase the retirement age in the private sector to 60 years which has resulted in a swirling debate. This has raised many arguments implying demographic, economic, social and political points of view; both in favour of, and against the proposed policy. Malaysia has been slower in taking steps to increase the retirement age as compared to neighbouring ASEAN countries. According to the International Institute of Management, there are a number of countries with higher retirement ages which are ranked higher than Malaysia in terms of productivity and economic scale. It is imperative to study the implications of the proposed new policy from the aspect of human resources. In this study, an open-ended survey of 230 currently employed

individuals of varying demographics was conducted in a number of cities across Malaysia (Kuala Lumpur, Penang, Ipoh, Kuching Kota Bharu and Johor Bharu) to determine reactions and opinions about the imminent retirement age policy changes. The collected qualitative data was analysed for the emerging key themes using a coding method. The data was analysed by reading through more than 230 scripts, sorting the opinions into specific response categories and grouping common themes and repeated words and phrases. Although the findings suggested that most of the respondents (86%) agreed to raise retirement age policy, some remains skeptical (14%). Among the positive points stated by the respondents are the contribution to the nation growth, ensure financial security, reduce reliance on foreign labours, mental and physical fulfillment for older workers. The majors perceived drawbacks among respondents are on the issues of potentially reduce job opportunity, career advancement for younger workers, low productivity and higher cost compare to younger employees. Findings of this study could provide better understanding regarding the spectrum of opinions regarding the policy of increasing the retirement age in Malaysia as well as other nations, especially in the private sector.

Urquhart, D. R., & Tai, C. (1991). Obstetric performance in the elderly Malaysian Primigravida. *Asia-Oceania Journal of Obstetrics and Gynaecology*, 17(4), 321–325.

The obstetric performance of 240 elderly primigravida delivering at the University Hospital, Kuala Lumpur, Malaysia between January 1987 and February 1990 was compared with a random group of 250 young primigravida delivering during the same time period. The incidence of impaired glucose tolerance, diabetes mellitus, preterm delivery, antepartum haemorrhage and malpresentation was all increased in the elderly primigravida group. The incidence of caesarean section in the older group was 40.4% compared with 6.8% in the younger (p less than 0.001). Recent studies suggest that the perinatal mortality in women who delay having their first baby until after the age of 35 is not significantly different from the rest of the obstetric population. However, in our own population of elderly primigravida, although not quite reaching statistical significance the perinatal mortality rate of 46 per 1,000 is three times that of primigravida aged 20-25. This may reflect our low induction rate (7.5%) and assisted vaginal delivery rate (8.3%) in those women in this high risk group who are allowed to labour. The implications of these findings are discussed.

Vaghefi, N., Kari, F., & Talib, M. A. (2017). Poverty and income replacement profile among epf retiree in Malaysia. *Social Indicators Research*, 132(3), 1065-1078.

Social security policies often focus on replacement rates, which indicate retirement income or social security benefits in relation to preretirement income. The higher replacement rate among the pensioners would ensure that the ageing society would have sufficient income to lead a normal life after retirement. This study examined factors that influencing the income replacement rate of Malaysian Employee Provident Fund (EPF) retirees. The analysis was based on a nationwide survey conducted in 2013–2014 among EPF retiree. A logit model was used to evaluate the likelihood of selected socio-demographic and economic factors contributing to income of the retirees. The results indicated that around 62 % of elderly has lower retirement income compared to their preretirement income and it makes them more vulnerable to unpredictable events and financial conditions. The study suggested that the income replacement rate of elderly could be strengthened by investing in ageing workforce, raising retirement age, enhancing educational achievements of low income groups and

restructuring employment. These may in turn increase the availability of skilled workers, enhancing the national productivity, increase the income security of retirees, reduce poverty, and develop economic growth of the country.

Vanoh, D., Shahar, S., Din, N. C., Omar, A., Vyrn, C. A., Razali, R., Ibrahim, R., & Hamid, T. A. (2017). Predictors of poor cognitive status among older Malaysian adults: Baseline findings from the LRGS TUA cohort study. *Aging Clinical and Experimental Research*, 29(2), 173-182.

Concepts of successful aging (SA), usual aging (UA), and mild cognitive impairment (MCI) have been developed to identify older adults at high risk of Alzheimer's diseases (AD), however, the predictors have rarely been investigated in a single study. Thus, this study aims to explore the risk factors of MCI as compared to UA and SA among older adults, in a large community based cohort study in Malaysia. 1993 subjects from four states in Malaysia were recruited. A comprehensive interview-based questionnaire was administered to determine socio-demographic information, followed by assessments to evaluate cognitive function, functional status, dietary intake, lifestyle and psychosocial status. Risk factors of cognitive impairment were assessed using the ordinal logistic regression (OLR). The prevalence of SA, UA and MCI in this study was 11, 73 and 16 % respectively. OLR indicated that higher fasting blood sugar, hyperlipidemia, disability, lower education level, not regularly involved in technical based activities, limited use of modern technologies, lower intake of fruits and fresh fruit juices and not practicing calorie restriction were among the risk factors of poor cognitive performance in this study. This study will be a stepping stone for future researchers to develop intervention strategies to prevent cognitive decline.

Vanoh, D., Shahar, S., Rosdinom, R., Din, N. C., Yahya, H. M., & Omar, A. (2016). Development of TUA-WELLNESS screening tool for screening risk of mild cognitive impairment among community-dwelling older adults. *Clinical Interventions in Aging*, 11, 579–587. <https://doi.org/10.2147/CIA.S102925>

Focus on screening for cognitive impairment has to be given particular importance because of the rising older adult population. Thus, this study aimed to develop and assess a brief screening tool consisting of ten items that can be self-administered by community dwelling older adults (TUA-WELLNESS). A total of 1,993 noninstitutionalized respondents aged 60 years and above were selected for this study. The dependent variable was mild cognitive impairment (MCI) assessed using neuropsychological test batteries. The items for the screening tool comprised a wide range of factors that were chosen mainly from the analysis of ordinal logistic regression (OLR) and based on past literature. A suitable cut-off point was developed using receiver operating characteristic analysis. A total of ten items were included in the screening tool. From the ten items, eight were found to be significant by ordinal logistic regression and the remaining two items were part of the tool because they showed strong association with cognitive impairment in previous studies. The area under curve (AUC), sensitivity, and specificity for cut-off 11 were 0.84%, 83.3%, and 73.4%, respectively. TUA-WELLNESS screening tool has been used to screen for major risk factors of MCI among Malaysian older adults. This tool is only suitable for basic MCI risk screening purpose and should not be used for diagnostic purpose.

Vanoh, D., Shahar, S., Yahya, H. M., & Hamid, T. A. (2016). Prevalence and determinants of depressive disorders among community-dwelling older adults: Findings from the towards useful aging study. *International Journal of Gerontology*, 10(2), 81–85. <https://doi.org/10.1016/j.ijge.2016.02.001>

Geriatric depressive disorders affect the physical and emotional well-being of older adults. Therefore, this study aims to identify the prevalence of geriatric depressive disorders and their risk factors in a large-scale study comprising community-dwelling older adults in Malaysia. A total of 2264 older adults consisting of 1083 (47.8%) men and 1181 (52.2%) women were recruited in this study. An interview-based questionnaire was used to obtain information on sociodemography, presence of comorbidities, nutritional status, dietary habits, lifestyle, practice of calorie restriction, cognitive function, social support, and psychosocial aspects. Geriatric depressive disorder was confirmed if a participant obtained a score of 5 or more in the Geriatric Depressive Scale. The prevalence of depressive symptoms is 16.5%, and it is higher in women (56.6%) than in men (43.4%). Individuals who are at a higher risk of depressive disorders are most likely to be less educated and to have neurotic disorder, a lower score of instrumental activities of daily living, poor fitness level, hypertension, and osteoarthritis. Depression affects 16.5% of Malaysian older adults and is associated with factors such as sociodemography, comorbidities, psychosocial function, calorie restriction, physical function, and fitness. There is a need to screen and treat depressive symptoms to prevent their progression to severe mental health problems.

Verma, R. K., Sia, R. L. G., Chakravarthy, S., Barua, A, & Kar, N. (2014). Socio-demographic correlates of unipolar major depression among the Malay elderly in Klang Valley, Malaysia: An intensive study. *International Journal of Pharmacy and Pharmaceutical Sciences*, 6(4), 158-164.

The present study was carried out with the following aims: To determine the prevalence of unipolar major depression among the Malay elderly in Klang Valley, Malaysia; To study the socio-demographic correlates of unipolar major depression in Malay ethnic group; and To study the chronic co-morbid conditions associated with unipolar major depression in Malay ethnic group. A cross-sectional study was conducted within Klang Valley region, Malaysia, and subjects recruited were elderly Malay aged 60 and above. WHO validated questionnaire (English version) was chosen and translated into Malay, and the Malay version of the questionnaire was used to identify the status of unipolar major depression. The prevalence of unipolar major depression among the Malay elderly living in Klang Valley, Malaysia was found to be 20.9%. Using multi variant analysis, type of family (joint/extended), smoking habits(smoker), acknowledgement of memory problem/depressed mood (acknowledged), and positive status of well-being (poor) were determined to be significantly associated with depression. The prevalence of unipolar major depression among Malay elderly within Klang Valley, Malaysia appears to be much higher than studies done in previous years, but is comparable to other countries. Prevention of depression is essential to be done among the elderly, as this age group of individuals is very susceptible to depression.

Verma, R. K., Tan, H. M., T., Chakravarthy, S., Barua, A, & Kar, N. (2014). Sociodemographic correlates of unipolar major depression among the Chinese elderly in Klang Valley, Malaysia: An epidemiological study. *The Scientific World Journal*, Article ID 812712.

Depression, as one of the most disabling diseases around the world, had caught the global concern with its rising prevalence rate. There is a growing need of detecting depression, particularly in the old age population which is often left being overlooked. We conducted a cross-sectional community-based study which included 150 Chinese elderly aged 60 and above within Klang Valley area. We obtained the sociodemographic profiles and assessed the status of well-being, depression, and cognitive function of the participants with the help of instruments: WHO Five-Item Well-Being Index, Major (ICD-10) Depression Inventory, and 6-Item Cognitive Impairment Test. We found that the prevalence of depression among the Chinese elderly within Klang Valley region was 10.7%. With multiple logistic regression, decision to consult doctor on depressed mood or memory problem and presence of cognitive impairment were shown to be significantly associated with unipolar major depression, whereas wellbeing status was also found to be statistically correlated with depression in univariate analysis. The prevalence of unipolar depression among Chinese elderly within Klang Valley, Malaysia presented that there was an increased trend compared to the previous studies.

Visvanathan, R., & Ahmad, Z. (2006). Good oral health, adequate nutrient consumption and family support are associated with a reduced risk of being underweight amongst older Malaysian residents of publicly funded shelter homes. *Asia Pacific Journal of Clinical Nutrition*, 15(3), 400–405.

A low body mass index in older people has been associated with increased mortality. The main objective of this study was to identify factors associated with low body mass indices [BMIs] (< 18.5 kg/m²) in older residents of shelter care facilities in Peninsular Malaysia. 1081 elderly people (59% M) over the age of 60 years were surveyed using questionnaires determining baseline demographics, nutritional and cognitive status, physical function and psychological well-being. Body mass index was also determined. Subjects were recruited from publicly funded shelter homes in Peninsular Malaysia. 14.3% of residents had BMIs < 18.5 kg/m². Multivariate analyses (adjusted for age and sex) revealed that having no family (RR 1.98[95%CI 1.40-2.82], p<0.001) and negative responses to statement 3 [I eat few fruits or vegetables or milk products] (RR 0.62 [95% CI 0.42-0.90]; P= 0.013) and statement 5 [I have tooth or mouth problems that make it hard for me to eat] (RR 0.69 [95%CI 0.50-0.96]; P= 0.023) of the 'Determine Your Nutritional Health Checklist' were independently associated with low BMIs (<18.5 kg/m²). Older people with no family support were at risk of becoming underweight. Older people who consumed fruits, vegetables or milk or had good oral health were less likely to be underweight. Nutrient intake, oral health and social support were important in ensuring healthy body weight in older Malaysians.

Visvanathan, R., Zaiton, A, Sherina, M. S., & Muhamad, Y. A. (2005). The nutritional status of 1081 elderly people residing in publicly funded shelter homes in Peninsular Malaysia. *European Journal of Clinical Nutrition*, 59(3), 318–324.

The aim of this study was to determine the: (1) prevalence of undernutrition as determined by the 'DETERMINE Your Nutritional Health Checklist' (NHC) and (2) factors

independently associated with undernutrition among the older residents of these publicly funded shelter homes in Peninsular Malaysia. A total of 1081 elderly people (59%M) over the age of 60 y were surveyed using questionnaires determining baseline demographics, nutritional and cognitive status, physical function and psychological well-being. Shelter homes, Peninsular Malaysia. In all, 41.4% ($n=447$) were nourished (score <3), 32.1% ($n=347$) at moderate risk (score between 3 and 5) and 26.6% ($n=287$) were at high risk of undernutrition (score >5) according to the NHC. A large proportion of subjects were underweight with 14.3% of subjects recording a low body mass index (BMI) <18.5 kg/m² and a further 18.2% recording a BMI between 18.5 and 20 kg/m². The residential geriatric depression score (GDS-12R) (relative risk (RR) =1.03 (95% confidence interval (CI) 1.01–1.05); $P=0.002$) and the number of illnesses (RR=1.14 (95% CI 1.07–1.21); $P< 0.001$) were found to be independently associated with nutritional risk (NHC score ≥ 3). Using a BMI <18.5 kg/m² as an objective marker for nutritional risk, the NHC was shown to have a sensitivity of 66.4% (95% CI 58.0–74.2%), specificity of 42.7% (95% CI 39.3–46.1%), positive predictive value of 16.2% (95% CI 13.3–19.5%) and a negative predictive value of 88.4% (95% CI 84.9–91.4%). Many elderly people residing in publicly funded shelter homes in Malaysia may be at-risk of undernutrition, and were underweight. The NHC is better used as an awareness tool rather than as a screening tool.

Wan Ibrahim, W. A. (1999). *Social relationships, support and well-being of the elderly in rural Kelantan* (Doctoral dissertation). Universiti Putra Malaysia, Malaysia.

The existence of social relationships and sufficient social supports are extremely important for the maintenance of the well-being of the elderly. Therefore the objective of this study is to describe the social relationships and social supports for the elderly from family members and their neighbours. The study, which was conducted in the District of Limbongan, Pasir Puteh, Kelantan, also sought to determine the relationships between the selected background characteristics of the elderly, the social relationships with their family and neighbours, and social supports from their family and neighbours, with the level of actual and perceived well-being of the rural elderly. A total of 214 elderly from 1,067 families with family members aged 60 and above in Limbongan District, were chosen by using the simple random sampling. Data were collected by using structured questionnaires and were analysed using the product-moment correlation and the multiple linear regression techniques. The findings reveal that, a majority of the elderly did not received any form of formal education. Although they were very old, they still have to work to earn their lives. For those who were still working, they were involved in the traditional agricultural activities. An analysis on social relationships indicated that the elderly were not segregated from other family or their neighbours. Most of the elderly perceived that family members, particularly spouse and children, and neighbours were the most important sources of social supports to them. The study also shows that the actual well-being for the majority of the elderly was quite low. Although their actual well-being was low, their perceived wellbeing was moderately high. The quality of housing, number of children, education and employment status, were found to have significant influence on the actual well-being. On the other hand, the quality of housing, social relationships with neighbours, education, employment status and social relationships with spouse, were found to have significant influence on the perceived well-being. This study as a whole, concludes that education, employment, children, suitable housing conditions, and the existence of social relationships, particularly with spouse and neighbours, were seen as

the most important factors for the maintenance of the well-being of the rural elderly in the study area.

Wan Ibrahim, W. A., & Zainab, I. (2014). Health conditions of older persons in rural Malaysia. *World Applied Sciences Journal*, 30(7), 903–906.

Health condition is an important element for the maintenance of human visions, hearing and mobility. The objective of the present paper is to examine the health conditions older people in terms of type of illness, frequency of going to see physician to seek medication, self-health assessments, comparison of health with health status in the past and the comparison of health status of older persons with peers. A total of 214 older populations, from a population aged 60 years and above living in rural areas in the district of Limbongan, Kelantan, Malaysia were selected as respondents. Results of the study show that not many respondents are suffering from chronic illness that requires ongoing medical treatment. There are quite large proportions of older respondents who never come to see physician to get treatment. Only a small number of the respondents are less satisfied with their health condition. The majority of respondents perceived their health at the time of the study more or less similar to the previous health status and compare their health condition with their peers, almost half felt their health status is not much different with their peers. The nature of health condition of older people is felt important to understand to help government creating a good action plan to address the needs of older persons.

Wan Ibrahim, W. A., & Zainab, I. (2014). Modes of social relationships of older persons with their neighbors. *World Applied Sciences Journal*, 30(7), 907–910.

One of the most obvious demographic changes in Malaysia in this century is an increase in the number and proportion of older persons. This increasing, known as the aging of population, has become a trend not only in developed countries but in developing ones as well. The purpose of this article is to analyze the modes of social relationships of the older population in rural Kelantan with their neighbors. By using a combination of sociological and anthropological method, a total of 214 older persons aged 60 years and above in rural Kelantan were selected. Data gathered through face-to-face interviews and participant-observation was analyzed using descriptive approach. As all respondents in the study area live in an agricultural area which comprised of several houses and have neighbors nearby. Results of the study reveal that there are three common modes of social relationships among the elderly respondents, namely, telephone, visit and face to face relationships in certain places such as at gathering centers, night markets, or at certain parties. Respondents believed that neighbors are the main source of relationship in their lives.

Wan Ibrahim, W. A., & Zainab, I. (2014). Reasons behind the availability of family support of older persons in Malaysia. *Middle - East Journal of Scientific Research*, 20(11), 1458–1460.

Family support has been widely assumed to enhance well-being of older persons in society. Many older persons all over the world assumed to receive support from their family members as they become physically dependent. Research conducted in Malaysia suggests family is still the main source of support for the older persons. This article seeks to analyze the reasons why some of the older persons in Malaysia did not receive support from their

family members. Data for this study were collected from a survey of 214 respondents aged 60 and above in rural areas in the state of Kelantan, Malaysia. Result of this article reveals that there are five reasons behind the availability of family support, which are whether the respondents having children in their family; whether the adult children leaving in the same locality with the respondents; whether the respondents having daughter with academic achievement; whether the respondents having neighbors nearby; and the pattern of living arrangement of older persons. In general result reveals that family members in the study area still continue to provide care and support for their aged dependents.

Wan Ibrahim, W. A., & Zainab, I. (2014). Religious commitment of rural older woman in Malaysia. *World Applied Sciences Journal*, 30(7), 895–898.

Following the growing number of older persons in the world, research on aging and the older persons have become the focus of extensive concern, resulted in a growing number of researches on these issues. Malaysia is no exception. Following the growing number of older persons in Malaysia recently, issue of religious commitment of older persons has been an interesting issue to be discussed. The level of religious commitment of older persons varies considerably between older persons. The aim of this article is to explore religious commitment of older people with a special reference to the rural older women in Felda Chiku, the district of Gua Musang, Kelantan, Malaysia. Using a non-probability sampling technique, a total of 70 older residents aged 50 years and above in Felda Chiku 1, Kelantan were selected as respondent. Results of the study show that almost all of older women have high level of religious commitment. Older women who have moderate and low levels of religious commitment are not significant. The implications of these findings are that religious programs should be activated so as all older persons have the awareness to comply with religion in everyday life.

Wan Ibrahim, W. A., & Zainab, I. (2014). Satisfaction of family support of older rural Malaysian. *World Applied Sciences Journal*, 30(7), 919–922.

One of the most significant demographic changes of the twentieth century is the aging of the world's population. Population aging or the increasing proportion of older population has become a challenge not only for developed countries but developing ones as well. There are signs that the population of Malaysia is also moving towards aging. The purpose of this paper is to analyze satisfaction of older persons in rural Malaysia on family support they receive from their adult children. The design used in this study was a combination of the sociological method of face-to-face interviews and the anthropological method of participant-observation. Using a simple random sampling technique, a total of 214 older residents aged 60 years and above in rural Kelantan, Malaysia was selected as respondents. Results reveal that on the average, one-third of the respondents are very satisfied, while more than half are satisfied with the support they received. The respondents who less satisfied with support received were not significant. Based on the small proportion of older people who less satisfied with support received, it can be concluded that all family members and neighbors have contributed significantly to the welfare of the elderly.

Wan Ibrahim, W. A., & Zainab, I. (2014). Some demographic aspects of population aging in Malaysia. *World Applied Sciences Journal*, 30(7), 891–894.

One of the most important demographic events occurred in the 21st century is the increasing number of older persons in community through a demographic event, known as demographic aging, or population aging. There are signs that population of Malaysia is starting to aging. As the percentage of older population continues to increase, the need for extensive and current information on this older population increases. This article attempts to review some emerging issues that form the context of demographic aging in Malaysia. To meet the objective, this article uses secondary data as its main devices. It reviews some published materials and highlights some emerging issues in terms of demographic aspects. Secondary data in this discussion are derived from the report of Population and Housing Census of Malaysia and various books on demographic aging in Malaysia. There are some related issues can be analyzed, include number of older people, median ages, dependency ratio, aging index and geographic distribution. From the discussion it is clear that the population of Malaysia is moving towards aging.

Wan Ibrahim, W. A., & Zainab, I. (2014). The availability of family support of rural elderly in Malaysia. *World Applied Sciences Journal*, 30(7), 899–902.

Research findings outside Malaysia show the availability of family support has been widely assumed to enhance well-being of older persons in society. Although at the early stages of economic development, family-based support systems provide a principle source of old-age security, the responsibility of taking care of the aged dependants is gradually shifting to public support as the developmental process proceeds. Thus, because the level of economic development varies, the level and the nature of family support vary substantially between nations. Furthermore, family support is also likely to be different between urban and rural areas. The majority of the elderly in Malaysia are likely to reside in rural areas. This article seeks to analyze the availability of family support in rural Malaysia. Utilizing data from a survey of 214 respondents aged 60 and above in rural areas, this article presents evidence that the family support is very important for rural elderly in Malaysia. The majority of the elderly receive support from family members. Rural society until now still maintained a rather strong traditional value despite the eroding effects of the process of modernization and still provides the major social security for their elderly members. Data reveal that, to obtain support is not difficult for the elderly. Family members acknowledge the care of their elderly parents as their responsibility.

Wan Ibrahim, W. A., & Zainab, I. (2012). Some socioeconomics characteristics of older population in Malaysia. *Advances in Natural & Applied Sciences*, 6(8), 1577–1579.

Demographic aging has been a twentieth century phenomenon. As the number and percentage of the older population continues to increase, the need for extensive and current information on this older population increases. This article aims at analyzing some aspect of social and economic aspects of demographic aging in Malaysia. Secondary data in this discussion is taken from the report of Population and Housing Census of Malaysia and various books on the demographic aging in Malaysia. This paper describes some aspects of the demographic aging in Malaysia in terms of ethnic variations, state level proportions, age structure, marital status, educational attainment, and employment status.

Wan Ibrahim, W. A., Asyraf, H. A. R., & Zainab, I. (2014). Population aging in rural Malaysia: Its barriers to lifelong education. *Middle - East Journal of Scientific Research*, 20(12), 1742–1745.

Population aging, a term used to refer to the continuous increasing of older population in a population structure, is becoming a global phenomenon. The purpose of this article is to describe the growth of older population and analyze its barriers to lifelong education programs in rural Malaysia. Utilizing data from a survey on 214 respondents aged 60 and above in rural areas in Malaysia, this study reveals that all of the older persons in the survey are categorized as from lower social economic status. In-depth interviews data shows that there are a lot of barriers to these older persons to be involved in lifelong education. These barriers include gender, education level, marital status, poverty, and health status. The government is facing problems to influence older persons to participate in the lifelong education programs in rural Malaysia

Wan Ibrahim, W. A., Majid, M. A., & Zainab, I. (2014). Subjective well-being of older persons at Elderly Day-Care Center. *Middle - East Journal of Scientific Research*, 20(11), 1461–1464.

In Malaysia, because family members are the main care providers to the elderly parents, the well-being of the older persons is very much depends on their family members. In recent years, family members have become increasingly difficult to continue such function as before. The provision of care within family becomes more difficult in urban areas as family size decreases and women, who are traditionally the main care providers, increasingly engaged in employment outside the home. This study was conducted to analyze the level of subjective well-being of older persons attending the Elderly Day-Care Centre, in Cheras, Kuala Lumpur, Malaysia. Utilizing data collected through face-to-face interviews on 35 respondents aged 60 and above whom regularly come to the center; this study shows that nearly all of older persons in the survey have a moderate level of subjective well-being. Assessing subjective well-being across different profiles reveals that the level of subjective well-being of respondents in various categories was not much difference.

Wan Ibrahim, W. A., Zainab, I., & Redzuan, M. (2012). Living arrangement of older population in rural Malaysia. *Advances in Natural and Applied Sciences*, 6(3), 383–387.

One of the most significant demographic changes of the twentieth century is the aging of the world's population. At the same time industrialization that taking place in developing countries has created a new pattern of family structure, that is nuclear conjugal family that resulting family care for the older persons become problematic. The purpose of this paper is to analyze the living arrangement of the older persons in rural Kelantan, Malaysia. The design in this study was a combination of the sociological method of face-to-face interviews, and the anthropological method of participant-observation. Results show that nearly half of the respondents still living in the extended family, but the majority of the them feel that they want to choose to be living with their spouse only.

Wan Ibrahim, W. A., Zainab, I., & Asyraf, H. A. R. (2012). Factors related to frequency of family support of older rural Muslim. *Advances in Natural and Applied Sciences*, 6(8), 1580–1582.

There are several factors that set limits for the potential availability of family support for older persons. The purpose of this paper is to analyze the factors related to the frequency of support of older persons from adult children. The design used in this study was a combination of the sociological method of face-to-face interviews, and the anthropological method of participant-observation. Results show that there were five factors determined the frequency of support the older persons receive. Those factors which discussed in this paper were number of children, geographical distance, marital status of adult children, living arrangement, health status of elderly parents and economic conditions of adult children. All these factors have been expressed by informants as the main barriers for the older persons getting support from their adult children.

Wan Mohd Azam, W. M. Y., Din, N. C., Ahmad, M., Ghazali, S. E., Ibrahim, N., Said, Z., Ghazali, A. R., Shabar, S., Razali, R., & Maniam, T. (2013). Loneliness and depression among the elderly in an agricultural settlement: Mediating effects of social support. *Asia-Pacific Psychiatry*, 5(S1), 134–139.

Loneliness has long been known to have strong association with depression. The relationship between loneliness and depression, however, has been associated with other risk factors including social support. The aim of this paper is to describe the role of social support in the association between loneliness and depression. This cross-sectional study examined the mediating effects of social support among 161 community-based elderly in agricultural settlement of a rural area in Sungai Tinggi, Malaysia. Subjects were investigated with De Jong Gierveld Loneliness Scale, Geriatric Depression Scale and Medical Outcome Survey Social Support Survey. Data were analyzed using Pearson correlation, linear and hierarchical regression. Results indicated that social support partially mediated the relationship between loneliness and depression. This suggests that social support affects the linear association between loneliness and depression in the elderly.

Wan, Y. C., & Poi, P. J. H. (1997). A comparative study of first and third year student nurses' knowledge and attitudes on the elderly and ageing, *Medical Journal of Malaysia*, 52(3), 238–243.

A comparative study was carried out to assess Year I and Year III student nurses' attitudes and knowledge of the elderly. Significantly more Year I students disagreed that the elderly had a capacity to learn ($\chi^2 = 11.08, p = 0.0006$). Year III students were significantly more likely to obtain information about the elderly from the mass media, agencies, and relatives but not from health personnel. Nearly all respondents (96.25%) in the study wanted to know more about the elderly. Only 3 of the 14 questions on ageing revealed significant differences in knowledge between the two groups. The basic course in gerontology should be expanded and revised to dispel erroneous attitudes, allow better understanding of the ageing process, and ensure entry-level competence in caring for older people.

Wang, J., Jamison, D. T., Bos, E., & ThiVu, M. (1997). Poverty and mortality among the elderly: Measurement of performance in 33 countries 1960-92. *Tropical Medicine & International Health*, 2(10), 1001–1010.

This paper analyses the effect of income and education on life expectancy and mortality rates among the elderly in 33 countries for the period 1960-92 and assesses how that relationship has changed over time as a result of technical progress. Our outcome variables are life expectancy at age 60 and the probability of dying between age 60 and age so for both males and females. The data are from vital-registration based life tables published by national statistical offices for several years during this period. We estimate regressions with determinants that include GDP per capita (adjusted for purchasing power), education and time (as a proxy for technical progress). As the available measure of education failed to account for variation in life expectancy or mortality at age 60, our reported analyses focus on a simplified model with only income and time as predictors. The results indicate that, controlling for income, mortality rates among the elderly have declined considerably over the past three decades. We also find that poverty (as measured by low average income levels) explains some of the Variation in both life expectancy at age 60 and mortality rates among the elderly across the countries in the sample. The explained amount of variation is more substantial for females than for males. While poverty does adversely affect mortality rates among the elderly (and the strength of this effect is estimated to be increasing over time), technical progress appears far more important in the period following 1960. Predicted female life expectancy (at age 60) in 1960 at the mean income level in 1960 was, for example 18.8 years; income growth to 1992 increased this by an estimated 0.7 years, whereas technical progress increased it by 2.0 years. We then use the estimated regression results to compare country performance on life expectancy of the elderly, controlling for levels of poverty (or income), and to assess how performance has varied over time. High performing countries, on female life expectancy at age 60, for the period around 1990, included Chile (1.0 years longer life expectancy), China (1.7 years longer), France (2.0 years longer), Japan (1.9 years longer), and Switzerland (1.3 years longer). Poorly performing countries included Denmark (1.1 years shorter life expectancy than predicted from income), Hungary (1.4 years shorter), Iceland (1.2 years shorter), Malaysia (1.6 years shorter), and Trinidad and Tobago (3.9 years shorter). Chile and Switzerland registered major improvements in relative performance over this period; Norway, Taiwan and the USA, in contrast showed major declines in performance between 1980 and the early 1990s.

Wan-Ibrahim, W. A., & Zainab, I. (2014). Frequency of family support of older rural Malaysian. *World Applied Sciences Journal*, 30(7), 915–918.

Population aging has become a challenge not only for developed countries but developing ones as well. Malaysia is being no exception. The purpose of this paper is to analyze the frequency of family support of older citizens in rural Malaysia. The design used in this study was a combination of the sociological method of face-to-face interviews and the anthropological method of participant-observation. Analysis on the frequency of support shows that the frequency of support the elderly receive varies. The analysis reveals that, out of 214 respondents, 20.2% reported they did not receive any support at all from family. From 79.8% of the elderly who receives support from family, 53.0% receive it once in a while and 26.8% receive it always in three weeks before the study. There were kinds of support the elderly received in almost every day, while others the elderly respondents only received once

in a while. From the number of respondents who receive support shows that the welfare of older persons in rural community is not abandoned.

Wong, B. K. M., & Musa, G. (2017). Malaysia My Second Home (MM2H): Retirees' demographic profile and spending dynamics. *Tourism Management*, 60, 42–46. <https://doi.org/10.1016/j.tourman.2016.11.012>

While most of the second home retirement tourism studies are qualitative in nature, knowledge on retirees' demographic profile and their spending dynamics is limited. We sampled Malaysia My Second Home (MM2H) participants at multiple data collection points, and received 504 usable completed questionnaires for analysis. The majority of the participants (56.3%) are aged between 60 and 69 years, mainly from Japan, the UK, and Australia. Their favourite residential locations are Klang Valley, Penang, Langkawi, Sabah, and Sarawak. Most of them stay about 10–12 months yearly in Malaysia, and spend an average of RM 6030 a month. Based on the recorded 29,390 second home participants, we calculate the potential direct spending contribution from MM2H participants to the Malaysian economy as RM 1.68 billion a year. We propose some marketing and managerial recommendations.

Wong, B. K. M., Musa, G., & Taha, A. Z. (2017). Malaysia my second home: The influence of push and pull motivations on satisfaction. *Tourism Management*, 61, 394–410. <https://doi.org/10.1016/j.tourman.2017.03.003>

Malaysia's second home retirement tourism programme attracted participants globally and reached its peak in 2013. The numbers started to dwindle in 2014, particularly among the once-top nationalities: the British, Japanese, and Iranians. The lack of data on the participants' motives and satisfaction levels in quantitative forms justifies the need for this study. This research examines the 'Malaysia My Second Home' (MM2H) participants' motivation, satisfaction, and the relationship between the two constructs. Of the 504 usable samples, we used 280 for scale development and 224 for the structural model assessment. The empirical analyses validated the conceptual model. The results revealed four 'push' and seven 'pull' motivation factors respectively. Push motivations ($\beta = 0.568$) displayed a stronger influence on the participants' overall satisfaction. The findings suggest the need for human centric marketing strategies and improvement in the central government management to enhance the attractiveness of the MM2H programme for international retirees.

Wong, C. Y. (2011). Exploring the relationship between mobile phone and senior citizens: A Malaysian perspective. *International Journal of Human-Computer Interaction*, 2(2), 65–77.

There is growing ageing phenomena with the rise of ageing population throughout the world. According to the World Health Organization (2002), the growing ageing population indicates 694 million, or 223% is expected for people aged 60 and over, since 1970 and 2025. The growth is especially significant in some advanced countries such as North America, Japan, Italy, Germany, United Kingdom and so forth. This growing older adult population has significantly impact the social-culture, lifestyle, healthcare system, economy, infrastructure and government policy of a nation. However, there are limited research studies on the perception and usage of a mobile phone and its service for senior citizens in a

developing nation like Malaysia. This paper explores the relationship between mobile phones and senior citizens in Malaysia from the perspective of a developing country. We conducted an exploratory study using contextual interviews with 18 senior citizens of how they perceive their mobile phones. This paper reveals 4 interesting themes from this preliminary study, in addition to the findings of the desirable mobile requirements for local senior citizens with respect of health, safety and communication purposes. The findings of this study bring interesting insight to local telecommunication industries as a whole, and will also serve as groundwork for more in-depth study in the future.

Wong, C., Thwaites, H., & Khong, C. (2008). "Oh! My battery was drained because i forgot to press the end call button": A small-scale study on Malaysian senior citizen's perception towards mobile phone and its services. *Proceedings of the 21st International Symposium Human Factors in Telecommunications (HFT2008)* (pp. 31–38). Kuala Lumpur: Prentice Hall.

The growing global ageing phenomena have promised untapped market segmentation for mobile operators and content creators to look into the 'silver industry'. However, there are limited research studies on the perception and usage of mobile phones and their services for elderly in a developing nation like Malaysia. We conducted a small study with in-depth interviews with local senior citizens to investigate their general perception of mobile phones and services. This paper reports the findings of the desirable mobile requirements for local senior citizens in relation to health, safety and communication purposes.

Wong, K. M., & Musa, G. (2015). Challenges of international retirees in second home destination: A phenomenological analysis. *Tourism Management Perspectives, 15* (Supplement C), 81–90. <https://doi.org/https://doi.org/10.1016/j.tmp.2015.03.010>

The increase in aging population globally stimulates the demand for international retirement travel. Even though unsatisfactory retirement experiences could deter its growth potential, little knowledge is available on the retirees' challenges encountered at the second home destination. The study responds to the discouraging growth of European retirees in Malaysia, compared with Asian counterparts. Being "problem based" in nature, this study employed in-depth phenomenological method. Twenty-three international retirees in Malaysia were interviewed, and the data were analyzed using NVivo. We also triangulated the data with several primary and secondary sources. The paper highlights new perspectives on the challenges related to unclear rules and regulations, unprofessional officers, unreliable postal service, and unstandardized banking procedures, which deserve certain attention from the second home destination promoters. The findings provide useful pointers for professional practitioners in product development and marketing of international second home destination.

Wong, K. M., & Musa, G. (2015). International second home retirement motives in Malaysia: Comparing British and Japanese retirees. *Asia Pacific Journal of Tourism Research, 20*(9), 1041–1062.

Generally, the international second home (ISH) retirement develops from the need for better life quality of the aging population globally. "Malaysia My Second Home" (MM2H) is an ISH scheme that aims to attract inbound retiree market in Malaysia. This study explores the retirement motivations and their influences on ISH decision using the combination of

push–pull travel motivation theory and tri-reference point (TRP) theory, while simultaneously comparing the British and the Japanese retirees. We interviewed 26 MM2H participants in depth and content analyzed the data with qualitative NVivo software. Other than common motivations shared by both groups, there are also distinct differences, especially with regards to environmental preference and risk taking. Only two motives fit into all the three elements of TRP, with most motives either explained by a single or dual reference point. Based on the findings, the study proposes its knowledge, marketing, and managerial implications.

Wong, K. M., & Musa, G. (2014). Retirement motivation among “Malaysia My Second Home” participants. *Tourism Management*, 40, 141–154.

‘Malaysia My Second Home’ is an international retirement migration programme aimed at attracting the lucrative retiree market to choose Malaysia as their residence. This study implemented the concept of the Travel Career Ladder (TCL) (Pearce, 1991), with a purposeful sample of 30 participants who had retired to Malaysia. Questioning was directed towards their motives for selecting Malaysia and the analysis indicated that the majority of the motivation themes clustered in the seeking of self-fulfilment needs. Among motivation themes discovered are meaningful second life, positive instant thoughts, central travel location, positive retirement book description, food variety, tranquility and simple life, political stability and security, and ease of communication. The study also revealed a challenge in applying TCL to its findings as some motivational themes simultaneously represent various TCL hierarchies. The theoretical, marketing and managerial implications of the study are discussed.

Wong, P. S., Tan, Y. M., & Mohanty, B. K. (2017). Curcumin consumption and cognitive function in elderly. *International Journal of Pharmaceutical Sciences and Research*, 8(12), 5367-5372.

Cognitive impairment in elderly is a growing public health concern, and is mainly caused by dementia of various etiologies. Hence, it is important to explore possible measures to mitigate the risk of dementia. Curcumin, active ingredient of turmeric (*Curcuma longa*) is used in curry and has shown protective effect on cognition. This study aims to explore the association between curcumin consumption in curry form and cognitive function in elderly population. This cross-sectional study was conducted in 14 randomly selected residential homes for elderly in Ipoh, Malaysia. A total of 162 subjects aged ≥ 60 years without major physical and mental health problems were selected. The variables included demographic variables, fitness and social activities and frequency of curry consumption. Association of cognitive function with curry consumption and other variables was tested using Mini-Mental State Examination (MMSE). The data was analysed by chi-square and logistic regression using SPSS17.0. Curry consumption, at least once a week was a significant protective factor for cognition based on logistic regression analysis (OR = 0.152; 95% CI: 0.038-0.614; $p = 0.008$) when combined with other variables like higher level of education (secondary level, $p = 0.002$; college or university level, $p = 0.016$) and engagement in fitness activities ($p = 0.010$). Females (OR = 4.085; 95% CI: 1.559-10.705) and higher age group i. e. 75 years and above (OR = 4.441; 95% CI: 1.656-11.907) were at significant risk of cognitive impairment.

Wu, H. Z., & Rudkin, L. (2000). Social contact, socioeconomic status, and the health status of older Malaysians. *The Gerontologist*, 40(2), 228–234.

We tested the applicability of the stress buffering hypothesis in a developing country setting with data from the Senior Sample of the Malaysian Family Life Survey-2. Using ordered logistic regression methods, we examined whether having daily contact with adult children moderates the effect of low socioeconomic status (SES; conceptualized as a chronic stressor) on self-assessed health status. We found that low SES is associated with poorer health for all three ethnic groups - Malay, Chinese, and Indian. Further, for Malays and Chinese, we found that the negative effects of low SES on health tend to be stronger for older people with less frequent contact with adult children than for those who have daily contact. These results provide general support for the buffering model and suggest that, as found in developed countries, active intergenerational relationships in developing country settings may have protective effects on the health of older people experiencing chronic stressors.

Yaacob, M. F. (2000). Formal old age financial security schemes in Malaysia. In J. Doling & R. Omar (Eds.), *Social welfare East and West: Britain and Malaysia* (pp. 71-79). Aldershot: Ashgate.

This chapter provides an overview of the formal schemes that have been developed to meet the needs for financial security of Malaysian workers in their old age. It traces the origin and development of schemes such as those administered by the Employees Provident Fund Board and the Social Security Organisation. It briefly discusses the Civil Service Pension Scheme. Issues pertaining to the coverage of these schemes and adequacy of their coverage will also be an important part of this chapter, as their coverage will also be an important part of this chapter, as will discussion of the necessity of reviewing the current policy and practice of retiring from public service upon attaining the age of 55. It starts with a brief general description of sources of income for older people in Malaysia.

Yaakub, U., Masron, T., & Masami, F. (2009). Spatial distribution of senior citizen in Peninsular Malaysia 1991 and 2000. *The Journal of Ritsumeikan Geographical Society*, 21, 59–69.

Senior citizen or ageing population refers to population aged 60 years and above. Ageing is also based on the increase of median age and dependency ratio. It is an interesting topic and discussion on this problem has begun since the early 1990s especially in the developed countries. This was due to a faster population ageing process in the developed countries as compared to the developing countries. Nevertheless, currently, the problems of ageing population have existed in some Asian countries. Therefore, many aspects of ageing population were discussed since a decade ago. In Singapore, the life of senior citizen and housing and in Brunei, issues of trends and economic impact, economic consequences of rapid development of pension scheme and establishment of a medical insurance system and social problems were discussed. In Japan, there were discussions on care and cultural change problems, health services, government role as well as public and private policies for senior citizen. The purpose of this article is to study the distribution of aged population or senior citizen by districts in Peninsular Malaysia for 1991 and 2000. Analysis on the distribution was based on the application of Geographic Information System (GIS). Two methods were used; the first one used real total population data and the second used proportion or the percentage of aged population in each district.

Yahaya, N., & Hamid, T. A. (2005). Housing planning for old age amongst civil servants in Malaysia. *Gerontechnology*, 3(4), 238.

Post independence housing policies in Malaysia have resulted in high ownership rate especially among the civil servants. Findings indicated that homeowners were better off, had more floor plan and were more satisfied with their house than those in rented accommodation. Due to changing family traditions and socioeconomic changes, the residential choices of older people are also in transition. This study investigated the preference of housing type, location and living arrangement in old age for Malaysian civil servants. The sample consists of 1,402 civil servants identified through stratified random sampling in four ministries. The results showed that a majority of the respondents are in possession of good quality housing with an average bedroom number of three, reflecting a reasonable number to meet their household needs (5 to 6 members). More than two-third of the respondents plan to stay in their present house upon retirement, an indication for ageing-in-place preferences and highlighting the importance of home modification for an all age-friendly environment. Most of the respondents plan to stay with their spouse in retirement (94%). Further analysis is needed to determine the factors that contribute to future housing choices among the respondents and its implications for future housing policies in Malaysia.

Yahaya, N., Abdullah, S. S., Momtaz, Y. A., & Hamid, T. A. (2010). Quality of life of older Malaysians living alone. *Educational Gerontology*, 36(10–11), 893–906.

According to the 2000 census report, about 7% of the 1.4 million people 60 years and over in Malaysia live alone. This study investigated socioeconomic factors affecting the quality of life of this vulnerable population. Data from a subsample of the study on Mental Health and Quality of Life of Older Malaysians were used in this paper. About 10% of the original sample or 299 older persons aged 60 years and over were living alone. Perceived quality of life was measured by asking “In general, how do you perceive your quality of life?” on a 5-point Likert Scale response. A multinomial regression model was utilized to identify variables associated with perceived quality of life in older person living alone. Results revealed four factors significantly predicted their perceived quality of life, which include self-rated health, gender, employment status, and level of education. In conclusion, self-rated health and level of education had significant positive effects on perceived quality of life; elderly women and employed older persons were more likely to fall in the poor perceived quality of life group. The findings of this study posited that self-rated health and level of education have significant positive effects on the perceived quality of life; being female and employed are related to lower quality of life of an older person living alone.

Yahaya, N., Momtaz, Y. A., Hamid, T. A., & Abdullah, S. S. (2013). Social support and psychological well-being among older Malay women in Peninsular Malaysia. *Indian Journal of Gerontology*, 27(2), 320-332.

Research shows older women are at increased risk for poor psychological well-being. The present study investigated the effects of social support on psychological well-being of a random sample of 716 older Malay women which obtained from a national survey. Findings from multiple regression analysis revealed a significant model ($F=15.06$, $p\leq.05$) where psychological well-being was best predicted by non-family support ($\beta=.22$, $p\leq.001$) and family support ($\beta=.10$, $P\leq.01$), after controlling for sociodemographic factors. Results of this study imply that social support especially from non-family source is a significant predictor of

psychological well-being among older women.

Yahaya, N., Sabri, B., Abdullah, S. F. Z., Siti Suhailah, A., Momtaz, Y. A., & Hamid, T. A. (2012). Impact of housing environment and neighbourhood safety towards perceived quality of life among older persons. *Indian Journal of Gerontology*, 26(2), 227–241.

Since elderly people prefer to stay in their homes as they age, so it is imperative to enhance the housing environment and neighborhood safety for better quality of life among older persons. This study aimed to examine the impact of housing environment and neighborhood safety towards quality of life among older persons in Malaysia. Data were derived from the “Mental Health and Quality of Life of Older Malaysians, 2005” (N=2,980). A 4-item and 5-item at four point Likert Scale were used to measure the perception of housing environment ($\alpha=0.53$) and neighborhood safety. Perceived quality of life was measured using a one-item statement on a 5 – point Likert Scale. Result of regression analysis showed self-rated health ($\hat{\beta}=0.25$), income category ($\hat{\beta}=0.14$), neighborhood safety ($\hat{\beta}=0.11$) and level of education ($\hat{\beta}=0.08$) are significant predictors for perceived quality of life. In conclusion, safety issues influence the perception of quality of life among older Malaysians, after controlling for health, income and level of education.

Yahaya, N., Siti Farral, Z. A., Chai, S. T., Haron, S. A., Hamid, T. A., Sharifah Norazizan, S. A. R., Paim, L., Asnarulkhadi, S., & Marof, R. (2006). Housing satisfaction among elderly poor in Peninsular Malaysia. *Asia-Pacific Journal of Public Health*, 18(1S), 14–19.

The lack of income in old age often results in low quality housing options for the elderly. This paper aims to determine the level of housing satisfaction among elderly poor in Peninsular Malaysia. This study involved 485 older welfare recipients from Kelantan, Kedah, Malacca and Perak. The average monthly income of the respondents was RM147.48 (Median = 135, SD = 46.68). Results showed that a majority of the respondents lived in traditional houses with low quality construction material (plank, cement and zinc). About half of the respondents are owners of their present dwelling but more than half did not meet basic housing requirements. Nevertheless, almost three quarter of them were satisfied with the present housing condition. Relatives and neighbours play an important role in providing shelter and assistance to this vulnerable group. Multiple regression analysis showed that satisfaction towards housing was significantly related to financial satisfaction. In general, the elderly dissatisfaction with their housing was high to moderate (2.24 ± 0.480). It indicated a skewed and unrealistic level of housing satisfaction among the elderly poor. This is perhaps attributable to the fact that most of them were grateful for simply having a roof over their heads.

Yap, S., Chong, W. Y., Lew, H. W., & Chok, N. V. (2017). The importance of financial literacy on Malaysian household. *International Business Management*, 11(7), 1457–1461.

The purpose of this study, is to provide a comprehensive personal retirement planning based on the level of financial literacy in Malaysian household. We identify the importance of financial literacy to make financial decision on Malaysian household retirement planning. Measurements used consist of inflation-adjusted interest rate, future value of the expenses and present value of total retirement fund needed. Therefore, we are able to identify retirement

gap that need to be considered immediately. The findings show financial literacy is vital to household retirement planning as with the adequate financial literacy, we conclude that there is no retirement gap where the future value of financial assets is bigger than the total needs during retirement. The financial assets should be prepared in early age to accumulate substantial funding to support household retirement life. Future researches may explore to non-professional and professional to differentiate the level of financial literacy. The financial position may vary when time pass over the time. Therefore, it must be reviewed from time to time to get higher accuracy. The outcome of this finding will be beneficial to society especially to Malaysian working adults. It highlights the importance of financial literacy to retirement planning. It is also a milestone for Malaysian to achieve developed country if Malaysian has sufficient retirement funding. There is currently lack of in-depth research on financial literacy related to household retirement planning. Further, the study also focusses on financial literacy as a means to assist those in funding retirement resources, in order to fulfil the retirement gap.

Yassin, Z. (1989). Selected indicators of nutritional status among rural elderly females in Malaysia. *Retrospective Theses and Dissertations, 11176, IOWA State University.*

The purpose of this study was to investigate nutritional status indicators of elderly Malay females in selected rural areas in Malaysia by examining food consumption patterns, perceptions about food, health indices, anthropometric measurements, and selected demographic and descriptive variables. A sample of 317 healthy elderly female respondents aged 55 years and over was selected from two sub-districts in the state of Negri Sembilan. Personal interviews were conducted in the local language by the researcher and five trained interviewers in the homes of the respondents. Selected anthropometric measurements were also obtained, including weight; standing, sitting, and knee height; arm span; waist, hip, and mid-arm circumference; triceps skinfold thickness; and hand grip strength. The findings revealed that the rural elderly females were in relatively good health, living in relatively good physical environments, and participating actively in their families and communities. The food expenditure and food purchasing patterns were quite varied. The frequency of food intake revealed the consumption of a variety of food items common to the Malaysian diet. Although three of the major food groups were well represented in the high food-use category, the consumption of milk and milk products was negligible. Perceptions and beliefs about the health characteristics of certain foods were quite prevalent among the respondents. The nutritional status of the elderly women, as reflected by anthropometric assessment, revealed several trends. Most of the indicators of stature and adiposity correlated negatively and significantly with age. Whether the decline of these indicators with age is truly biological or secular in origin is not clear. Mean values for selected anthropometric measurements are comparable to other Malaysian and Asian women of the same age living in similar environments. However, both obesity and underweight were found in this sample. In general, the Malaysian elderly females weighed less, were shorter, and had lower values for triceps skinfold thickness, mid-arm girth, and body mass index than a national sample of U.S. white females of comparable age.

Yassin, Z., & Seong, L. T. (1995). Assessment of nutrition education needs among a sample of elderly Chinese in an urban area. *Malaysian Journal of Nutrition*, 1, 41–50.

As Malaysia is moving towards a rapidly developing economy, its elderly population is also expected to increase not only in numbers and proportion but also in their life expectancies. This demographic shift from a relatively young population to one that includes an increasing number of old and very old age group presents a real challenge to nutritionists and health professionals. The challenge is to maintain a healthy and vigorous elderly population who can lead fulfilling and independent lives. Health promotion and disease prevention efforts, including nutrition education, targeted towards this group can contribute important elements in meeting the challenge. The objective of the study was to assess the nutrition education needs of a sample of elderly Chinese in an urban area. The sample consisted of 34 males and 36 females, whose age ranged from 55 to 86 years. They were generally affluent and well-educated with a mean income of RM101 1.86 and 8.0 years of formal education. A self-administered questionnaire which requires 20 to 30 minutes to complete was used to collect the information. The results of the nutrition knowledge assessment indicated that the typical respondent correctly identified 16 of the 22 nutrition knowledge statements. A majority (91.4%) of the respondents recognized the fact that tomato, dark green leafy vegetables, and orange juice are good sources of vitamin C, while the statement on vitamin supplementation was correctly answered by only 15.7% of the respondents. The mean nutrition knowledge score was 26.14 with a range of between 18 and 36. The t-test indicated a significant difference ($t=3.63$, $p=0.05$) between males and females in their nutrition knowledge scores, with the males having higher mean scores. Although only 8.6% of the respondents reported they had participated before in a nutrition education programme, a majority of them believed that nutrition education can improve the nutritional and health status of the elderly. A majority (80%) of the respondents mentioned newspaper articles as their source of nutrition information, while only 8.6% indicated the dietitian as their source of information. However, the doctor was identified as a more creditable and reliable source of information by a majority.

Yassin, Z., & Terry, R. D. (1991). Anthropometric characteristics of rural elderly females in Malaysia. *Ecology of Food and Nutrition*, 26(2), 109–117.

Selected anthropometric measurements were examined for 305 Malay females age 55 and older from selected rural villages in Malaysia. Although height and indicators of stature were similar to elderly Asian females living in similar environments, the Malay females were comparatively heavier with more body fat. Age was negatively and significantly related to changes in standing and sitting heights, arm span, body weight, body mass index, waist and hip circumferences, upper arm and arm muscle circumferences, mid-arm muscle area, triceps skinfolds, and mid-arm fat area. These age-related changes may be a function of biological, secular, or methodological variation. Both underweight and obesity appear to be prevalent, and waist-hip ratio trends indicate that excess body fat is preferentially deposited in the abdominal region. Such obesity trends may be contributing to the current rise in chronic disease death rates in Malaysia.

Yassin, Z., & Terry, R. D. (1990). Dietary patterns of rural elderly females in Malaysia. *Ecology of Food and Nutrition*, 24(3), 213–221.

Interviews which collected data on dietary patterns were conducted with 317 rural Malay females age 55 and older. Cultivated, wild, and purchased foods all contributed to the household food supplies of subjects. Over 90% reported eating breakfast, lunch, and dinner daily, while daily snacking patterns were less consistent. Estimates of food intake frequency indicate that a variety of foods were eaten by these women. The most frequently consumed foods were rice, cooking oil, dried anchovies, sugar, and fresh fish. Intake frequency for individual food items tended to decrease with increasing age but increase with increasing income.

Yassin, Z., & Terry, R. D. (1990). Health characteristics of rural elderly Malay females in selected villages in Negeri Sembilan. *Medical Journal of Malaysia*, 45(4), 310–318.

Health indices of 317 healthy elderly Malay females 55 years and older from two rural sub-districts in Negri Sembilan were collected through personal interviews. About 33% of the respondents perceived their health condition as good to excellent, 63.4% rated their health status compared to a year earlier as about the same, 48.3% had no worry about their health, and 49.2% perceived themselves as physically active as their peers. Arthritis was the major ailment which affected the daily activities of about 64% of the respondents. The classical age-related problems of poor hearing, poor sight and difficulty in chewing were also prevalent among these elderly.

Yassin, Z., Akahbar, S. A. N., Raja Adnan, R. N. E., & Chan, Y. M. (2012). Nutritional status of older persons in Malaysia. In *Profile of Older Malaysians: Current and Future Challenges* (pp. 158–172). Universiti Putra Malaysia: Institute of Gerontology.

Rapid changes in lifestyle behaviors including dietary intakes associated with industrialization, urbanization, economic development and globalization have accelerated over the past decade. This gives a significant impact on the health and nutritional status of populations, particularly in developing countries in transition. This paper presents an overview of nutritional status of older Malaysians and discusses the factors influencing nutritional status. Besides, it also discusses the nutritional needs and recommendation of nutrient intakes as well as having a good nutrition for the elderly.

Yeoh, S. F., Chan, B. Y. F., & Rashid, S. N. S. A. (2011). Predictors of driving practices among older drivers: Two ethnic groups comparison in Peninsular Malaysia. *International Journal of Humanities and Social Science*, 1, 174–184.

The speed of aging has led to a considerable attention on traffic safety among older drivers. This study aims to determine the driving practices and identify predictor variables that significantly contribute to safe driving practices among older drivers in different ethnic groups at Peninsular Malaysia. The cross-sectional design and face-to-face interview protocol was used to collect 400 respondents aged 50 years and over. *Findings:* Generally, older Malaysian drivers are practicing safe driving practices ($M = 34.79$, $SD = 3.48$). Results of multiple linear regression analysis indicated that 22.8% variance of driving practices was explained by six variables that also significant at correlation level ($F = 9.508$, $p \leq 0.05$). This study also found that different ethnicity group having different determinants of safe driving

practices. The provided information about the determinants of safe driving practices and ethnic differences among older drivers can contribute knowledge in gerontology field. The collected information is also important to provide insights for road planning system and training programs to improve road safety among older drivers.

Yeoh, S. F., Ibrahim, R., Oxley, J., Hamid, T. A., & Rashid, S. N. S. A. (2016). Development of a valid measurement instrument to understand self-regulatory driving practices among older drivers in Malaysia. *Accident Analysis and Prevention*, 92, 1–8. <https://doi.org/10.1016/j.aap.2016.03.009>

Self-regulatory driving is a term used to describe a strategy used by older drivers to preserve mobility and safety, through the adjustment of driving behaviors to match declining physical functions. It can be regarded as a way to prolong driving, or as a process leading to the cessation of driving. Previous studies have striven to explore and understand how older drivers self-regulate their driving. This paper aims to provide an overview of the relevant theories, to explicate the factors that contribute to the adoption of self-regulated driving and the scales used to measure self-regulatory behaviors. This paper also reports on the development and psychometric testing of a Self-Regulatory Driving Practices (SRDP) scale in the Malaysian context. Based on the reviewed theories, adoption of self-regulatory driving practices is a process and involves cognitive thinking that reflects a set of actions. Existing instruments to measure self-regulatory driving practices have been developed and used to identify the behavioral components of self-regulation. Based on literature reviews and a thematic analysis from focus group discussions, a SRDP scale was developed, accommodating the Malaysian context. There were 498 surveys completed by older drivers for further psychometric testing purposes. Results revealed that the final 12-item SRDP scale ($\alpha = 0.81$) consists of four subscales that are planning, avoidance, reduction and alternatives. Suggestions for future research are also recommended.

Yeoh, S. F., Rashid, S. N. S. A., & Chan, B. Y. F. (2009). Driving practices of older Malaysian drivers: The influence of knowledge, attitude and confidence. *European Journal of Social Sciences*, 12, 68-78.

The purpose of the study was to investigate the driving practices determinants of older Malaysian drivers. Data for this cross-sectional study was obtained through interview with 400 older persons aged 50 years and over by quota sampling stratified by gender and age in states of Perak and Selangor which have the highest absolute numbers of older persons aged 60 years and over. The findings of the study revealed that majority of older Malaysians have high driving related knowledge (56.6%). Based on the study, 54.8 percent of the respondents showed confidence in selected driving situations. About 45% of the respondents had good driving attitude and nearly 52 percent of the respondents were practicing safe driving. A significant relationship was found between driving practices with age ($r = 0.099$, $p = 0.048$), driving knowledge ($r = 0.177$, $p = 0.000$), driving attitude ($r = 0.252$, $p = 0.000$), driving confidence ($r = 0.238$, $p = 0.000$), psychomotor ability ($r = 0.292$, $p = 0.000$) and also history of accident involvement ($r = -0.176$, $p = 0.000$). Multiple Linear Regression analysis showed the six predictor variables which has accounted for 22.8 percent of variance in driving practices ($F = 9.508$, $p = 0.000$). Determinants that significantly contributed to safe driving practices include previous history of accident involvement, high driving knowledge, high driving confidence and good psychomotor ability. It is important to educate driving

knowledge and traffic safety to the public especially older drivers to improve their driving. The determining factors are significant to provide insights for future road safety training programs and consideration as part of license renewal procedure.

Yeon, A. L., Hussain, M. A., & Ramli, A. N. (2016). Framework of Malaysian private retirement scheme under capital markets and services Act 2007. *International Journal of Economics and Financial Issues*, 6(7), 56-61.

The Government of Malaysia established the 1 Malaysia Pension Scheme (SP1M) in 2010 and recognizes the importance of savings from an early age to ensure sufficient savings after retirement. After 5 years been introduced to the public, it is significance to evaluate the perception of Private Retirement Scheme (PRS) providers in relation to the existing legal framework of the scheme. The objective of the paper is to examine the perception of PRS providers on the legal framework of the PRS. This is a qualitative research and interviews were conducted amongst providers of PRS. In analysing the data, thematic data analysis was employed to deduce findings from the respondents' views. The finding shows that majority of respondents agreed the legal framework of PRS is adequate to protect investors and providers. However, there are a few suggestions to improve the legal framework and governance of PRS i.e., internal guidelines, provider's fee and etc.

Yeong, U. Y., Tan, S. Y., Yap, J. F., & Choo, W. Y. (2016). Prevalence of falls among community-dwelling elderly and its associated factors: A cross-sectional study in Perak, Malaysia. *Malaysian Family Physician*, 11(1), 7-14. [https://doi.org/2016;11\(1\);7-14](https://doi.org/2016;11(1);7-14)

Fall is a major cause of injuries and can increase the risk of early mortality among elderly. The objective of this study was to determine the prevalence of falls among community-dwelling elderly in rural Malaysia and its associated factors. Data were obtained from a cross-sectional survey in five randomly selected districts in the state of Perak, Malaysia. A total of 250 households were randomly selected. A total of 811 individuals aged 60 years or more were recruited and interviewed using a structured questionnaire. Information about socio-demographic, history of falls in the past 1 year, medical history, drug history and physical activity level were enquired. The prevalence of falls in the past 1 year among community-dwelling elderly was reported to be 4.07%. Indigenous elderly (Adjusted odd ratio, AOR = 6.06, 95% CI = 1.10-33.55, $p = 0.039$) and living alone (AOR = 2.60, 95% CI = 1.04-6.50, $p = 0.042$) were shown to be factors associated with falls. Physical activity level, number of co-morbidities and number of medications used were not associated with falls. Elderly of indigenous ethnicity and living alone are the main factors associated with falls in this population. Indigenous people may be at higher risk, which warrant further investigation with a larger sample to improve the precision of estimates.

Yew, S. Y., & Cheong, K. C. (2013). Ageing and the economic welfare of Southeast Asian Nations. *Malaysian Journal of Economic Studies Journal of Economic Studies*, 50(2), 101-106.

Ageing is an issue larger than what is perceived by individuals and families and governments. For families, caring for the aged has both financial and social dimensions, while for governments, resources have to be found to support an ageing population in the form of better health and consequently a longer period of productivity which is as much an opportunity

as a challenge. These issues are at the fore of the papers brought together in this special issue. The holistic view of ageing in this overview is juxtaposed against country papers that recall country experiences and are understandably more narrowly focused. Will these perspectives be bridged? That will depend on the visions of policymakers and the attitudinal changes of citizens.

Yunus, F., & Bakar, S. H. A. (2000). Social security policies in Malaysia. In John F Doling and Roziah Omar (Eds.), *Social Welfare East and West: Britain and Malaysia*. (pp. 39-52). Aldershot: Ashgate.

The Employees Provident Fund (EPF), established in 1951, is the legislative foundation stone of the present Malaysian social security system. Whereas its introduction took place within a few years of the setting up of the British social security system, in matters other than timing the two systems are not at all close. Two particular contrasts stand out. First, unlike the British funding of social security through a mix of contributions and taxation, the Malaysian system is based centrally on the principle of personal and employer contribution. Rather than state provided welfare, then, it is more accurate to portray the EPF as a form of mandatory and individualised saving or statutory re-distribution across the life cycle. Second, the EPF started as a mechanism for ensuring an income during retirement. Although it has been widened in scope and extended by the introduction of the Social Security Organisation (SOCSO), it has not progressed as far as providing unemployment benefits for those not working for reasons other than such matters as disability, illness or accident. Social security is perceived, then, more as welfare at the work- place or as ways in which employers, employees and the government facilitate programmes that protect workers and their families during hardship; but neither as compensation for those not in employment nor as initiatives to encourage people to work.

Yunus, M., Hazilah, N., Manaf, A., Omar, A., & Juhdi, N. (2015). Attitude towards ageing and perceived health status among the elderly in Malaysia. *Advances in Business Research International Journal*, 27–38.

There is an increasing number of older people globally, thus it is essential to build knowledge of how older people view their own ageing, considering their health related circumstances. However, limited attention has been given to attitude towards ageing, particularly in Malaysia. The purpose of this study is to examine the relationship between self-perception of ageing and perceived health status in adults aged 60 years and above. This study is primarily conducted via survey among the elderly patients who are 60 years old and above, who are using the services at public hospitals in Peninsular Malaysia. The 'Attitudes towards ageing' questionnaire was used to measure participants' perception of ageing, while perceived health status was measured using questions from the Study of Global Ageing and Adult Health (SAGE) developed by World Health Organization (WHO). All items in both questionnaires were measured on a 5-point Likert-scale. The findings reveal that positive attitudes to ageing were associated with health status in older adults. The research contributes to greater understanding of the attitudes among the elderly towards ageing and their perceived health status. Understanding these associations may help healthcare providers and policy makers consider strategies to enhance the quality of life of the elderly.

Yunus, N. M., Abd Manaf, N. H., Omar, A., Juhdi, N., Omar, M. A., & Salleh, M. (2017). Determinants of healthcare utilisation among the elderly in Malaysia. *Institutions and Economies*, 9(3), 117-142.

Population ageing is pervasive, a global phenomenon and has implications for society and the nation. Among them is demand for greater allocation of financial resources for healthcare services to cope with this demographic trend. Therefore, this study was aimed at investigating the determinants of utilisation of healthcare services among the elderly in Malaysia. A questionnaire survey was conducted among those aged 60 in 14 public hospitals in Peninsular Malaysia. Findings revealed that age, education level, income level and need for care were associated with healthcare utilisation. Thus, this study contributed to a greater understanding of the determinants of healthcare utilisation among the elderly in Malaysia. Understanding these associations may help healthcare providers and policy makers design strategies to enhance the quality of healthcare services for the elderly.

Yunus, R. M., Hairi, N. N., Choo, W. Y., Hairi, F. M., Sooryanarayana, R., Ahmad, S. N., Abdul Razak, I., Peramalah, D., Abdul Aziz, S., Mohammad, Z. L., Mohamad, R., Mohd Ali, Z., & Bulgiba, A. (2017). Mortality among elder abuse victims in rural Malaysia: A two-year population-based descriptive study. *Journal of Elder Abuse and Neglect*, 29(1), 59-71.

Our study aims at describing mortality among reported elder abuse experiences in rural Malaysia. This is a population-based cohort study with a multistage cluster sampling method. Older adults in Kuala Pilah (n = 1,927) were interviewed from November 2013 to May 2014. Mortality was traced after 2 years using the National Registration Department database. Overall, 139 (7.2%) respondents died. Fifteen (9.6%) abuse victims died compared to 124 (7.0%) not abused. Mortality was highest with financial abuse (13%), followed by psychological abuse (10.8%). There was a dose-response relationship between mortality and clustering of abuse: 7%, 7.7%, and 14.0% for no abuse, one type, and two types or more, respectively. Among abuse victims, 40% of deaths had ill-defined causes, 33% were respiratory-related, and 27% had cardiovascular and metabolic origin. Results suggest a link between abuse and mortality. Death proportions varied according to abuse subtypes and gender.

Yusnani, M. Y. (2006). Accommodating the Malaysian elderly: The cultural precursors. *Ageing International*, 31(3), 185–202. <https://doi.org/10.1007/BF02915228>

This paper discusses the cultural characteristics of aged persons that facilitate planning of their future accommodation. It involves the identification of cultural values of the individual elderly, the rural/urban location, and the identification of loadings on those values. The key operative variables of the accommodation system are preserving face, a desire for harmony, with compliance a third factor. These values have been shown to influence the decisions on housing accommodation, particularly in determining change in accommodation and barrier free spatial forms in the housing environment, and shaping free flowing interaction with the community and choice in housing options.

Yusof, M. M. (2012). *Women and pensions in Malaysia: Assessing the impacts of disruptions in working life* (Doctoral dissertation). University of Southampton, United Kingdom. Retrieved from <https://eprints.soton.ac.uk/341955/>

Population ageing is a global phenomenon and occurring most rapidly in countries in Asia, which have experienced a rapid decline in fertility and mortality. Malaysia is one such country. The increase in life expectancy along with a rising cost of living has meant that many elderly women are exposed to the risk of poverty in later life. This is also due to the inability of the current pension system in Malaysia to recognise interruptions during employment. In the West, there has been extensive research highlighting how living longer combined with an early retirement age and having disruptions during employment years may lead to an inadequate retirement income and affect the quality of life during retirement. Such research is lacking in the Malaysian context. This research therefore investigated the effectiveness of Malaysia's current pension system to deliver an adequate income in retirement, taking into account the differences in life course experienced by women, particularly interrupted work histories as a result of care-taking responsibilities as well as differences in educational level. This study used a hypothetical simulation model – MHYRISA (Malaysian Hypothetical Retirement Income Simulation Analysis) model to simulate different scenarios. The findings suggest that women with gaps and disruptions during employment will not be able to maintain their standard of living in later life under the present pension system due to the low replacement rate level generated. The findings also suggest that the current retirement age and contribution rate should be increased and also reconsidering the pre-retirement withdrawals policy in order to provide an adequate retirement income during old age. The government should also consider providing a pension credit contribution to women who are unemployed due to care-taking responsibilities, so that they are lifted out of poverty during old age.

Yusof, Y. M. (2010). *Accommodation of the elderly in Malaysia: What should happen to the future housing-accommodation of the elderly in Malaysia?* Saarbrücken, Germany: LAP Lambert Academic Publishing.

Malaysia's export-oriented economy has developed rapidly from one based on agriculture to one that is supported by manufacturing, high tech industry and tourism. As a result of this modernization, living standards and behavioral patterns of the population are changing. This increase in living standards has demographic implications such as a decrease in fertility levels, increase in longevity and reductions in average household size. As a consequence of these changes, a rapid increase in number of elderly (people over 60 years of age) is predicted over the next 20 years. Traditionally the elderly in Malaysia lived as an extended family with their children, mainly in the rural areas. However as urbanization is growing, the young are moving to cities, leaving the elderly in a dilemma of whether to move with their children or to stay in their traditional rural environment. This situation raises the key research question - what should happen to the future housing- accommodation of the elderly in Malaysia? The results of this research are aimed at policy makers and the elderly individual and family to ensure preparedness in accommodation needs in old age.

Yusof, Y. M. (2005). *What should happen in the future accommodation of the elderly in Malaysia?* (Doctoral dissertation). The University of Queensland, Australia. Retrieved from <https://espace.library.uq.edu.au/view/UQ:158676>

Malaysia's export-oriented economy has developed rapidly from one based on agriculture to one that is supported by manufacturing, high tech industry and tourism. As a result of this modernization, living standards and behavioural patterns of the population are changing. This increase in living standards has demographic implications such as a decrease in fertility levels, increase in longevity and reductions in average household size. As a consequence of these changes, a rapid increase in number of elderly (people over 60 years of age) is predicted over the next 20 years.

Traditionally the elderly in Malaysia lived as an extended family with their children, mainly in the rural areas. However as urbanization is growing, the young are moving to cities, leaving the elderly in a dilemma of whether to move with their children or to stay in their traditional rural environment. This situation raises the key research question – what should happen to the future housing accommodation of the elderly in Malaysia?

Considering five main UN principles, that the elderly persons should be entitled to independence, participation, care, self-fulfilment and dignity, there is an evident potential for research targeting future accommodation for elderly in Malaysia.

To establish the proportions of the research question, several key operational definitions are essential. They include those of the concepts of elderly persons, individual and population aging, aging indicators, dependency, social welfare, housing, cultural values and policy responses. To assess adequately the current conditions in Malaysia and to construct a model that could become the benchmark for accommodation for the elderly, a comprehensive literature review was conducted on current conceptual models of well-being. The search uncovered five major models; The Three-Pillar Retirement Income Model, The Social Model of Welfare, The Care Model, The Williams Ring Model and the Model of Housing. In addition, key insights from other societies were forwarded in order to understand the progress made in addressing issues in ageing, income, welfare, health, housing and service. The specific concept of cultural values which are pervasive in the multi-ethnic Malaysian population which includes Malays, Chinese and Bidayuh are analyzed in view of the link of the cultural-values dimensions with an overall housing-accommodation system.

The newly developed Culturally Modified Housing-Accommodation Model (CMHAM) can become a tool for decision-makers and policy planners to catalogue housing preferences, and subsequently identify choices in housing accommodation and features of the social environment most suitable for the elderly population. The elderly individual and members of the family can gauge their preparedness in accommodation needs in the face of the imminent demands of old age.

Considering the application of the CMHAM in Malaysia, seven general assumptions were identified covering dimensions such as cultural values, the housing accommodation system, physical planning and policy responses. The architecture and content of the model were laid out. A stimulus-response approach in the motivation and operation of the CMHAM and an adapt-modify-move approach in decision making were employed.

In the final stages of this study, a survey questionnaire testing the newly developed model was carried out on a sample of elderly Malaysians in a rural setting in Tebakang and an urban setting in Petaling Jaya, Malaysia. With the rural elderly population, the cultural values are immediately challenged. The basic difference is that whereas in urban areas elderly persons are integrated into a more fluid and eclectic urban environment, in rural areas elderly persons have an intimate relation with the traditional community around them. The type of accommodation in urban areas reflects a need for diverse design options and planning. But in the rural areas, cultural values demand a high degree of visual inclusiveness; the accommodation arrangements rely on barrier-free movement and ease in flow of interaction among members of the family and the community.

Strategies in accommodation of the elderly, therefore, deal with ageing as a consciously planned process from both the private and public points of view, not something haphazard and incremental. The process should retain people's core beliefs and traditional cultural values, but with sufficient flexibility to incorporate changes along the way, and to the extent that resources permit, the process should feature ownership and guidance by the elderly individual and local community. Ageing in place can be validated as a desired and general *modus operandi* but will need augmentation by developments on the home to institution interface. Hence, results of this project are aimed at policy makers and the elderly individual and family to ensure preparedness in accommodation needs in old age.

Yusoff, S. N., & Buja, G. A. (2013). Aged society: The way forward. *International Journal of Trade, Economics and Finance*, 4(4), 226–229.

Many countries have experiencing aging population, due to better healthcare services and higher education among citizen. In Malaysia, the country also facing the same emerging trend, in which the demographic profile of Malaysian experiencing the major shift. The life expectancy of Malaysian has increased in year 2012 with the average of 73.8 years or equal to 71.1 years for males and 76.7 years for females. This phenomenon has spawned into the public sector and forced the government to take a prompt action by increasing the retirement age of public servant from 58 to 60 years old. However, it has created new challenges towards young entrance, especially in the public sector. SEDAR and CUEPACS have different views on this issue, in which it has been debated from the country's standpoint. The Malaysian National Policy for Elderly has its own loophole within; make the policy become less comprehensive in the views of aged. Therefore this paper aims to provide an overview of Malaysia's situation of elderly and its impact towards the country's growth.

Yusuf, M. M., Yazis, M., & Basah, A. (2013). Assessing the impact of disruptions during employment: a study on women in Malaysia. *Proceeding of the International Conference on Social Science Research, ICSSR 2013* (pp. 1296–1306). Penang, Malaysia.

Population ageing is a global phenomenon, with countries throughout the world experiencing a rise in the proportion of population who are aged. This phenomenon is occurring most rapidly in countries in Asia which experienced a rapid decline in fertility along with improvements in mortality. Malaysia is not exceptional. Increases in life expectancy, along with a rising cost of living have meant many older people especially women, are exposed to risks of poverty in later life. There has been extensive research that highlights how living longer, having early retirement age and disruptions during working life can lead to

problems in the adequacy of retirement income. This in turns gives impact upon the quality of life in retirement. However, it is still lacking in the Malaysian context. The study therefore endeavoured to investigate the effectiveness of Malaysia's current retirement scheme (Employees Provident Fund) in delivering an adequate income in retirement. This study used the hypothetical simulation model MHYRISA (Malaysian Hypothetical Retirement Income Simulation Analysis) to analyse by considering interrupted work histories (gaps and disruptions) as a result of their family responsibilities and also the differences in educational level. The study found that women with disruptions in working life are unlikely to maintain their standard of living under the present retirement scheme due to low replacement rates.

Zabri, S. M., Ahmad, K., & Lian, A. A. L. H. (2016). The awareness of private retirement scheme and the retirement planning practices among private sector employees in Malaysia. *International Journal of Economics and Financial Issues*, 6(6), 120-124.

Private retirement scheme (PRS) was first introduced in 2012 in supporting the private sector employees to prepare for their retirement. The main purpose of this exploratory study is to unveil the level of awareness of PRS and investigating factors influencing the retirement planning practices. This study applies quantitative approach with the use of survey questionnaires as the main instrument of data collection. Private sector employees from five private companies in Malacca was selected as respondents of this study. Data collected was analysed using descriptive analysis. In general, findings of this study shows that relatively, the level of awareness towards PRS is still low. In addition to that, only 77% of those that aware about this scheme have an interest to invest. Various factors were found to have an influence on the retirement planning practices private sector employees in Malaysia. Overall, this study shed some information on the awareness towards PRS among private sector employees in Malaysia and also factors influencing their current state of retirement planning practices.

Zaherah, F. M. S., Suraiya, S. H., Poi, P. J. H., Tan, K. S., Lai, P. S. M, Ramakrishnan, K., & Mahadeva, S. (2012). Long-term nasogastric tube feeding in elderly stroke patients - An assessment of nutritional adequacy and attitudes to gastrostomy feeding in Asians. *The Journal of Nutrition, Health & Aging*, 16(8), 701-706.

Gastrostomy feeding is superior to long-term nasogastric (NG) feeding in patients with dysphagic stroke, but this practice remains uncommon in Asia. We sought to examine the nutritional adequacy of patients on long term NG feeding and identify barriers to gastrostomy feeding in these patients. A prospective comparison of subjective global assessment (SGA), and anthropometry (mid-arm muscle circumference, MAMC; triceps skinfold thickness, TST) between elderly stroke patients on long-term NG feeding and matched controls was performed. Selected clinicians and carers of patients were interviewed to assess their knowledge and attitudes to gastrostomy feeding. 140 patients (70 NG, 70 oral) were recruited between September 2010 and February 2011. Nutritional status was poorer in the NG compared to the oral group (SGA grade C 38.6% NG vs 0% oral, $p < 0.001$; TST males 10.7 ± 3.7 mm NG vs 15.4 ± 4.6 mm oral, $p < 0.001$; MAMC males 187.9 ± 40.4 mm NG vs 228.7 ± 31.8 mm oral, $p < 0.001$). 45 (64.3%) patients on long-term NG feeding reported complications, mainly consisting of dislodgement (50.5%), aspiration of feed content (8.6%) and trauma from insertion (4.3%). Among 20 clinicians from relevant specialties who were interviewed, only 11 (55%) clinicians would routinely recommend a PEG. All neurologists

(100%) would recommend a PEG, whilst the response was mixed among non-neurologists. Among carers, lack of information (47.1%) was the commonest reason stated for not choosing a PEG. Elderly patients with stroke on long term NG feeding have a poor nutritional status. Lack of recommendation by clinicians appears to be a major barrier to PEG feeding in these patients.

Zaimah, R., Masud, J., Haron, S. A., Othman, M., Awang, A. H., & Sarmila, M. D. (2013). Financial well-being: Financial ratio analysis of married public sector workers in Malaysia. *Asian Social Science*, 9(14 SPL), 1-6. doi: 10.5539/ass.v9n14p1.

The purpose of this study is to explore the usefulness of two family financial ratio guidelines in assessing the financial well-being of married public sector workers in Malaysia. The ratios examined were savings and debt-payment. Data on 415 workers were gathered from the Financial Well-being of Workers of Dual-earner Family survey report in 2008. The findings showed most of the workers had a savings ratio of less than 10 percent. Meanwhile, more than half of the workers had debt-payments ratio of more than or equal to 20 percent. In addition, the workers fall into four categories, namely are A, B, C and D, of which level A is the best and level D the worst. Typically, most of the workers are in level D (42.2%) and level B (30.1%). In summary, the study revealed that the culture of saving among the workers was still at the unsatisfactorily level.

Zaimah, R., Sarmila, M. S., Lyndon, N., Azima, A. M., Selvadurai, S., Saad, S., & Er, A. C. (2013). Financial behaviors of female teachers in Malaysia. *Asian Social Science*, 9(8), 34-41. doi: 10.5539/ass.v9n8p34

This paper aims to identify the pattern of financial behavior among female teachers in Bandar Baru Bangi, Selangor. A total of 325 female teachers was involved in the study. Questionnaires were used in the survey to collect data. Data on questions relating to socioeconomic background, financial knowledge and financial behavior were gathered. The financial behavior pattern was formulated using the 5-Likert scale and financial knowledge with the choice of either 'right' or 'wrong' answer. The analysis showed four dimensions that were interrelated on the assessment measurement of financial behavior: i) planning, ii) cash flow management, iii) saving and iv) usage of credit card. Descriptive analysis includes t-test and ANOVA were used to analyze the differences between the mean score of financial behavior across the factors such as age, level of education, monthly income and financial knowledge level. The findings showed the respondents had a substantial mean score in the four dimensions of financial behavior described above. The highest mean score was on the dimension of cash flow management which involve activities of paying bills and other expenses by installments. The findings also showed respondents aged more than 45 years old had good financial behavior in term of saving. In another word, as they grew older they cultivate better saving habit. The findings also showed that the respondents with the good financial behavior were among those who were good in saving their income. Further study is suggested to identify factors that influence the financial behavior among teachers. The financial behavior can describe the financial well-being of an individual or group which has an impact on the individual productivity level.

Zaimi, A. R. (2007). *Social welfare policies and services for the elderly: A country report (Malaysia)*. Paper presented at the 5th ASEAN & Japan High Level Officials Meeting on Caring Societies: Collaboration of Social Welfare and Health Services, and Development of Human Resources and Community. Community Services for the Elderly, 27 – 30 August 2007. Tokyo, Japan.

Though the growing rate of ageing population in Malaysia is slower compared to the United States of America and Singapore, yet the increasing ratio of this older persons group makes it impossible for the government to disregard the social and economic impacts due to population ageing. Hence, the government has come up with the National Policy for Older Persons and in concordance with that policy, the National Advisory and Consultative Council for Older Persons was set up and through it, a Plan of Action for the Older Persons is established. The Department of Social Welfare under the Ministry of Women, Family and Community Development, Malaysia is the secretariat for the Council and serves as the focal point for all issues related to ageing.

Zainab, I. (2014). *Division of labor of older person's household in rural Malaysia*. *World Applied Sciences Journal*, 30(7), 911–914.

Population aging has become a challenge not only for developed countries but developing ones as well. Malaysia is being no exception. The purpose of this paper is to analyze the division of labor of older person's household in rural Malaysia. The design used in this study was a combination of the sociological method of face-to-face interviews the anthropological method of participant-observation. Results of the study show that there is a tendency that works outside the home is considered as the responsibility of the husband. Number of respondents who felt this task is a shared responsibility is not significant. Almost all respondents felt that work in the home is the responsibility of the wife. Respondents felt holding spending money as a wife responsibility. In the context of a purchasing decision, the majority of respondents felt that both husband and wife all together should be responsible for any decision to purchase any items. Making important family decisions task is also considered by many respondents as a task to be undertaken both by husband and wife.

Zainab, I., & Wan Ibrahim, W. A. (2014). *Social welfare issues of older population in Malaysia*. *World Applied Sciences Journal*, 30(7), 887–890.

In recent years older population is growing globally. The growth of this population is said to be the 21st century phenomenon. Never before in the history of demography has the world contained a high number and proportion of populations living to the age of 65 and over. This article, originated from a qualitative study, discusses the growth of older persons in Malaysia and attempt to explore social welfare issues arise. To explore these issues, this qualitative study was conducted an in-depth interview with three key informants. The interview was recorded. Upon completing the interview, five issues of the welfare of older persons are traced which are the changes of family, youth migration to city, support and care system, health problems and employment and financial security. These issues will be facing by all if one reaching older ages.

Zainab, I., & Wan Ibrahim, W. A. (2012). Self-concept among the older people in Malaysia. *Advances in Natural and Applied Sciences*, 6(3), 392–395.

Self-concept, which is sometimes referred to as self-esteem, is a difficult concept to measure. There are various items and domains can be used to measure the concept. This study sought to analyze self-concept among the elderly residents in old folk's home, Malaysia. Using a non-probability sampling technique, a total of 203 elderly residents in nine old folk's home nationwide were selected. Self-concept in this study refers to the score the elderly obtained as response from ten items asked to them on a five-point scale in which "1" stood for "strongly disagree" and "5" stood for "strongly agree". Data of this study demonstrates that the majority of the elderly have a moderate level of self-concept. It is very important for the authority in old folk's home to do something to improve self-concept of these elderly residents.

Zainab, I., Wan Ibrahim, W. A., & Asyraf, H. A. (2014). Social barrier in Da'wah mission to older population. *Middle - East Journal of Scientific Research*, 20(12), 1738–1741.

Although the number of older population in Malaysia is still small as compared to developed countries, its number and percentage are now increasing. This is certainly posing particular challenges to the missionaries in their efforts to invite people to the oneness of Allah. This paper discusses the aging of population and its problems in the context of da'wah mission to older population. To explore social barriers in da'wah mission to older population, this study interviewed five key informants aged between 41 years to 60 years. It was revealed there are five major problems will be faced by missionaries in their da'wah mission. These problems include health problems, overwhelmingly elderly women in the community, decline in mosque attendance, poverty and negative attitude of the elderly. With health problem the older people may not be so interested to think about religious practices. As the number of older women is more than the older men, preaching may not receive attention in the future because preaching activity mostly done in the mosques and women are not so encouraged to go to mosque. Because of too old they become less interested in visiting places of worship and preaching activities. Poverty and negative attitude are also become social barriers.

Zainab, I., Wan Ibrahim, W. A., Mahmud, Z., Hamjah, S. H., Jemain, R., Baharuddin, E., Kawangit, R. M., Sidek, R. S. M., & Kusrin, Z. M. (2012). An alternative living arrangement for older Malaysian. *Advances in Natural and Applied Sciences*, 6(8), 1568–1572.

Research suggests that older persons in developing countries turn first to family for social care, and elderly parents are accepted to be living with their children when they are physically dependent. Nowadays the provision of care within family becomes more difficult as family size decreases. Women, who are traditionally the main care providers, also increasingly engaged in employment outside the home. Thus, the older persons have to think an alternative living arrangement to secure their welfare. This study seeks to analyze an alternative living arrangement for older persons in Malaysia. Using a multiple-case study design, a total of eight older persons aged between 62-72 years old who live in the modern pondok at the al-Jenderami Foundation, in the state of Selangor, Malaysia, were purposively selected as participants. All participants, who are all single mothers, have opted in at their own wish and have settled in the al-Jenderami for the period of 2 to 6 years. Through in-depth

interviews conducted, it can be concluded that there are five reasons why they choose the pondok as their residence. The reasons are: 1) consistent in ibadah, 2) easy to join the jemaah at the mosque, 3) able to mix around and learn together with their peers, 4) can increase the deeds for the afterlife, and 5) be able to focus on the religious learning.

Zainab, I., Wan Ibrahim, W. A., Tibek, S. R., Endut, I., & Sham, F. M. (2012). The need for counseling services amongst older persons in nursing homes. *Advances in Natural & Applied Sciences*, 6(8), 1573–1576.

This study is related to social services offered to elderly residents in nine Rumah Seri Kenangan in Malaysia. Rumah Seri Kenangan offers a range of activities for the purpose of maintaining the well-being of these residents. This study seeks to analyze the need for counseling service among the elderly residents. Using a convenience sampling technique, a total of 203 elderly persons in nine Rumah Seri Kenangan were selected. The study employs both quantitative and qualitative methods to collect data. Data for the quantitative analysis are derived from face-to-face interviews. Data of this study demonstrates that the average age of respondent is 70 years old. Most of them are male and completed their education at primary school level. In term of the need for counseling, the study reveals that most of the respondents have their own problems that highlight the need of counseling. The study concludes the counseling is very important for the maintaining of the well-being of the elderly.

Zainab, L., Wan Ibrahim, W. A., & Elmi, B. (2012). Religious participations among the older persons in Malaysia. *Advances in Natural and Applied Sciences*, 6(3), 388–391.

There are various religious activities conducted by the authority to increase the participation of the elderly residents in the old folk's home (Rumah Seri Kenangan), Malaysia. Religious activities of the elderly people may take several forms. This study seeks to analyze the religious participation among the elderly residents in the old folk's home, Malaysia. This study also seeks to analyze some demographic and family background among these elderly residents. To meet these objectives, a total of 203 elderly residents in the all nine old folk's home nationwide were selected. To get a true picture of their activities, respondents were asked whether or not they participate in certain religious activities during the previous week before the survey. Data of this study demonstrates the majority of the elderly residents are involved in certain religious activities conducted for them.

Zainab, S., Ismail, N. M., Norbanee, T. H., & Ismail, A. R. (2008). The prevalence of denture wearing and the impact on the oral health related quality of life among elderly in Kota Bharu, Kelantan. *Archives of Orofacial Sciences*, 3(1), 17–22.

This study aims to determine the prevalence of denture wearing among elderly and to compare the oral health related quality of life (OHRQoL) between elderly with dentures and those without dentures. This cross sectional study involved 506 randomly selected edentulous elderly in the district of Badang, Kota Bharu, Kelantan. Consented participants were interviewed in the Kelantanese dialect at their homes by a single trained interviewer using the short version Oral Health Impact Profile [S-OHIP(M)] which had been translated into the Malay language, tested and validated for use in Malaysian population. Denture wearing and self rated denture status was noted. The prevalence of denture wearing was 46.2% (95% CI=41.83, 50.70). There was a significant difference in sex, smoking status, self

perceived treatment need and self perceived satisfaction between denture wearers and non denture wearers. Denture wearers reported better overall OHRQoL compared to non denture wearers ($p < 0.001$). They reported better OHRQoL in 3 items namely 'difficulty in chewing', 'uncomfortable to eat' and 'avoiding food' compared to non denture wearers. Thus appropriate measures are required to improve knowledge among the elderly regarding the use of dentures and the importance of proper denture care.

Zainal, A., Ahmad, N. A., & Razak, F. H. A. (2013). *Older people and the use of mobile phones: An interview study*. Paper presented at the International Conference on Advanced Computer Science Applications and Technologies (ACSAT), 23-24 December 2013 (pp. 390–395). Kuching, Sarawak.

Ageing populations are turning to technology in greater numbers than ever. New technology is being designed to help older people live independently for longer. Despite the usefulness of mobile phones especially older people, the current problems with its complex features and interface designs have intimidated some older people users from using the device. The authors wished to explore exposure to the real-world technology needs of older people by evaluating the mobile phones use among them. Although numerous studies have been reported on the various benefits of interviewing in Human-Computer Interaction (HCI) research, little is known about preparatory interviewing in engaging with ageing population. The purpose of this study was to explore the interviewing technique in eliciting requirements from older people. A qualitative approach and semi-structured interviews were used with a sample size of seven Malaysian elders. This paper reports interview experience with the older people. The results suggest that the interviewing guidelines are recommended to be applied in the future research on HCI and older people.

Zainal, N. Z. (2008). *Depressive symptoms in middle-aged women in Peninsular Malaysia*. *Asia-Pacific Journal of Public Health*, 20(4), 360-369.

It is estimated that the proportion of people aged 60 years and above in the world will double between 2000 and 2050. This is very much due to modernization and new technologies developed which make living standards and behavioural patterns of the population changed and continuously changing. The urban families on the other hand are very busy working for survival leaving less or no time to cater for the aged parents. In response to this situation, different sectors such as government agencies, non-governmental organizations, and religious organizations have developed programs and services to address the needs and concerns of the elderly people under the support and supervision of the concerned ministries or organizations. Many programs and activities have been developed to cater for the elderly and it becomes more challenging if the aged population are of different backgrounds with different cultures, values and belief systems. This situation raises the question of how the programs and activities are conducted by the concerned organization for the elderly and to what extent the programs and activities fulfil the needs and expectations of the old aged especially in a multi-cultural background. Qualitative descriptive research method is used in the study using survey questions, interviews, observations and documented materials. The result of the study shows that there are differences in the needs and expectations of the elderly towards the services rendered by the organizations and people's core beliefs and traditional cultural values have become the main concerns of the elderly and should be incorporated in the programs and activities prepared. Hence, results of the study are aimed at policy makers and other

organizations to ensure preparedness in management and program needs of the aged population.

Zainuddin, R., Abdullah, N., Din, S. Z. M., Yeow, H. P. P., & Loo, H. S. (2011). A study of public health awareness among the elderly in an industrially developing country. *Journal of Social Sciences*, 7(2), 152–157.

The elderly in Industrially Developing Countries (IDC) may encounter problems regarding health. This research is to determine the common diseases or ailments experienced by adults over the age of 40. A sample of 150 respondents was taken from three states in Malaysia, an IDC. Demographic profiles such as age, gender and race were obtained and questions regarding attentiveness and awareness of health were asked. Four hypotheses were tested. Multiple regression analysis was employed to analyze the data. The result showed 85.8% of respondents had one or more diseases. Among them, men and women had different diseases and different race had different disease. In addition, healthy lifestyle, good diet and weight management were determinants of health awareness. The results are very useful for health administrators to plan strategies to improve public health in Malaysia. The study can be replicated in other countries using the same method to derive similar benefits.

Zainudin, N., Hamirudin, A. H., Rahman, N. A. A., & Sidek, S. (2016) *Prevalence and intervention of malnutrition risk of Malaysian elderly living in the community: A literature review*. Paper presented at the Medical Research Symposium & Pacific Partnership in conjunction with Kuantan Research Day 2016, 3-5 Aug 2016, Kuantan, Pahang.

Malnutrition among the elderly is a concern around the globe, including in Malaysia due to its negative effects to health. The aims of this review are to identify prevalence of malnutrition risk in Malaysian elderly living in the community; and to identify the types of nutrition intervention provided to the elderly following malnutrition risk identification. Literature searches were undertaken using online databases and a manual search. Main keywords used for literature search strategy were malnutrition, elderly and Malaysia. Inclusion criteria for the literature searches are studies performed in Malaysian community, using either nutrition screening or assessment tool and elderly aged ≥ 60 years old. Exclusion criteria are studies among hospitalized elderly, conducted in nursing homes, validation and development studies of nutrition screening tool. Results: Four published studies were eligible to be included in the review. The studies showed that prevalence of malnutrition in the Malaysian elderly living in the community is approximately 1.3% - 36.3%. A range of 25.3% to 48.5% elderly was reported to be at malnutrition risk. All of the identified studies were cross-sectional studies; whilst none of the studies provided nutrition intervention to the elderly. Alarming rates of malnutrition risk of Malaysian elderly living in the community has been identified. Appropriate nutrition intervention for malnourished and at risk elderly should be targeted to improve nutritional status and prevent health deterioration. Further evaluation of effectiveness of nutrition intervention following malnutrition risk identification is warranted in future studies.

Zaiton, A, Sazlina, S. G., & Renuka, V. (2012). Shelter homes for the elderly in Malaysia. *BOLD*, 20(1), 12–18.

This study describes for the first time the residents of public-funded shelter homes in Peninsular Malaysia. A cross sectional study of 1081 residents from all nine shelter homes were interviewed from March to September 2003. The mean age of the residents was 71.8 + 0.23 [SEM] years old. The majority of residents were males (58.6%), had no formal education (64.1%)* were from rural (81.1%) areas, had no family members (61.7%) and received no visits at all (85.5%) from either friends or relatives. Two hundred and ninety five (27.3 %) had mild to severe disability, 226 (20.9%) had poor vision and 47 (4.3%) had reduced hearing. Only 447 (41.4%) older people were well nourished, 707 (78.9%) were at-risk of depression and 817 (75.6%) had probable cognitive impairment One hundred and forty three (14.1%) and 88 (8.1%) self reported to have hypertension and coronary heart disease respectively. It is clear that these residents have multiple co-morbidities and effective management strategies are required to ensure maintenance if not improved quality of life.

Zaiton, A. (2009). *Healthy, active and productive ageing*. Paper presented at the 13th Malaysian Family Medicine Specialists Scientific Conference, 6th – 9th August 2009. Awana Porto Malai, Langkawi, Kedah, Malaysia.

The number of older persons is increasing worldwide. In 2000 there were 600 million older persons aged 60 years and above. By 2025 it is expected to increase to 1.2 billion and 2 billion by the year 2050. Presently two thirds of all the older persons are living in the developing countries. Similar to most countries in the world, Malaysian's population is also undergoing demographic transition. This transition is due to fertility, mortality and to some extent migration as a result of social and cultural development. With increasing ageing also come the various challenges and issues which will affect the society in the 21st century. Among them are burden of diseases, increase risk of disability, feminization of ageing as well as the care and the economics of the aging population. To overcome these issues of concern, certain programs and policies will have to be introduced in order to attain older persons that are healthy, active as well as productive. This paper will discuss the concept of healthy, active and productive ageing as well as issues that will enable the older persons to be participating actively in an age friendly environment and at the same time maintain their autonomy.

Zaki, L. R. M., & Hairi, N. N. (2014). Chronic pain and pattern of health care utilization among Malaysian elderly population: National Health and Morbidity Survey III (NHMS III, 2006). *Maturitas*, 79(4), 435–441.

The aims of this study were to report prevalence of chronic pain and to examine whether chronic pain influence healthcare usage among elderly Malaysian population. This was a sub-population analysis of the elderly sample in the Malaysia's Third National Health and Morbidity Survey (NHMS III) 2006, a nation-wide population based survey. A subset of 4954 elderly aged 60 years and above was used in the analysis. Chronic pain, pain's interference and outcome variables of healthcare utilization (hospital admission and ambulatory care service) were all measured and determined by self-report. Prevalence of chronic pain among elderly Malaysian was 15.2% (95% CI: 14.5, 16.8). Prevalence of chronic pain increased with advancing age, and the highest prevalence was seen among the old-old group category (21.5%). Across young-old and old-old groups, chronic pain was more prevalent among females, Indian ethnicity, widows/widowers, rural residency and those with

no educational background. Our study showed that chronic pain alone increased hospitalization but not visits to ambulatory facilities. Presence of chronic pain was significantly associated with the frequency of hospitalization (aIRR 1.11; 95% CI 1.02, 1.38) but not ambulatory care service. Chronic pain is a prevalent health problem among the elderly in Malaysia and is associated with higher hospitalization rate among the elderly population. This study provides insight into the distribution of chronic pain among the elderly and its relationship with the patterns of healthcare utilization.

Zaki, L. R. M., & Hairi, N. N. (2013). Patterns of health service utilization among Malaysian elderly with chronic pain. *Journal of Health and Translational Medicine*, 16[Special Issue], 72.

The aim of the study was to analyze pattern of health care utilization in elderly with chronic pain and predictors of hospitalization and type of facilities used. We used data from The Third National Health and Morbidity Survey (NHMS III) conducted in 2006 on all elderly aged 60 and above (N=4954). Prevalence of chronic pain among Malaysian elderly was 15.2%. Elderly with chronic pain were more likely to be hospitalized and frequent users of health services. The multivariate result showed educational status ($p=0.013$), chronic pain status ($p=0.004$), level of interference of pain ($p=0.046$) and present of chronic diseases ($p<0.001$) were the significant predictors of hospitalization among the elderly. Among those hospitalized, majority (88.9%) prefer Public hospital admission compared to Private hospital (11.1%). A quarter (25.0%) of public hospital attendees were from household with average income less than RM1,000. More than half (75.0%) were from the group with income of more than RM 1,000. The multivariate analysis showed ethnicity ($p <0.001$) and income level ($p=0.04$) were associated with the choice of facilities, but not for chronic pain ($p=0.795$), chronic diseases (0.109) and level of interference of chronic pain (0.602). The findings revealed a high rate of utilization of health services by Malaysian elderly, especially when chronic pain and chronic diseases were present.

Zareei, H., Mohd. Yusuff, R., Mohd. Salit, S., Sharifah Norazizan, S. A. R., & Hussain Mohd, R. (2017). Assessing the usability and ergonomic considerations on communication technology for older Malaysians. *Universal Access in the Information Society*, 16(2), 425-433.

The increasing elderly population and their specific needs have challenged communication technology developers regarding the usability of their devices. The aim of this study was to design a usability assessment method and assess the usability of communication devices in elderly Malaysians. This cross-sectional study was conducted on elderly Malaysians (aged 55–74 years old). A questionnaire was developed to assess the usability issues of mobile phones (MP), home telephones (HT) and Internet/E-mail (I/E) usage. A total of 303 elderly subjects (148 males and 155 females) from urban and rural areas in the state of Selangor participated in this study based on stratified random sampling. I usage was found to be 10 % while the usage of MP and HT were 73 and 50 %, respectively. The main concern of the participants was the “durability of the devices” followed by “ease of use” in MP and “ergonomic features” in HT. Factor analysis was carried out to identify the number of latent factors for MP and HT. The relative weights for the extracted factors were then evaluated by six experts using the GAHP technique. “Adjustability to user needs and abilities” for MP and “ease of operation” for HT was weighted most. A total of ten products including

6 MPs and 4 HTs were assessed by five elderly subjects. The usability index for each MP and HT family of products was then obtained by TOPSIS which was used to select the best product. None of the four common designs of HT complied with the usability factors indicating that the design of current HT products is unsuitable for the elderly, for communication. Moreover, this study revealed that the low usage of I/E might be due to inappropriate design and lack of knowledge. However, the design of communication products should be based on the identified weighted factors to provide more usable products for the elderly population.

Zareei, H., Mohd. Yusuff, R., Sharifah Norazizan, S. A. R., & Hussain, M. R. (2010). A conceptual framework to determine usability criteria for family of products for older Malaysians. *Proceedings of the 9th Pan Pacific Conference on Ergonomics (PPCOE 2010)* (pp. 95–98).

This study proposes a conceptual framework which has three steps to derive and rank usability criteria for family of products related to Instrumental/Enhanced Activity of Daily Living (I/EADL). The three steps include, measuring level of functional disability by a modified IADL scale to obtain the kind and level of disability and identify related family of products, developing an initial list of recognized usability factors, and conducting Focus Group Discussion (FGD) process to develop and rank a complete list of usability criteria for family of products to support I/EADL. The proposed method can be used to evaluate product usability and create a helpful link between level of usability and IADL scale, thereby making better decision in purchasing each family of product for older Malaysians.

Zin, R. H. M. (2012). Malaysia: Towards a social protection system in an advanced equitable society. *ASEAN Economic Bulletin*, 29(3), 197–217.

This paper argues why Malaysia needs to strengthen and provide more formal social protection. It describes the social protection programmes currently available in Malaysia — public assistance; and social security and insurance schemes including employer's liability scheme, Workmen's Compensation Scheme, civil service pension, Employees Provident Fund (EPF), Armed Forces Provident Fund, and Social Security Organisation (SOCSSO) insurance schemes. The paper also attempts to identify the challenges faced by these programmes, especially in terms of coverage, governance and sustainability. Policy recommendations include finding ways to protect the informal sector, relooking at the EPF Annuity Schemes proposals and promoting them again to EPF members, improving transparency and accountability of civil service schemes by subjecting them to regular evaluations and making it publicly available. The introduction of a minimum wage, the discussion of introducing unemployment insurance and raising the retirement age to sixty years in the private sector this year augur well for the Malaysian workers.

Zin, R. H. M., Lee, H. A., & Rahman, S.A. (2002). Social protection in Malaysia. In *Social Protection in Southeast and East Asia* (pp. 119–169). Singapore: Friedrich Ebert Stiftung.

The social protection schemes in Malaysia include (i) the Employer's Liability Scheme (ELS) covering employment injury compensation since 1952, and sickness and maternity benefits since 1955; (ii) Civil Service Pension (1951), a non-contributory pension scheme for civil servants; (iii) the Employee Provident Fund (EPF) (since 1951) for all workers not covered by the civil service pension; (iv) the Workers' Compensation Scheme (1952) to determine the terms and amounts of compensation in the case of death or accident, which never attained much significance. In March 1998, the Foreign Workers' Compensation Scheme was formed to cater primarily for foreign workers' insurance needs. The main social insurance scheme for workers earning less than RM2,000 a month in Malaysia is the Social Security Organization (SOCSO) established in 1969. There are also several private savings schemes, which workers can fall back on in times of need if they are members of these schemes. Social assistance in Malaysia is classified only as residual welfare. The coverage of the formal social protection system in Malaysia is inadequate. Workers in the informal sector and the self-employed, such as petty traders and hawkers, are not compelled to have accounts with the EPF and contribute only on a voluntary basis. The Asian financial crisis has altered perceptions somewhat, due to the sheer magnitude of adversity that workers and vulnerable groups faced. The inadequacy of extant measures was exposed, for instance in retrenchment benefits and foreign worker social insurance. Malaysia still emphasizes employment generation and poverty eradication while reserving direct transfers only for those unable to enter the job market.

Zuhdi, A. S. M., Ahmad, W. A. W., Zaki, R. A., Mariapun, J., Ali, R. M., Sari, N. M., Ismail, D., & Sim, K. H. (2016). Acute coronary syndrome in the elderly: The Malaysian national cardiovascular disease database - Acute coronary syndrome registry. *Singapore Medical Journal*, 57(4), 191–197. <https://doi.org/10.11622/smedj.2015145>

The elderly are often under-represented in clinical trials for acute coronary syndrome (ACS) and cardiologists commonly face management dilemmas in the choice of treatment for this group of patients, particularly on whether invasive revascularisation should be used. This study analyses the characteristics of hospitalised elderly patients with ACS, and compares the outcomes of invasive and non-invasive treatment. From 29 December 2005 to 26 April 2010, 13,545 patients were admitted for ACS in 16 hospitals across Malaysia. These patients were divided into two groups - elderly (≥ 65 years) and non-elderly (< 65 years) patients. The clinical characteristics, treatment received (invasive or non-invasive) and outcomes (in-hospital and 30-day all-cause mortality) of these two groups were compared. The elderly patients were then grouped according to the type of treatment received, and the outcomes of these two groups were compared. The elderly had a higher cardiovascular risk burden and a higher incidence of comorbidities. They were less likely to receive urgent revascularisation for acute ST-segment elevation myocardial infarction (elderly: 73.9% vs. non-elderly: 81.4%) and had longer doorto-needle time (elderly: 60.0 minutes vs. non-elderly: 50.0 minutes, $p = 0.004$). The rate of cardiac catheterisation was significantly lower in the elderly group across all ACS strata. The elderly had poorer outcomes than the non-elderly. Elderly patients who received invasive treatment appeared to have better outcomes than those who did not. Elderly patients with ACS tend to be undertreated both invasively and pharmacologically. Invasive treatment seems to yield better outcomes for this group of patients.

About the Editors

NORMA MANSOR

Norma Mansor is the Director of Social Security Research Centre (SSRC), a position she holds since 2013. She is a Professor at the Department of Administrative Studies and Politics, Faculty of Economics and Administration, University of Malaya where she served as the Dean from April 2004 to June 2009. She is a member of the National Wages Consultative Council (NWCC) and the Employment Insurance System (EIS) committee. She was appointed as Secretary of the National Economic Advisory Council in Prime Minister's Department from July 2009 to May 2011. She was a Ragnar Nurkse Visiting Professor at Talinn University of Technology, Estonia in 2015. Prior to these appointments, she has served as advisor and consultant to various government bodies and private organizations which include The National Institute Of Public Administration (INTAN), Sarawak Economic Development Corporation (SEDC), Federal Agricultural Marketing Authority (FAMA), The United Nations Development Programme (UNDP), World Bank, International Labour Organization (ILO), Organisation for Economic Co-operation and Development (OECD) and the European Union (EU). Her research interest includes public policy, governance and social protection. She has written extensively in books and scholarly journals. She sits as Editor in Chief of Institutions and Economies Journal, Member of Editorial Advisory Board of Public Management and Money and guest editor to several academic journals.

TEY NAI PENG

Tey Nai Peng obtained his Bachelor of Economics degree and Ph.D. from the University of Malaya, and Master's degree in Population Planning from the University of Michigan. Between 1974 and 1992, he held various positions at the National Population and Family Development Board (NPFDB). As a researcher and the director of the Centre for Population Studies at the Board, he conducted a number of national demographic surveys, including the Second Malaysian Family Life Survey with the Rand Corporation in 1988. He joined the Faculty of Economics and Administration (FEA), University of Malaya (UM) as an Associate Professor (AP) of Applied Statistics (demography and survey techniques and sampling) in 1992. Upon retiring in 2005, he has continued to serve as a contract AP and research fellow. He is the coordinator of the Population Studies Unit at UM, and a Board member and chairman of the research committee at NPFDB. His research interest is on ageing issues, family planning, fertility, gender studies, migration, public health, and population dynamics. He has participated and presented papers at more than 100 national and international conferences. He published his work in *The Gerontologist*, *PlosOne*, *Maturitas*, *The Scientific World*, *Social Indicator Research*, *Journal of Interpersonal Violence*, *Contemporary Therapies in Medicine*, *Child Abuse Review*, *Asian Women*, *Asian Population Studies*, *Asia-Pacific Journal of Public Health*, *Journal of International Medical Research*, *Institutions and Economies*, and *Malaysian Journal of Economic Studies*. He has provided consultancy services to national agencies/companies such as the National Population and Family Development Board, Federation of Reproductive Health Association Malaysia, International

Council for Management of Population, Tenaga Nasional, Chemical Company of Malaysia, Pos Malaysia, Drainage and Irrigation Department, Ministry of Rural Development, and Sepang International Circuit; and international agencies such as UNFPA, UNDP, WHO, Synergoes Institute, ESCAP, and the Futures Group.

YAP SU FEI

Yap Su Fei is an Associate Professor (AP) at the Department of Economics, Faculty of Economics and Administration, University of Malaya. She obtained her Ph.D. in the field of Macromodeling. She has published widely in Scopus and ISI journals including the Journal of Policy Modeling, Asia Pacific Business Review, Singapore Economic Review, Disasters, Institutions and Economies, Malaysian Journal of Economic Studies (previously *Kajian Ekonomi Malaysia*), International Journal of Economic Research and the Journal of Contemporary Economics among others. She has 2 books published. She has used her expertise in Macroeconomics and Economic Modeling starting from her PhD thesis which did an innovative macromodel on a system of Derivatives employing Calculus and Differentials to computationally map Macroeconomic outcomes over changes, rather than levels. As such, her expertise runs consistently through her papers and publications with a focus on macroeconomic systems and modeling. She has received important recognition as a macroeconomist and modeller as atested by her many consultative, expert linkages and reviewer evaluations. She has contributed substantially to national policy issues and conducted joint research on the National Plantation and Minimum Wages Study, Economic Impact of the Petronas International Grand Prix for a total of 4 separate Consultancies, Rubber Master Plan, Industrial Master Plan, the National Foresight Alliance Vision Malaysia 2050 and numerous budget memorandums for the Ministry of Finance. She has anchored the post graduate program in Economics and taught Advanced Macroeconomics which is a core paper for the Masters of Economics Program for many years.

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