

Malaysia Ageing and Retirement Survey (MARS) Wave 1 - 2018/2019

Full Report



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Retirement Survey
(MARS)
Wave 1-2018/2019**

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MALAYSIA AGEING AND RETIREMENT SURVEY WAVE 1-2018/2019

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PREFACE

In this report, we provide an overview of Malaysia Ageing and Retirement Survey (MARS) Wave-1 that was conducted in 2018/2019. MARS is one of the Social Wellbeing Research Centre's (SWRC) flagship projects, an ambitious undertaking with the objective to promote research on ageing related issues, to share MARS data within the scientific community and offer evidence-based policy recommendations and strategies for healthy and active ageing Malaysia to relevant stakeholders.

The idea of collecting empirical data on older persons was mooted much earlier given the importance and absence of such data in the country. National and international experts were consulted on the viability and sustainability of a large-scale longitudinal study as it requires huge financial and other resources commitment. These experts include Professor Robert Holzmann and Professor Naohiro Ogawa, former chairholders of SWRC, Professor David Weir, Principal Investigator of Health and Retirement Survey (HRS), University of Michigan, Professor Axel Börsch-Supan, Principal Investigator of Survey on Health, Ageing and Retirement Europe (SHARE) and Professor Hidehiko Ichimura, Principal Investigator of Japanese Study on Aging and Retirement (JSTAR). Local subject matter and survey experts engaged include Dr. Tey Nai Peng and Dr. Ng Sor Tho, Faculty of Economics and Administration, UM, Professor Sarinah Low Abdullah and Professor Noran Naqiah Mohd Hairi, Faculty of Medicine, UM and the Department of Statistics Malaysia, respectively. With financial and technical support from the Employees Provident Fund (EPF) and the Survey Research Center, University of Michigan, work on MARS project officially started in November of 2017 and data collection for MARS Wave-1 was completed in June 2019.

MARS collects information on various aspects of an adult life and experiences involving household members aged 40 years and older. The questionnaire contains 400 over questions covering five main components that include demographic and family background, health and healthcare utilization, psychosocial and outlook on life, work and employment, income, savings, and assets. In addition to the traditional questions, physical measurement of height, weight, waist and hip circumference, grip strength and blood pressure were taken during the field interviews. Information on all these components were collected and recorded using the Computer Assisted Personal Interviewing (CAPI).

One of the objectives of MARS is to construct a longitudinal dataset on middle-aged and older Malaysians that is comparable with other similar studies to enable scientific investigation on ageing related issues from an international perspective. Subsequently, MARS became a member of the Gateway to Global Aging, a platform for population survey data on ageing around the world with its secretariat at the University of Southern California. Being the latest addition to this global platform, we have learned a lot from the experiences of our sister studies, from the planning of MARS project to designing the survey instrument, training of field interviewers, and in conducting the actual fieldwork.

MARS project would not have materialised without the support of many organisations and individuals. We would like to express our utmost gratitude to the Employees Provident Fund (EPF) for believing in MARS and providing the necessary funding. Our heartfelt thanks to the Survey Research Center, University of Michigan for the technical support for CAPI development, training, and data management. The collaboration, made possible through an MOU between Universiti Malaya and University of Michigan, has enabled three SWRC's researchers to participate in the training of enumerators in Michigan in March 2018 and two Survey Research Center's technical experts to assist SWRC in conducting similar training in UM in June 2018. The technical support provided to SWRC continued throughout the field survey and data management via weekly virtual meeting. We would also like to thank the Department of Statistics Malaysia for providing the enumeration blocks and household samples based on the population and sampling frame of 2010 Population and Housing Census.

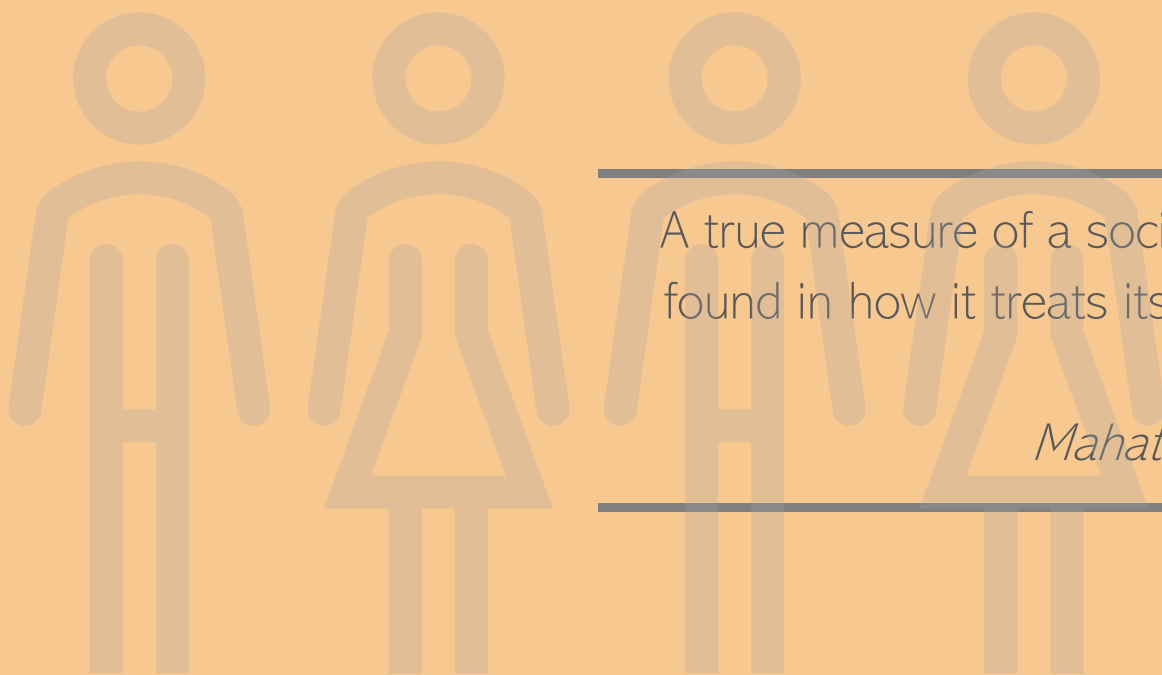
MARS data collection would not have been completed without the tireless efforts and dedication of our field interviewers as well as the willingness and trust of the respondents to participate in the survey. The experience of going to the ground, meeting respondents from all walks of life, capturing how they perceive, think and value things in life had a lasting impact on our own perception and thinking about life.

We owe a big thank you to all the respondents of the survey without which valuable information on various aspects of their lives would not have been obtained.

This report presents the preliminary analyses of MARS baseline data and that this is only a first step in our efforts to have a better understanding of ageing issues surrounding older persons in Malaysia. In-depth analyses will be performed to examine these issues with the hope that they would shed some light which could stimulate further research and engagements within the scientific community. We hope that you will be as excited as we are by the rich potential of current MARS data and the other waves on the foreseeable future.

Norma Mansor & Halimah Awang

Principal Investigators



A true measure of a society can be
found in how it treats its weak and
vulnerable

Mahatma Gandhi

WHAT IS MARS?

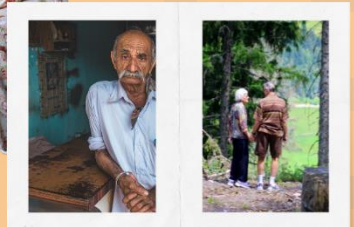
MARS

Is a major undertaking by the Social Wellbeing Research Centre (SWRC) to produce nationwide longitudinal micro-level data relating to ageing and retirement involving personal interviews of individuals aged 40 years and older in Malaysia.

MARS collects information on vital issues impacting their lives which include personal (background characteristics, etc.), family (relationship with spouse, parents, children, siblings, transfers, etc.), health (health status, diagnosed illness, healthcare utilization, physical measurement, etc.), economic (work, employment, retirement, income, etc.) and other social factors (friends, social participation, etc.).

MARS data are to be harmonised with leading international research data to enable adoption of best practices and comparability of findings across participating countries around the world.

It is hoped that the rich potential of MARS data from such a longitudinal study will become a pivotal source of invaluable inputs in promoting research and development opportunities and enhancing policy making for healthy and active ageing in Malaysia.



1

INTRODUCTION

1.1 The World is Ageing

Population ageing is experienced by virtually every country in the world as indicated by the steady increase in the number and proportion of older persons over the past decades. Within a span of 35 years, the world's population aged 60 years and older is projected to increase from 900 million in 2015 to 2 billion by 2050, with the increase in proportion nearly double from 12 percent to 22 percent, respectively (World Health Organization, 2018). A total of 703 million persons were aged 65 or over in 2019 and projected to double to 1.5 billion in 2050 (United Nations, 2019). It is also estimated that by 2050, 80 percent of all older persons will live in low- and middle-income countries.

The World Population Prospects 2019 (United Nations, 2019) reported that 1 in 11 persons in the world in 2019 was over the age of 65 and that the ratio will increase to 1 in 6 persons or 16 percent in 2050. In Asia and Pacific Region, about 12.4 percent of the population were 60 years and older in 2016 and projected to exceed 25 percent or to 1.3 billion people by 2050 while the proportion of the Asian population aged 65 years and older will be more than quadruple by 2050 (United Nations, 2016). Ageing population has seen the fastest increase in Eastern and South-Eastern Asia with the proportion of the population aged 65 or over increasing from 6 percent in 1990 to 11 percent in 2019 (United Nations, 2019). In Japan, 27 percent of its population are already 65 years or older and predicted to reach 32 percent by 2030, or one in three persons in Japan will be at least 65 years old. Survival beyond age 65 is improving in most parts of the globe but more alarming is the dramatic acceleration of the older population. Among those aged 60 years and older, the fastest growing population is that of the oldest-old, those in the 80 years and older bracket. According to United Nations (2019), a person aged 65 years in 2015-2020 could expect to live, on average, another 17 years and 19 years by 2045-2050. The number of persons aged 80 years or older will increase threefold from 143 million in 2019 to 426 million in 2050 of which 120 million will live in China alone (United Nations, 2019).

The changing in demographic profile of the world, with ageing population on the increase, has led to many important social and economic implications. While there are variations in the structure and pace of ageing across regions and countries, the rising trend has posed challenges to not only the older persons themselves as they are becoming more dependent on the younger working age group but also governments will have to withstand fiscal and political pressures due to the increasing demand for goods and services such as housing, transportation, healthcare, pensions and social protection, as well as family structures and intergenerational ties. Certainly, there has been a growing interest and debate on various issues related to population ageing. On one hand, it has been argued that population ageing has substantial capacity to diminish the productive capacities of national economies. On the other hand, studies seemed to suggest that any negative effect on economic growth is likely to be no more than modest (Bloom et al., 2010; Börsch-Supan and Ludwig, 2010). Across countries, older adults are increasingly seen as contributors to development, whose abilities to act for the betterment of themselves and their societies should be woven into policies and programmes at all levels. However, one common fact remains and that regardless of the effect on the economy as a whole, population ageing will lead to increased need for elder care and support, at a time when, in developing countries and especially so in Asian societies, traditional family-based care, which was once a common practice, has been on the declining trend over time.

Population ageing is the result of declining fertility and mortality and increasing life expectancy which raises crucial issues concerning the wellbeing of older persons (Cherchye et al., 2012). Wellbeing is defined as a subjective perception of quality of life or life experience identified as the global perception of life satisfaction, combined with the predominance of positive over negative effect in daily life (Watson et al., 1988; Kahneman et al., 1999). As such, wellbeing is a complex construct, measured as a dynamic process encompassing multiple indicators including income, living conditions, physical and mental health, and the dimensions of perceived social coherence, actualization, integration, acceptance, and contribution (Hugo, 2011; Keyes, 1998; Prilleltensky, 2005; Huta and Waterman, 2014). As cited by Wang, Shieh and Wang (2004), measure of wellbeing is an important outcome measure in understanding the life experiences of older persons.

Perhaps nowhere in the world is this demographic transition as inevitable as in many parts of Asia, where unprecedented speed of population ageing is occurring at the same time as dramatic transformation in the social and economic spheres are taking place. However, it is also important to note that nearly a billion poor people with low and uncertain incomes and few assets live in Asia and the Pacific where livelihoods rest on a fragile economic foundation (ESCAP, 2016). They are vulnerable to shocks such as economic crisis, natural disasters, pandemic, and climate change. With the rapid changes, there is a clear need to enhance our understanding of the experiences and life histories of older persons, how their wellbeing will be affected as well as long-standing societal and familial arrangements that have been a vital part of old age support in the region. While population ageing is a cause for celebration as more and more people are living longer due to improvements in nutrition and health, societies must be prepared for the demographic shift to ensure that the wellbeing of older persons are taken care of to enable a more purposeful life during these extra years.

1.2 What about Malaysia?

Malaysia too is experiencing a change in demographic profile with a steady increase in the number of older population as well as its proportion to the total population. Malaysia's population rose by 13.6 percent from 28.6 million in 2010 to 32.5 million in 2020 and projected to reach 37 million by 2030 and 41.5 million by 2040 (Department of Statistics Malaysia, 2018). The median age is expected to increase from 26.3 years in 2010 to 38.3 years in 2040 while the population aged 60 years and older and those aged at least 65 years accounted for 11.1 percent and 7.2 percent of the country's total population in 2020, respectively.

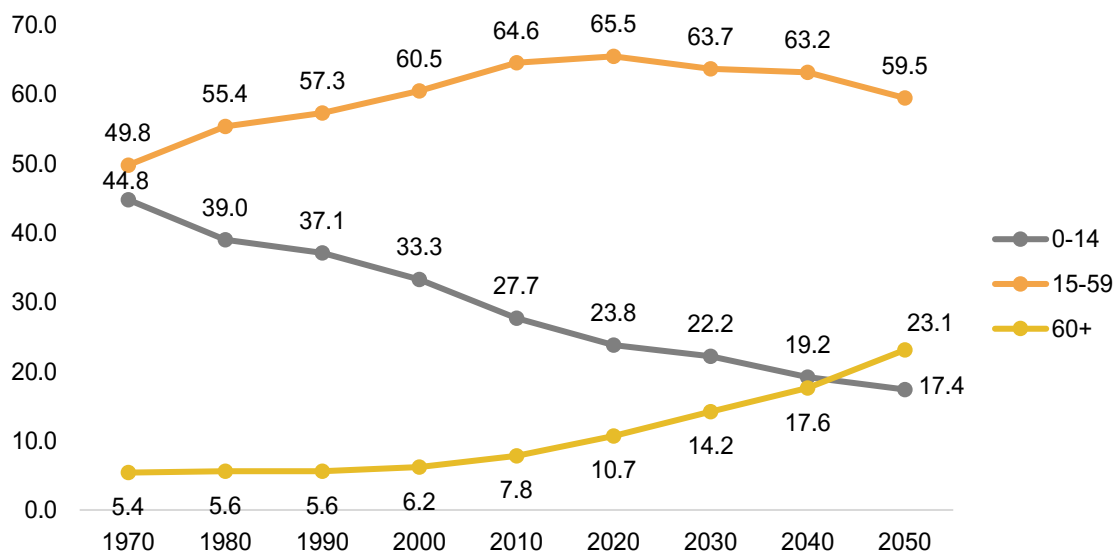
The distribution of population by year and age group presented in Table 1.1 indicates the gradual decline in the proportion of population aged 0-14 years to the total population and an increasing trend of those aged 60 and older. By 2040, population aged 60 and over will almost equal those aged below 15 (19.2 percent versus 17.6 percent), and the proportion of the older population will exceed the young population in 2050 (23.1 percent versus 17.4 percent).

The proportion aged 60 and over will cross the young population aged below 15 around year 2045 and will surge ahead beyond that (Figure 1.1). The proportion aged 15-59 will begin to descend after 2020, resulting in rapid increase in old age dependency burden.

Table 1.1: Distribution of population of Malaysia by age 1970-2050

	Number ('000)			Percentage		
	0-14	15-59	60+	0-14	15-59	60+
1970	4,885	5,436	587	44.8	49.8	5.4
1980	5,394	7,663	776	39.0	55.4	5.6
1990	6,756	10,428	1,028	37.1	57.3	5.6
2000	7,803	14,169	1,449	33.3	60.5	6.2
2010	7,828	18,256	2,193	27.6	64.6	7.8
2020	7,818	21,519	3,520	23.8	65.5	10.7
2030	8,167	23,461	5,218	22.1	63.7	14.2
2040	7,668	25,176	7,006	19.2	63.2	17.6
2050	7,315	25,050	9,747	17.4	59.5	23.1

Source: United Nations World Population Prospects 2021

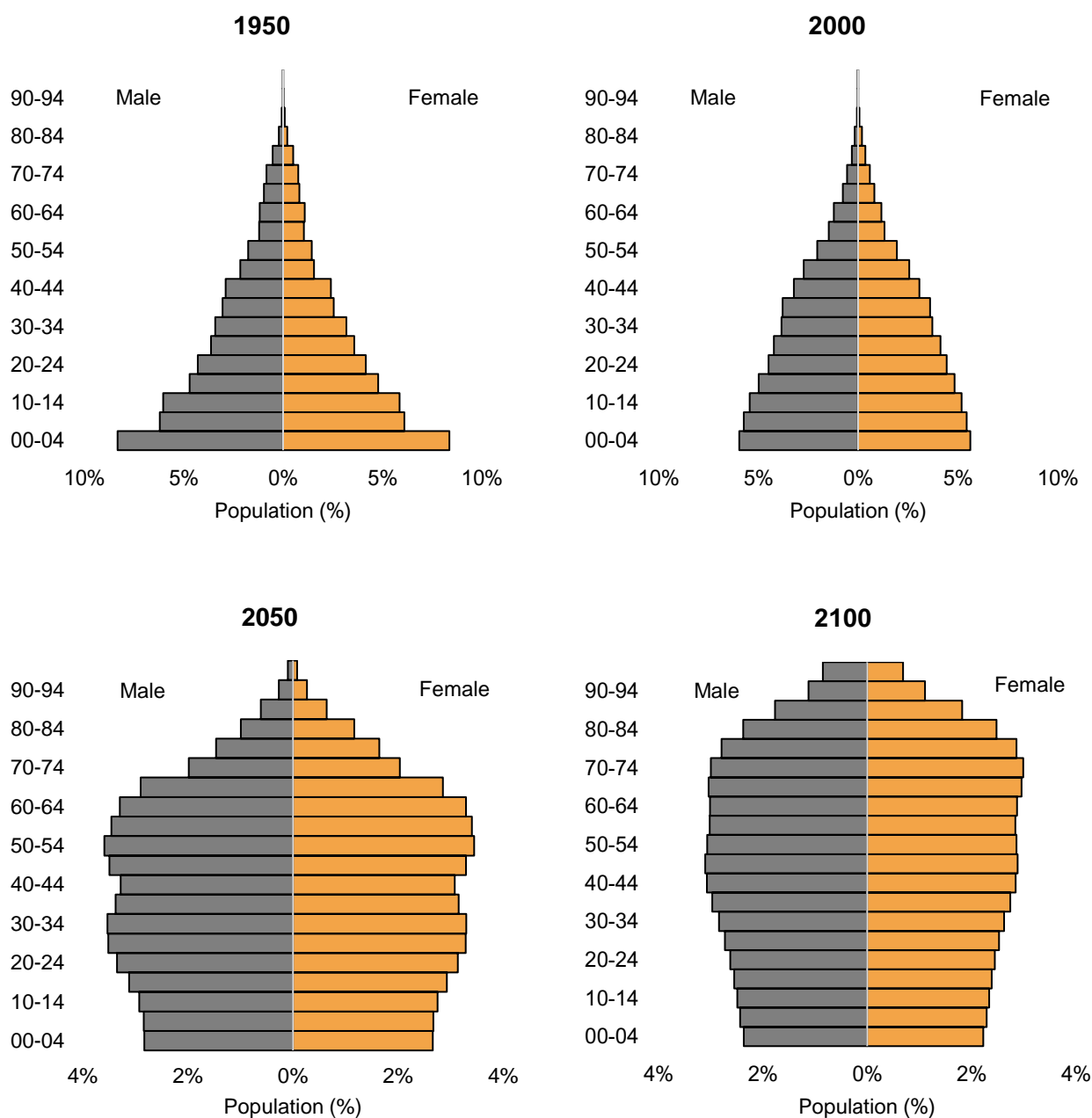


Source: United Nations World Population Prospects 2021

Figure 1.1: Proportion of population (%), 1970-2050

The changing age structure of Malaysia's population can be observed from the population pyramids shown at four different points in time: 1950, 2000, 2050 and 2100 (Figure 1.2). From a very broad base consisting of bigger proportions of young people and declining sharply at older ages in 1950, the proportion of younger generation has become smaller and almost equal to the middle-aged group giving almost a straight shape of the population pyramid which tapers at the very old ages in 2050. The projected pyramid in 2100 indicates a slightly fatter shape at the young old groups.

Malaysia reached an ageing population status in 2020 with 2.4 million people aged 65 and older, accounting for 7.5 percent of its total population. Estimates indicate that by 2040, the proportion of population aged 60 and older will double to 20 percent while those aged 65 years and older will increase to 14.5 percent. The number of the oldest old, those aged 80 years and older is projected to increase four-fold from 0.3 million people in 2017 to 1.4 million by 2040 (Department of Statistics Malaysia, 2018).



Source: United Nations World Population Prospects 2021

Figure 1.2: Population pyramids of Malaysia in 1950, 2000, 2050 and 2100

Life expectancy at birth for the total population increased from 72.3 years in 2000 to 74.4 years in 2012 and 74.9 years in 2020. Life expectancy at birth for males increased from 72.2 years in 2012 to 72.6 years in 2020 while for females, the increase was from 76.9 years in 2012 to 77.6 years in 2020. There is a slight increase in the gender gap from 4.7 years in 2012 to 5.0 years in 2020. Improvement in average life expectancy at age 65 has also been observed with 15 years for male and 17.2 years for female in 2020, an increase of 0.5 years and 0.8 years from 2012, respectively (Department of Statistics Malaysia). This means that males aged 65 in 2018 are expected to live to 80.0 years, and for females 82.2 years. Similar rising trend is projected for the oldest old. Women and men who turned 80 in 2019 are expected to live for another 7.0 years and 6.1 years, respectively.

The current and expected future demographic realities warrant the country to address the short- and long-term considerations in facing major challenges to ensure sound and sustainable socio-economic, health and social care systems are ready for this demographic shift. While ageing is associated with biological changes and other life transitions such as a gradual decline in physical and mental capacity, susceptibility to diseases and ultimately death, a longer life brings with it opportunities for older persons to continue to be active and contribute to their families and communities.

Currently, there are three policies related to the wellbeing of older persons in Malaysia namely the National Health Policy for Older Persons 2008, the National Policy for Older Persons and Plan of Action for Older Persons 2011, and Physical Planning Guidelines for the Elderly 2013. While these policies act as the foundation for the welfare of older persons, not much attention is given to the promotion of active ageing for Malaysia. To date, Malaysia has yet to come out with an Active Ageing Index (AAI) which has been adopted and used by many European and Asian countries to measure the untapped potential of older persons for active and healthy ageing (Rantanen et al., 2019).

1.3 The Need for a Longitudinal Study

Large scale longitudinal studies on crucial issues impacting the lives of mid-aged and older persons have been conducted worldwide in recent decades, more so in developed nations. For example, the Health and Retirement Survey (HRS) in the United States, which started its First Wave in 1992, has been continuing with subsequent waves every two years. The Survey of Health, Ageing and Retirement Europe (SHARE) started in 2002, covering 27 countries in Europe and Israel. Among the countries in Asia, China, Japan, Korea, India, and Thailand have joined these leading international groups in embarking on similar longitudinal studies. The Korean Longitudinal Study of Ageing (KLoSA), started in 2006, was followed by the Japanese Study of Aging and Retirement (JSTAR) which carried out its full-scale survey in January 2007. Both the China Health and Retirement Longitudinal Study (CHARLS) and the Health, Aging and Retirement in Thailand (HART) were launched in 2015 while the Longitudinal Aging Study in India (LASI) in 2016.

While Malaysia is heading towards an older society and notwithstanding the increased recognition of the importance and relevance of population ageing, to date, there has been no longitudinal study conducted nationally to explore and understand these issues. Recent empirical research on topics related to population ageing in Malaysia have been documented (Mansor et al., 2018). Earlier studies were mostly conducted in specific regions or locations with limited coverage in terms of the areas of concern. The National Health and Morbidity Study (NHMS) 2018, is a cross-sectional nationwide study, specifically focused on elder health. The Longitudinal Study of Ageing in Malaysia (AGELESS) (formerly known as Malaysian Elders Longitudinal Research (MELoR)) is a multi-dimensional study which completed its first wave data collection in 2015, covered only Petaling Jaya and parts of Kuala Lumpur. The Retirement Preparedness and Productive Ageing among Government Employees and Retirees in Klang Valley conducted in 2018 is also a cross-sectional study.

Given the importance and the lack of availability of such data for formulation and implementation of effective mid- and long-term policies to address the trends that emerge amid population ageing, Malaysia Ageing and Retirement Survey (MARS) was initiated to fill this gap through a large-scale, nationally representative, longitudinal survey on ageing, health, and retirement. MARS aims to produce the data needed to understand the situation of Malaysia's older population, to formulate and implement policies that can protect and support the growing ageing community.

1.4 Initiation of MARS

The initiation of MARS began with a series of consultation involving local and international experts as well as key people of leading international research including HRS (Health and Retirement Survey, USA), SHARE (Survey of Health, Ageing and Retirement Europe) and JSTAR (Japanese Study on Aging and Retirement). MARS benefited much from these studies in terms of useful advice and input especially from HRS in the development of MARS study design, training, and technical support. This was made possible through an official Memorandum of Understanding between Survey Research Center, Regents of the University of Michigan, and SWRC of the Universiti Malaya in early 2018.

1.5 Objective of MARS

The main objective of MARS is to produce comprehensive micro-level data on various aspects of ageing and retirement impacting the lives of mid-aged and older persons which will provide useful input for policy making and strategy formulation for healthy and active ageing Malaysia and towards strengthening social protection system in the country.

Specific objectives of MARS:

- To produce a comprehensive baseline data on the individual, family, social, economic and health of middle-aged and older persons;
- To collect longitudinal data on life histories and experiences of middle-aged and older persons over time so as to gain a deeper understanding of the issues and challenges related to retirement and ageing;
- To offer evidence-based recommendations on opportunities and policies to address the trends that emerge in the midst of population ageing in Malaysia;
- To be part of the global platform on retirement and ageing research comparable with similar longitudinal surveys that can provide the basis for policy making and academic studies.

1.6 Significance of MARS

MARS will be a national landmark in scientific research that will provide a much-needed foundation for a better understanding of ageing related issues in Malaysia and designing appropriate evidence-based policies for adults and older persons. Due to its harmonised design with parallel international studies, MARS can learn and gain much from the experiences of other participating countries. At the same time, MARS will be able to contribute to scientific insights and policy development in those countries and be part of the conversation on how different societies, cultures and policies are preparing for their ageing population.

MARS is adapted from the HRS in the United States through a collaboration between SWRC, Universiti Malaya, an EPF endowed centre, and the Survey Research Center, University of Michigan. The Survey Research Center provides support in the development of MARS study design, training, and technical assistance prior to, during and post-production of MARS data to ensure quality data as validated through regular monitoring of the fieldwork and random call backs. Over the years, HRS has inspired many similar studies worldwide with more than 35 countries on four continents undertaking HRS-type research. Hence, there are endless opportunities for MARS to widen and deepen research on the nature, implications, and emerging issues of ageing. While overall comparability with the HRS model was maintained, several changes were made to reflect the cultural, religious and realities of the local context, Malaysia.

Another key attribute of this research is the longitudinal setup which allows data on the same individuals to be assembled over an extended period, enabling researchers to follow their life histories and experiences and examine occurring changes and trends while at the same time have access to current data. Ageing is a continuous process. To understand that process and to track the movement of individuals through the various stages of life including employment, morbidity, disability, and mortality requires longitudinal data. In this sense, MARS is Malaysia's first-ever globally comparable panel survey data of mid-aged and older persons which will become a pivotal source for policy making on active and healthy ageing.

MARS is Malaysia's first-ever globally comparable panel survey data of mid-aged and older persons which will become a pivotal source for policy making on active and healthy ageing.

2 STUDY DESIGN

2.1 Sample

The baseline sample of MARS consists of individuals aged 40 years and older residing in all the states of Malaysia, including Sabah and Sarawak. Selection of sample was done by the Department of Statistics Malaysia based on the 2010 Population and Housing Census. The geographical areas in Malaysia were divided into Enumeration Blocks (EBs). Altogether, about 75,000 EBs were identified with each EB containing between 500 to 600 Living Quarters (LQs).

To ensure widest coverage possible across the country, each state was first stratified by urban and rural EBs. A multi-stage sampling procedure was adopted beginning with the selection of EBs in each stratum followed by selection of living quarters or households, and finally selection of household members as potential respondents according to age eligibility criterion.

The number of EBs selected in each state was based on proportionate allocation to the population size of the state and systematic sampling was used in the selection of EBs. This means that bigger number of EBs were allocated to states with large population size such as Selangor, Johor, and Sabah. Following the common practice, 10 to 12 households per EB were randomly selected to maintain heterogeneity of the sample representing the various sub-groups of the population. A list of selected EBs and LQs, also called households with addresses, referred to as sample IDs (SIDs), was provided by the Department of Statistics Malaysia (Table 2.1). For each SID, any member aged 40 or older who has lived in the household most of the time would be eligible to be selected as a respondent. Should there be more than one eligible member, a maximum of three oldest eligible members would be selected as possible respondents.



Figure 2.1: Map of Malaysia

Nine hundred EBs with a total of 9,542 households or sample IDs (SIDs) were received from the Department of Statistics Malaysia. The distribution by state shows Selangor, Sabah and Johor top the list in terms of the number of selected EBs and SIDs (Table 2.1).

Table 2.1: Distribution of EBs & SIDs by state

State	EBs	SIDs	Urban	Rural
Selangor	178	1,952	1,759	201
Sabah	107	1,080	629	451
Johor	105	1,240	918	322
Sarawak	77	770	413	357
Perak	70	780	575	205
Kedah	60	600	393	207
Federal Territories	58	580	623	20
Kelantan	52	580	270	299
Pulau Pinang	48	480	480	0
Pahang	47	470	263	207
Terengganu	34	340	218	122
Negeri Sembilan	31	310	187	30
Melaka	26	290	200	30
Perlis	7	70	33	37
Total	900	9,542	6,961	2,581

2.2 Data Collection

MARS data were collected through face-to-face survey using Computer-Assisted Personal Interviewing (CAPI) by trained field interviewers. The SIDs were released in batches to the field interviewers and to ensure that SIDs were aware of MARS project, letters were sent out a few weeks prior to the fieldwork. Among other information, the letter introduces what MARS study is all about, how SIDs are selected and the importance of their participation to the overall purpose of the study.

To conduct CAPI, trained field interviewers were equipped with laptop computers pre-loaded with the survey questions, structured in such a way that only one question appears on the screen at a time and allows the interviewers to directly input the responses on to the same screen. Use of CAPI allows for efficient data entry, crosschecking of data in real time thereby minimizing data recording errors and ensuring internal consistency.

MARS CAPI uses a sample management system called SurveyTrak and survey processing tool called Blaise which were developed and programmed by the Technical Team from the Survey Research Center, University of Michigan. The software uses Malay and English for its language interface and questionnaire instrument. Hardcopy of MARS questionnaire in Chinese and Tamil were also provided for Chinese and Tamil speaking field interviewers, respectively. In addition to the data collected on the subject matter, contact observation by the interviewers were collected on the attitudes and behaviours of the respondents towards the survey, household surrounding and the community they live in. The experiences of the interviewers during the fieldwork were also recorded for purposes of para-data analyses and planning for future waves survey.

2.3 Questionnaire

To a large extent possible to enable comparability on the global platform, the main components of MARS survey instrument were first developed, guided by JSTAR and HRS questionnaires, in consultation with its respective principal investigators. Subsequently, the interview topics and related questions were discussed among MARS research team members to examine in terms of applicability, suitability, and practicality of those questions in the local context. After much deliberation, MARS survey questions were completed for pilot test. Two rounds of pilot tests were conducted, first using Paper Assisted

Personal Interviewing (PAPI) then by CAPI, based on the revised version of MARS questionnaire to also test the CAPI SurveyTrak system.

MARS survey contains traditional questions and physical measurement. There are altogether 260 traditional questions covering five core components namely respondent and family members, health, work and employment, income and consumption, savings and assets as shown in Figure 2.2. Physical measurements were administered on site during the field interview using standard protocols and procedures. The measurements taken from participating respondents include height, weight, waist and hip circumference, blood pressure and grip strength.

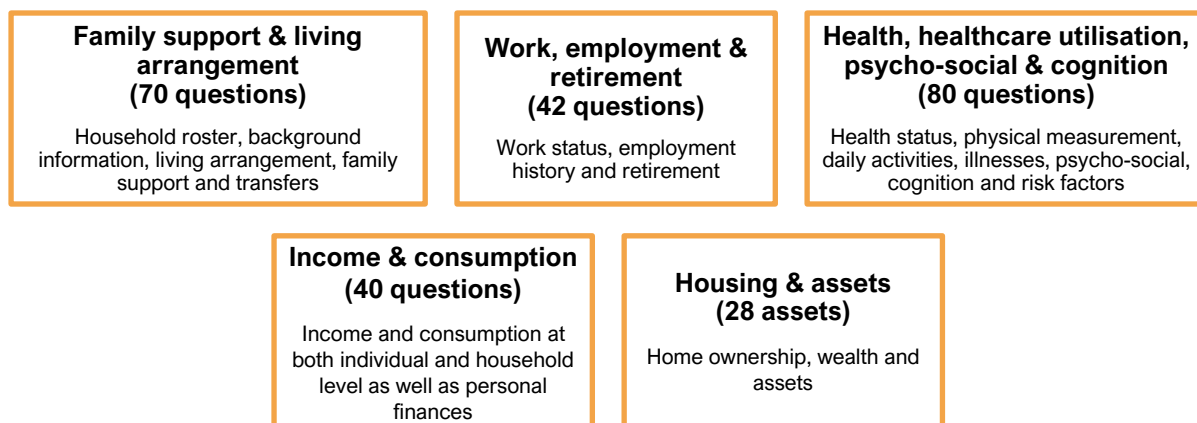


Figure 2.2: Core components of MARS survey questionnaire

MARS survey questionnaire is divided into the following sections:

Section A: Background Information of the Respondent

- Birth information, age, sex
- Ethnicity, religion, marital status, education
- Native language, language spoken, language written
- Living arrangement

Section B: Family Support and Transfer

1) Living children including stepchildren and adopted children:

- Personal details of children
- Living arrangement of children
- Contact with children
- Support received from and given to children

2) Living parents and/or parents-in-law:

- Personal details of parents and/or parents-in-law
- Living arrangement of parents and/or parents-in-law

- Contact with parents and/or parents-in-law
- Support received from and given to parents and/or parents-in-law
- Care for parents and/or parents-in-law

3) Living siblings including step siblings and adopted siblings:

- Personal details of siblings
- Living arrangement of siblings
- Contact with siblings
- Support received from and given to siblings

Section C: Health

1) Health Status:

- Overall health status
- Pains and aches
- Doctor-diagnosed diseases
- Accidents, falls
- Eyesight, hearing, oral health

- 2) Risk Factors:
 - Smoking
 - Alcohol consumption
- 3) Psychosocial:
 - Attitudes and perception about life
 - Emotional relationship with spouse
 - Personal, social and religious activities
- 4) Physical Activities:
 - Participation in vigorous, moderate and light physical activities
 - Activities of Daily Living (ADL)
 - Instrumental Activities of Daily Living (IADL)
- 5) Cognition:
 - Memory testing
 - Counting and simple arithmetic
 - General knowledge
- 6) Healthcare Utilisation:
 - Medical examination
 - Hospitalization

- Health insurance
- 7) Physical Measurement:
 - Height, weight, waist and hip circumference
 - Blood pressure
 - Grip strength

Section D: Work, Employment and Retirement

- Work status, occupation, industry
- Aspects of current job/employment
- Retirement decision

Section E: Income and Expenditure

- Sources of income
- Monthly expenditure

Section F: Savings and Assets

- Savings
- House ownership
- Assets

2.4 Ethical Considerations

Ethics approval was obtained from the Universiti Malaya’s Research Ethics Committee (UMREC) (Reference No: UM.TNC2/UMREC – 341). Both verbal and written consent were obtained from the respondents during fieldwork prior to the survey interview.

2.5 Pilot Study

Two pilot tests of MARS questionnaire were carried out. The first pilot of the final draft questionnaire was conducted in selected areas in and around Selangor using PAPI. Following the first pilot study, revisions were made to MARS questionnaire which was subsequently tested in selected EBs in four states namely Selangor, Johor, Kelantan, and Perak using CAPI. The second pilot survey was also to identify issues related to supervision of fieldwork and the CAPI interview system.

2.6 Fieldwork

The field interview was carried out in August 2018 to May 2019 involving 150 trained enumerators. The first training, attended by about 100 participants, was conducted by SWRC in July 2018 with assistance from technical experts of the Survey Research Center, University of Michigan. Subsequent trainings were conducted in batches involving a smaller number of participants per training. On-site coaching was also conducted to assist enumerators needing help in conducting the interviews.

Most of the interviewers employed were fluent in at least two languages, Malay, and English. There were also Chinese speaking and Tamil speaking interviewers to address Chinese and Tamil speaking SIDs, respectively. Native speakers of local dialects of Sabah and Sarawak were recruited to conduct the survey in East Malaysia. About 84 percent of completed interviews were conducted in Malay, 7 percent

in English, and less than 5 percent were conducted in Mandarin or other Chinese dialects with the remaining balance in Tamil and other dialects. On average, 4.8 attempts were needed to obtain one completed interview for SIDs located in urban areas and more attempts were required for areas beyond its vicinity.

2.7 Data Validation and Quality Control

To ensure quality data were being collected, the team regularly monitored the field progress of interviewers using para-data. Interviewer behaviours were observed in terms of the length of interview time, number of questions asked, number of negative or don't know responses. For example, interviewers who displayed tendency of short interview length and high negative response were closely monitored so that early intervention can be taken.

In addition, 10 percent of completed interviews were verified through call backs. These cases were selected using three approaches: (i) initial completed interview, (ii) random completed interview, and (iii) para-data completed interview. The first two selections were based on the overall interview order by field interviewers while the last selection was made based on field interviewers that displayed worrying or suspicious behaviour through their para-data.

Call-backs for verification were done through phone interviews where the respondents were asked questions to verify on the time and length of interview, location, background information, physical measurements and cash incentives received. Questions that were not captured during the actual interview were included to ascertain interviewer behaviour. For example, respondents were asked whether the interviews were conducted separately if there were multiple respondents. Respondents were also asked whether they have any comments regarding the field interviewer or the study itself.

3 MARS SAMPLE

3.1 Sample Respondents: Household members aged 40 years and older

Of the total 900 EBs covering 9,542 SIDs, 7,387 SIDs were successfully tracked and visited, with 5,613 completed interviews. Table 3.1 shows the distribution of respondents by state.

Table 3.1: Respondents by state

State	No	Percentage
Sabah	1,010	18.0
Selangor	762	13.6
Sarawak	587	10.5
Johor	569	10.1
Perak	510	9.1
Kedah	481	8.6
Kelantan	405	7.2
Pahang	366	6.5
Terengganu	267	4.8
Pulau Pinang	228	4.1
Negeri Sembilan	157	2.8
WP Kuala Lumpur	122	2.2
Melaka	82	1.5
Perlis	39	0.7
WP Labuan	11	0.2
WP Putrajaya	9	0.2
Total	5,613	100.0

3.2 Response Rate

The response rate was calculated as a ratio of the number of respondents who participated in the interview to the sum of respondents who participated and the number of respondents who refused to participate.

$$\begin{aligned}
 \text{Response Rate} &= \frac{\text{Complete interview}}{\text{Number of Respondents} + \text{Number of Refusals}} \\
 &= \frac{5,613}{5,613 + 1,059} \\
 &= 84.1\%
 \end{aligned}$$

MARS sample consists of 5,613 respondents giving an overall response rate of 84 percent.

Table 3.2: Respondents by state and response rate

State	Response Rate (%)
Johor	84.1
Kedah	83.7
Kelantan	83.7
Labuan	74.3
Melaka	84.3
Negeri Sembilan	89.4
Pahang	80.9
Perak	87.4
Perlis	88.6
Pulau Pinang	82.9
Putrajaya	63.3
Sabah	88.7
Sarawak	87.5
Selangor	78.3
Terengganu	72.9
WP Kuala Lumpur	71.8

3.3 Profile of Respondents

The questions that are captured include core demographic information such as sex, age, ethnicity, place of residence, marital status, education, religion and other information in the context of a respondent's life. The information is important for the examination of certain variables such as employment, health and psychological wellbeing across the subgroups of the sample. For example, educational attainment has been shown to have a significant influence on employment, income, health and mortality (Zajacova and Lawrence, 2018; Hahn and Truman, 2015; Almond et al, 2007). Employment, lifestyle and accessibility to information and communication technologies may be dependent on the place of residence. Literature also shows that marital status may play an important role in older adults' health status and behaviours, social relationships, and quality of life (Gutiérrez-Vega et al., 2018; Rook and Zettel, 2005; Schone and Weinick, 1998). Psychosocial wellbeing of older adults may be associated with religion and participation in religious activities while ethnicity is another important variable to be included in socio-economic research in the context of multi-ethnic Malaysia (Khan et al., 2017; Tey et al., 2016).

Demographic information that includes sex, age and relationship to the respondent were obtained on each household member residing with the respondent. In addition, information on demographic and socioeconomic characteristics of the respondent's living parents, children and siblings as well as respondents' relationships with them were gathered. Parents, children, and siblings defined in MARS data include biological, foster, step and adopted parents, children and siblings.

The distribution of the 5,613 sample respondents by sex, age, location and education level is shown in Table 3.3. Female constitutes about 56 percent and those aged 40-59 about 60 percent while 14 percent are aged 70 and older. Majority of the respondents are from the urban areas (61.6 percent) and have at least lower secondary education (51.7 percent) while 12 percent have no schooling experience.

Table 3.3: Profile of respondents

Variable	Frequency	Percentage (%)
Sex		
Male	2,481	44.2
Female	3,132	55.8
Age group		
40-49	1,555	27.7
50-59	1,827	32.5
60-69	1,443	25.7
70-79	621	11.1
80+	167	3.0
Strata		
Urban	3,455	61.6
Rural	2,158	38.4
Education Level		
No schooling	674	12.0
Primary school	1,652	29.5
Lower secondary	1,184	21.1
Upper secondary	1,449	25.8
Post-secondary / Tertiary education	653	11.6
Total	5,613	100.0

The mean and median age for the total sample is 57.2 and 56 years, respectively. The distribution of respondents by age and sex shown in Figure 3.1 indicates more females than males in the age range of 40-68 years and 78 to 83 years, and about the same from age 84 onwards.

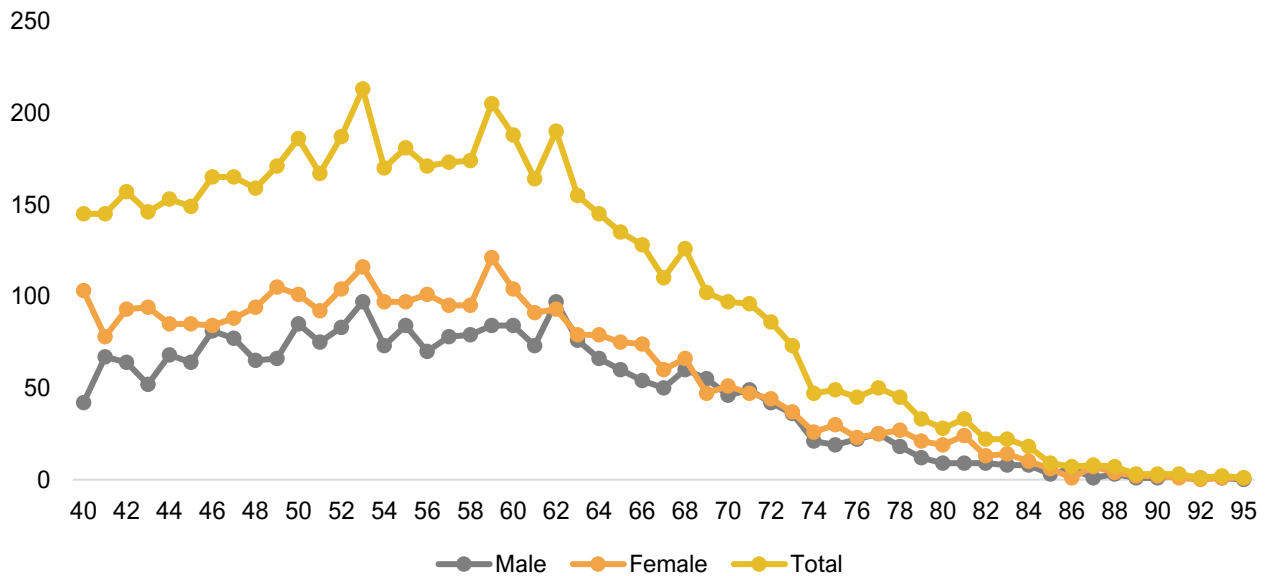


Figure 3.1: Respondents by age and sex

Average age of respondents is generally younger in some areas of Selangor, Kedah and Sabah than in Perak, Pahang, Johor and Sarawak (Figure 3.2).

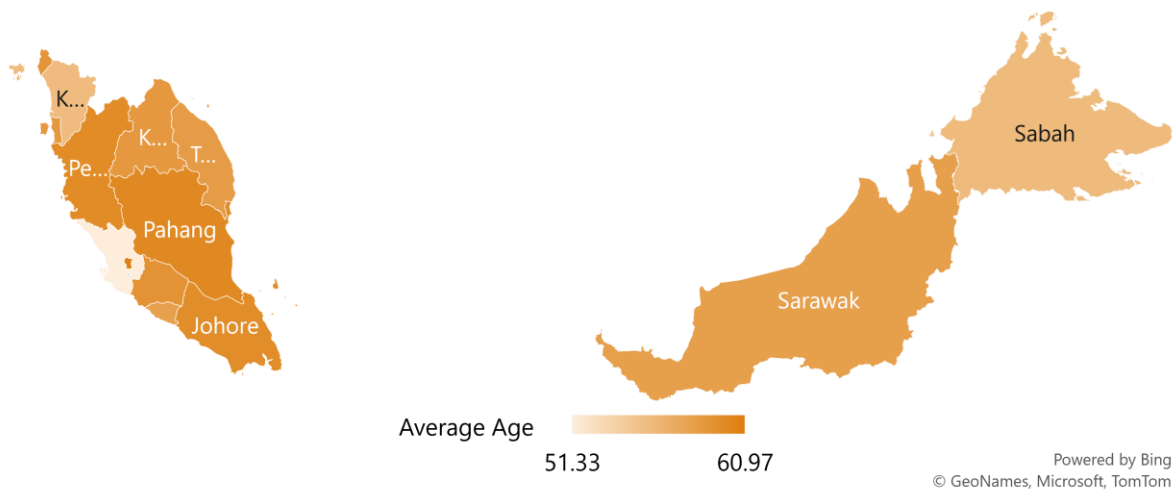


Figure 3.2: Respondents by age and state

About 33 percent of the respondents never moved out from their birthplace while 39 percent had migrated to other districts within the same states they were born. The remaining 28 percent had migrated across states (Figure 3.3).

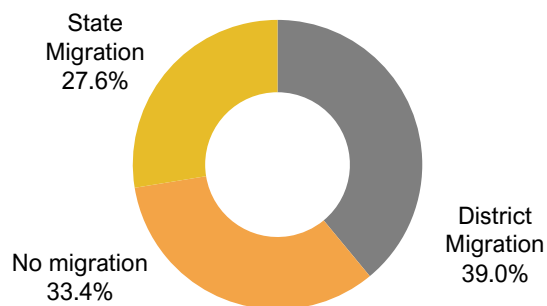


Figure 3.3: Migration pattern of respondents after birth

The proportion of respondents with post-secondary education is highest among those aged 40-49 (19.3 percent) and decreases with age to 2.4 percent among respondents aged 80 and over. The proportion of respondents with no schooling accounts for three percent among the youngest age group and increases to 30 percent among respondents aged 70 to 79 and 49 percent among those aged 80 and over (Figure 3.4).

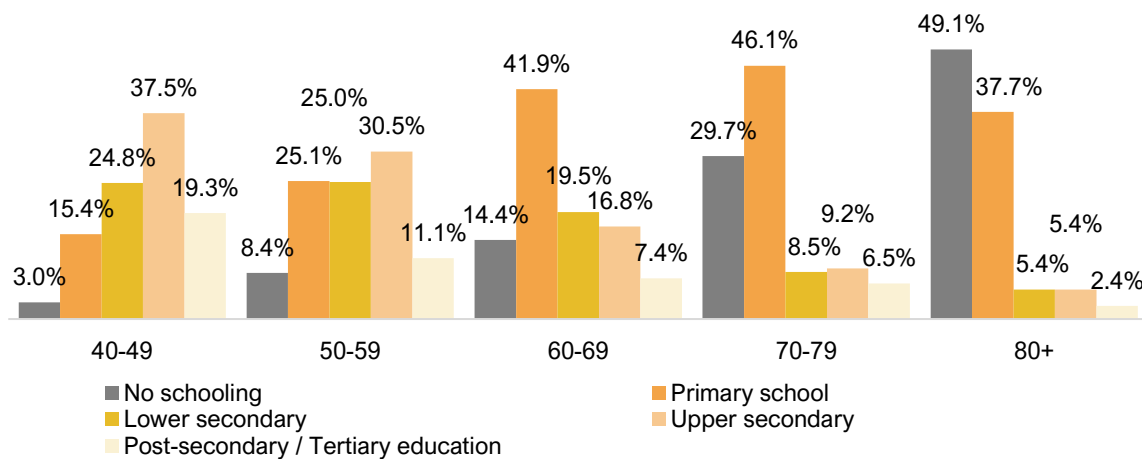


Figure 3.4: Educational attainment by age

Malay accounts for 55.8 percent followed by Other Bumiputera (22.2 percent), Chinese (11.1 percent) and Indian (8.1 percent) (Figure 3.5). Other Bumiputera comprises of respondents in Sabah and Sarawak with Bumiputera Sabah the majority (Figure 3.6). The 'Other' category includes respondents of mixed parentage and those with permanent residence status.

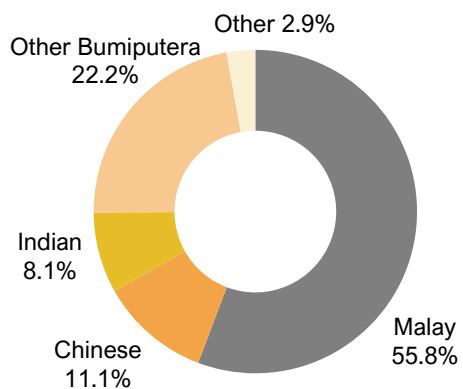


Figure 3.5: Respondents by ethnicity

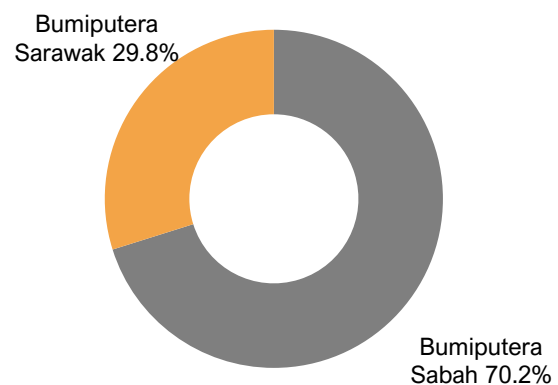


Figure 3.6: Other Bumiputera Sabah & Sarawak

Bumiputera Sabah and Sarawak when further analysed shows Iban, Dusun, Bajau and Bugis form the four largest group out of more than 30 ethnic groups. Iban ethnic group is in Sarawak while the other three are in Sabah (Figure 3.7).

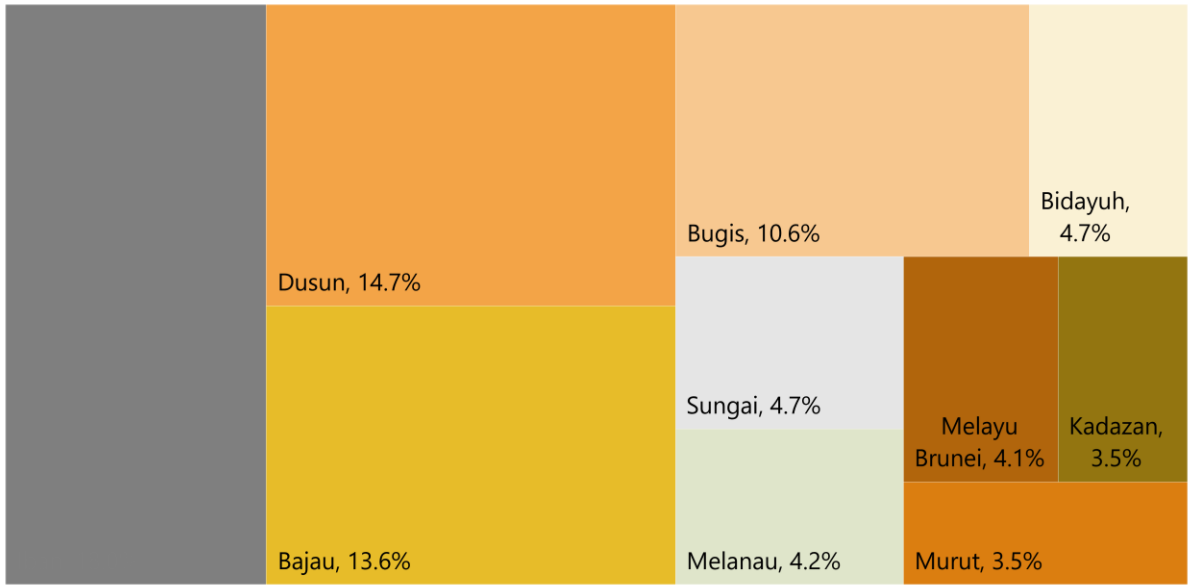


Figure 3.7: Top 10 ethnic Bumiputera Sabah and Sarawak

3.4 Language and Religion

About 57 percent of the respondents reported Malay as their native language, followed by other languages (24.4%), Tamil (7.3%), Other Chinese dialect (7.3%), Mandarin (3.4%) and English (0.5%) (Figure 3.8). Other languages comprise mainly of ethnic dialects of respondents in Sabah and Sarawak.

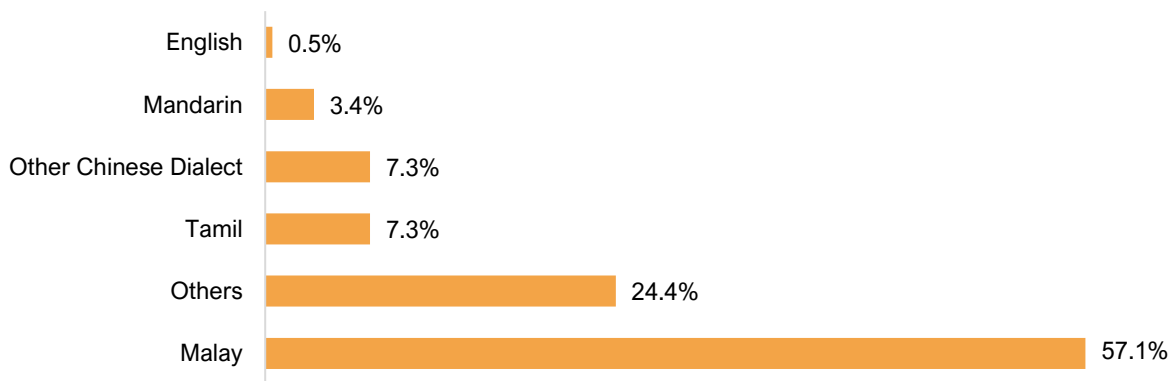


Figure 3.8: Native language of respondents

Similar to the distribution of native language, Malay is the language used most at home as reported by about 65 percent of the respondents, followed by other languages, Mandarin and other Chinese dialects combined (Figure 3.9). There is a slight decrease in the proportion of respondents using Malay language as age increases.

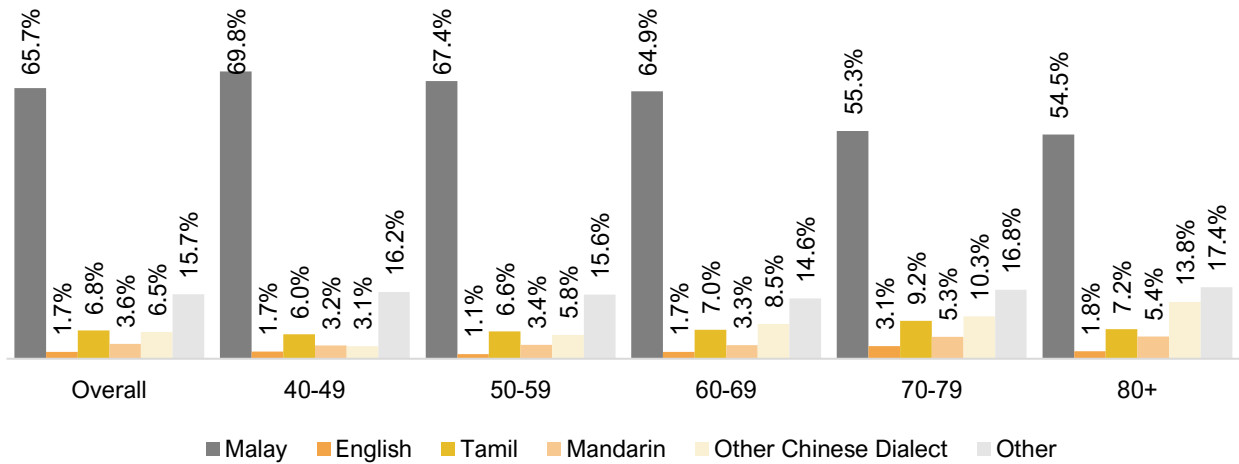


Figure 3.9: Language used most at home by age

In terms of religion, Muslims comprised 70.5 percent followed by Christians (11.8 percent), Buddhists (9.6 percent) and Hindus (6.5 percent). 'Other' religion includes atheist and believers of other faiths (Figure 3.10).

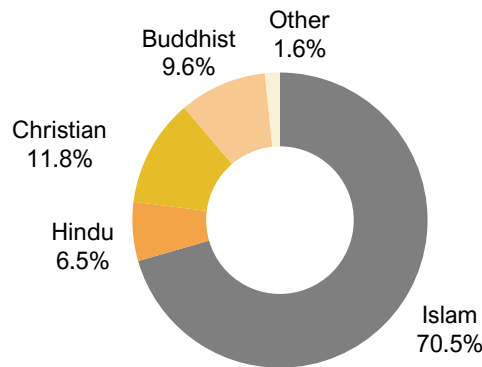


Figure 3.10: Respondents by religion

3.5 Marital Status

Slightly more than three quarters of the total sample are married (77.6 percent) while widowed, divorced, or separated comprise 18.4 percent while 4.0 percent of the respondents were never married (Figure 3.11).

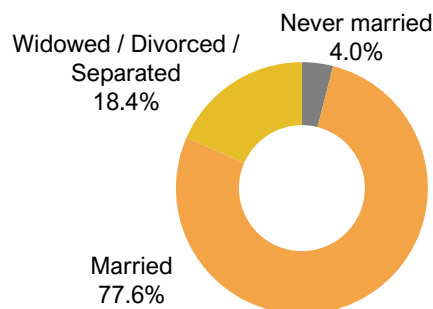


Figure 3.11: Respondents by marital status

Proportion of married respondents decreases from 85.4 percent among those aged 40-49 to 67.1 percent among respondents aged 60 and older. The proportion of respondents who are widowed or divorced/separated increases from about nine percent among those aged 40-49 to 30 percent among those aged 60 and older (Figure 3.12).

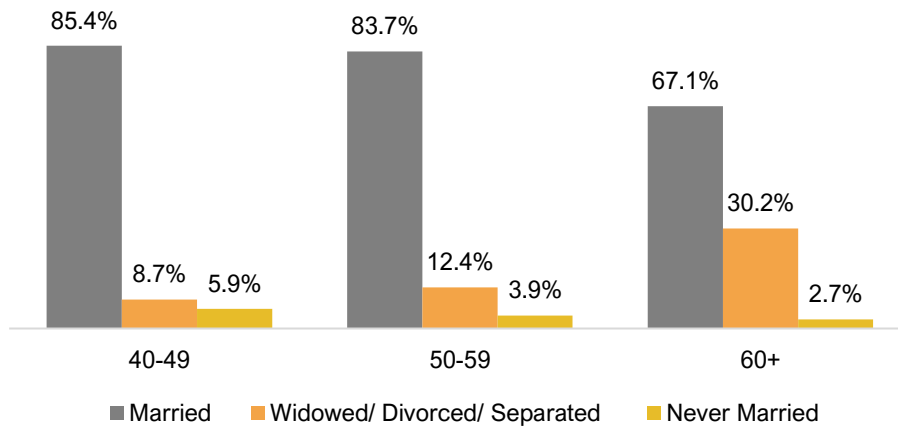


Figure 3.12: Respondents' marital status by age

Among respondents aged 60 and older, the proportion of males who are married is substantially higher than females (86 percent vs 51 percent) while the opposite is true for those who are either widowed, divorced or separated (46 percent female, 12 percent male) (Figure 3.13).



Figure 3.13: Marital status of respondents aged 60 and older by sex

4 FAMILY

4.1 Family Relationship and Support

In most cases, the relationships between older parents and their adult children remain intact over the life course through co-residence, contact, care, support, and assistance that are exchanged between them. These exchanges provide the foundation of sustainable bonding and reciprocal obligation, an important element in times of need especially so in the context of the wellbeing of older adults in later years (Kim, et al., 2015; Abdul Aziz and Yusooff, 2012; Silverstein and Giarrusso, 2010; Swartz, 2009; Antonucci et. al., 2004; Davey et al., 2004). For example, Abdul Aziz and Yusooff (2012) stressed on the importance of family and kinship network in strengthening intergenerational relationships.

One of the measures of intergenerational relationships is co-residence which is captured by the question on living arrangement. The living arrangement of respondents would provide useful information for detection of vulnerable groups for possible intervention. Bongaarts and Zimmer (2002) examined the living arrangement of older adults across 43 developing countries and found that co-residence with adult children is most common in Asia and that is more frequent with sons than with daughters. Studies have also shown that living arrangement of older adults is associated with their health status, wellbeing, life satisfaction and social support (Zhang, 2015; Teh, et al. 2014; Kooshlar et al., 2012).

4.2 Living Arrangement

Overall, the average family size is three members per household. It is encouraging to note that a high proportion of respondents (84.2 percent) live with their family members, majority with unmarried children. The proportion of respondents reported living with their parents is about 12 percent, similar proportion to those living with their spouses only. Majority of the remaining 4 percent who live alone comprise of female aged 60 and over. The data show that 20.3 percent of respondents live in a multigenerational household consisting of possible combinations of respondents with parents, grandparents, children, grandchildren and/or other relatives (Figure 4.1).

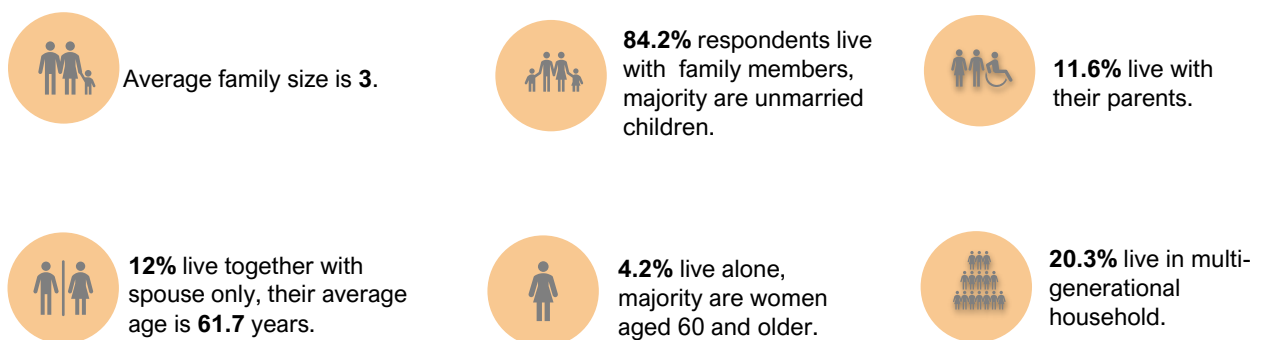


Figure 4.1: Living arrangement

Figure 4.2 shows the different proportions of members living with respondents as indicated by the size of each box. Respondents living with sons, including stepsons, and adopted sons, constitute the highest proportion (27.7 percent), followed by daughters, including stepdaughters, and adopted daughters (24.5 percent), spouses (21.6 percent) and grandchildren (11.4 percent).

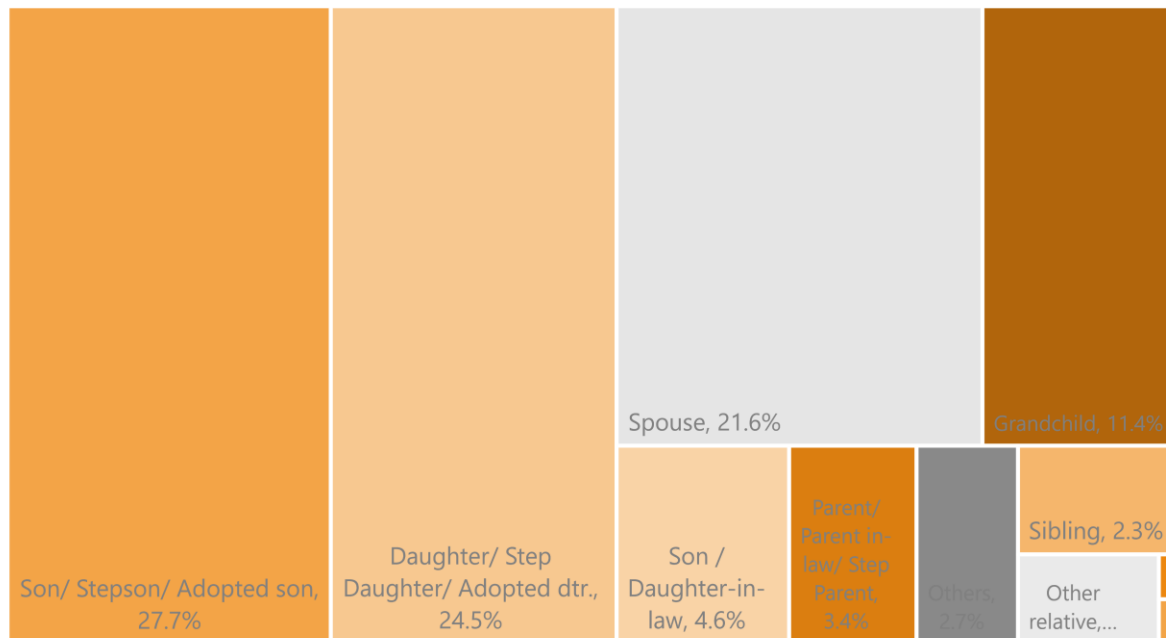


Figure 4.2: Members living in the same household

Across age groups, the proportion of respondents living with family members ranges from 71.0 percent among those aged 70-79 to 93.1 percent among those aged 40-49 (Figure 4.3). Younger respondents may have young school going children living with them while respondents in the oldest age group live with family members as many may not be able to live independently.

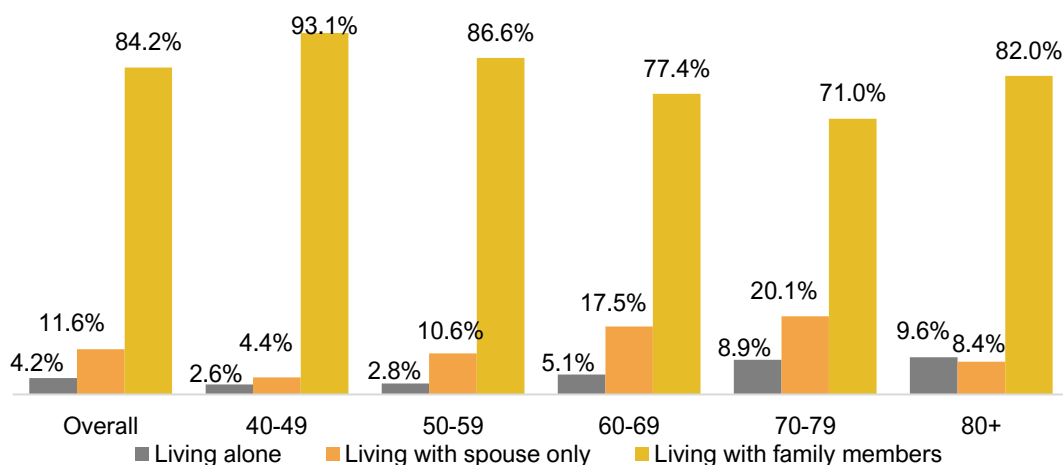


Figure 4.3: Living arrangement of respondents by age

Among respondents aged 60 and older, 60 percent of male respondents live with their spouses only compared to about 15 percent of females while the proportion of older female respondents living alone is higher than older males (8.1 percent vs 2.6 percent). Older respondents living with family members are found to be substantially higher among females (77.4 percent) than males (41.5 percent) (Figure 4.4).

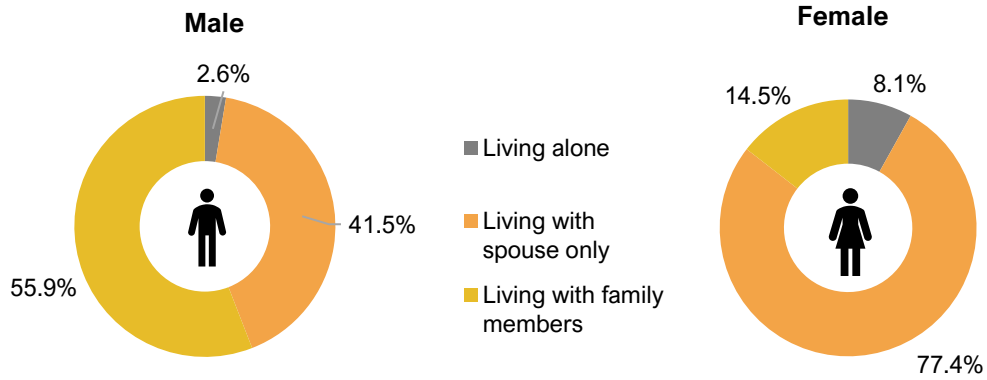


Figure 4.4: Living arrangement of respondents aged 60 and older by sex

Examining living arrangement by ethnicity, the data show that except for Chinese, more than 80 percent of the respondents of other ethnic groups reported they are living with family members. Chinese respondents register the highest proportion of living with spouses only and living alone (Figure 4.5).

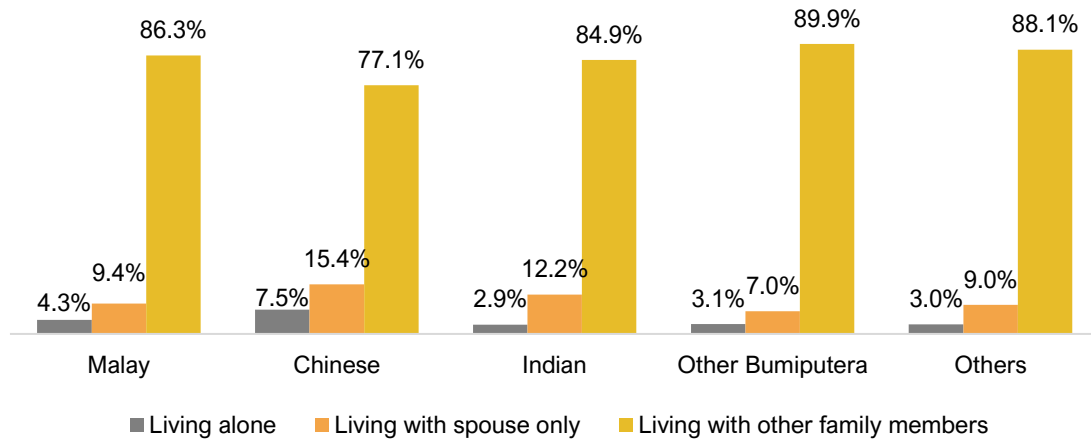


Figure 4.5: Living arrangement by ethnicity

About 11 percent of the respondents reported they live with at least one of their parents, which also include parents-in-law, stepparents and adopted parents (Figure 4.6). Majority of the respondents reported living with at least one of their children or within 5km radius from their children (Figure 4.7). About 19 percent of the respondents live with at least one of their grandchildren (Figure 4.8).

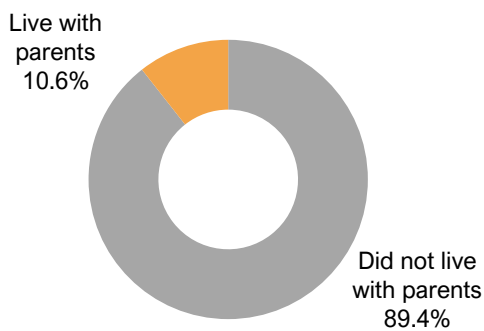


Figure 4.6: Living with parents

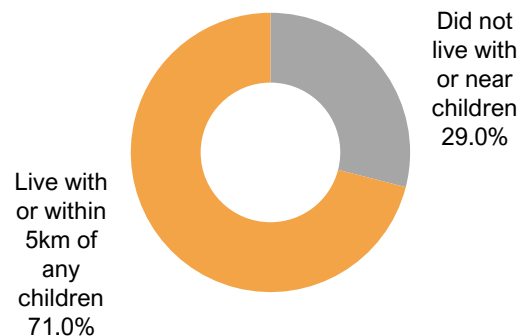


Figure 4.7: Living with or near children

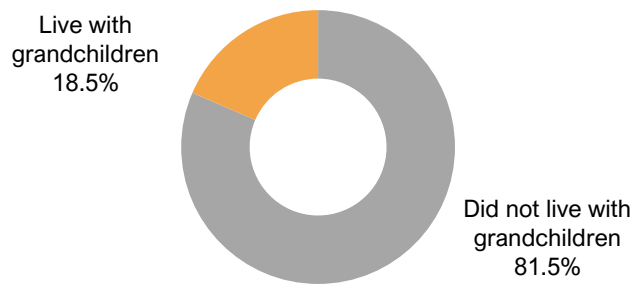


Figure 4.8: Living with grandchildren

4.3 Children

Majority of the respondents have at least two living children with more than 45 percent have between 2-4 children (Figure 4.9). Children include adopted and stepchildren. A small proportion of the respondents have 10 or more children while about nine percent do not have any children which were attributed mainly by those who were never married.

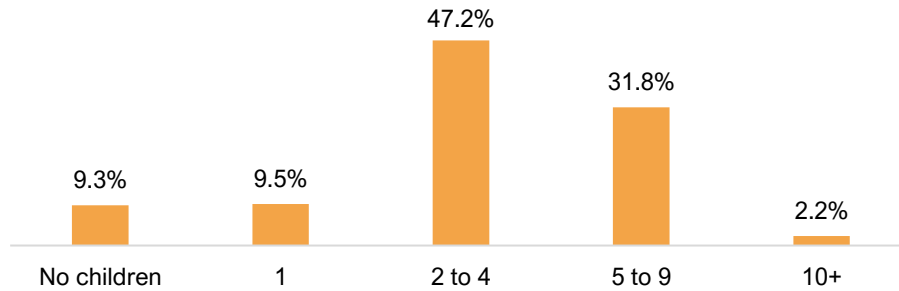


Figure 4.9: Number of living children

In Figure 4.10, it can be observed that respondents aged 40-49 have the highest proportion of their children in the age group 0 to 14 years and 15 to 24 years and that these proportions decrease substantially with increasing age of respondents. In contrast, the proportion of children aged 25 to 44 increases with the age of the respondents, the highest proportion is among respondents aged 70 years and over.

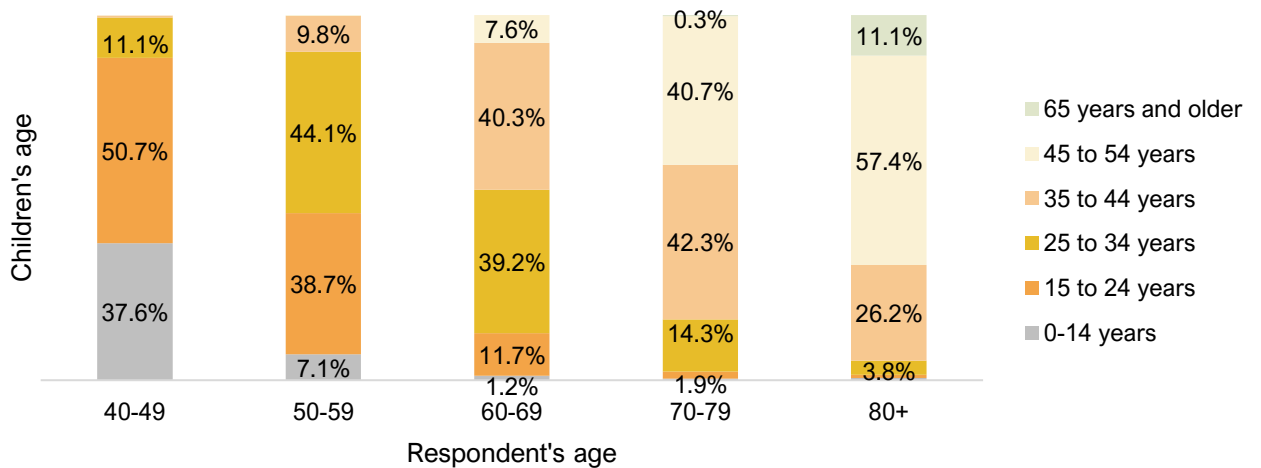


Figure 4.10: Children's age by respondents' age

Children's location with respect to where respondents live was explored and as shown in Figure 4.11. The proportion of children living with respondents is highest among respondents aged 40-49 and decreases substantially thereafter. Younger respondents are associated with school going children and still living at home. The proportion of respondents reporting that their children live within 5km from their place accounts for about four percent among those aged 40-49 and increases gradually with age reaching to about 27 percent among the oldest age group.

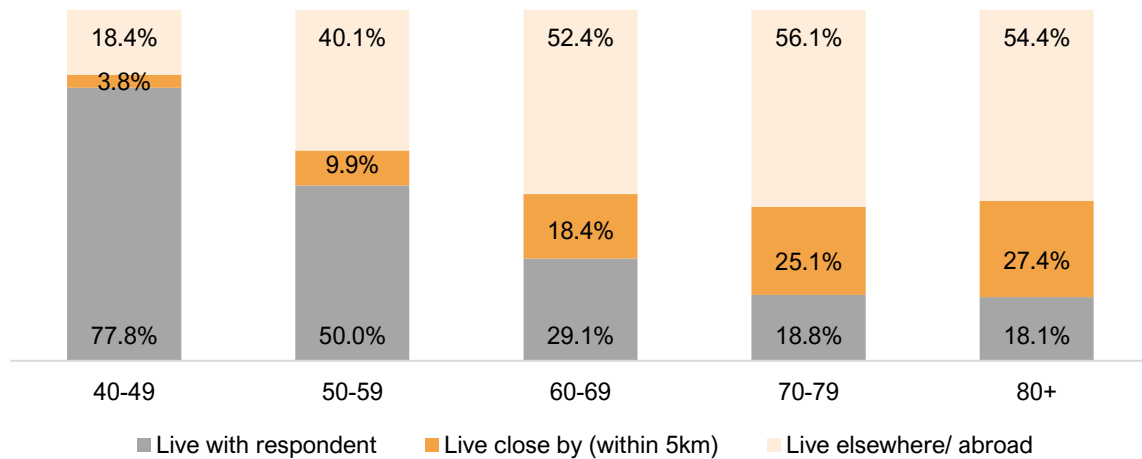


Figure 4.11: Children's location by respondents' age

Subsequently, employment status of the children reveals that among respondents aged 40-49, the highest proportion of their children are still studying in schools or colleges (63.4 percent) followed by working in any type of job (22.6 percent) (Figure 4.12). The opposite is observed for respondents aged 50-59, where the proportion of children who are still studying in schools or colleges dropped to almost 27 percent while the proportion for children working in any type of job increased to more than 50 percent. It is observed that the proportion of housewives or househusbands among respondents' children increases with age groups. A small proportion of the children are unemployed across all age groups while the proportion of children working in any job increases gradually with age of the respondents up to age 60 to 69 and decreases from age 70 and older (Figure 4.12).

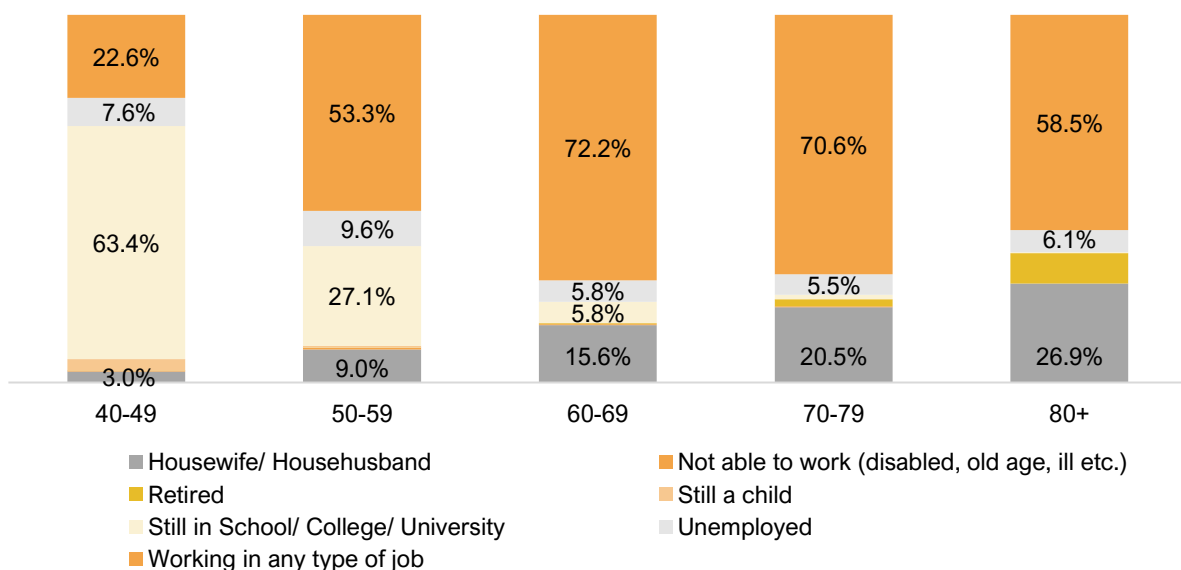


Figure 4.12: Children's employment status by respondents' age

Figure 4.13 shows that children’s level of education mirrors their parents’ education where the highest proportion of children with no schooling is observed among those respondents with no schooling and that this proportion declines with increasing level of respondents’ educational attainment. Respondents with post-secondary/tertiary education register the highest proportion of children having completed tertiary education (82.3 percent) compared to only 16 percent among respondents with no schooling.

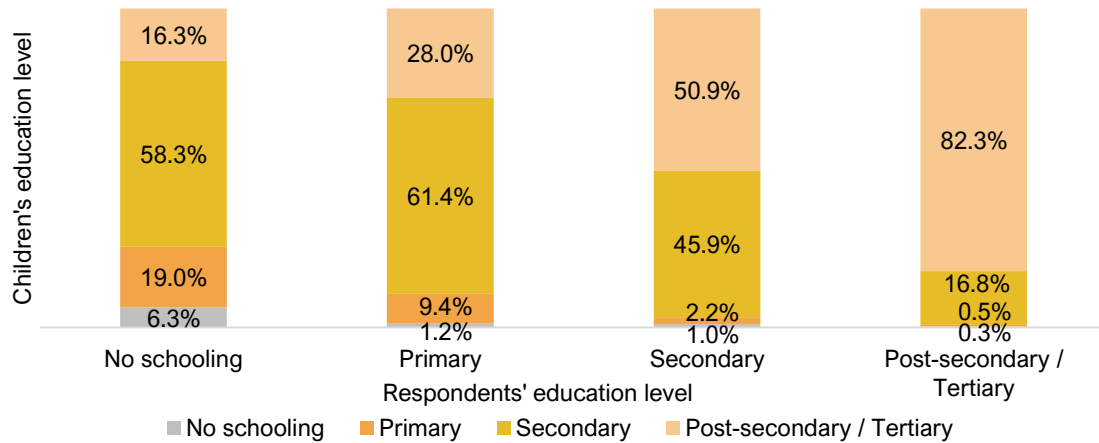


Figure 4.13: Children’s education by respondents’ education level

Among those who have children, about 95 percent of the respondents reported meeting in person at least once with any of their children and 93 percent of them reported communicating at least once with any of their children in the past one year (Figure 4.14). Mode of communication includes phone calls, WhatsApp, SMS, email, and virtual meeting.

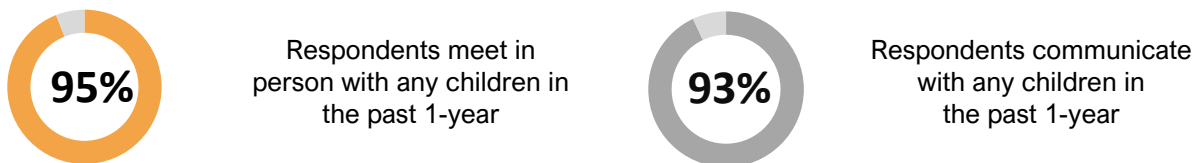


Figure 4.14: Respondents contact with children in the past 1-year

Overall, it can be observed from Figure 4.15 that more than 50 percent of the respondents across age meet their children at least several times a month. The proportion of respondents who meet their children everyday increases with age groups from 12.6 percent among respondents aged 40-49 to 19.6 percent among respondents aged 80 years and over. Only a small proportion of the respondents reported they have not met their children in the last 1 year. (Figure 4.15).

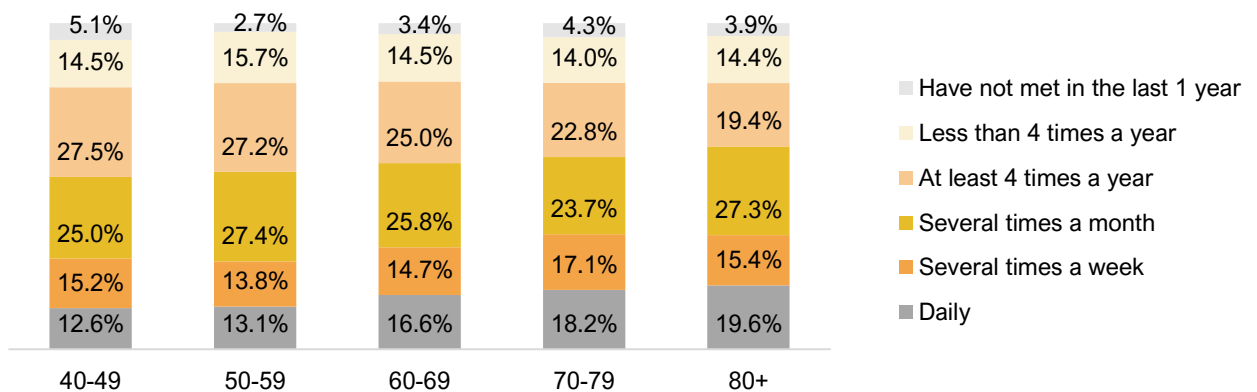


Figure 4.15: Face to face meeting with children by respondents’ age

Across ethnic groups, the proportion of respondents who meet their children daily, with the exception of Other ethnic group, is the highest among Malay (17.1 percent), followed by Other Bumiputera (14.3 percent) and lowest among Chinese (9.3 percent) (Figure 4.16). The proportion of respondents who have not met their children in the last 1 year is found highest among Indian (8.3 percent) and lowest among Malay (2.3 percent). Even though the proportion of respondents who reported to meet their children daily is the highest among the 'Other' ethnic, the number of respondents who falls into this category is small and consist only 2.9 percent of the overall sample.

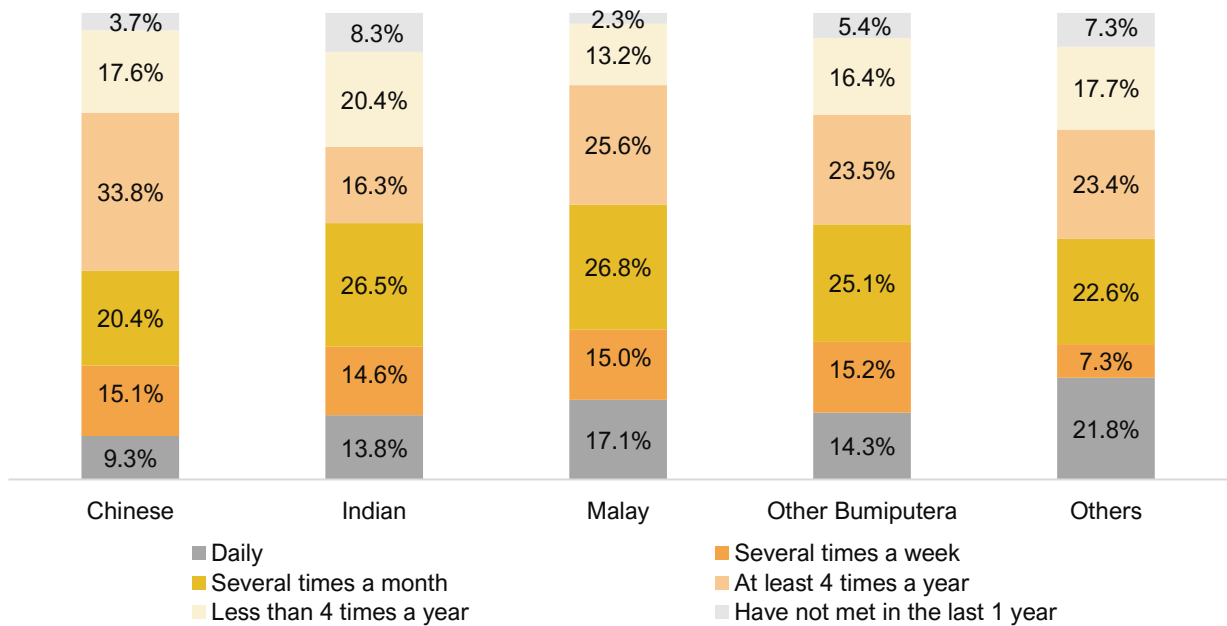


Figure 4.16: Face to face meeting with children by ethnicity

With regards to the frequency of communicating with their children, Figure 4.17 indicates that the proportion of respondents who reported doing so daily or several times a week is highest among those aged 40-49 and gradually declines with age. Respondents in the oldest age group register the highest proportion of who communicate with their children several times a month as well as those without any contact with their children in the last one year (Figure 4.17).

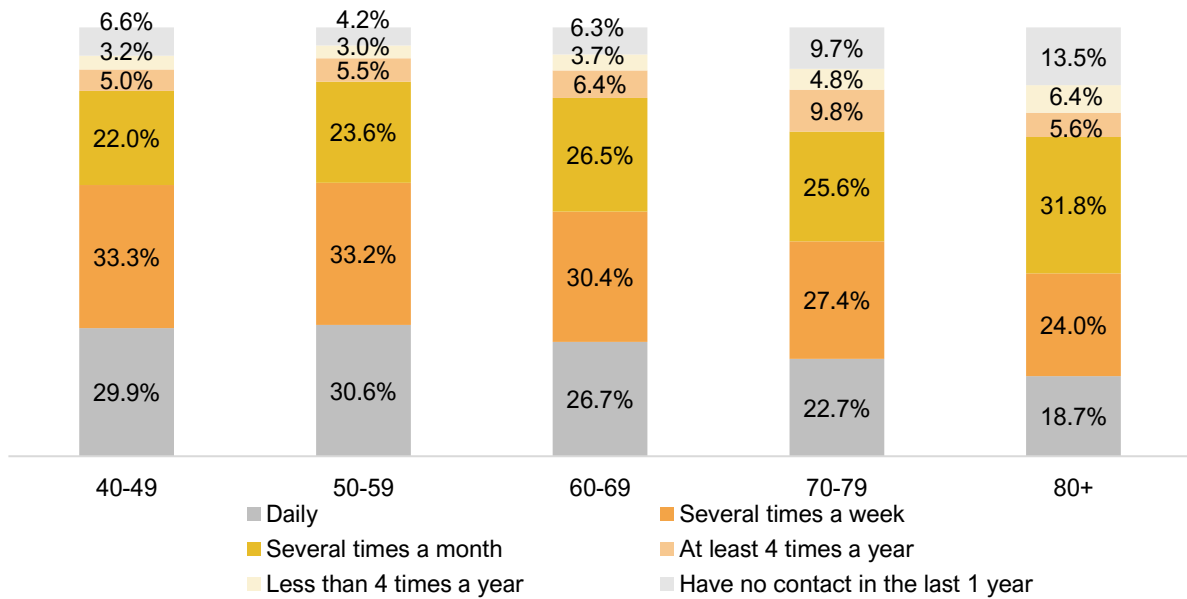


Figure 4.17: Communication with children by respondents' age

4.4 Parents

Approximately 47 percent of the respondents have at least one living parent which includes parent-in-law. Of the total living parents, 68.5 percent are either mother or mother-in-law while 31.5% are either father or father-in-law (Figure 4.18). About 81 percent of the respondents reported meeting in person at least once with any of their parent(s) and 76 percent of them reported communicating at least once with any of their parents in the past one year (Figure 4.19).



Figure 4.18: Living parents and parents-in-law

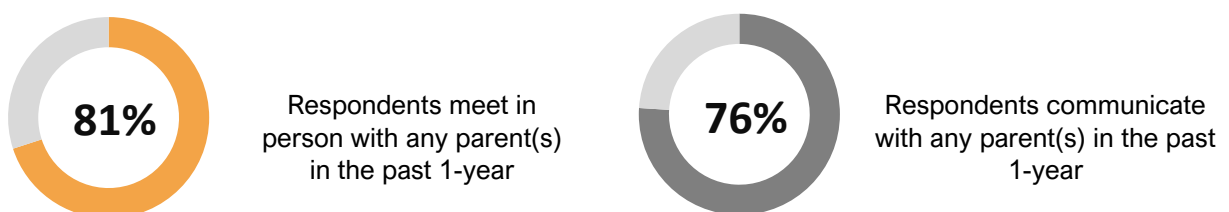


Figure 4.19: Respondents contact with parent(s) in the past 1-year

4.5 Support to and from Children

MARS provides the data needed to understand family and household structures and intergenerational transfers. The questionnaire includes both the financial and non-financial support to and from children as well as support to and from parents.

Grundy and Henretta (2006) found that about one-third of women aged 55-69 in England and in the United States reported providing support to ascending and descending generations, simultaneously. In Europe, intergenerational financial transfers are mainly from parents to children (Scodellaro et al., 2012; Fritzell & Lennartsson, 2005) while the opposite is true in many Asian countries (Wu et al., 2018; Lee et al., 2014; Agree et al., 2002).

Studies have also shown the relationships between intergenerational transfers and older adults' health, economic and psychological wellbeing, and life satisfaction (Wu et al., 2018; Diaz-Venegas et al., 2017; Ng and Hamid, 2012). Wu et al. (2018) reported the inverse relationship between financial transfers from children and depressive symptoms among mid-aged and older Chinese in China. Similarly, Ng and Hamid (2012) found that older Malaysians who provide to and receive support from children have significantly higher life satisfaction than their counterparts.

Overall, respondents reported that they both received and gave financial and non-financial support to their children. The proportion of respondents giving support to their children is about the same as those who received support from their children (70.1 percent and 69.7 percent, respectively). However, respondents who received financial support from their children is slightly higher (57.0 percent) than those who gave financial support to their children (50.9 percent) (Figure 4.20).

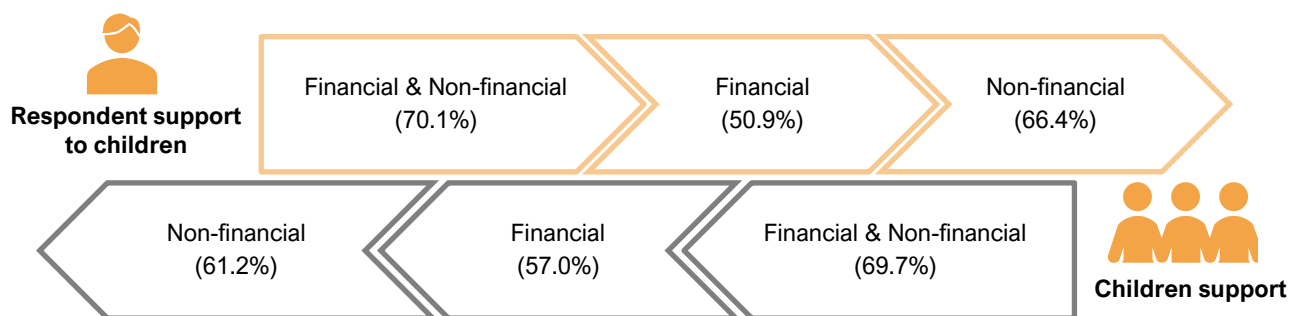


Figure 4.20: Support to and from children

Among respondents who received financial support from their children, 85.0 percent reported receiving it monthly with a median amount of RM150. Similarly, majority of the respondents who gave financial support to their children do so monthly (87.1 percent) with a median amount of RM100.

In terms of the amount, the data indicate 50 percent of the respondents received a total amount of at least RM3,000 from their children in the past year while 50 percent of them gave a total amount at least RM3,000 to their children (Figure 4.21).

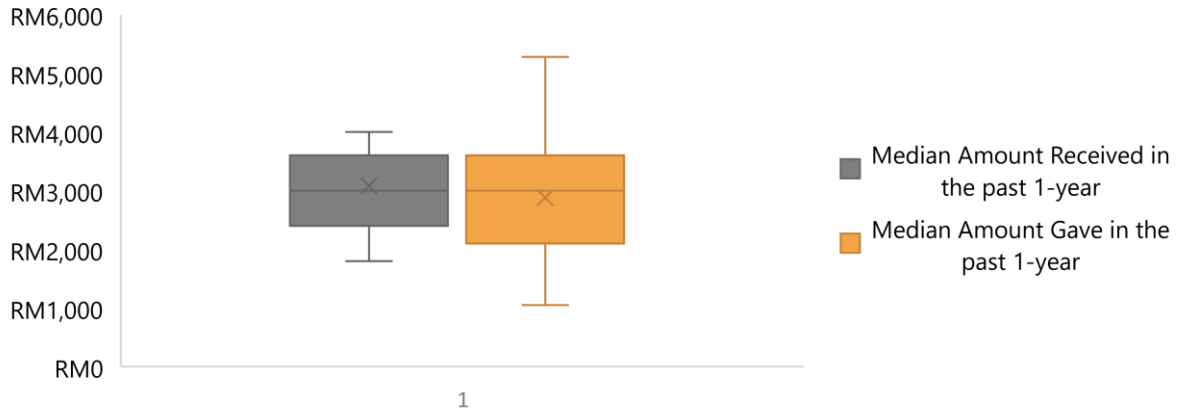


Figure 4.21: Total financial transfer from and to children in the last 1-year

Further examination of the financial support received from and given to children, Figure 4.22 shows that while there are fluctuations, the amount of financial support received slightly increases with age and the opposite is true of the amount of financial support given to children. The difference between the amount received and the amount given (net transfer) is negative from age 40 up to age 54 and increases to positive from age 55 onwards.

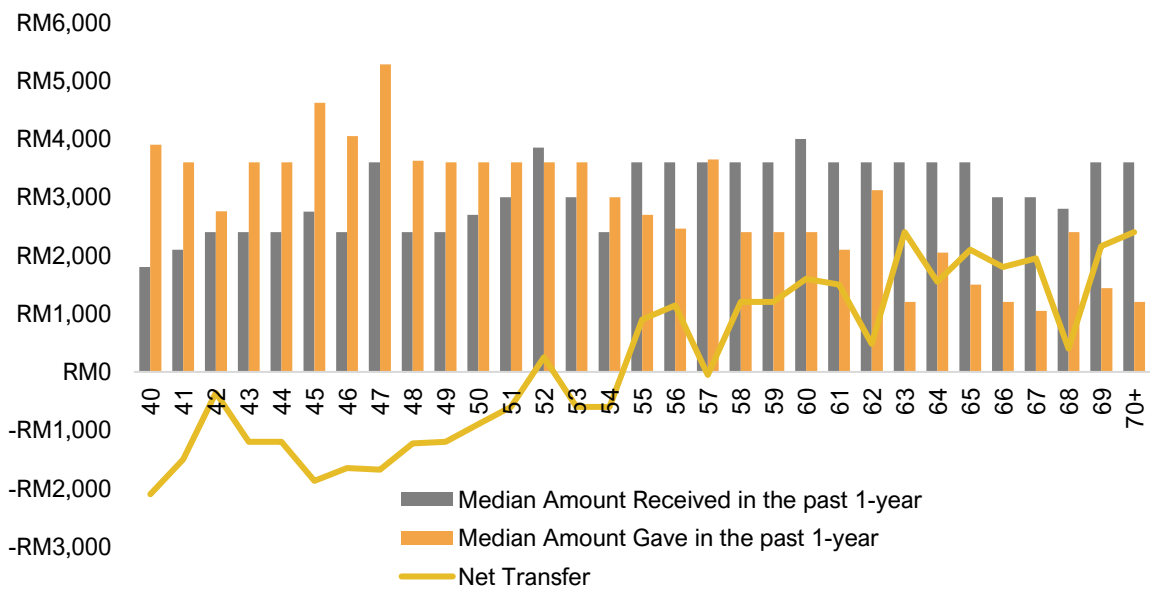


Figure 4.22: Amount of financial transfer from and to children in the past 1-year by age

Figure 4.23 shows generally women received a slightly higher median amount from their children compared to male across all ages except at age 41, 44 and 49. In terms of financial support given to children, the trend indicates that men gave a slightly higher median amount to their children compared to women across all ages, except at age 64 and 68 (Figure 4.24).

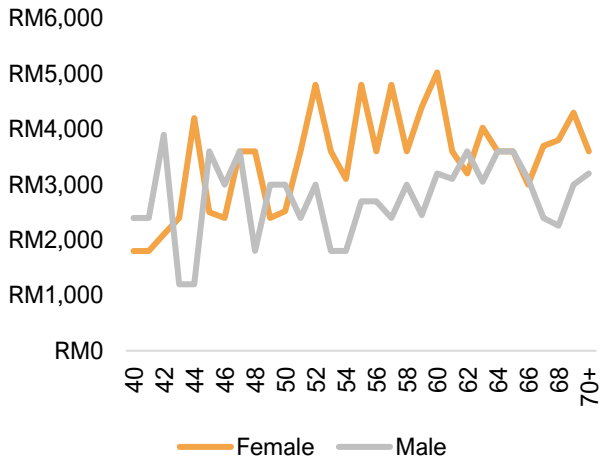


Figure 4.23: Median amount received from children in the past 1-year by sex

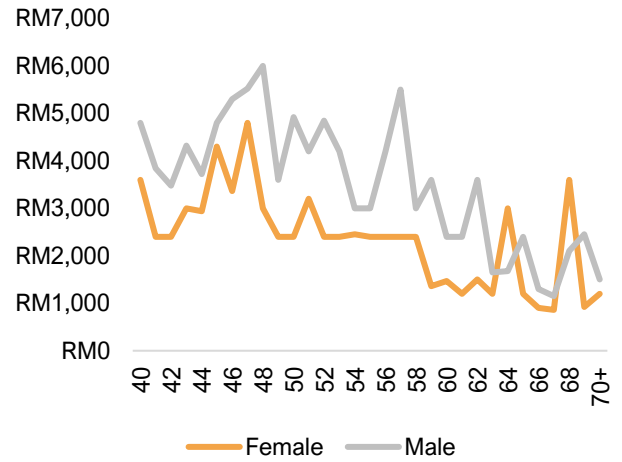


Figure 4.24: Median amount given to children in the past 1-year

In terms of non-monetary support, food, and grocery items account for the highest proportion that respondents received from their children followed by help with housework, advice or companionship and clothing or household items (Figure 4.25).

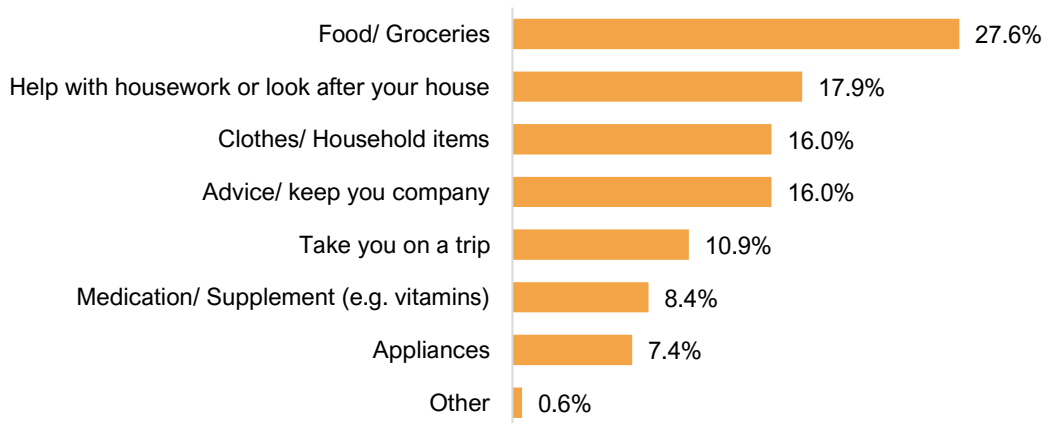


Figure 4.25: Non-monetary support respondents received from children (multiple responses)

Advice and keeping children company top the list of non-financial support that the respondents gave their children followed by food or groceries, clothes or household items and appliances (Figure 4.26).

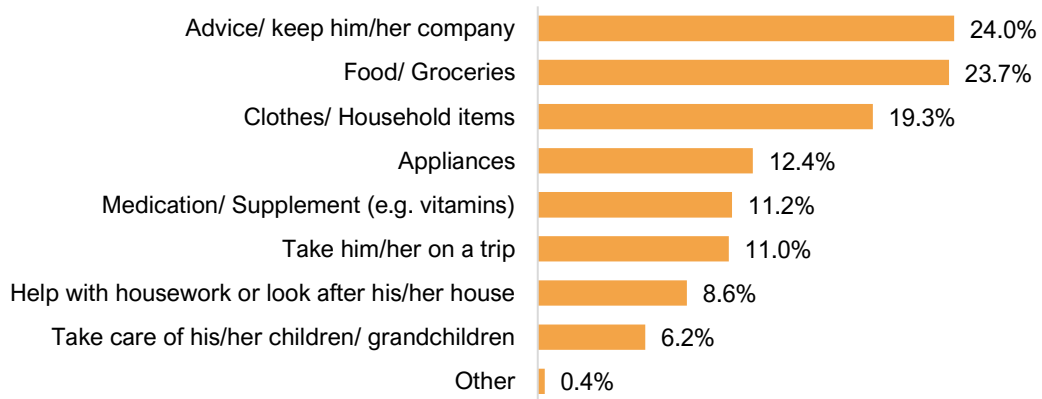


Figure 4.26: Non-monetary support respondents gave to children (multiple responses)

4.6 Support to and from Parents

A very small proportion (2.4 percent) of the respondents admitted receiving financial support from their parents while 33 percent reported that they gave financial assistance to their parents (Figure 4.27).

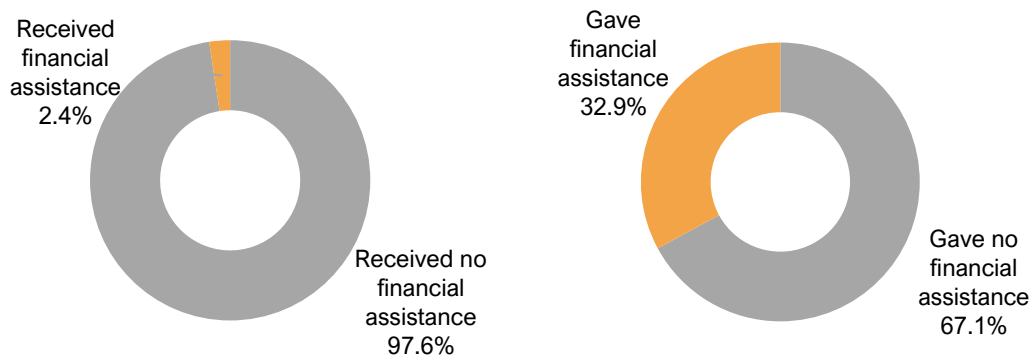


Figure 4.27: Financial assistance received from and gave to parents

4.7 Spousal Relationship

Questions related to spousal relationship were asked to married respondents. Majority of the respondents have positive social support about their spouses. Respondents claimed they can often/always talk about their worries with their spouses (68.9 percent) and that their spouses often/always understand how they feel about things (77.0 percent). However, about 15 percent of them admitted that their spouses often or always make too many demands (Figure 4.28).

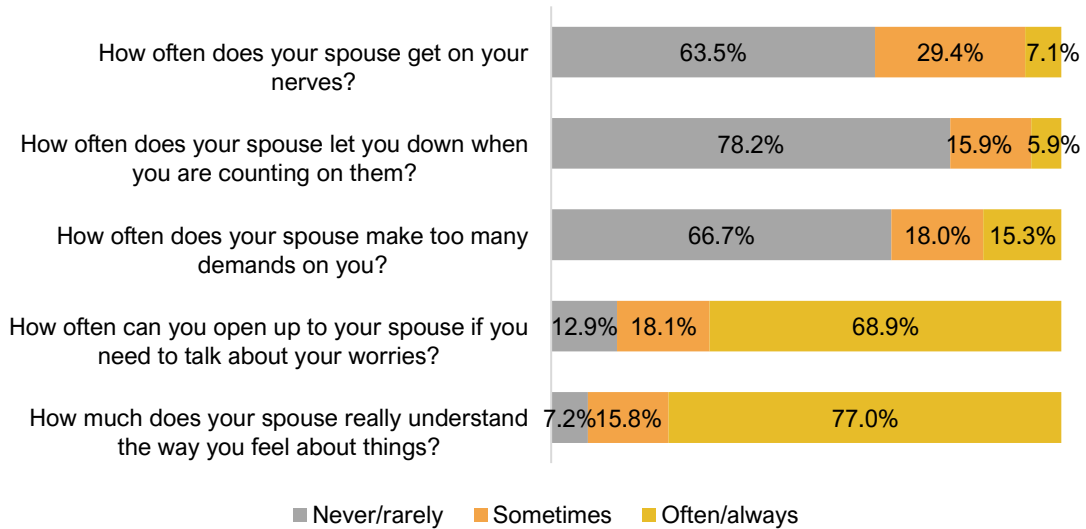


Figure 4.28: Spousal social support

Comparing across gender, male respondents reported a higher proportion than female respondents that their spouses understand the way they feel about things (82.7 percent and 71.5 percent respectively) and that they can always talk about their worries with their spouses (male 70.6 percent, female 67.4 percent). Meanwhile, a higher proportion of the male respondents claimed that their spouses often let them down compared to female respondents (male 4.3 percent, 7.5 percent) (Figure 4.29).

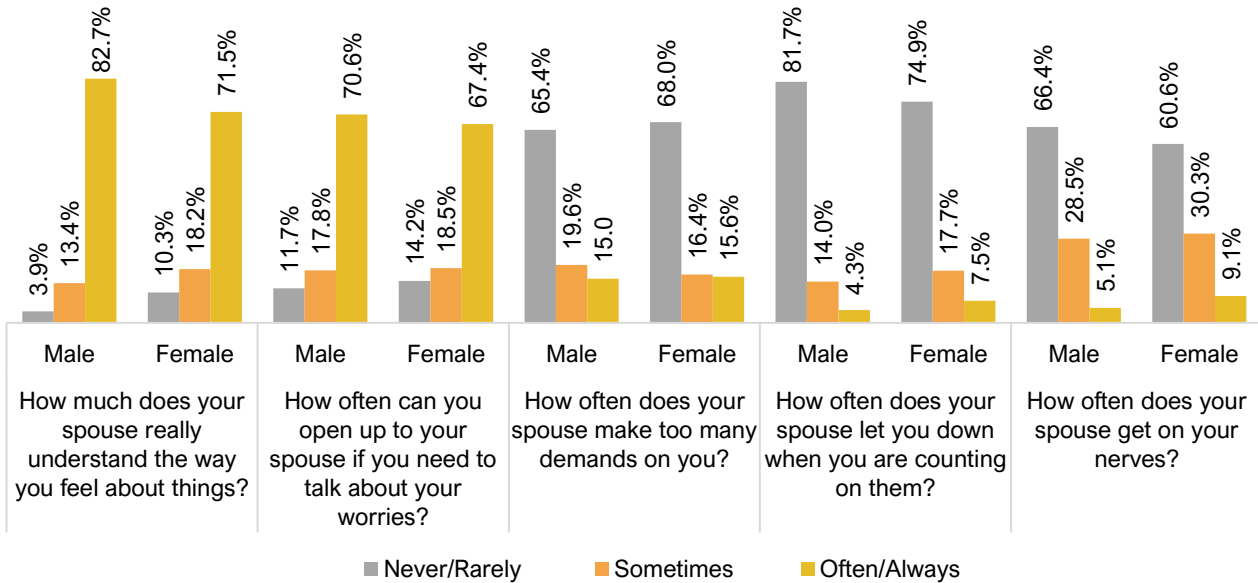


Figure 4.29: Spousal social support by sex

As shown in Figure 4.30, majority of the respondents reported they have a close relationship with their spouses with 75 percent reported a very close relationship. Only 3.5 percent reported being not close with their spouses. A higher proportion of male respondents reported having a close relationship with their spouses compared with female respondents (98 percent vs 95 percent) with male reported having a higher proportion of a very close spousal relationship at 78.3 percent compared to 71.6 percent of female respondents (Figure 4.31).

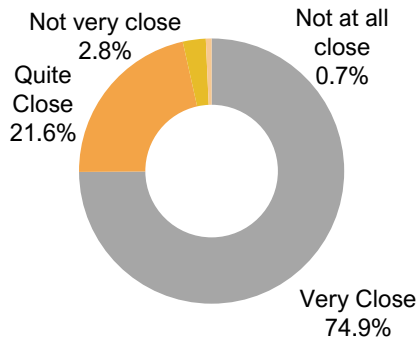


Figure 4.30: Relationship with spouse

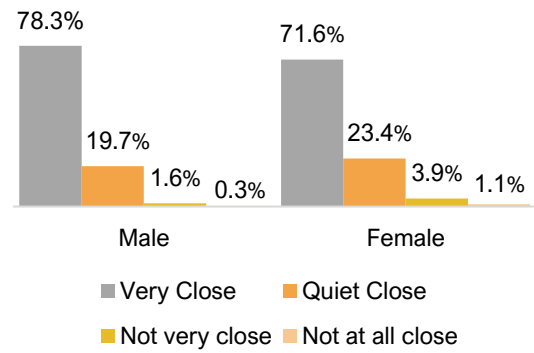


Figure 4.31: Relationship with spouse by sex

When asked about who has the final say in decisions about major family issues, about 62 percent of the respondents reported having equal say while 22 percent admitted that they always or mostly had the final say (Figure 4.32).

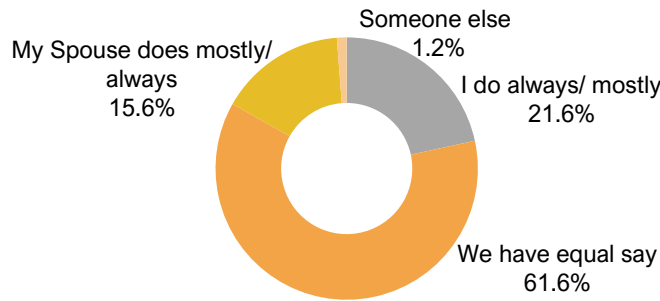


Figure 4.32: Decision making in major family issues

Examining decision making in major family issues across sex of respondents, a slightly higher proportion of male reported that they have equal say than female (63.2 percent vs 60.0 percent). Respondents who claimed that they were the ones who always or mostly have the final say is also higher among male than female (28.2 percent and 15.1 percent, respectively) (Figure 4.33).

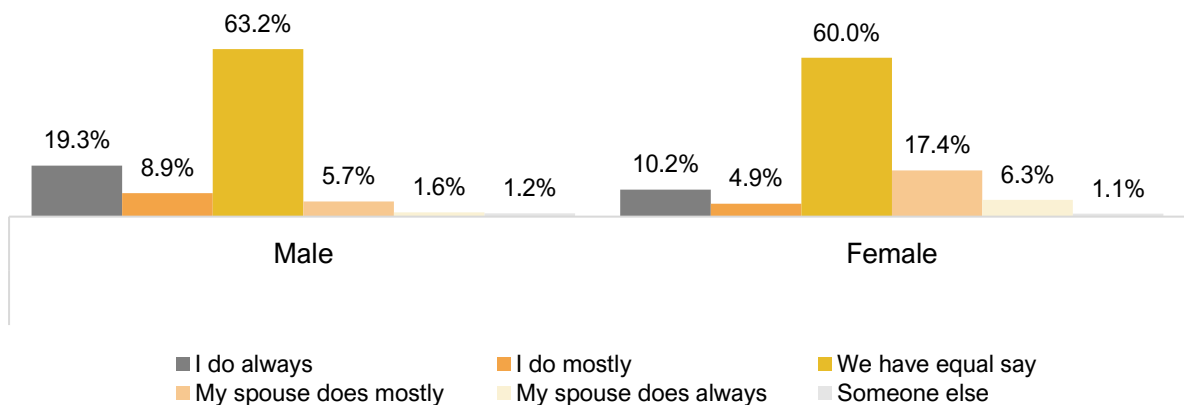


Figure 4.33: Decision making in major family issues by sex

5 EMPLOYMENT

One major concern of ageing is the fact that there will be more older individuals who are out of employment. This will affect their economic wellbeing, especially when they do not have enough retirement savings and become more dependent on the family (Tung and Cameau, 2012; Abd Samad & Mansor, 2013; Idayuwati Alaudin et al., 2016).

MARS collects information on work, employment history and characteristics as well as retirement planning and life in retirement.

5.1 Working Status

Overall, 38.9 percent of the respondents are still working. 'Working' comprises respondents involved in any economic activity while those who are not working include homemakers, retirees, disabled, unemployed and temporarily not working.

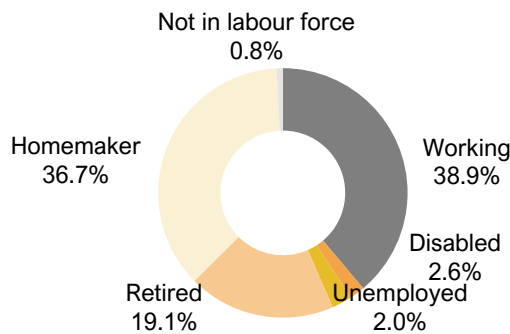


Figure 5.1: Current working status

Expectedly, the proportion of respondents who are still working decreases with age from 60.1 percent among those aged 40-49 to 21 percent among respondents aged 60-69 and 3.1 percent among those aged 80 and over (Figure 5.2).

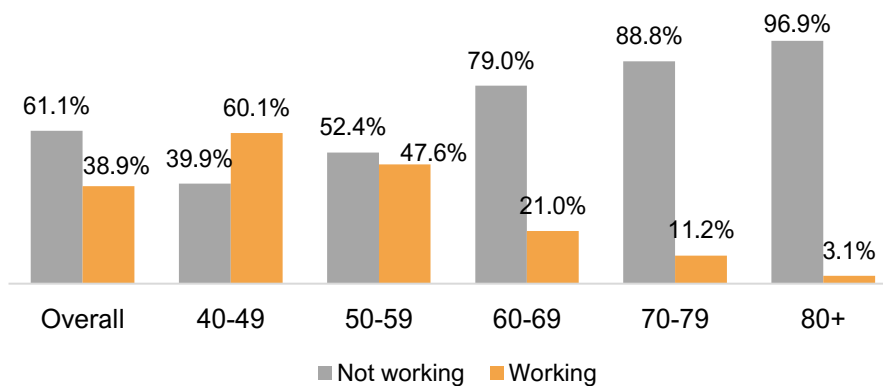


Figure 5.2: Current working status by age

The proportion of respondents who are working is higher among male than female (Figure 5.3). Majority of females who are not working are homemakers.

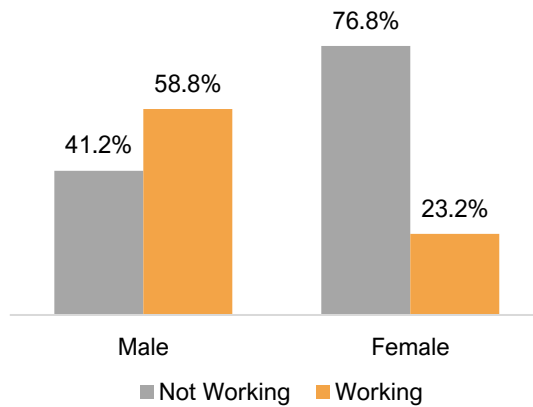


Figure 5.3: Working status by sex

Figure 5.4 shows the different proportions of respondents who are not working as indicated by the size of each box. 'Not Working' comprises those who are homemakers, retirees, disabled, unemployed and temporarily unemployed. A homemaker is someone who have never work, while those who have worked before but no longer working is considered as 'Retired'.

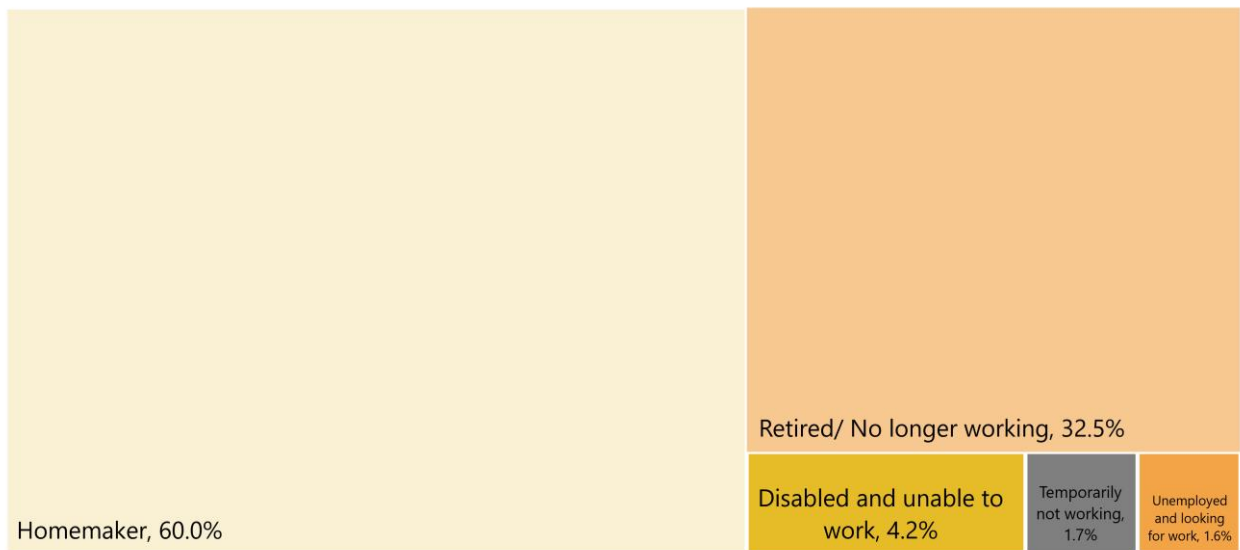


Figure 5.4: Composition of respondents who are not working

Among respondents who are still working, majority work in agricultural sector (22.9 percent) followed by elementary occupation (18.7 percent), service and sales worker (15.3 percent), craft and trades worker (9 percent), clerical support worker (8.6 percent) and professional (8.0 percent). Data indicate that a high proportion of respondents are in low-paying jobs and occupation (Figure 5.5).

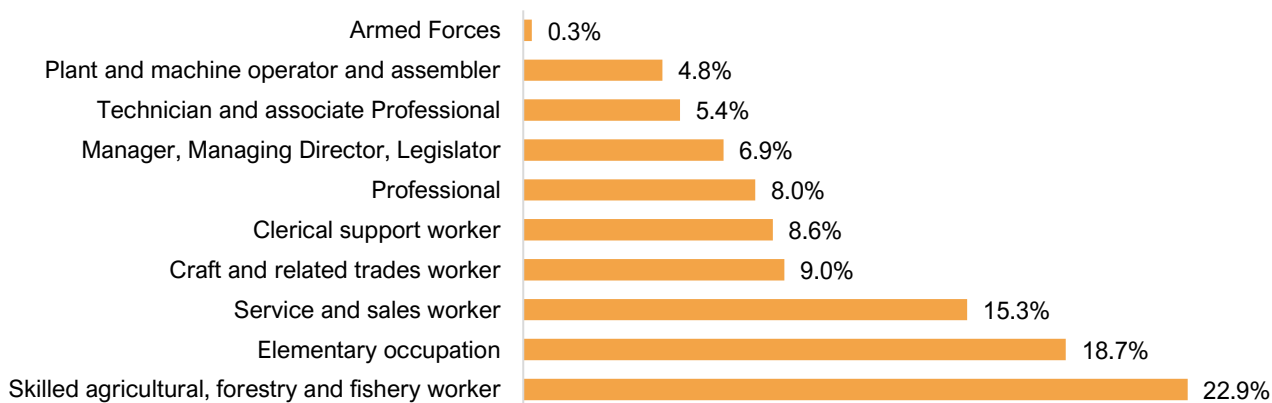


Figure 5.5: Occupation among working respondents

Examining employment of respondents by industry sector, Figure 5.6 shows the largest proportion is in the agriculture and related sector followed by accommodation and food services, manufacturing, education and transport and storage.



Figure 5.6: Respondents who are working by industry sector

Among respondents who work for someone else, majority reported private organization as their employer (68 percent) while those working in Government account for 22 percent (Figure 5.7).

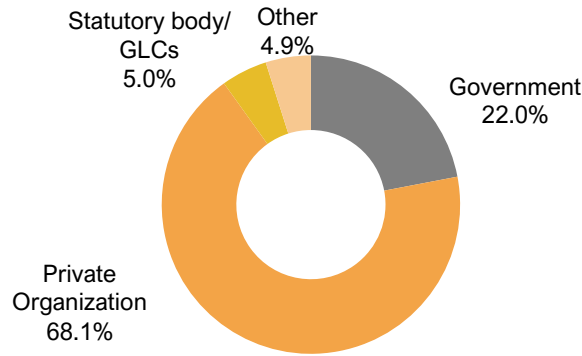


Figure 5.7: Who do you work for if working for someone else

Average number of working hours per week decreases gradually with age from about 45 hours per week among respondents aged 40-49 to 35 hours among those aged 60-69 (Figure 5.8). It is worth noting that working respondents aged 80 or over reported on average 20 hours per week. Average work hours per week is only slightly higher among male than female (43 hours and 40 hours, respectively) (Figure 5.9).

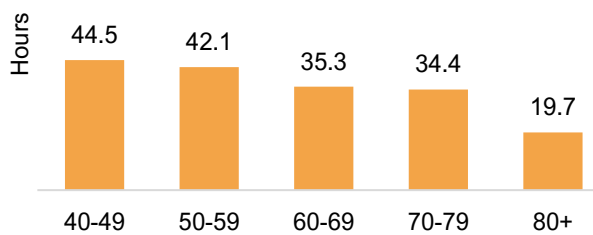


Figure 5.8: Average working hours per week by age (In hours)

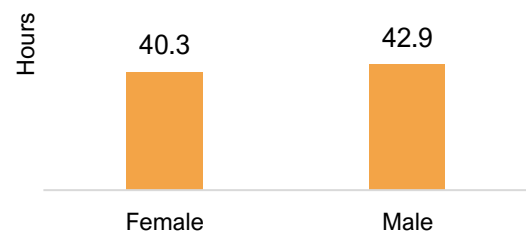


Figure 5.9: Average working hours per week by sex (In hours)

5.2 Job Characteristics

MARS questionnaire included questions on the nature and characteristics of respondents' jobs (Figure 5.10). About 80 percent of the respondents reported their jobs always require concentration and good eyesight while about 70 percent of them admitted that they always deal and communicate with people. 60 percent of j always require lots of physical effort while 50 percent require stooping/kneeling/crouching. Respondents whose jobs always require heavy lifting account for about 40 percent of the total number of working respondents.

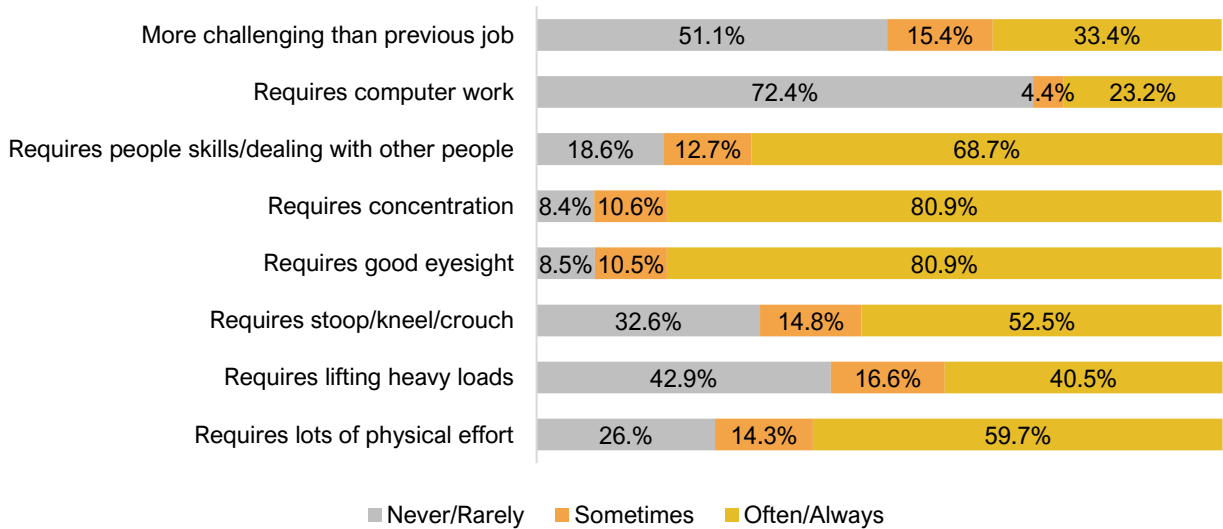


Figure 5.10: Overall job characteristics

The proportion of respondents who reported that their jobs always require physical effort increases slightly from about 56 percent among respondents aged 40-49 to about 66 percent among those aged 70 and over (Figure 5.11).

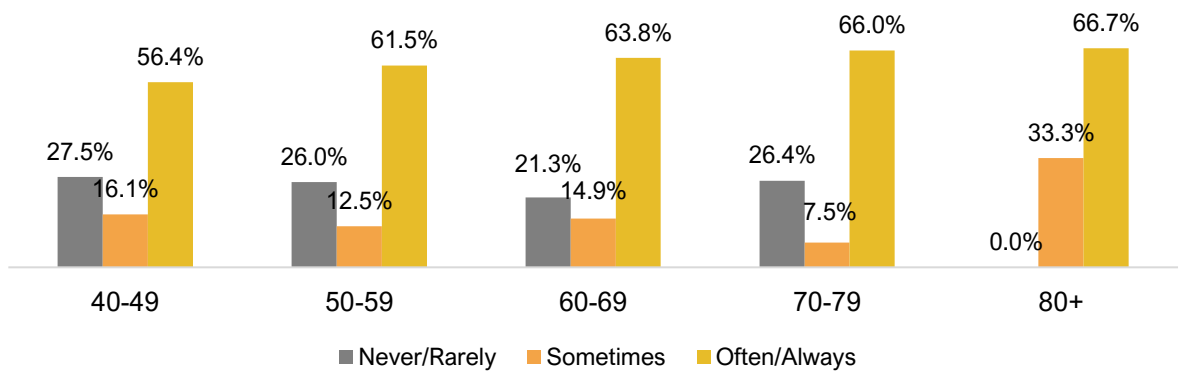


Figure 5.11: Jobs requiring physical effort by age

Jobs that always require lifting heavy loads were reported highest among respondents aged 60-69 (44 percent), followed by respondents aged 50-59 and 40-49 (40 percent) (Figure 5.12).

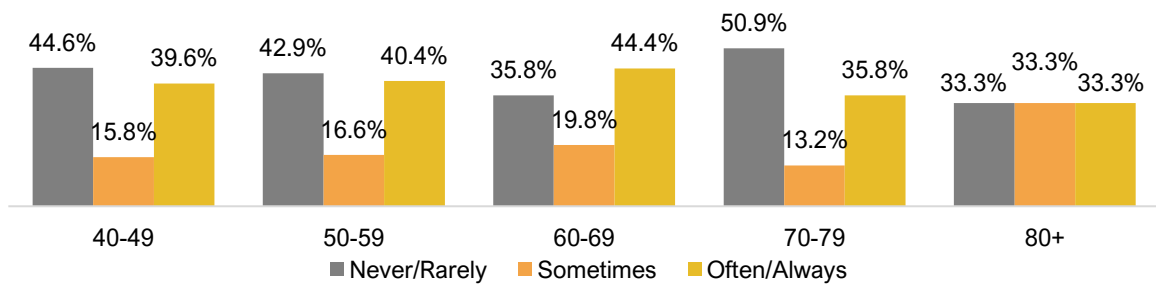


Figure 5.12: Jobs requiring lifting heavy loads by age

Respondents aged 80 and over register the highest proportion of jobs that always require stooping, crouching, or kneeling followed by respondents aged 60-69 and 70-79 (Figure 5.13).

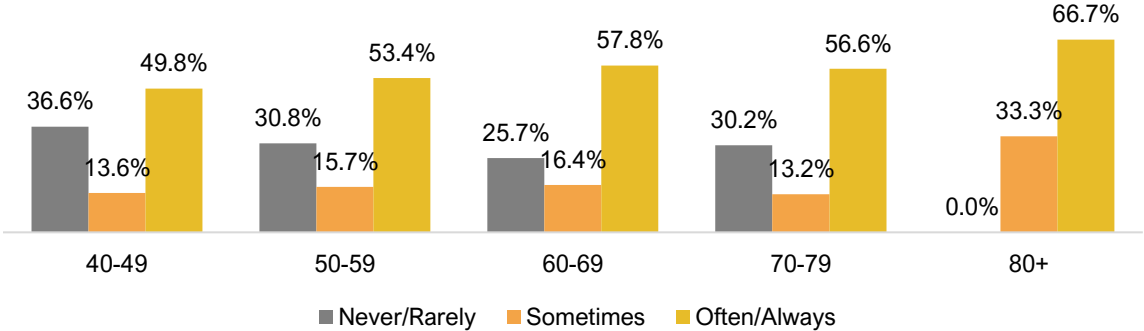


Figure 5.13: Jobs requiring stooping/crouching/kneeling by age

Jobs that always require good eyesight is highest among respondents aged 40-49 (82 percent) with little difference between respondents aged 50-59 and 60-69 but decline slightly among those aged 70 and over (Figure 5.14).

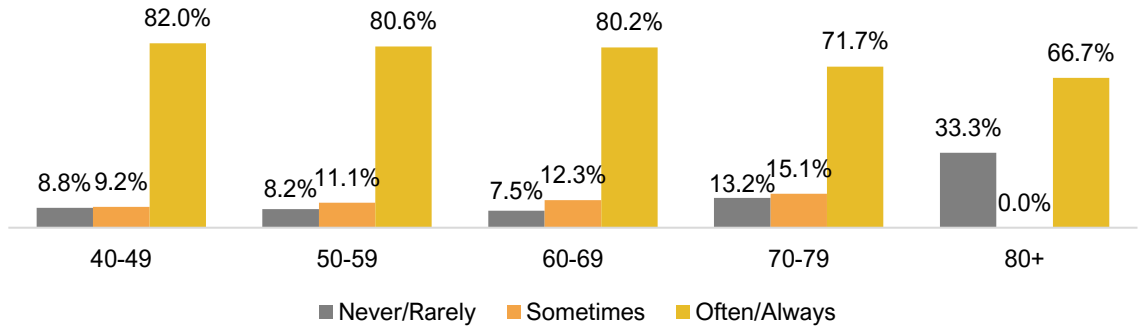


Figure 5.14: Jobs requiring good eyesight by age

A high proportion of respondents aged 40-69 reported that their jobs always require concentration. This proportion drops slightly among respondents aged 70-79 and continues to decline among those aged 80 and over (Figure 5.15).

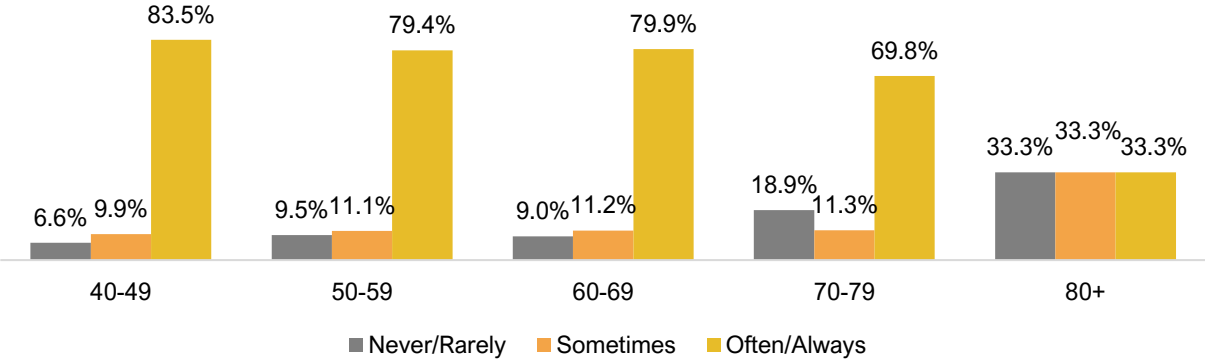


Figure 5.15: Jobs requiring concentration by age

The proportion of respondents whose jobs always require communication and dealing with other people is showing a declining trend as age increases (Figure 5.16). This proportion is more than 70 percent among respondents aged 40-49, about 62 percent among respondents aged 60-69 and slightly more than 30 percent among those aged 80 and over.

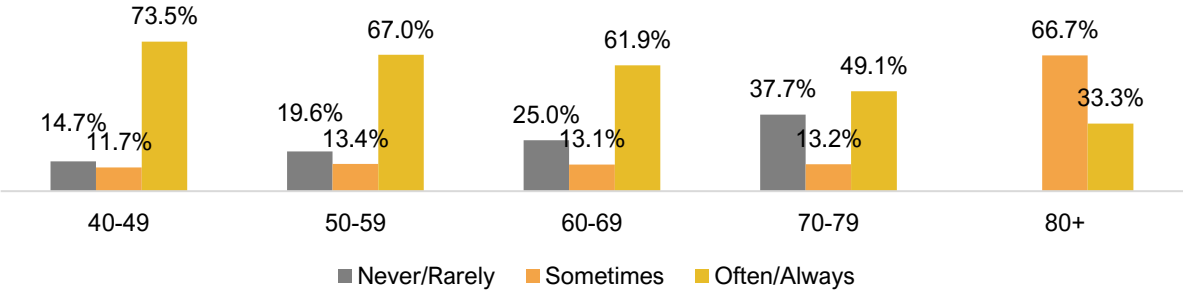


Figure 5.16: Jobs requiring communication and dealing with other people by age

It is clear from Figure 5.17 that the jobs that MARS respondents are involved in do not require any computer work. The proportion of respondents whose jobs always require computer work declines from about 30 percent among respondents aged 40-49 to less than 10 percent among those aged 60-79.

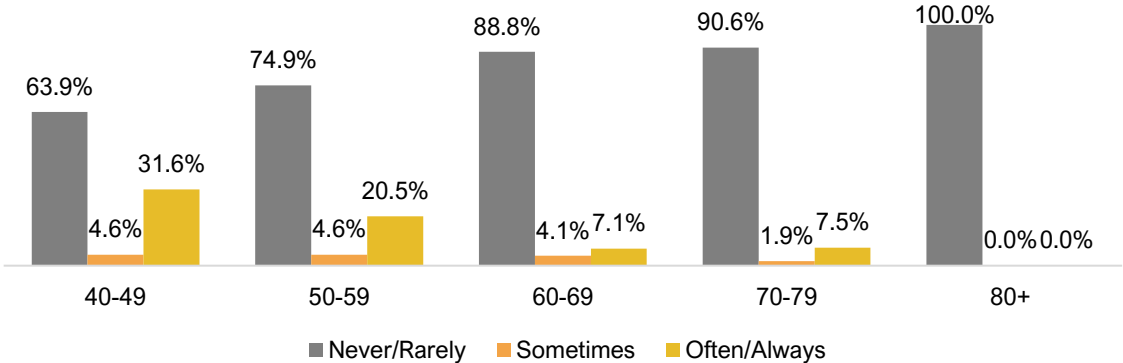


Figure 5.17: Jobs requiring computer work by age

Respondents who admitted that their current jobs are always more challenging than their previous jobs account for nearly 40 percent among those aged 40-49, about 32 percent among respondents aged 50-59 and the oldest age group, and slightly more than 20 percent among respondents aged 60-79 (Figure 5. 18).

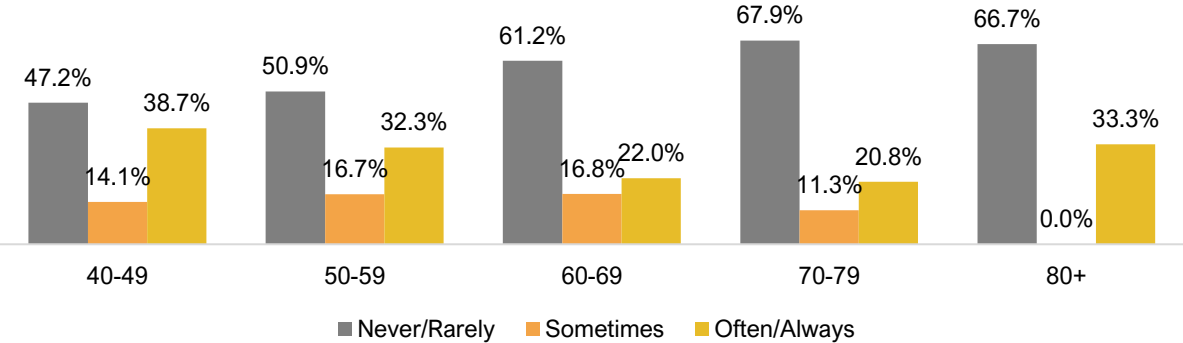


Figure 5.18: Jobs are more challenging than previous work by age

5.3 Job Satisfaction

Several questions were asked regarding job satisfaction. Overall, more than 80 percent of the respondents were satisfied with their current jobs. About 80 percent enjoyed going to work and were satisfied with the environment. While about 65 percent of the respondents agreed that they have good job security, nearly half agreed that they received adequate salary. Respondents who admitted that their jobs are stressful account for about 35 percent while 30 percent agreed that seniority is important. Slightly more than 10 percent agreed that their jobs are less demanding or paid less and that older workers are under pressure to retire (Figure 5.19).

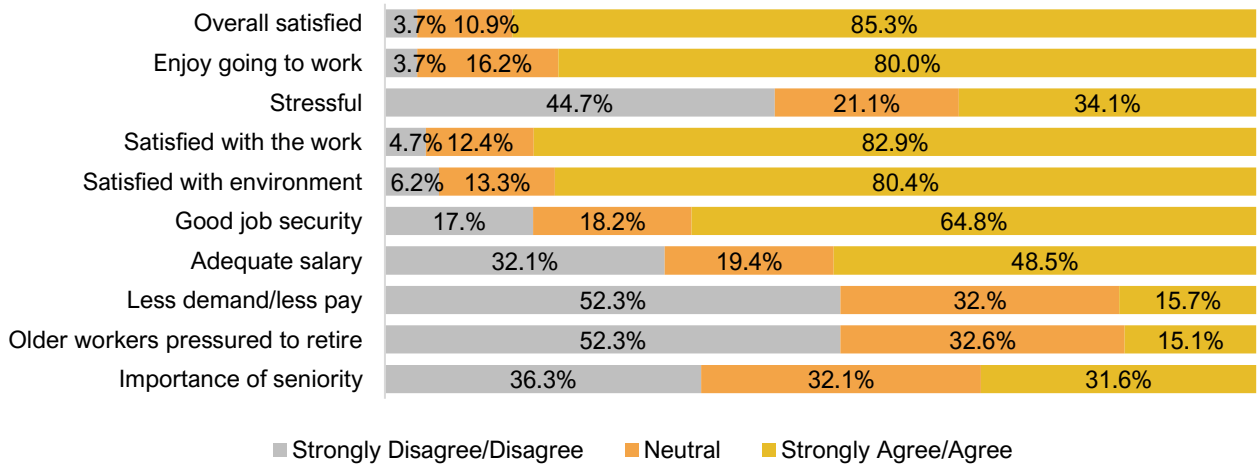


Figure 5.19: Respondents' opinions on job satisfaction

5.4 Retirement Plan

On the question of how long respondents expected to stay in their current job, a high proportion of them across all age groups reported more than three years. Among the oldest age group, about 67 percent reported they expected to stay in their current job more than 3 years while the remaining 33 percent will stay between one to two years. The proportion of respondents who want to resign and stop working altogether account for about 5 percent among those aged 40-59 and increases gradually with age, reaching slightly more than 10 percent among respondents aged 70-79 (Figure 5.20).

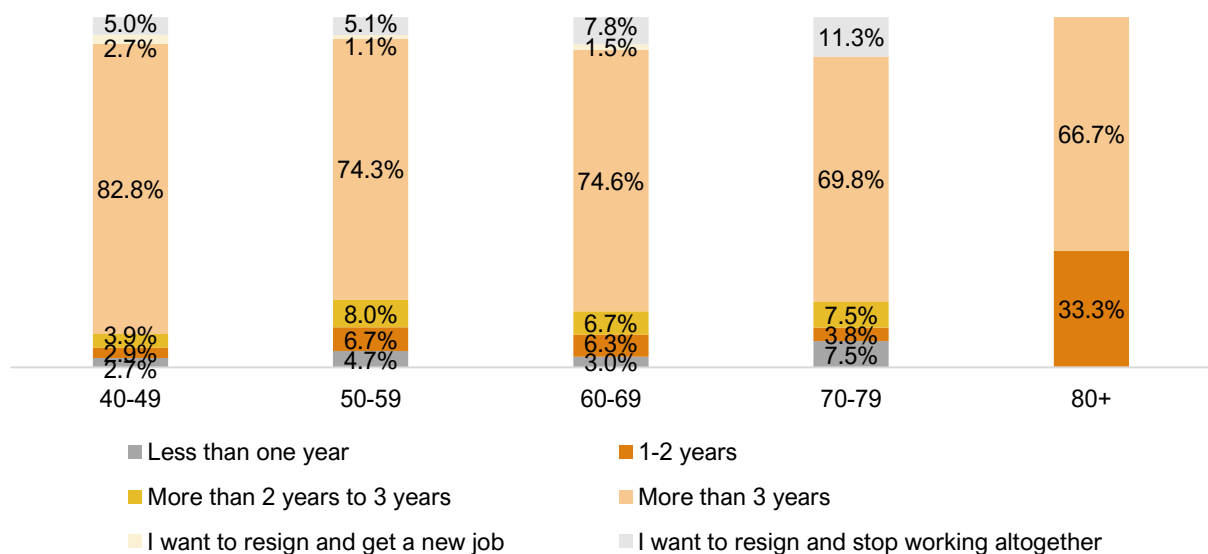


Figure 5.20: Expected to stay in current work by age

Overall, 82.0 percent will want to continue to work if they are able to. The proportion of respondents who will continue to work ranges from 88.4 percent among those aged 40-49 to 50.3 percent among those aged 80 and older (Figure 5.21). Among those who are still working, respondents were asked about their retirement plans as shown in Figure 5.22. Slightly more than a quarter reported they will work for as long as their health permits. About 20 percent have not given much thought about retirement while 18 percent plan to stop work altogether upon retirement.

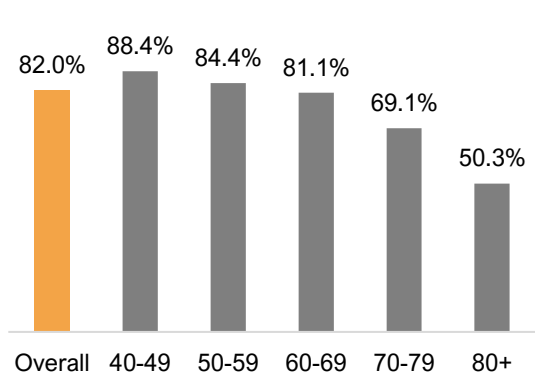


Figure 5.21: Respondents who want to continue to work for as long as their health permit by age

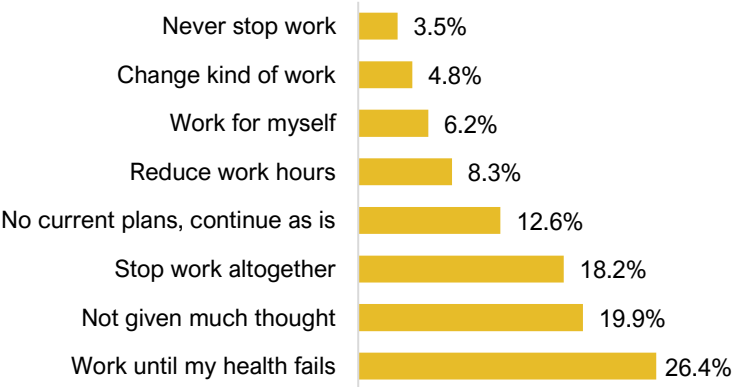


Figure 5.22: Respondents' retirement plan

5.5 Retirement

Half of the respondents retired because they want to do other things while 39 percent reported that they are forced to retire (Figure 5.23).

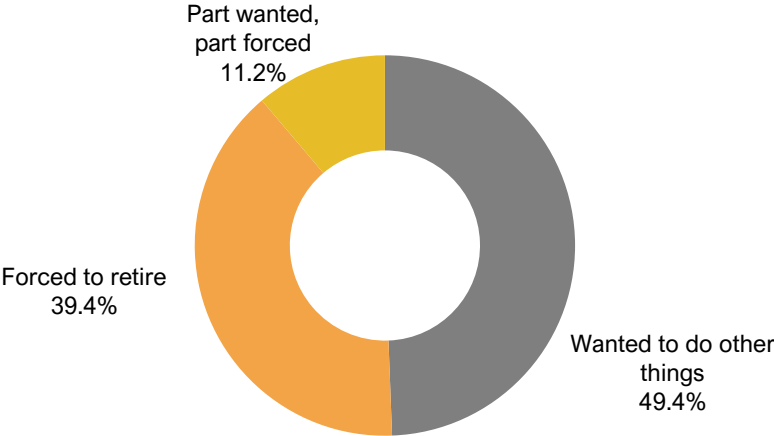


Figure 5.23: Retirement circumstances

When asked about life in retirement, 47 percent of the respondents are very satisfied, and 38 percent are moderately satisfied (Figure 5.24). Figure 5.25 indicates that 43 percent of the respondents admitted their present life is better than before retirement, 36 percent reported about the same, and 21 percent said their life is worse than before retirement.

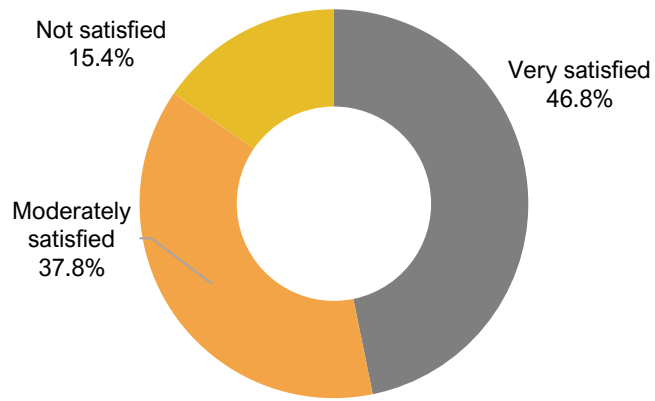


Figure 5.24: Life satisfaction after retirement

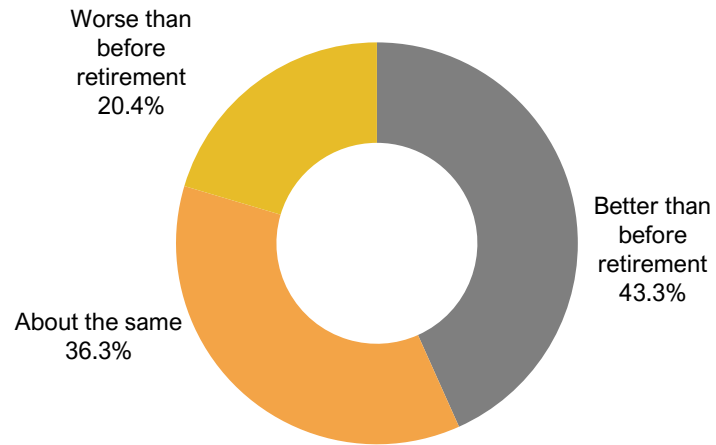


Figure 5.25: Life before and after retirement

6

INCOME AND EXPENDITURE

Generally, older persons are less likely to have paid employment and they are more vulnerable to uncertainties as they are more likely to have health issues and in need for long-term care compared to younger adults. Hence, income security in old age is very important. Income of older persons are mostly generated from a combination of their own savings which are often small and with low interest yield, formal pension schemes and support from family members. While there will be limited capacities and resources, the needs of older persons will be more complex as they get older.

Information on income collected from MARS respondents includes sources and amount of income. Income entails salary and wages, profit from business, rental, dividend from investment, private transfers and social assistance from government and other agencies. Average monthly expenditure on household needs, which include transportation, utilities, groceries, hygiene, and personal care, was obtained. This expenditure excludes any payment involving long-term rental or instalment. Respondents were also asked how they manage their monthly expenditure.

6.1 Income

In this section, respondents were asked about income they received in a year excluding income given by other household members (private transfer). Figure 6.1 shows that 60 percent of the respondents reported they received an annual income, excluding private transfer. Figure 6.2 shows that more male respondents received annual income, excluding private transfer, compared to female respondents (74.8 percent and 48.4 percent, respectively).

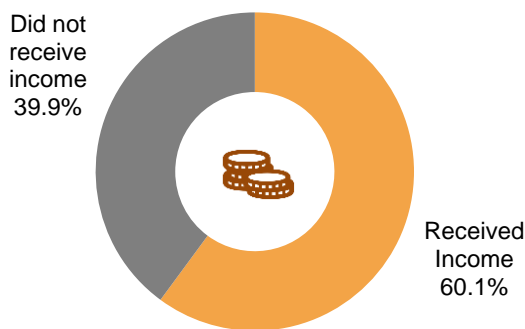


Figure 6.1: Respondents' income status (excluding private transfer)

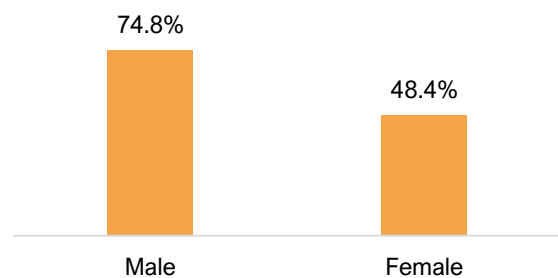


Figure 6.2: Respondents receiving annual income by sex

The proportion of respondents receiving annual income, excluding private transfer, decreases gradually from 62 percent among those aged 40-49 to 57.8 percent among those aged 70 and over (Figure 6.3).

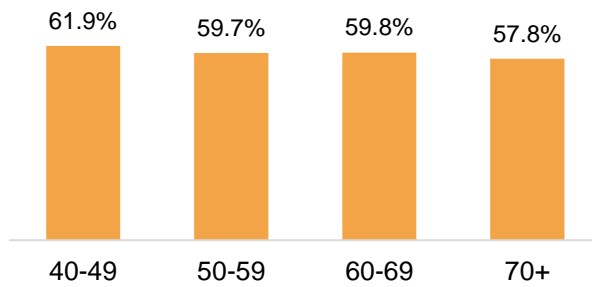


Figure 6.3: Respondents receiving annual income by age

Respondents indicated the top three sources of income received namely Salary/Rental (55.5 percent), Cost of Living Allowance or subsidies from the Government which include BRIM and BSH (40.4 percent) and Pension/SOCSSO/LTAT (17.2 percent) (Figure 6.4).

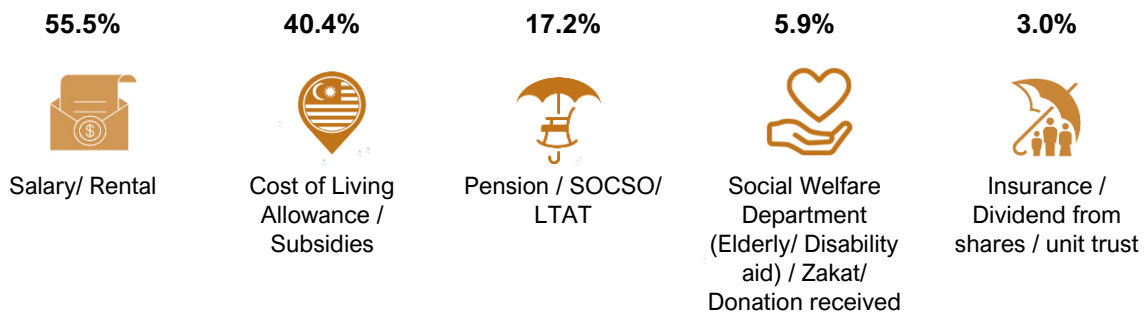


Figure 6.4: Sources of respondents' income

Figure 6.5 shows that the proportion of respondents who received annual income from Salary, Pension/SOCSSO/LTAT and Insurance/Dividend from shares/unit trust are slightly higher among males compared to females. No difference is observed for those receiving Government's social assistance.

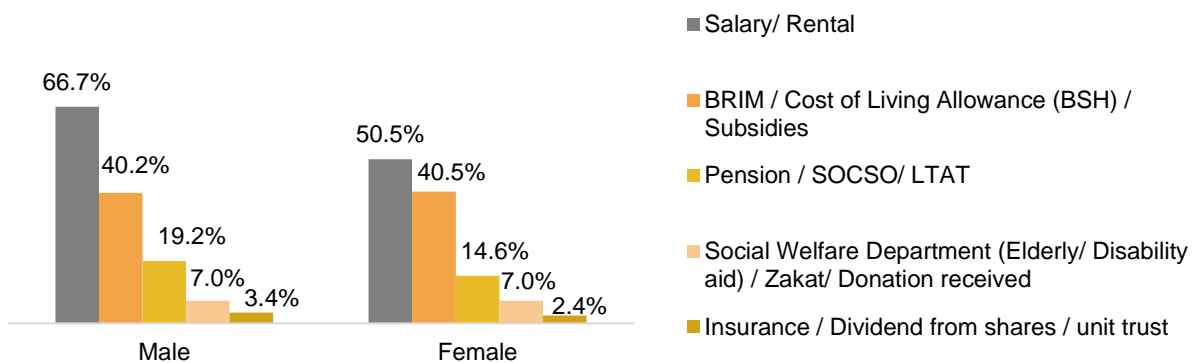


Figure 6.5: Sources of respondents' income by sex

In Figure 6.6, it can be observed that the proportion of respondents receiving salary/rental declines from 77.8 percent among those aged 40-49 to 26.7 percent among those aged 70 and older. In contrast, respondents who received Cost of living allowance/Subsidies increases from 34.5 percent among those aged 40-49 to 50 percent among those aged 70 and older. A similar increasing trend is observed for respondents who received Pension/SOCSO/LTAT, from 4.0 percent to 32.2 percent.

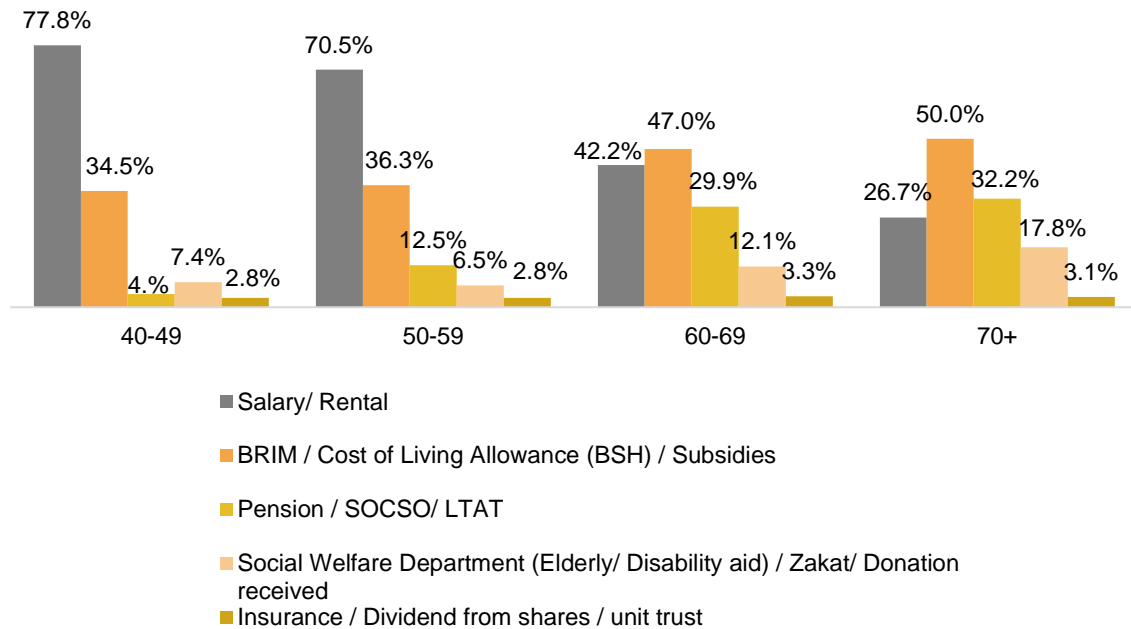


Figure 6.6: Sources of respondents' income by age

The net monthly income received including private transfer indicates that 43.9 percent of the respondents received less than RM1,000. While less than 10 percent of the respondents received net monthly income of at least RM3,000, 19 percent of respondents received irregular or no monthly income, including private transfer. (Figure 6.7).

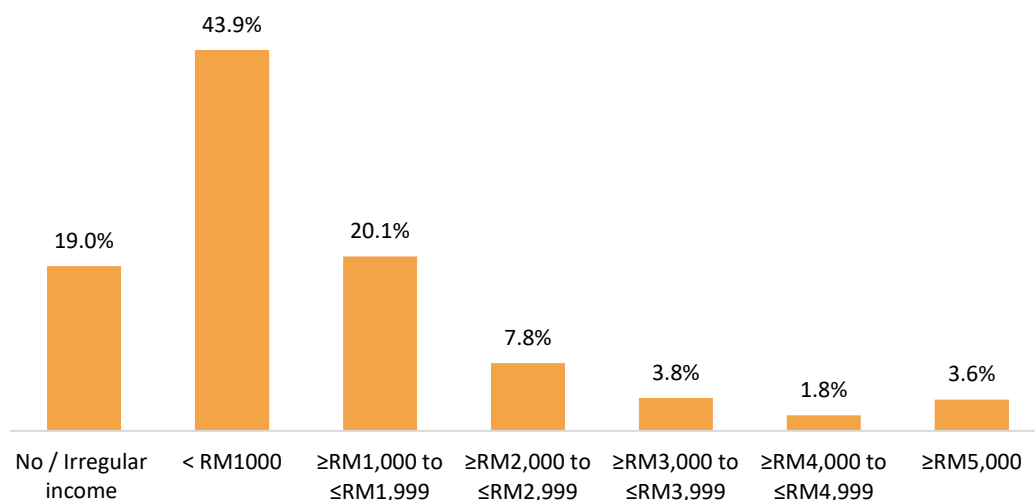


Figure 6.7: Monthly net income including private transfer

The proportions of female respondents who reported no/irregular income and income of less than RM1,000 are higher compared to male respondents. For income received of at least RM1,000 per month, male respondents reported a higher proportion than female respondents (Figure 6.8).

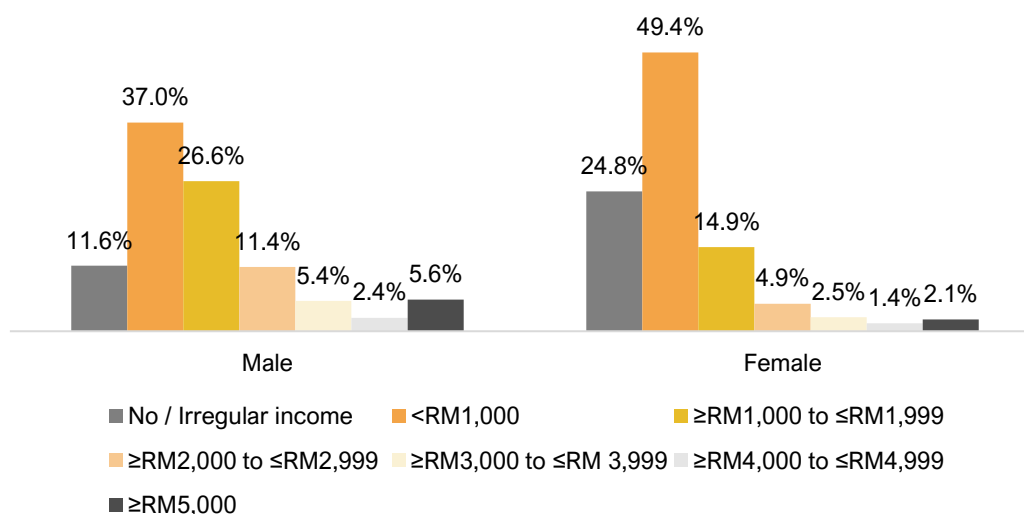


Figure 6.8: Respondents' net monthly income by sex

6.2 Expenditure

Respondents were asked to indicate their average monthly expenditure for typical household needs excluding housing costs for the past 12 months. Overall, respondents spent on average RM800 and a median of RM583 for their monthly household expenditure.

Table 6.1 shows about 70.3 percent of respondents spend less than RM1,000 monthly. There is a small proportion (3.3 percent) of respondents who spent more than RM3,000 for their monthly expenditure. Table 6.2 shows the average monthly expenditures on different household needs. The top 3 expenses are for groceries (RM393), transportation (RM177) and toiletries (RM89).

Table 6.1: Distribution of total monthly expenditure

Total monthly expenditure	Percentage (%)
>RM0 to ≤RM499	35.4
≥RM500 to ≤RM 999	34.9
≥RM1,000 to ≤RM1,499	15.1
≥RM1,500 to ≤RM1,999	6.4
≥RM2,000 to ≤RM2,499	13.1
≥RM2,500 to ≤RM2,999	1.9
≥ RM3,000	3.3
Total	100.0

Table 6.2: Mean expenditure for each household item

Item	Mean amount (RM)
Transportation	176.61
Electricity	85.91
Water	31.42
Telephone	50.92
Internet	21.65
ASTRO	36.38
Toiletries	88.70
Groceries	393.10

About 38 percent of the respondents reported they managed household finances by themselves. While 30 percent of the respondents reported that they jointly managed the household finances with their spouses, 21 percent of them reported that it was mostly managed by their spouses. Respondents whose household finances are managed by other family members reported that mostly are done by their children (Figure 6.9).

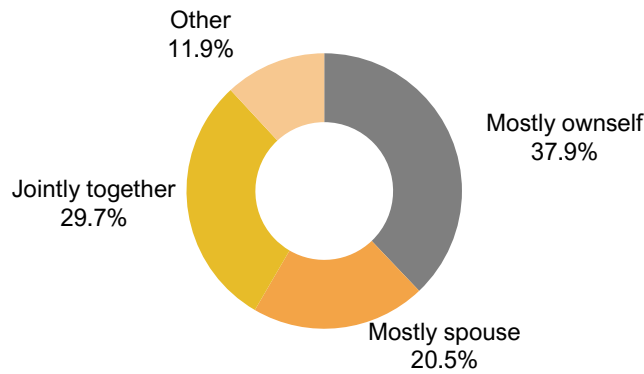


Figure 6.9: Managing household finances

Respondents were asked to rate how they have been managing their household finances. About 45.3 percent of respondents reported their ability in managing finance is either good or very good. While about 13.6 percent of respondents said they are either poor or very poor in managing their household finances (Figure 6.10). Figure 6.11 shows that there is not much difference in the proportion of respondents who rated poorly on the management of monthly household finances between male and female. However, slightly more males than females rated themselves as being able to manage their household finances well.

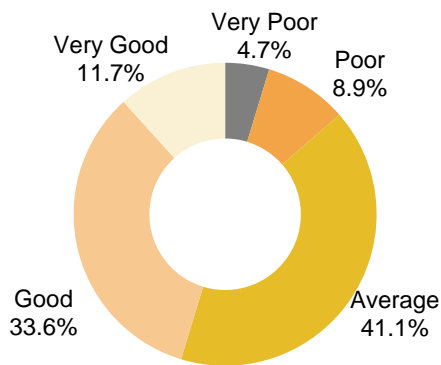


Figure 6.10: Rating of household finances management



Figure 6.11: Rating of household finances management by sex

The proportion of respondents who reported that they are good or very good in managing their household finances gradually decreases from 48.4 percent among those aged 40-49 to 36.6 percent among those aged 70 and older (Figure 6.12).

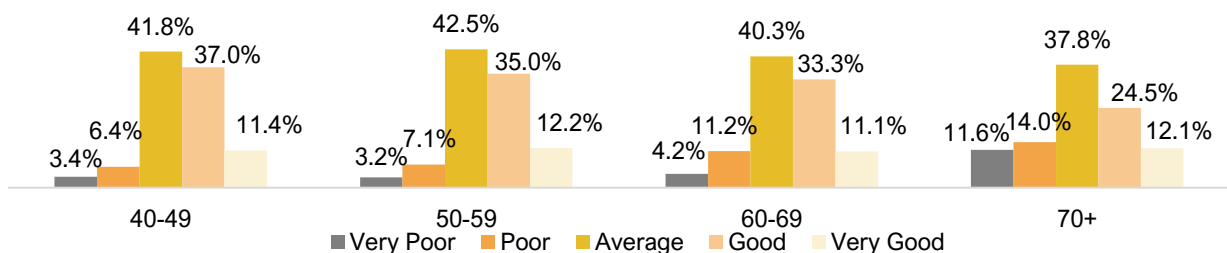


Figure 6.12: Rating of household finances management by age

6.3 Monthly Instalment

Figure 6.13 shows that about 20 percent of the respondents reported they still have monthly instalment as part of their expenditure. More male respondents have to pay monthly instalment compared to female respondents (26.6 percent and 15.4 percent, respectively) (Figure 6.14).

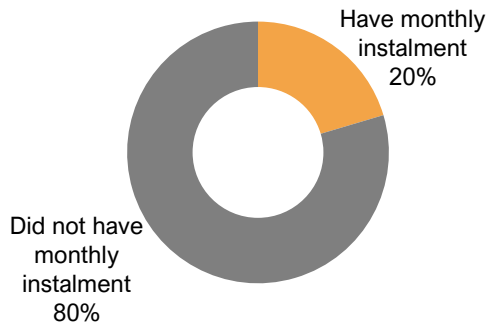


Figure 6.13: Respondents' monthly instalment

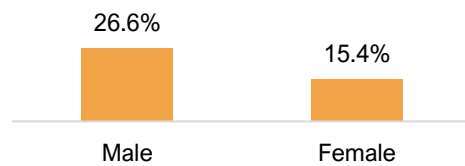


Figure 6.14: Respondents paying monthly instalment by sex

The proportion of respondents paying monthly instalments decreases gradually from 31 percent among those aged 40-49 to 9.7 percent among those aged 70 and older (Figure 6.15).

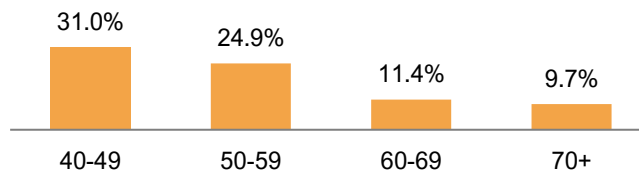


Figure 6.15: Respondents paying monthly instalment by age

Among respondents who have monthly instalments, the highest proportion is for car loan (53.4 percent) followed by housing loan (36.9 percent) and personal loan (13.3 percent). Less than 3 percent of the respondents reported having monthly instalment for investment loan (Figure 6.16).

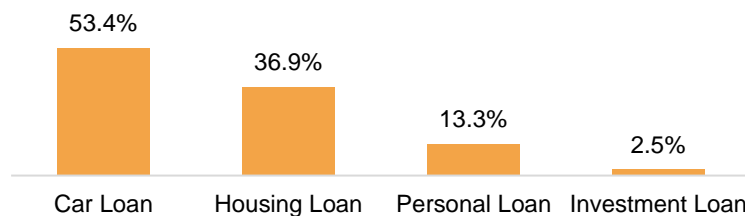


Figure 6.16: Type of instalments

7 SAVINGS AND ASSETS

With longer life expectancy, retirement planning becomes a critical concern among the older population. In a study conducted by Randstad Workmonitor in 2015, 76 percent of employees in Malaysia believed they would have to work beyond their retirement age and that Malaysian employees plan far less for retirement. Only one in 10 employees was willing to save 40 percent of their income for old age while 90 percent of the respondents were willing to set aside only 20 percent or less.

A study by Awang et al., (2018) found that while majority of respondents aged 40 years and older residing in Malaysia would like to live to at least 80 years old, many do not save specifically for old age. This suggests that majority of Malaysians are not sufficiently ready and are lacking in knowledge on retirement planning (Shanmugan and Zainal Abidin, 2013). To ensure a decent life in retirement, Malaysians must plan and start saving early.

7.1 Savings / Investment

On the question of savings/investment, 50 percent of the respondents reported having some savings/investment (Figure 7.1). The proportion of male respondents having savings/investment is significantly higher compared to female respondents. This is consistent with earlier studies that show gender difference in terms of income, positive net flow and positive net worth (Gikonyo et al., 2012).

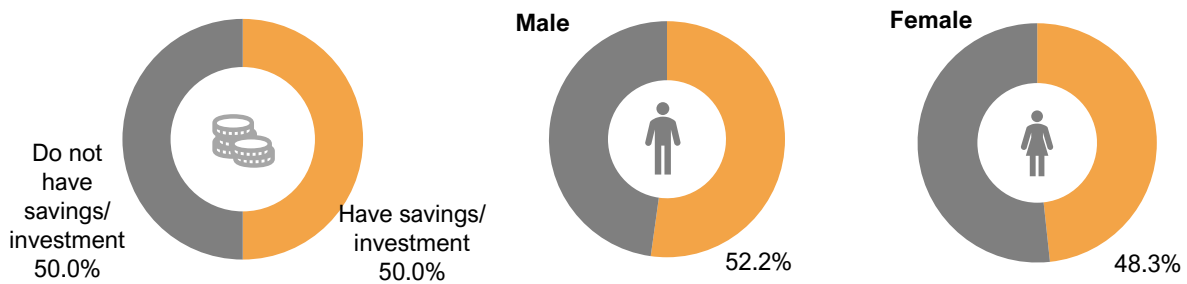


Figure 7.1: Respondents with savings/investment by sex

Figure 7.2 shows the highest proportion (52.4 percent) of respondents having savings/investments is observed among those aged 50-59 while the lowest proportion is among those aged 70 and older (44.3 percent).

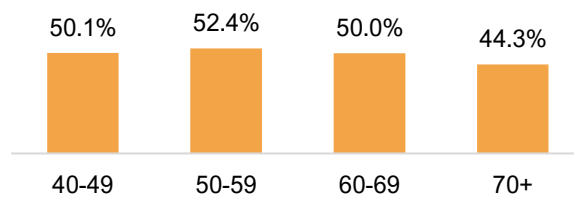


Figure 7.2: Respondents with savings/investment by age

7.2 Type of Savings/Investment

The different types of savings/investment that respondents have is shown in Figure 7.3. Bank savings registers the highest percentage at 54.9 percent followed by Tabung Haji (38.2 percent), EPF Savings (28.9 percent) and ASNB/ Unit Trust (25.9 percent).

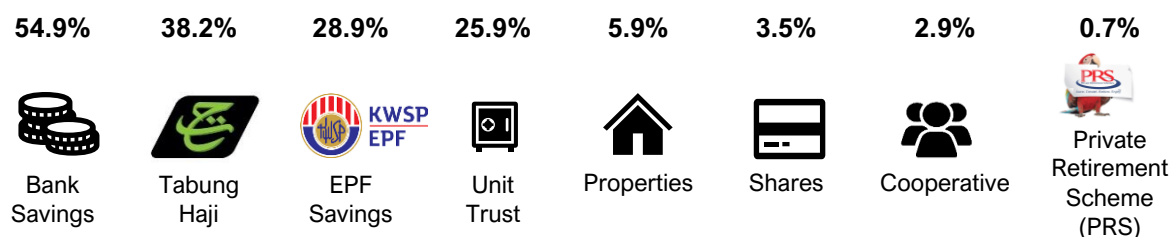


Figure 7.3: Type of respondents' savings/investment

The proportion of male respondents having bank savings is slightly higher compared to female respondents (57 percent and 54 percent, respectively). Similar trend is observed for respondents having EPF savings. However, more females have savings in Tabung Haji compared to male respondents (Figure 7.4).

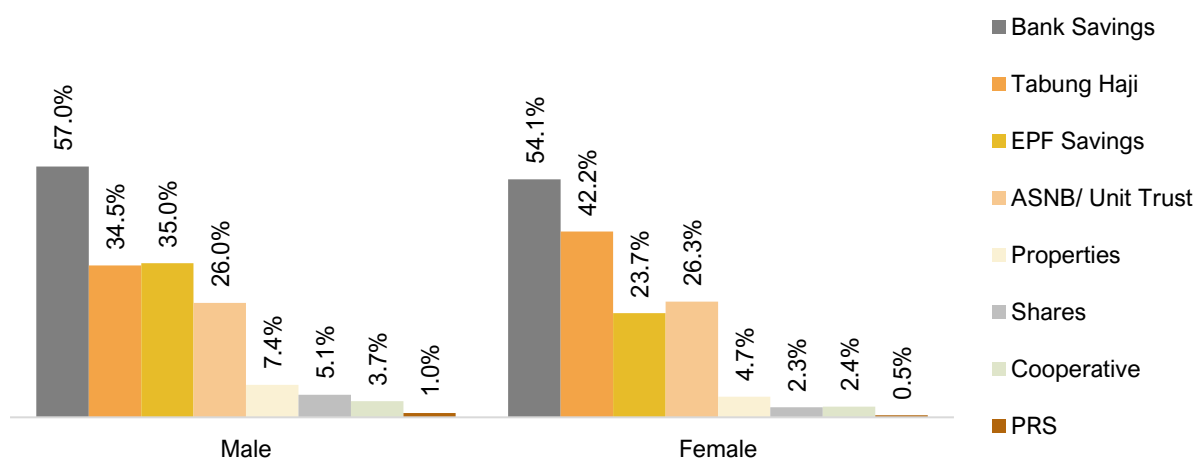
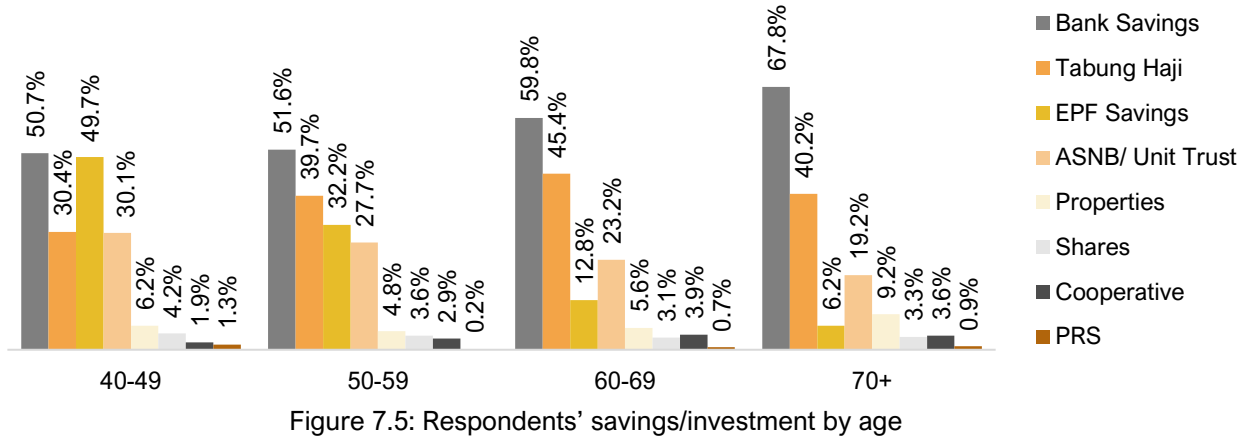


Figure 7.4: Respondents' savings/ investment by sex

The proportion of respondents having bank savings increases from 50.7 percent among those aged 40-49 to 59.8 percent among those aged 60-69 and 67.8 percent among those aged 70 and older. In contrast, the proportion of those with EPF savings decreases with age (Figure 7.5). This could be due to withdrawals made at age 50 and age 55. The proportion of respondents having ASNB/Unit Trust shows a gradual declining trend with age.



Subsequently, total savings was obtained by adding up all the respondents' savings from various sources. The median amount of total savings is RM10,250 indicating that 50 percent of the respondents have savings less than RM10,000 (Figure 7.6).

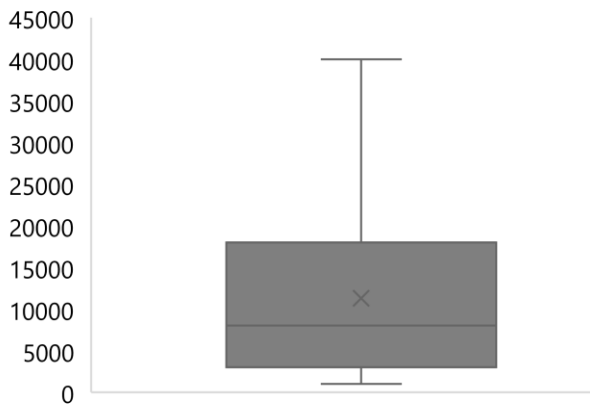


Figure 7.6: Respondents' total savings amount

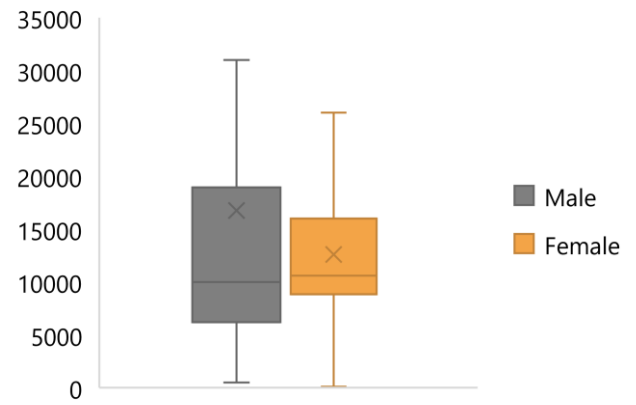


Figure 7.7: Respondents' total savings amount by sex

There is no difference between the median total savings amount among male and female respondents where 50 percent of them reported to have savings amount of at least RM10,000 (Figure 7.7).

7.3 Assets

In terms of assets, 52.4 percent of the total sample reported that they own assets. The proportion of male respondents with assets is much higher (62 percent) than female respondents (45 percent) (Figure 7.8).

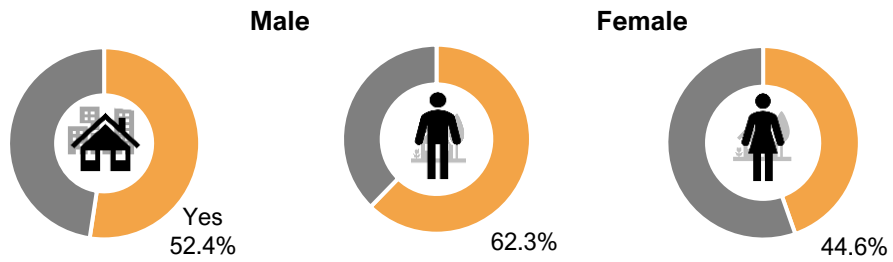


Figure 7.8: Respondents having assets by sex

Figure 7.9 shows that there is not much variation in the proportion of respondents having assets across age groups (54 percent-55 percent) except for those aged 40-49 (48 percent).

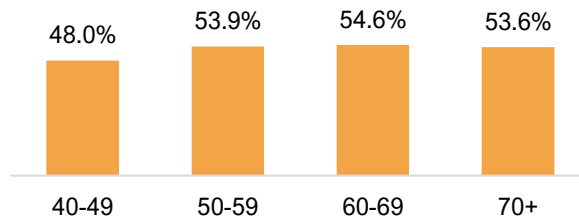


Figure 7.9: Respondents having assets by age

7.4 Type of Assets

Overall, 43.3 percent of respondents reported that they own at least one house. Among respondents who owned assets, they were asked on the type of assets owned (Figure 7.10). The highest proportion of asset owned is house (82.6 percent) followed by land (49.5 percent). Less than 10 percent of the respondents owned other property, insurance and business shares combined.

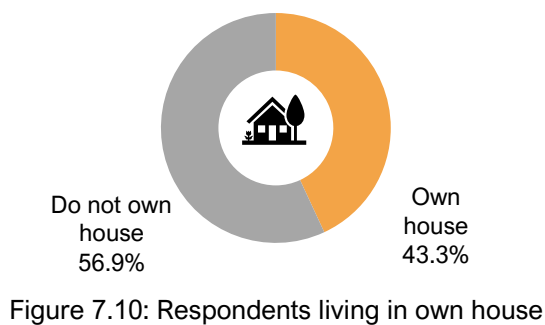


Figure 7.10: Respondents living in own house

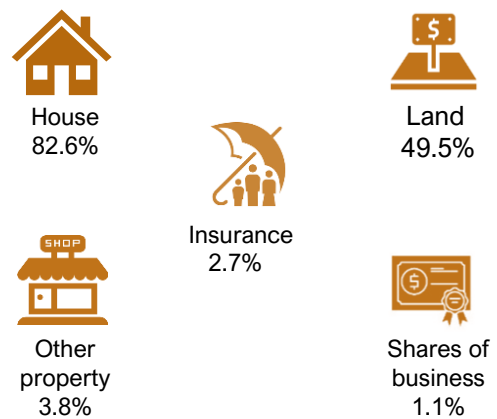


Figure 7.11: Type of assets owned

Except for house ownership where proportion of male respondents having this asset is slightly higher than female (86.7 percent and 78.0 percent, respectively), there is little difference in ownership of other types of assets (Figure 7.12).

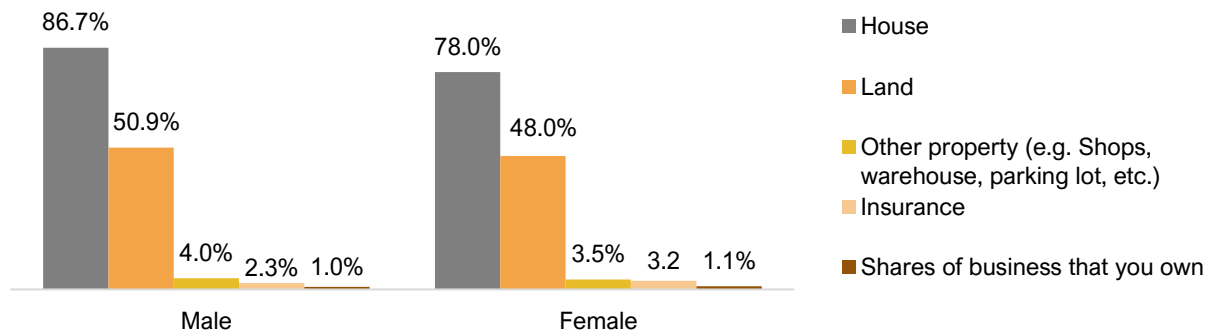


Figure 7.12: Type of assets owned by sex

House ownership ranges between 80 - 85 percent across age while land ownership increases from 40 percent among respondents aged 40-49 to 54 percent among those aged 70 and over (Figure 7.13).

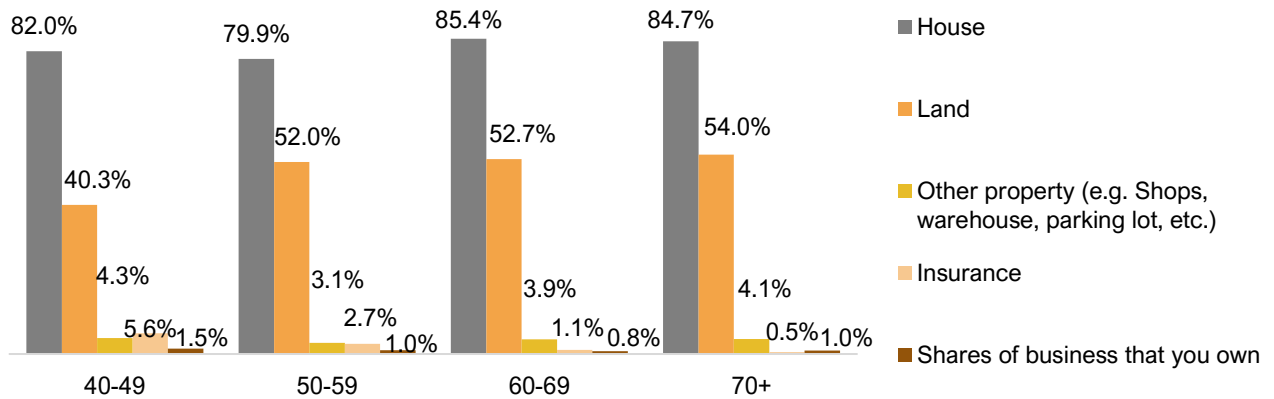


Figure 7.13: Type of assets owned by age

Data indicate that 50 percent of the respondents have value of assets of at least RM165,000 (Figure 7.14). Half of male respondents have assets worth at least RM180,000 while half of female respondents have assets worth at least RM160,000 (Figure 7.15).

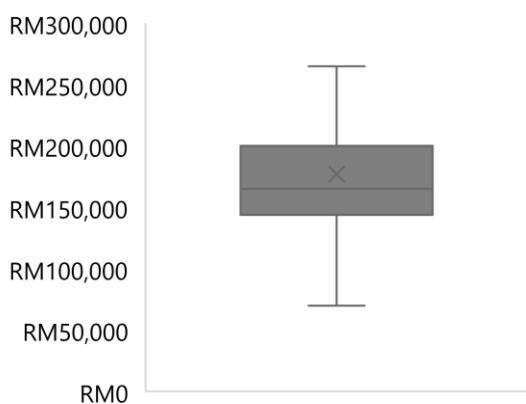


Figure 7.14: Median Value of assets owned

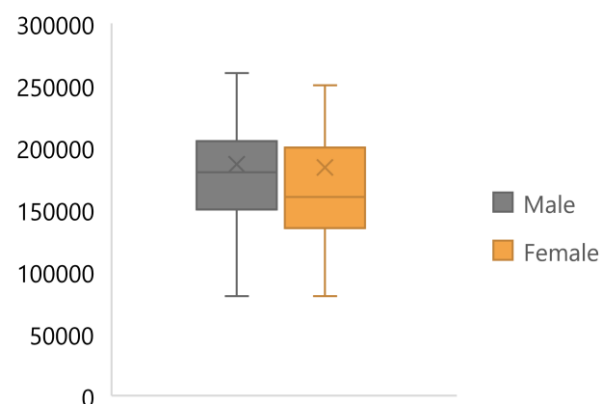


Figure 7.15: Median Value of assets owned by sex

7.5 House rental

On the question of rented house, only 12.8 percent of the respondents reported that the house they are currently staying in are rented. (Figure 7.16). Among those respondents who are renting house, 42.8 percent of respondents paid for the house rental themselves, 28.1 percent paid by spouse, followed by 29.1 percent reported that their rental is paid by someone else.

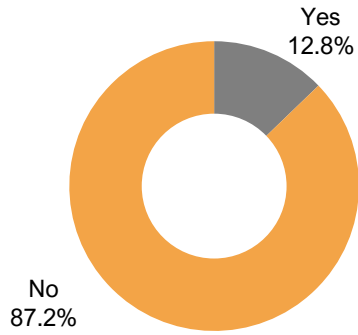


Figure 7.16: Respondents' rented house

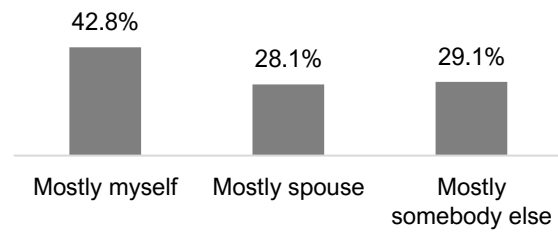


Figure 7.17: Persons paid for the house rental

8

HEALTH

Increasing longevity does not mean having an extended period of good health. Ageing is often associated with a gradual decline in physical and mental capacities and health. It is also associated with the onset of chronic diseases including hypertension, high cholesterol, diabetes, Alzheimer, arthritis etc. (Stephoe et al., 2015). Various aspects of health are included in MARS questionnaire namely self-rated health, illnesses, treatment, and hospitalization as well as physical measurement.

8.1 Self-rated Health

Self-rated health could reflect on various elements such as access to healthcare facilities and quality of healthcare. In a study, people who reported better self-reported health revealed that they have high satisfaction with access to healthcare compared to those who rated poor health (Bartsokas et al., 2019).

Overall, slightly more than 50 percent of the respondents reported that they are in good health and expectedly, health status deteriorates with age. Twelve percent are in poor health and 37 percent of them said their current health are just moderate. Compared to the year before, 61 percent of the respondents reported no change in their health status, 20 percent said their health has become worse and 19 percent claimed they have better health (Figure 8.1).



Figure 8.1: Overall current health vs Health compared to last year

The proportion of respondents with good health declines from 67.4 percent among those aged 40-49 to 30.3 percent among those aged 80 and older. The proportion of respondents with poor health increases from 5.4 percent among those aged 40-49 to 29.1 percent among those aged 80 and older (Figure 8.2).

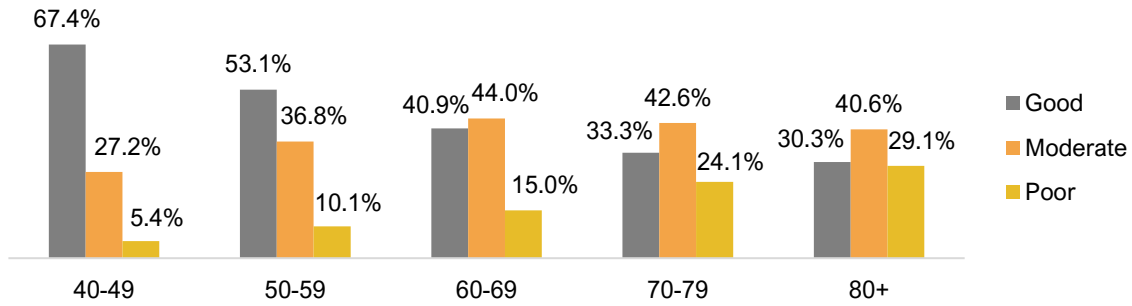


Figure 8.2: Self-rated health by age

Figure 8.3 shows that the proportion of respondents who reported to be in good health is slightly higher among male than female. Similar proportion between male and female (about 12 percent) is observed for those in poor health.

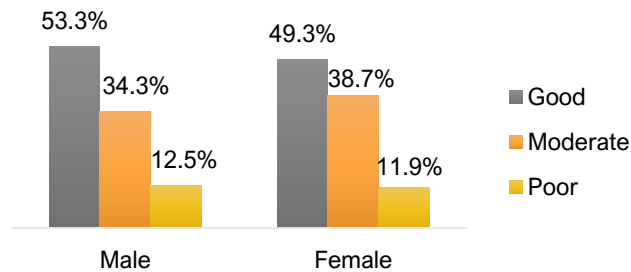


Figure 8.3: Self-rated health by sex

8.2 Body Pains or Aches

Pain is a major public health concern in an ageing population as it is often a central component in any chronic condition. It is associated with adverse health consequences and diminished quality of life. Studies have reported of increasing prevalence of pain with advancing age and that pain management among older persons has become a challenge for physicians of all specialties (Rottenberg et al., 2015).

MARS questionnaire asked whether respondents experienced any pain that limit their daily activities in the past one month. Figure 8.4 shows the overall cases of body parts pain among the respondents where 42.0 percent did not experience any pain. The most prevalent pains reported are knee pain (24.3 percent) and leg pain (20.6 percent) followed by back pain (15.3 percent) and shoulder pain (12.4 percent). Between 5 percent to 10 percent of the respondents experienced pain in other body parts which include head, hips, arms, neck and wrist.

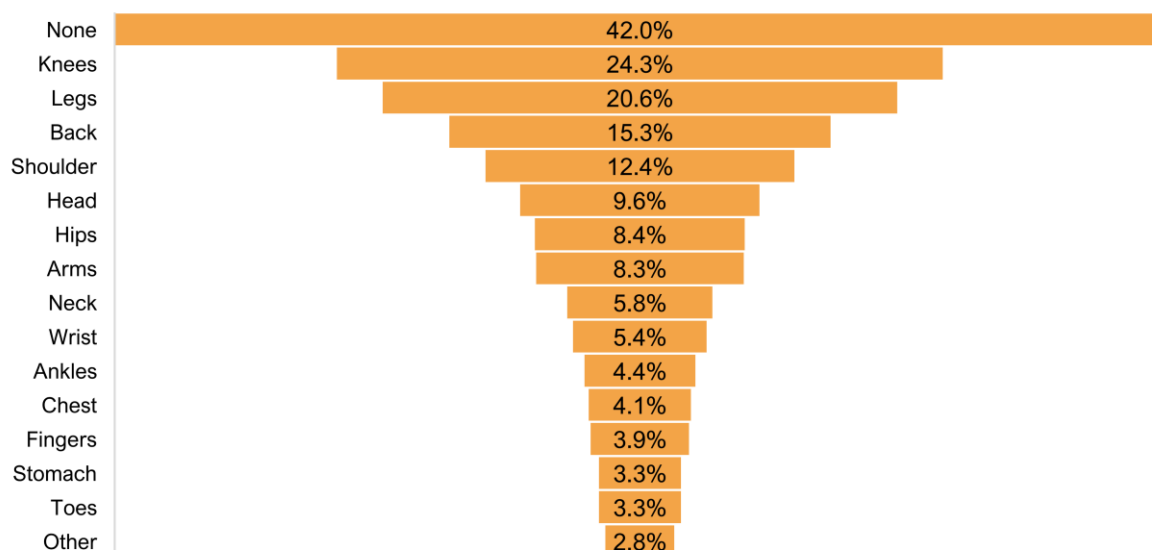


Figure 8.4: Respondents' experience of pain by body parts

8.3 Doctor-diagnosed Diseases

The prevalence of Non-Communicable Diseases (NCDs) such as hypertension, diabetes and high cholesterol are on the rise, particularly in the Asia Pacific region (Low et al., 2015). Recent NHMS 2018 findings show that 27.7 percent of the respondents aged 60 and older have been diagnosed by their doctors with diabetes, 51.1 percent hypertension and 41.8 percent high cholesterol (The Star Online, 23 August 2019).

For MARS, when asked whether respondents have been diagnosed of any disease by a doctor, 42.5 percent reported of never being diagnosed of any disease. Among those who have been diagnosed, the top five diseases include hypertension (36.6 percent), high cholesterol (21.0 percent), diabetes (19.3 percent), heart diseases (5.1 percent) and asthma (4.3 percent) (Figure 8.5).

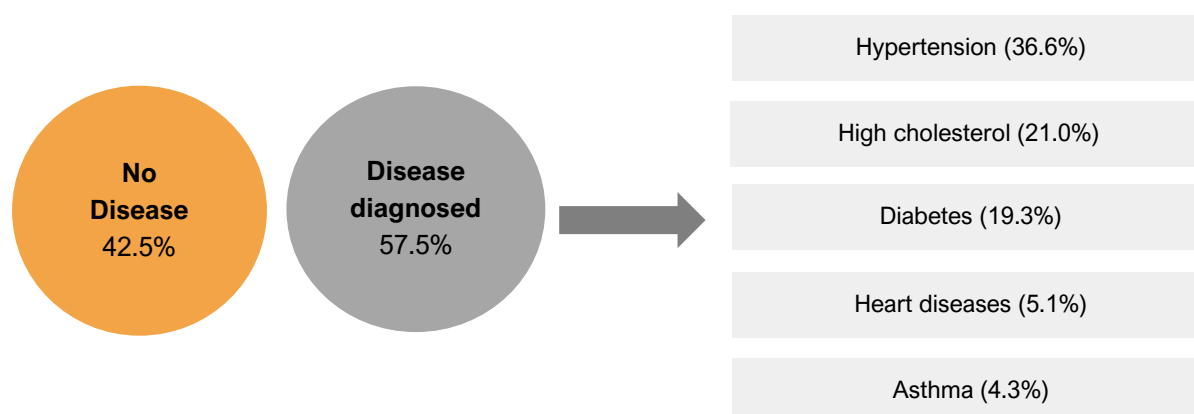


Figure 8.5: Proportion of respondents with doctor-diagnosed diseases

Further analysis of the respondents having been diagnosed with hypertension, high cholesterol and diabetes, Figure 8.6 shows that 9.1 percent of respondents have high cholesterol only, 31.7 percent have hypertension only and 9.3 percent have diabetes only. About 17.7 percent of respondents have both hypertension and high cholesterol while 13.5 percent have both diabetes and hypertension. Nearly 2.7 percent have both high cholesterol and diabetes. However, respondents with all three metabolic diseases constitute 16.0 percent of the total sample.

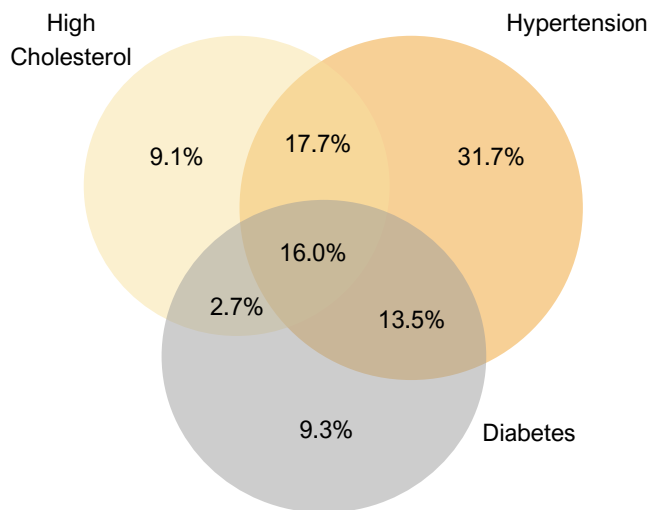


Figure 8.6: Respondents diagnosed with hypertension, high cholesterol, and diabetes

Across age groups, the top three diseases are hypertension, high cholesterol, and diabetes. The proportion of respondents diagnosed with hypertension ranges from 48.2 percent among those aged 40-49 and increases to 57.6 percent among those aged 80 and older. The proportion of respondents diagnosed with high cholesterol gradually increases from 26.4 percent among those aged 40-49 to 29.2 percent among those aged 50-59 then decreases slightly to 25.3 percent among respondents aged 80 and older. The proportion of respondents diagnosed with diabetes increases from 23.9 percent among those aged 40-49 to 26.0 percent among those aged 60-69 then decreases to 24.9 percent among those aged 70-79 with a further decline to 17.1 percent among the oldest age group (Figure 8.7).

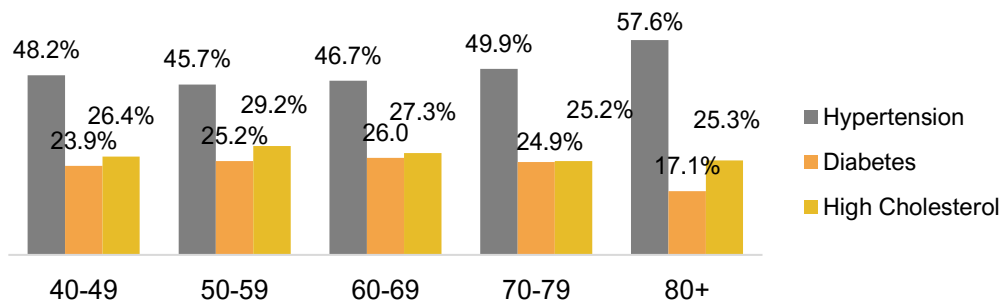


Figure 8.7: Top 3 doctor-diagnosed diseases by age

Respondents who reported to have ever been diagnosed with any illnesses were asked whether they are currently receiving treatment or medication. Those who have recovered from the illness or no longer taking medications or receiving treatment are considered as did not receive treatment. Figure 8.8 shows the proportion of respondents currently receiving treatment by illness. More than 90 percent of respondents who were diagnosed with diabetes, hypertension, lung disease, asthma, heart diseases were currently receiving treatment or medication.

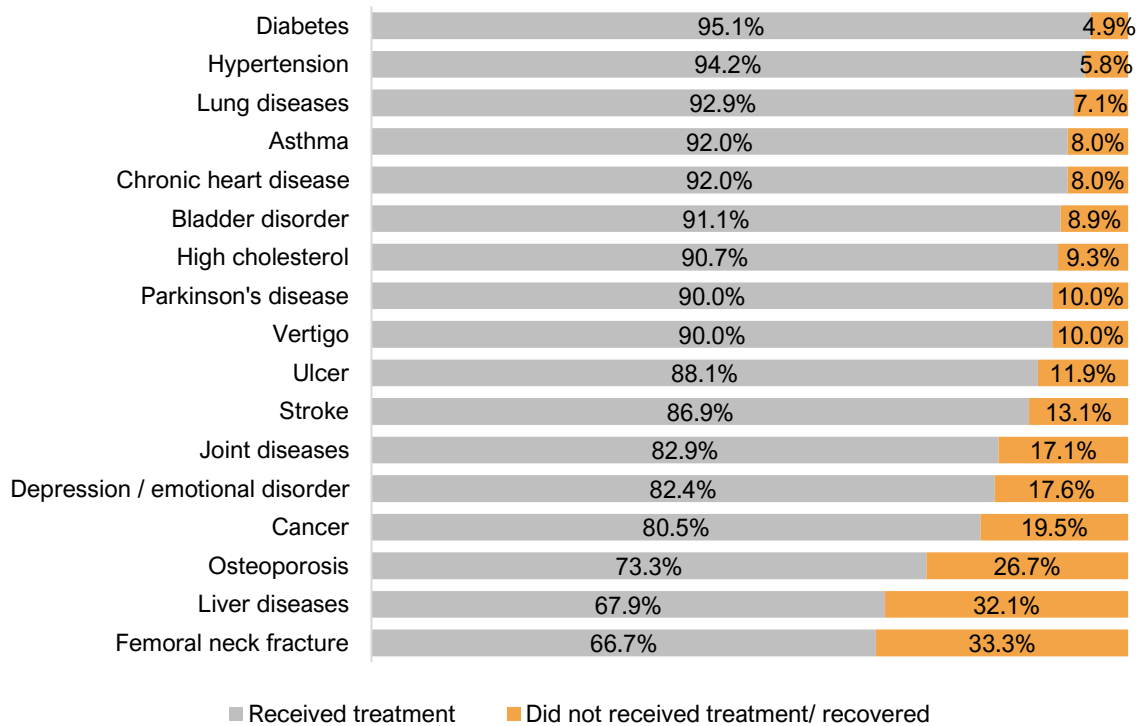


Figure 8.8: Respondents currently receiving treatment by illness

Based on Figure 8.9, the illness that limits respondents' daily activities the most is stroke (73.8 percent) followed by joint disorder and chronic lung disease (64.3 percent for both), asthma (60.9 percent), heart disease (58.9 percent), and bladder disorder (48.2 percent).

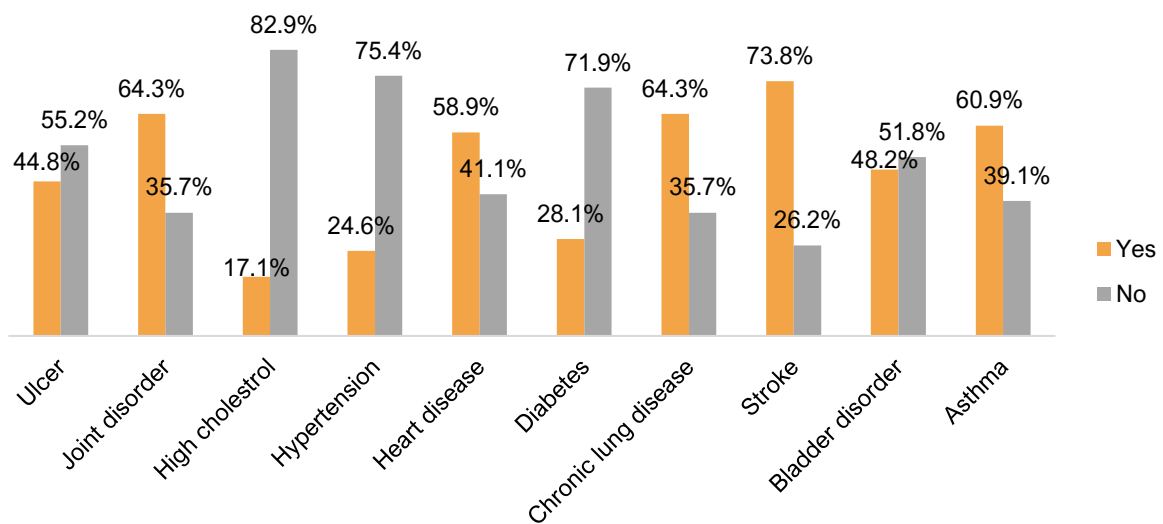


Figure 8.9: Illnesses that limit daily activities

8.4 Accidents and Falls

Accidents and falls are common among older persons. The risk of falling increases with age with one in three older adults falling every year and two-thirds of them falling again within six months (Gannon et al., 2007). The 2018 NHMS reported that 15 percent of those above age 60 had fallen at least once over 12 months (The Star Online, 27 November 2019).

MARS respondents were asked whether they were involved in any accident or fall that affected their physical health in the past 2-years. About 89 percent reported that they did not experience any accident or fall. 6.4 percent of respondents reported to have experienced falls, 3.2 percent were involved in automobile accident and 1.8 percent were hit by a falling object and other form of accidents (Figure 8.10).

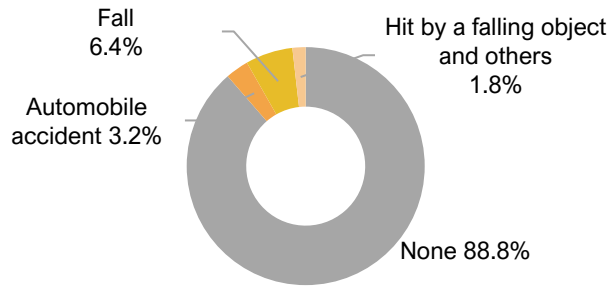


Figure 8.10: Types of accidents involved

As shown in Figure 8.11, automobile accidents register the highest proportion of permanent effect on health (36.8 percent), followed by injuries caused by a falling object (23.8 percent) and falls (18.9 percent).

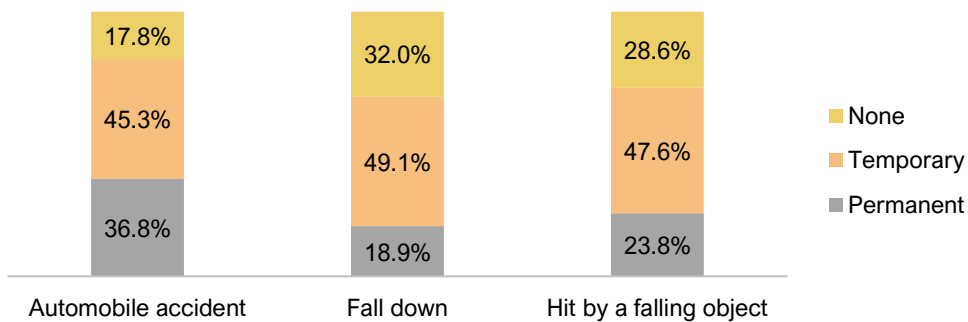


Figure 8.11: Effects of accidents/falls on health

Figure 8.11 shows whether the accidents limit respondents' daily activities. More than half of automobile accident cases (58.3 percent) and those hit by falling objects (52.4 percent) admitted that they do have limitations in carrying out their daily activities. About 38 percent of the respondents who had experienced falls reported having such limitations. When asked whether they worry about falling, 66 percent of the respondents admitted being worried and of which 20 percent are very worried (Figure 8.12).

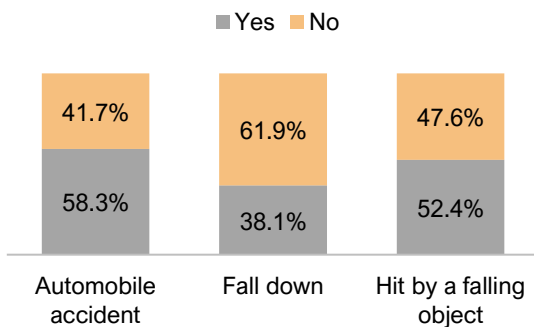


Figure 8.12: Accidents/Falls that limit daily activities

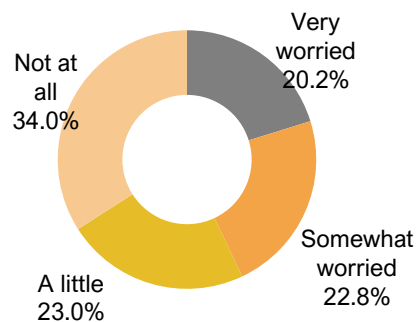


Figure 8.13: Worry about falling

8.5 Tiredness and Incontinence

Respondents were asked how often they feel tired, 28 percent admitted always feeling tired, followed by 38 percent of them feeling tired sometimes (Figure 8.14).

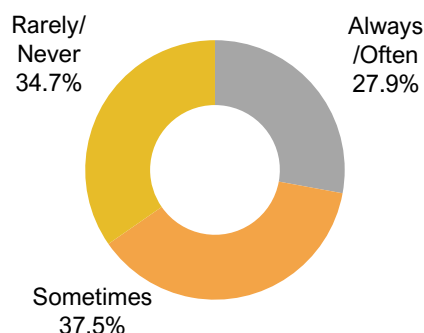


Figure 8.14: Frequency of feeling tired

About 9 percent of the respondents suffer from some degree of incontinence. Among those who admitted suffering from it, about 31 percent experience it all the time. Nearly 26 percent of them reported they were using products for incontinence of which about 9 percent admitted having to always use incontinence products such as adult disposable diapers (Figure 8.15).

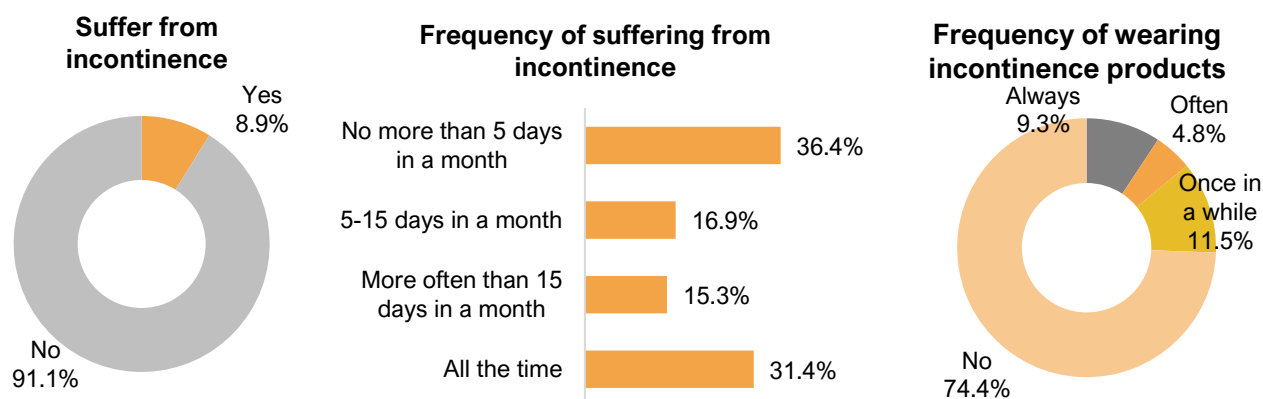


Figure 8.15: Experience of incontinence and use of incontinence products

8.6 Eyesight

As we age, vision sensory will show gradual deterioration and most of the eye diseases are age-related. The prevalence of these sight-threatening diseases dramatically increases above 75 years of age. Based on the world estimates 285 million people suffer from some visual impairment, 256 million have low vision, and about 40 million who are blind or have significant visual impairment. Furthermore, 65 percent of those with visual impairment and 82 percent of those who are blind are over 50 years of age (Chader and Taylor, 2013).

Overall, 54 percent reported that they usually wear eyeglasses or corrective lens. The highest proportion of respondents who usually wear eyeglasses are among those aged 60-69 years (62.3 percent) followed by those aged 70-79 (59.0 percent) (Figure 8.16).

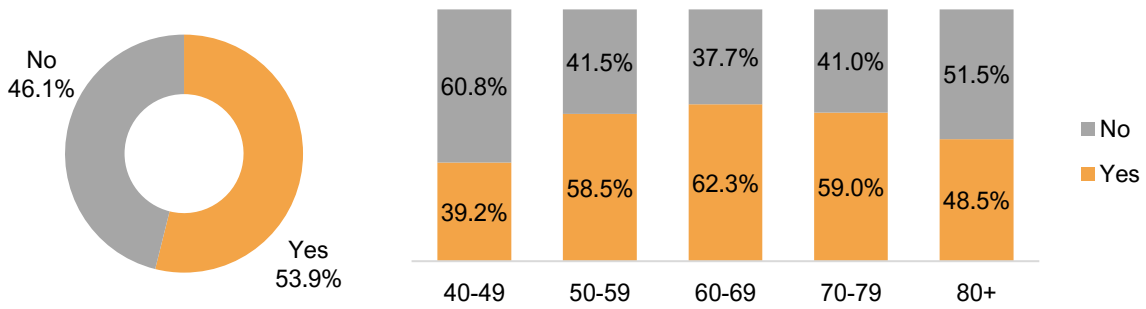


Figure 8.16: Respondents who usually wear eyeglasses or corrective lens

Among the respondents who usually wear eyeglasses, majority of them (overall 81.7 percent) reported that they have good vision with glasses while 15.2 percent claimed their vision as fair. The proportion of respondents who reported good vision with glasses gradually declines from 86.0 percent among those aged 40-49 to 78.6 percent among those aged 60-69 to 55.0 percent among those aged 80 and over (Figure 8.17).

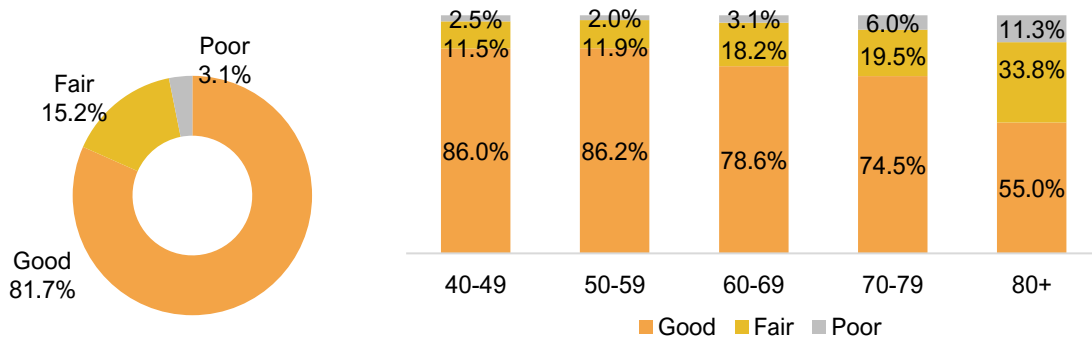


Figure 8.17: Respondents' vision/eyesight with eyeglasses by age

Among the respondents who do not wear eyeglasses, 58.4 percent of them reported that they have good vision while 29.4 percent reported that they have fair vision. The proportion of respondents with good vision declines sharply from 86 percent among those aged 40-49 to 29 percent among those aged 60-69 to 17.6 percent among those aged 80 or over. Expectedly, respondents with very poor vision without glasses increase with increasing age (Figure 8.18).

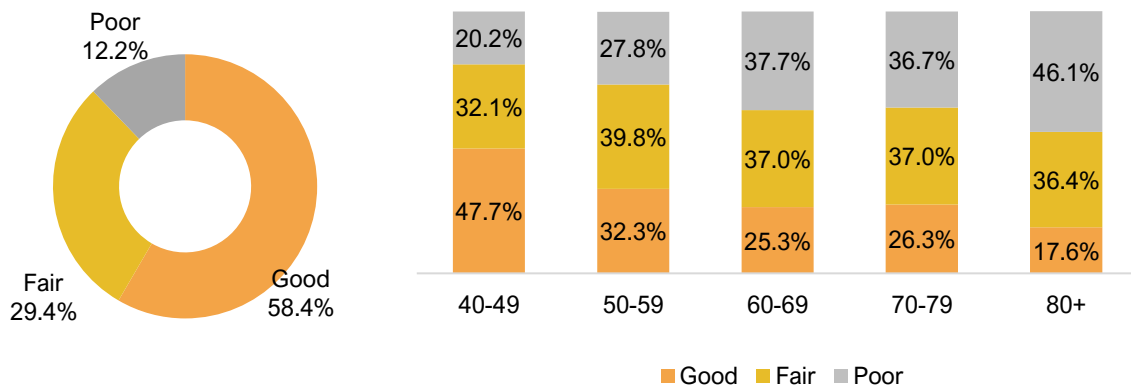


Figure 8.18: Respondents' vision/eyesight without eyeglasses by age

Of the total respondents, only 7.7 percent ever had an eye surgery of which 60.5 percent have had cataract surgery, followed by lens replacement surgery (22.1 percent) and eye replacement (1.6 percent). Another 15.9 percent of respondents reported other types of eye surgery which include laser-assisted eye treatment, glaucoma, blindness surgery, eye injury, and macular hole surgery (Figure 8.19).

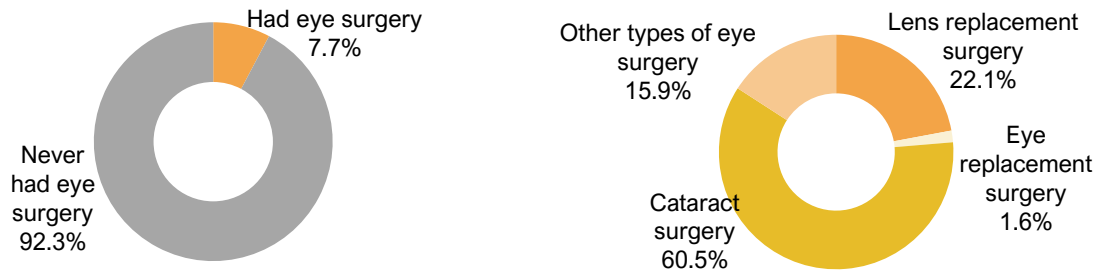


Figure 8.19: Respondents' experience with eye surgery

8.7 Hearing

Hearing problem is one of the common health problems reported among older persons around the world. Some of the risk factors for developing hearing impairment are noise exposures, cardiovascular diseases, diabetes mellitus as well as ageing effects and smoking. An earlier study conducted in Malaysia showed that hearing loss is associated with distressing problems which include functional decline, anxieties, depression and social isolation (Shahar et al., 2001).

Overall, only 4.4 percent of the respondents reported that they usually wear hearing aid. The proportion of respondents wearing hearing aid is 9.1 percent among those aged 80 and above, 5.8 percent among those aged 70-79, and 4.4 percent among respondents aged 50-59 (Figure 8.20).

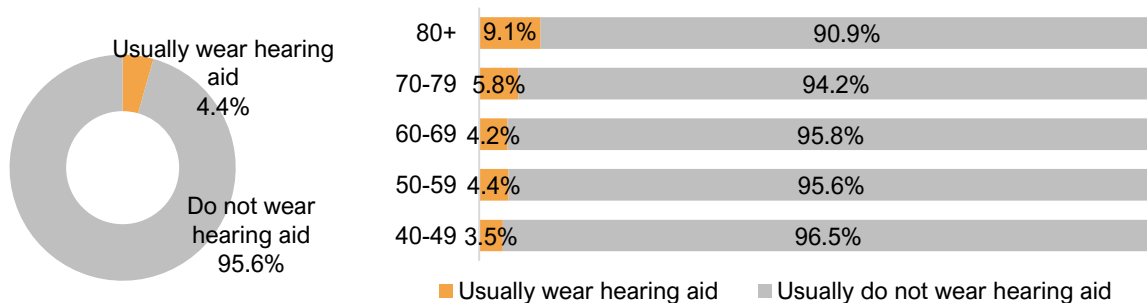


Figure 8.20: Respondents wearing hearing aid

Among respondents who wear hearing aid, 81 percent reported that their hearing is good with hearing aid. 47 percent of respondents aged 80 and above reported their hearing is good with the use of hearing aid (Figure 8.21).

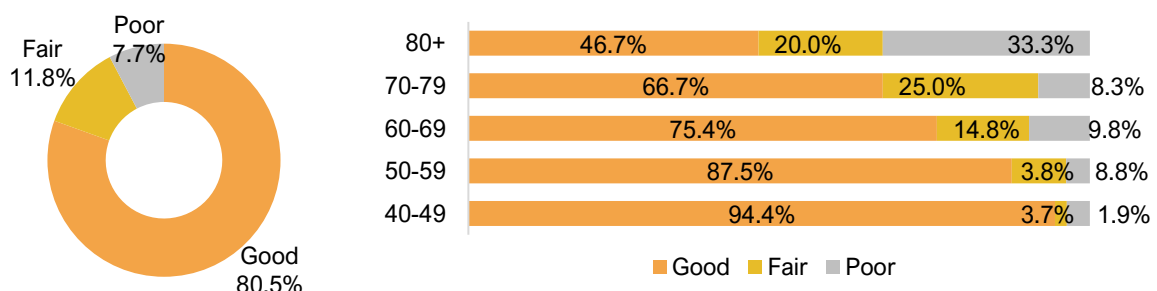


Figure 8.21: Hearing level with hearing aid

Among respondents who do not wear hearing aid, 86 percent reported their hearing is good (Figure 8.23). The proportion of respondents without hearing aid having good hearing decreases from 95 percent among those aged 40-49 to 70 percent among respondents aged 70-79 and 53 percent aged 80 and over (Figure 8.23).

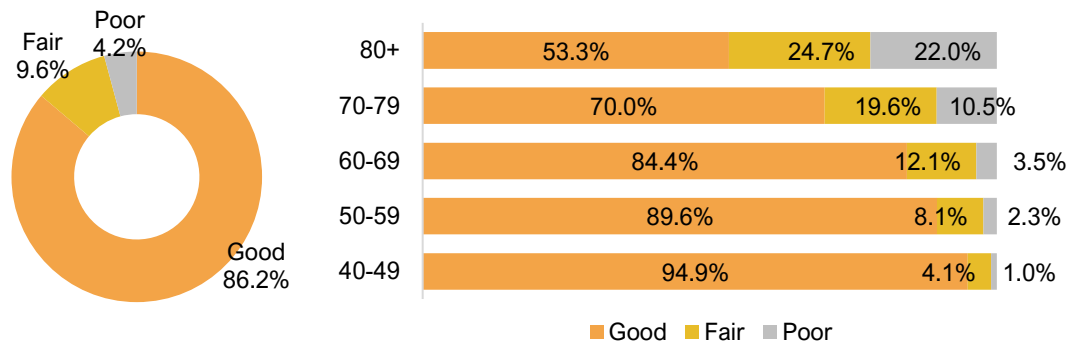


Figure 8.22: Hearing level without hearing aid

Out of 5,603 When asked about ear surgery, only 0.4 percent of respondents reported to have had ear surgery that include membrane surgery, tympanoplasty or eardrum surgery, and other surgery due to accidents and otitis externa.

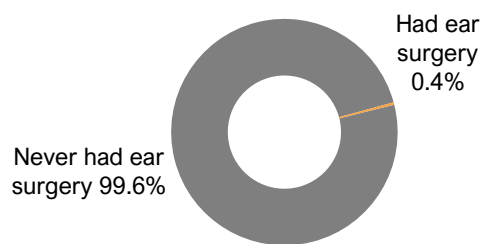


Figure 8.23: Respondents' experience of ear surgery

8.8 Oral health

One crucial and often neglected area of health is oral health. Poor oral health among older persons is reflected in high levels of dental caries or tooth decay, a high prevalence of periodontal or gum disease, tooth loss, dry mouth and oral pre-cancer or cancer. Moreover, the experience of pain and problems with eating, chewing, smiling, and communicating due to missing, discoloured or damaged teeth have a major impact on functional ability and older persons' daily lives (World Health Organization, 2015).

MARS sample indicates that 33.9 percent of the respondents admitted wearing dentures. Among those wearing dentures, 15.6 percent wear both upper and lower teeth, 15.5 percent wear either upper or lower teeth and 2.8 percent wear at least for one tooth (Figure 8.24).

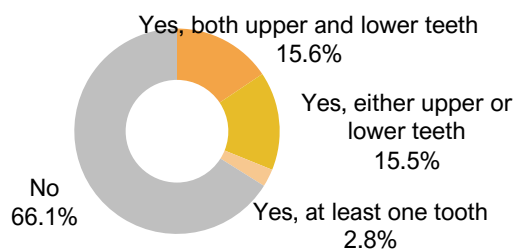


Figure 8.24: Respondents wearing dentures

Further examination reveals that female registers a higher proportion of respondents wearing dentures on both the upper and lower teeth (48.3 percent) than male (43.7 percent) while the opposite is true of respondents wearing either upper or lower teeth. Respondents wearing at least one tooth comprise 9.5 percent of the male and 7.0 percent of the female (Figure 8.25).

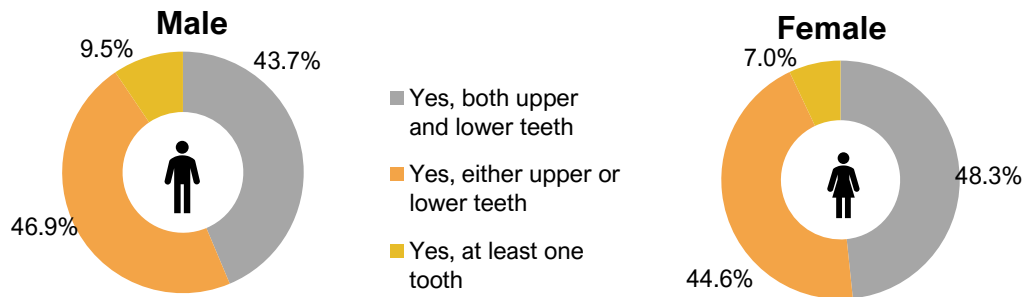


Figure 8.25: Respondents wearing dentures by sex

Among the respondents who wear dentures, the proportion of wearing dentures on both the upper and lower teeth increases sharply with age with about 21 percent among respondents aged 40-49 to 83 percent among those aged 60-69 and 83 percent among those aged 80 and over (Figure 8.26).

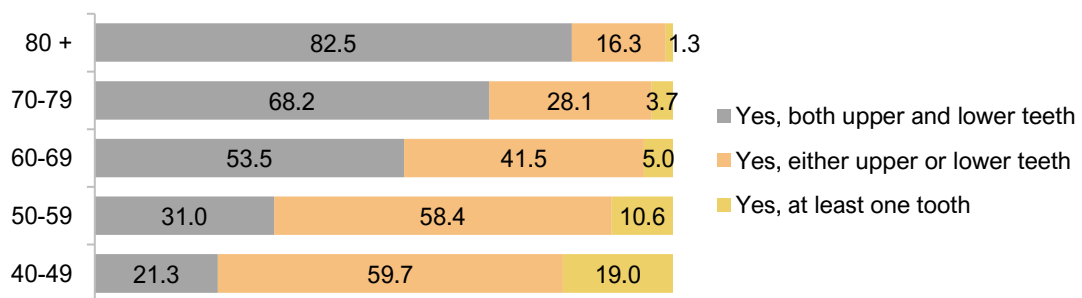


Figure 8.26: Respondents wearing dentures by age

Nearly 70 percent of the respondents wearing dentures reported that their chewing ability was good. Good chewing ability of the respondents wearing dentures ranges from 74.9 percent among those aged 40-49 to 62.5 percent among respondents aged 80 and older (Figure 8.27).

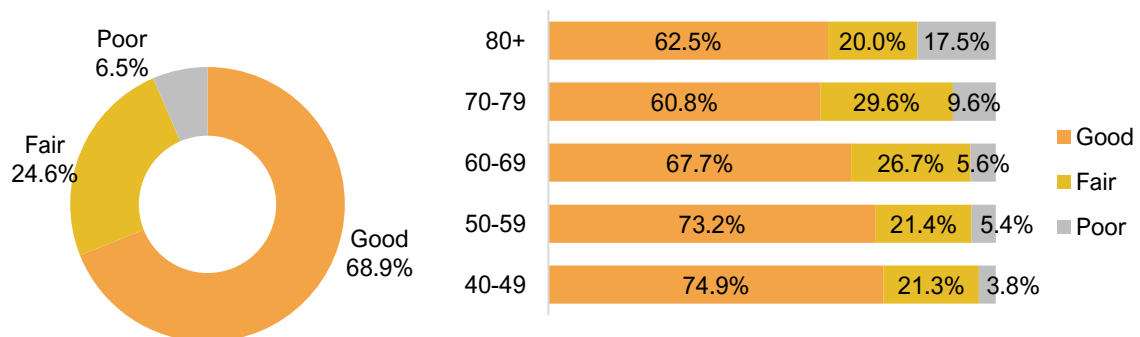


Figure 8.27: Chewing ability of respondents wearing dentures

Among the respondents who do not wear any denture, Figure 8.28 shows that the proportion of respondents who reported good chewing ability is 74 percent. Good chewing ability declines quite sharply from 89 percent among respondents aged 40-49 to 62 percent among respondents aged 60-69 and to only 25 percent among those aged 80 and over.

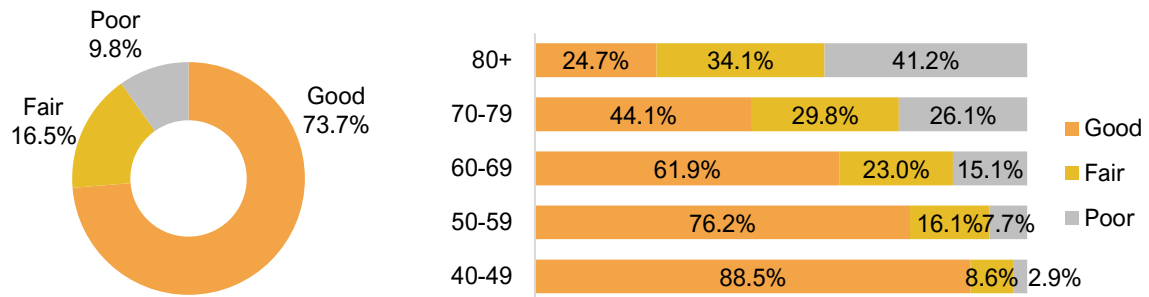


Figure 8.28: Chewing ability of respondents not wearing dentures

8.9 Sleeping Habit

Complaints of sleep difficulty are common among older persons where typical symptoms of sleep problems include difficulty falling asleep and maintaining sleep, early-morning awakening and excessive daytime sleepiness (Neubauer, 1999).

Respondents were asked how often they have trouble falling asleep and 12.7 percent reported that they experienced it most of the time while about 30 percent experienced it sometimes (Figure 8.29).

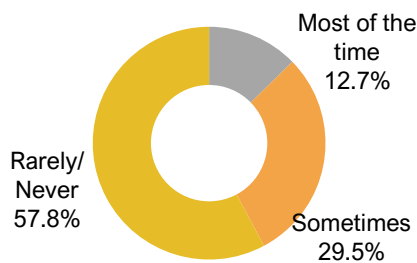


Figure 8.29: Respondents having trouble falling asleep

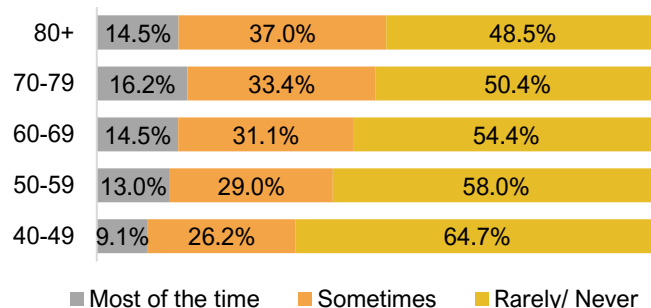


Figure 8.30: Respondents having trouble falling asleep by age

Across age, between 9-16 percent of the respondents reported always having trouble falling asleep with the lowest proportion among those aged 40-49 and gradually increases to 14.5 percent among respondents aged 60-69 and 16 percent among respondents aged 70-79 (Figure 8.30).

Figure 8.31 shows respondents reporting having trouble with waking up too early and not being able to fall asleep again most of the time account for 14.3 percent while 29.1 percent sometimes.

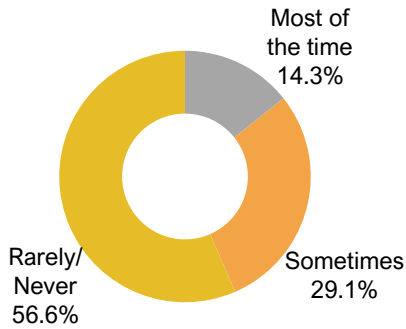


Figure 8.31: Respondents having trouble falling asleep again after waking up too early

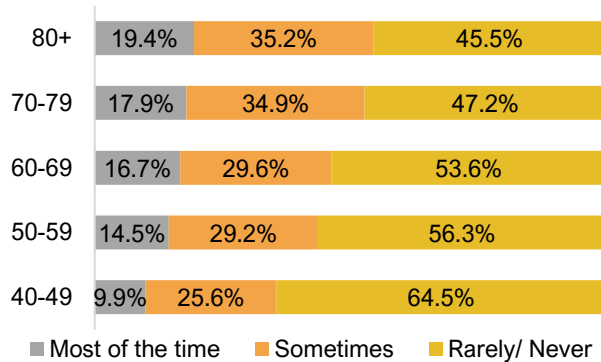


Figure 8.32: Respondents having trouble falling asleep again after waking up too early by age

Respondents having trouble falling asleep again after waking up too early most of the time increases with age. This proportion is about 10 percent among respondents aged 40-49, 17 percent among those aged 60-69 and 19 percent aged 80 or over (Figure 8.32).

Figure 8.33 shows that 59 percent of the respondents feel really rested when they wake up in the morning most of the time and 27 percent reported sometimes. Across age, between 54-61 percent of the respondents reported feeling really rested when they wake up in the morning most of the time with the highest proportion among respondents aged 40-49 and the lowest among those in the oldest age group (Figure 8.33).

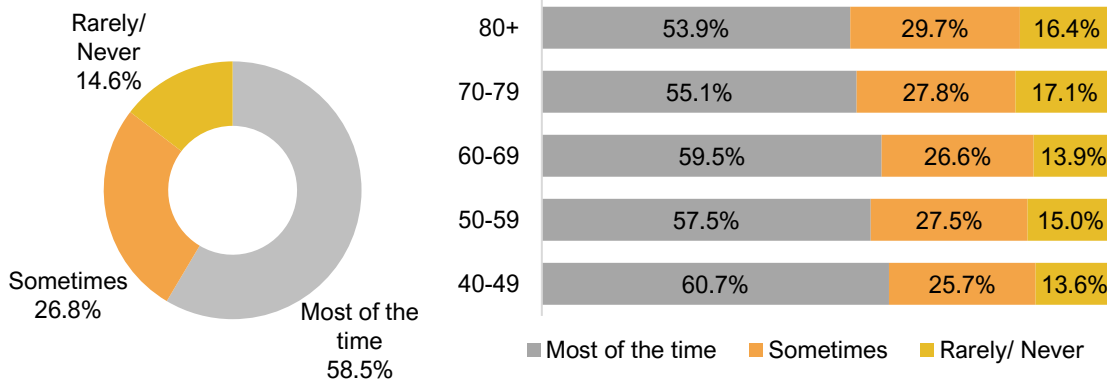


Figure 8.33: Respondents feeling rested after waking up in the morning overall and by age

The proportion of respondents having trouble falling asleep most of the time are slightly higher among female than male. A similar pattern is observed for respondents having trouble falling back asleep after waking up too early most of the time. In contrast, the proportion of male who feel really rested when they wake up in the morning for most of the time is higher than female (Figure 8.34).

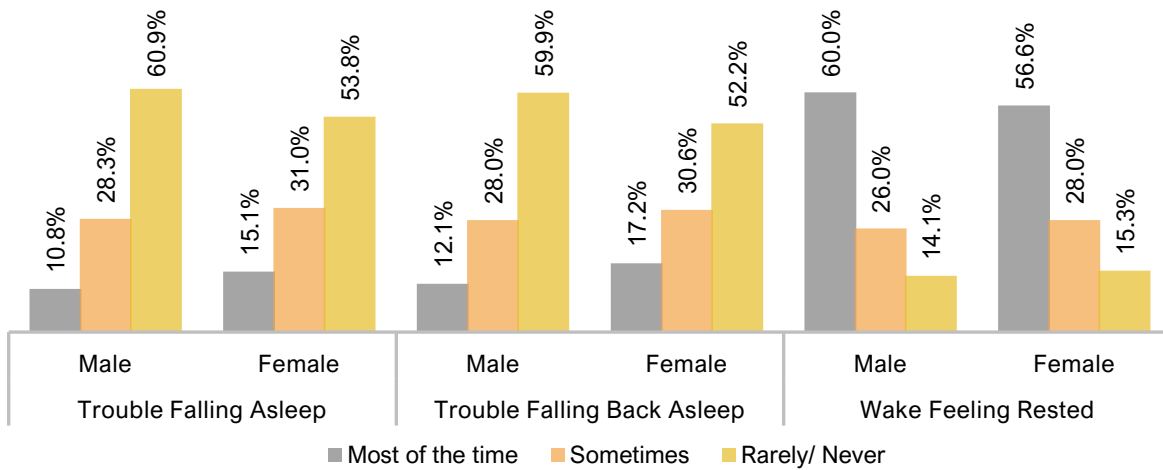


Figure 8.34: Sleeping habit by sex

8.10 Menopause

Menopause typically occurs in women in midlife where for some, the accompanying symptoms can disrupt their daily activities and sense of wellbeing. It is commonly believed that Asian women have a lower prevalence of menopausal symptoms than Western women (Sohail, 2014).

Figure 8.35 shows that 67 percent of female respondents reported they no longer experience menstruation. Among respondents aged 40-49, 90 percent are still having menstrual period while this proportion is 21 percent among those aged 50-59 and about one percent among 60-69).

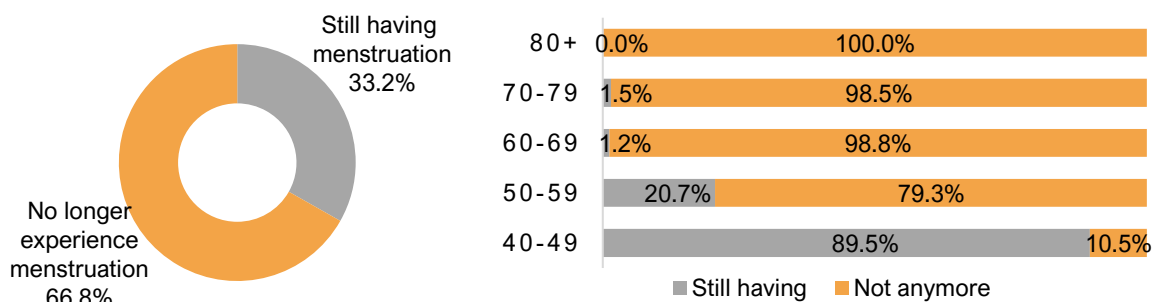


Figure 8.35: Overall menstrual status and by age

Among the respondents who have reached menopause, 27 percent experienced some form of menopausal symptoms in the months leading to menopause (Figure 8.36).

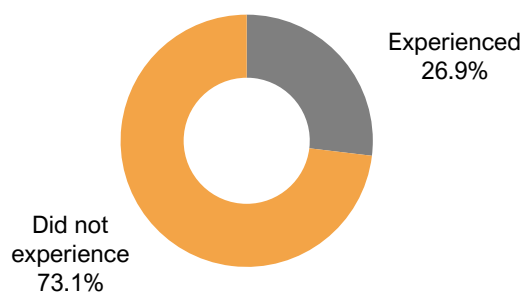


Figure 8.36: Menopausal symptoms prior to menopause

Menopausal symptoms reported by respondents include irregular periods (39.1 percent), mood changes (34.9 percent), night sweats (25.6 percent), hot flushes (23.1 percent), sleep problem (21.1 percent), thinning hair and dry skin (12.9 percent), and chills (12.4 percent). About 9 percent of them reported experienced weight gain while less than five percent experienced slowed metabolism, loss of breast fullness, and vagina dryness (Figure 8.37). The category 'Other symptoms' as experienced by about eight percent of the respondents include nausea, numbness, miscarriage and an irregular heartbeat.

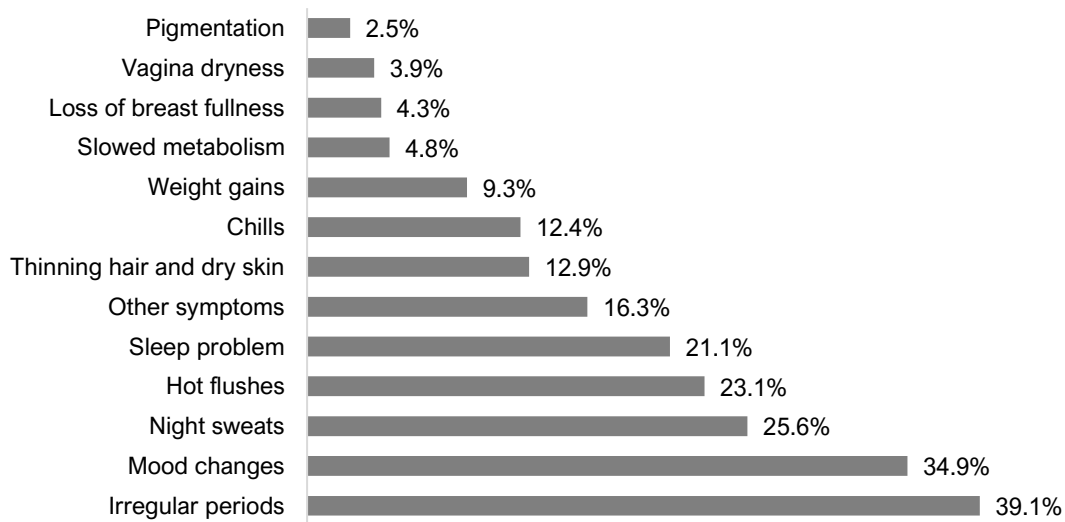


Figure 8.37: Menopausal symptoms experienced

8.11 Weight change

Body weight on average tends to decrease after age 60. The contribution of fat mass to this weight loss is relatively small, but fat tends to be redistributed towards more abdominal fat (Seidell & Visscher, 2000). Overall, 74 percent of the respondents did not gain or lose weight or that their weight change was less than 5kg. The proportion of respondents who gained more than 5kg is the same as that of respondents who lost more than 5kg (11 percent) (Figure 8.38).

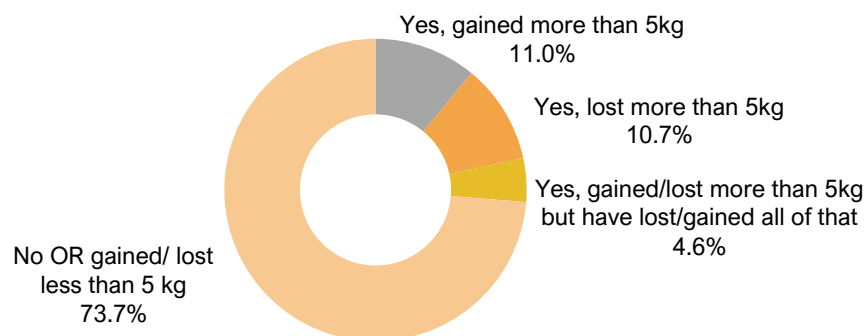


Figure 8.38: Experience of weight change

There is no difference between male and female respondents who did not experience any changes in their or that their weight loss/gain was less than 5kg (74 percent). Similarly, there is no gender difference in terms of respondents who gained weight more than 5kg (11 percent), and those who lost weight more than 5kg (11 percent) (Figure 8.39).

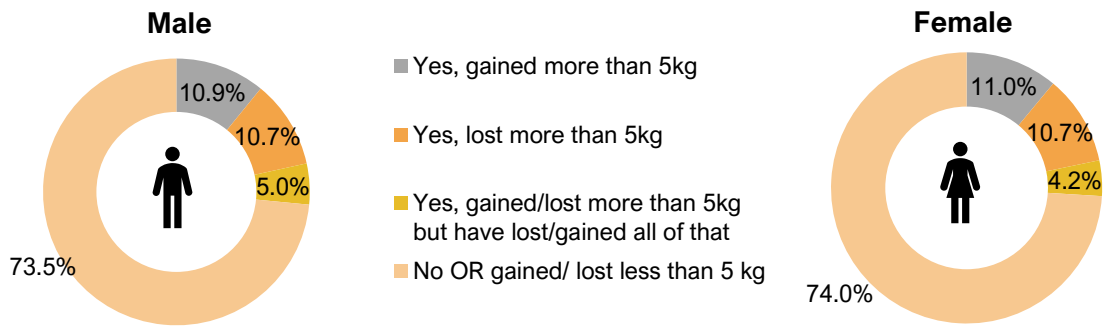


Figure 8.39: Experience of weight change by sex

Across age, respondents with weight gain of more than 5kg gradually decreases from 15 percent among those aged 40-49 to 9 percent among respondents aged 60-69 and slightly more than 2 percent among the oldest age group. The opposite pattern is observed for respondents who had lost weight more than 5kg with 9 percent among those aged 40-49 and 15 percent among respondents aged 80 and over. Similarly, increasing trend with age is observed for respondents who did not experience any weight change or that the change was less than 5kg ranging from 71 percent to 81 percent (Figure 8.40).

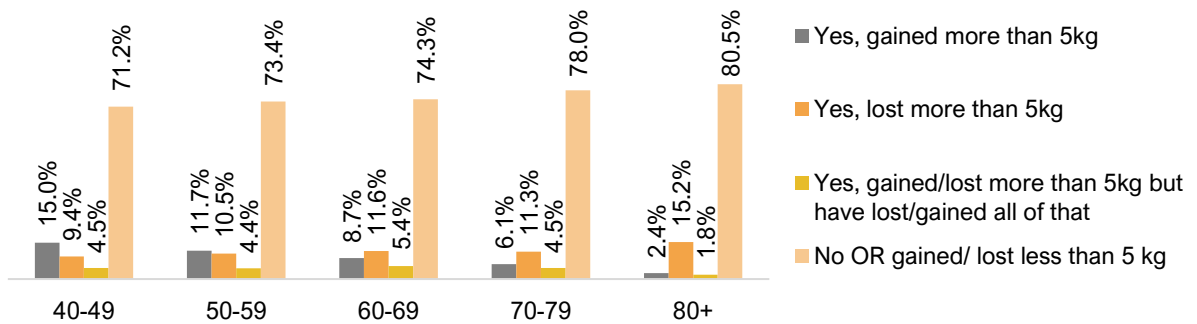


Figure 8.40: Experience of weight change by age

8.12 Risk Factors

Smoking

The overall sample shows that 26.3 percent of the respondents had ever smoked (Figure 8.41). Among male respondents, 57 percent admitted they had ever smoked while this proportion is only slightly more than two percent among female respondents.

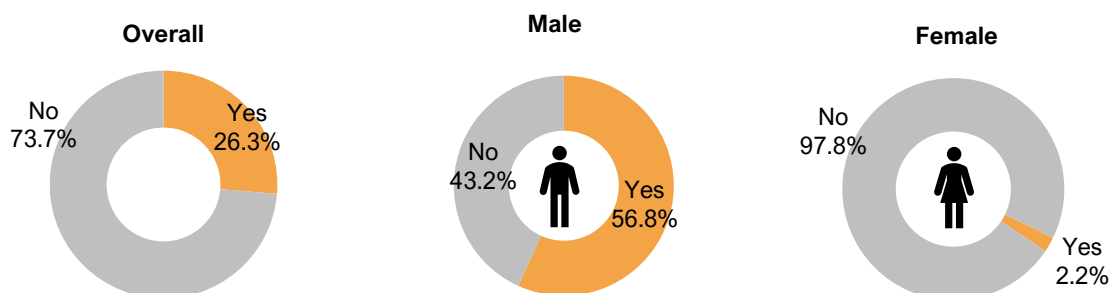


Figure 8.41: Respondents who had ever smoked

Among the respondents who had ever smoked, majority started between the ages of 16 to 24 with one-third started smoking at the age of 16-19 years and 29 percent started at the age of 20-24 (Figure 8.42).

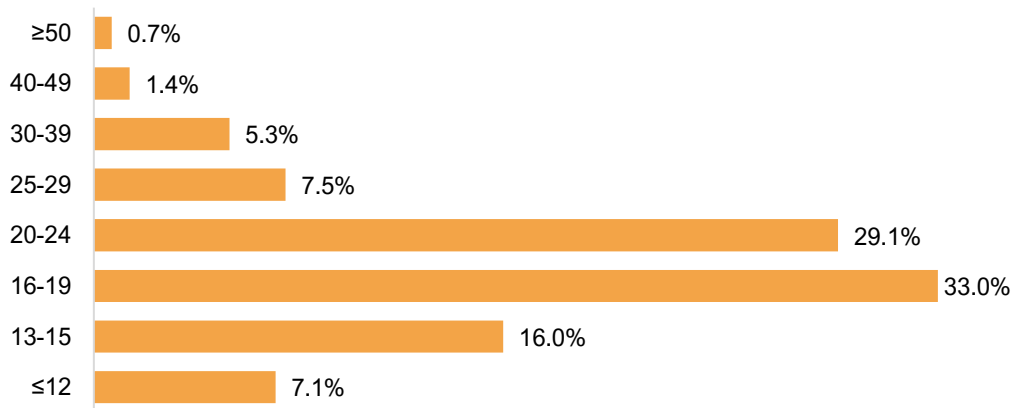


Figure 8.42: Age respondents started smoking

Out of 26 percent of respondents who had ever smoke, 71 percent still actively smoking (Figure 8.43). The proportion of current smokers decreases from 84 percent among respondents aged 40-49 to 62 percent among those aged 60-69 and 42 percent among those 80 and over (Figure 8.43).

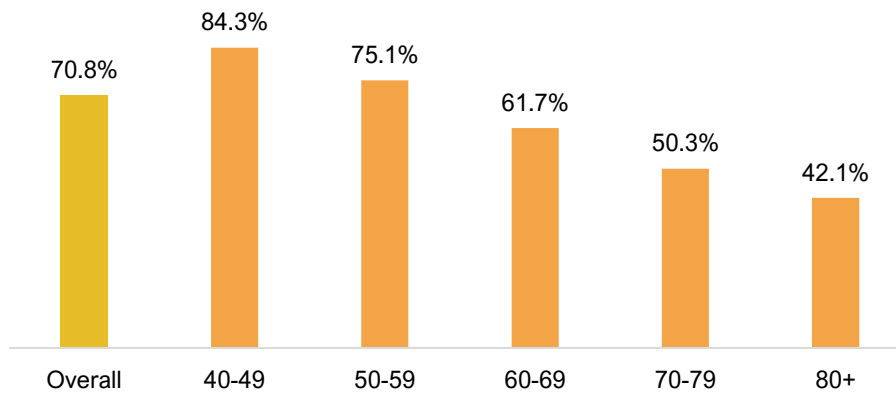


Figure 8.43: Current smokers by age

The total number of years of smoking among current smokers is shown in Figure 8.44 which indicates that more than 90 percent of them had been smoking for at least 20 years and nearly 40 percent had been smoking for at least 40 years.

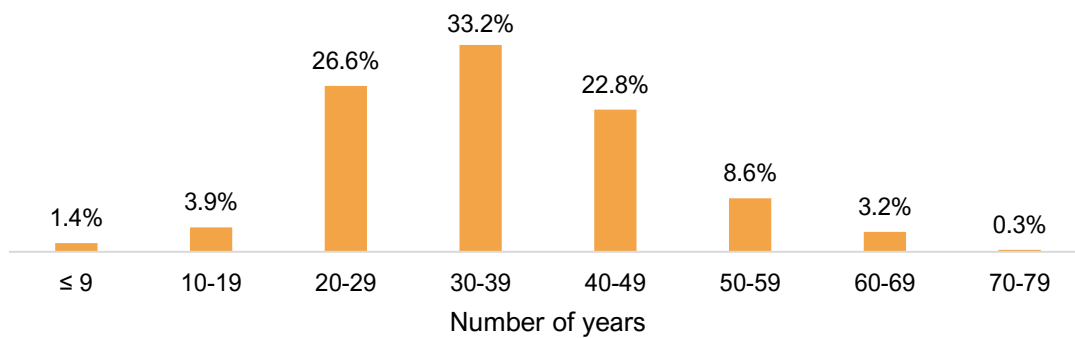


Figure 8.44: Number of years of smoking among current smokers

Among respondents who had stopped smoking, majority stopped smoking at age 40 years or older (68.6 percent) with about 40 percent stopped after they reached age 50 or older (Figure 8.45).

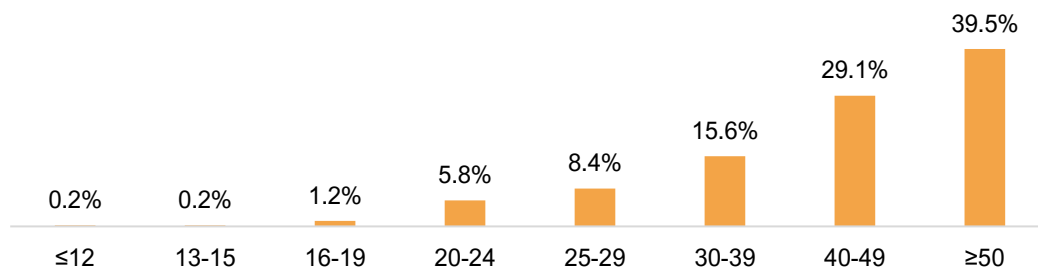


Figure 8.45: Age respondents stopped smoking

Nearly 90 percent of the respondents who had ever smoked reported that they smoked cigarettes and 9 percent smoked pipe/tobacco (Figure 8.46).

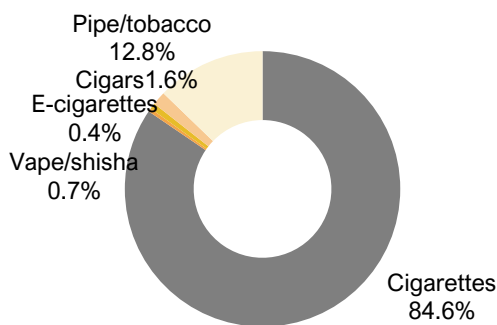


Figure 8.46: Types of smoking

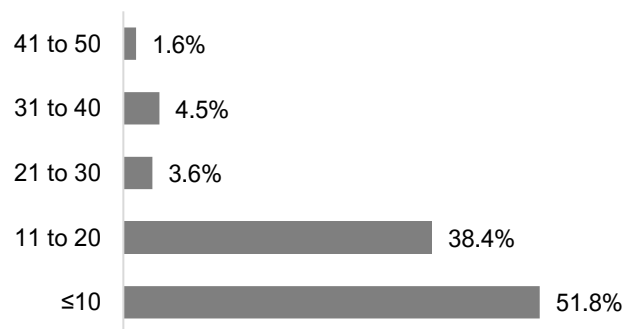


Figure 8.47: Smoking frequency (no. of sticks/times per day)

Slightly more than 50 percent of the respondents who had ever smoked reported less than 10 sticks/times per day during the period that they were smoking the most. However, about 10 percent admitted that they smoked at least 21 sticks/times per day (Figure 8.48).

Drinking

Of the total respondents, about 9 percent admitted that they had ever consumed alcoholic beverages such beer, wine, or toddy. It can be observed that the proportion of male respondents who had ever consumed alcohol (15.0 percent) is much higher than female respondents (3.7 percent) (Figure 8.48).

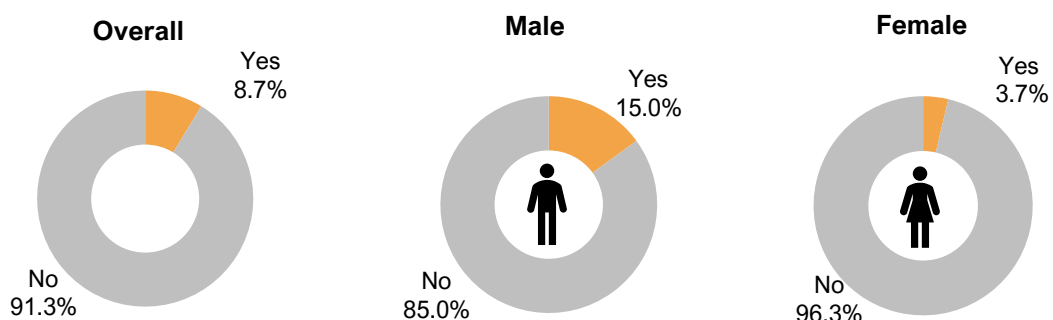


Figure 8.48: Respondents' drinking experience

Among the respondents who had ever consumed alcohol drink, half of them started in their twenties with the highest proportion at age 20-24 (37.4 percent). Respondents who started drinking in their teens account for 29 percent of which 8 percent started at age 15 years or younger (Figure 8.49).

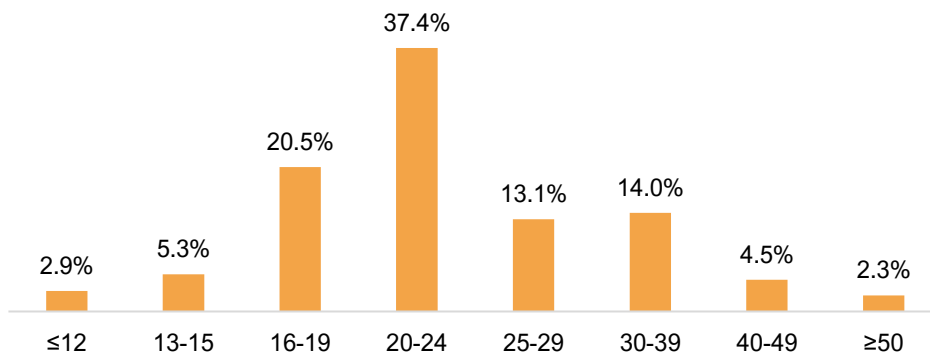


Figure 8.49: Age respondents started drinking

The data show that 64 percent of the respondents who had ever consumed alcoholic drinks are still drinking with the proportion declining substantially as age increases. Among the respondents aged 40-49, about 74 percent are currently consumers of alcoholic drinks compared to 45 percent among those aged 70-79 (Figure 8.50).

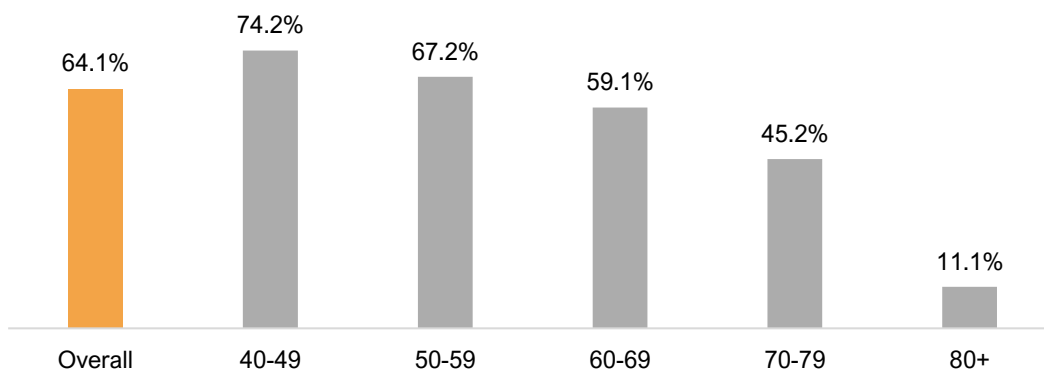


Figure 8.50: Current experience of drinking by age

Among the respondents who are currently consuming alcoholic drinks, nearly 52 percent of them have been drinking for at least 30 years with 18 percent for at least 40 years (Figure 8.51).

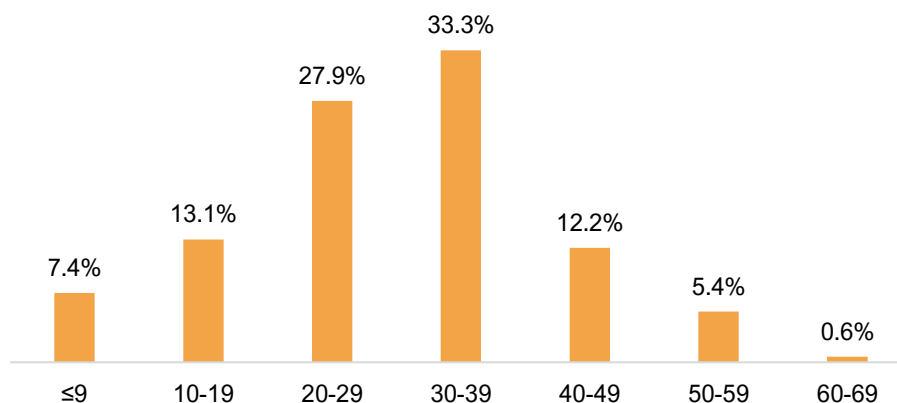


Figure 8.51: Number of years of drinking

On the question of drinking frequency in the past one month, the data indicate that 39 percent of the respondents consume alcoholic drinks once a month while about 40 percent consume alcohol at least twice a month (Figure 8.52).

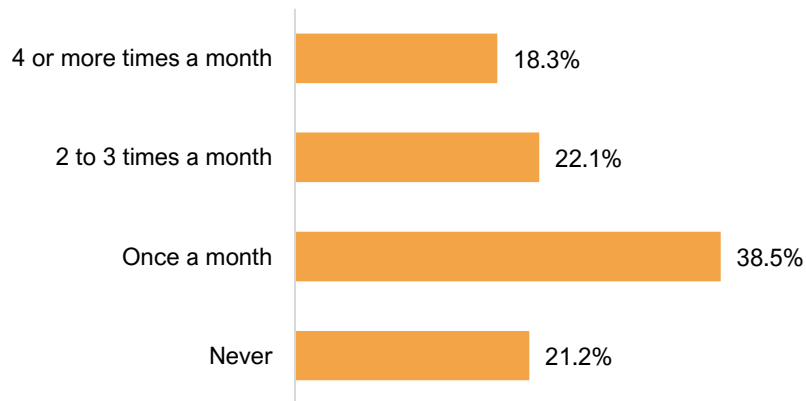


Figure 8.52: Frequency of drinking in the past one month

On a typical day when respondents were drinking, more than half reported that they only consumed 1 to 2 glasses/cans per day (approximately 0.6 oz per intake). About 23 percent of the respondents admitted having 3 to 4 glasses/cans in one day (Figure 8.53).

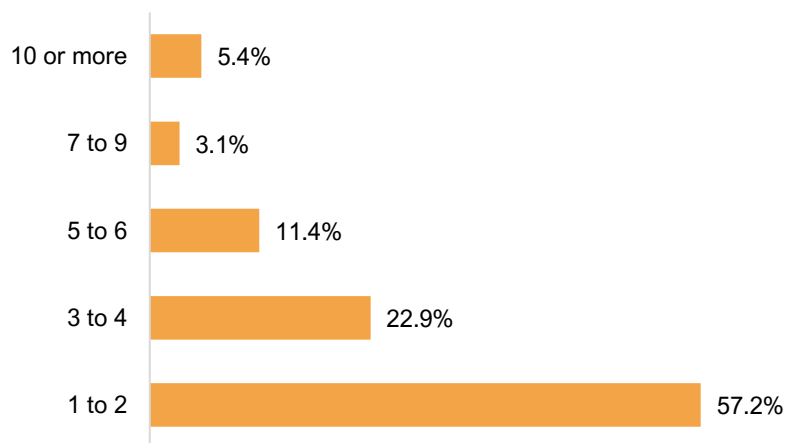


Figure 8.53: Number of glasses of alcohol consumption

9

PHYSICAL MEASUREMENT

Physical measurement was administered during the face-to-face interview with the respondents. Measurements taken include grip strength, blood pressure, height, weight, waist circumference and hip circumference.

9.1 Grip Strength

Generally, people will experience loss of handgrip strength as they age. Handgrip strength is measured because of its association with functional ability, premature mortality, disability, and other health complications among older persons (Moy et al., 2015; Nurul Shahida et al., 2015; Moy et al., 2011). In many epidemiological studies, reduced muscle strength was found to be associated with increased risk of mortality (Bohannon, 2015; Ekstrand et al., 2016).

The distribution of the dominant hand among MARS respondents shows that 91 percent are right hand dominant (Figure 9.1).

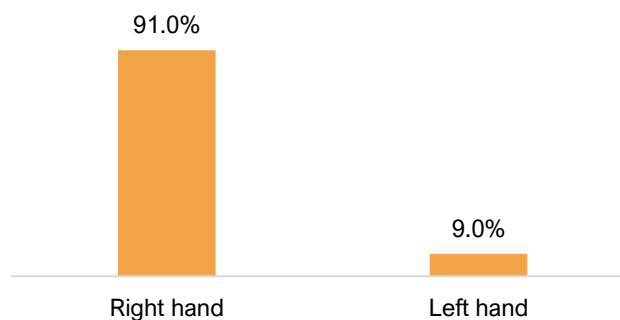


Figure 9.1: Distribution of dominant hand

Grip strength for MARS respondents was measured for both dominant and non-dominant hands using a hand dynamometer. On average, the dominant hand grip strength is slightly higher than that of the non-dominant for both male and female (Table 9.1).

Table 9.1: Grip strength by sex (kg)

Sex	Mean grip strength \pm SD	
	Dominant	Non-dominant
Male	28.2 \pm 11.1	26.7 \pm 10.6
Female	18.0 \pm 7.0	16.7 \pm 6.9

Average grip strength for both dominant and non-dominant hand is higher for male than female respondents by a margin of 10 points each hand (Figure 9.2).

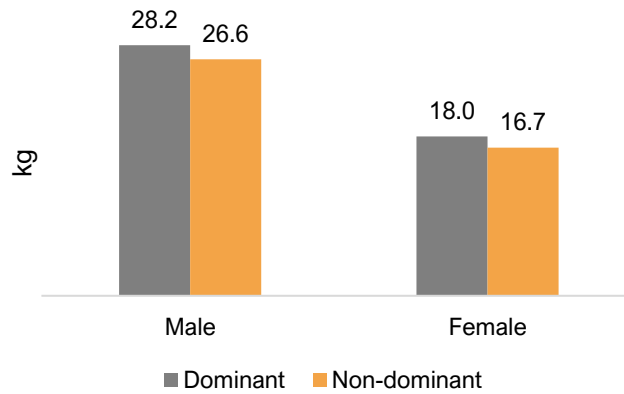


Figure 9.2: Mean grip strength by sex (kg)

Average grip strength decreases with age for both male and female (Figure 9.3). The grip strength among male decreases from 32.4kg at the age of 40 to 49 to 18.2kg at the age of 80 and older for their dominant hand. While the average grip strength for non-dominant hand among male decreases from 30.3kg at the age of 40 to 49 to 17.4kg at the age of 80 and above. Similar trend is observed among female for both dominant hand and non-dominant hand. For instance, the grip strength among female decreases from 20.7kg at the age of 40 to 49 to 10.8kg at the age of 80 and older for their dominant hand.

Table 9.2: Mean grip strength by gender and age (kg)

Gender	Age	Mean grip strength \pm SD	
		Dominant	Non-dominant
Male	40-49	32.4 \pm 10.2	30.3 \pm 10.1
	50-59	29.7 \pm 11.2	28.0 \pm 10.9
	60-69	26.5 \pm 10.3	25.0 \pm 9.3
	70-79	20.8 \pm 8.7	20.1 \pm 9.1
	80+	18.2 \pm 8.4	17.4 \pm 7.5
Female	40-49	20.7 \pm 6.7	19.2 \pm 7.0
	50-59	18.6 \pm 6.9	17.1 \pm 6.4
	60-69	16.6 \pm 6.2	15.4 \pm 6.2
	70-79	13.8 \pm 5.8	13.4 \pm 6.8
	80+	10.8 \pm 5.1	9.5 \pm 5.3

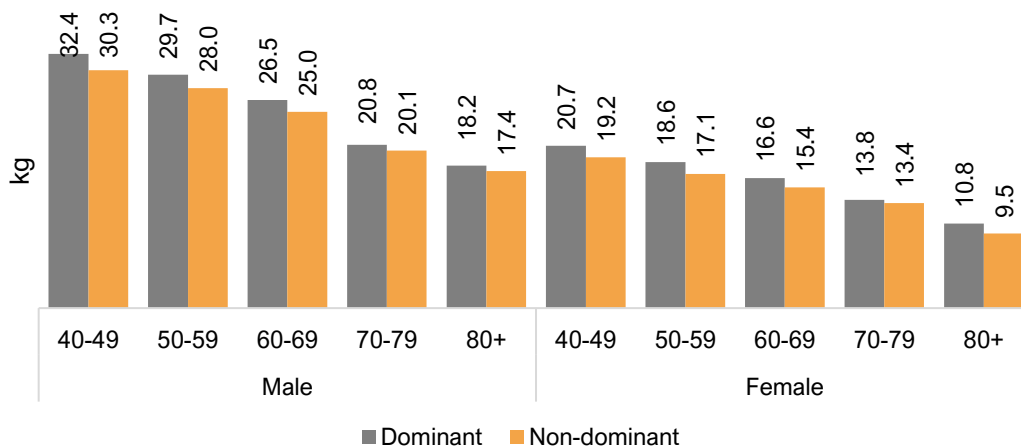


Figure 9.3: Mean grip strength by gender and age (kg)

9.2 Blood Pressure

Hypertension is associated with many age-related illnesses, such as coronary heart disease, peripheral vascular disease, stroke, cognitive impairment as well as renal and visual impairment (Dregan et al., 2016). It has been shown that prevalence of hypertension increases with age (Murphy et al., 2016). Monitoring hypertension epidemiology is pivotal in combatting the burden of hypertension (Murphy et al., 2016).

Blood pressure was measured for MARS respondents using a digital blood pressure monitor. The measured reading was then classified as *optimal*, *normal*, *at-risk*, and *hypertensive* state based on the 2018 Clinical Practice Guidelines, Management of Hypertension (5th edition), Ministry of Health, Malaysia (Table 9.3).

Table 9.3: Classification of clinics blood pressure levels among adults

Classification	Systolic (mmHg)	Diastolic (mmHg)
Optimal	<120	<80
Normal	120-129	80-84
At risk	130-139	85-89
Hypertension	≥ 140	≥ 90

About half of MARS respondents (50.7 percent) were classified under the category of hypertensive, followed by 19.8 percent who were at risk of hypertension, 16 percent were at normal range and 13.5 percent were under optimal state (Figure 9.4)

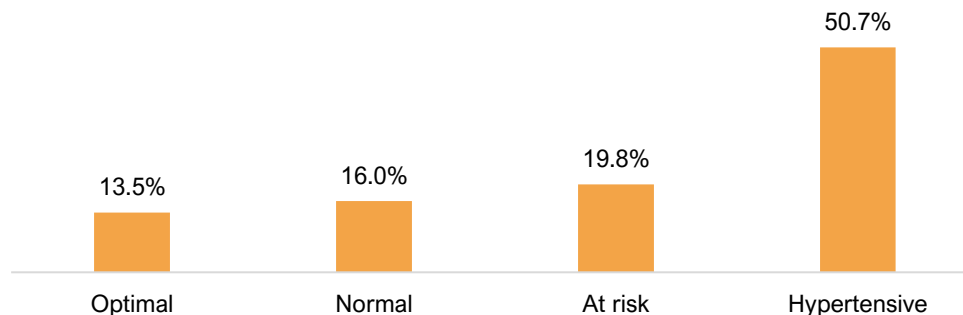


Figure 9.4: Overall blood pressure classification

Male respondents have a slightly higher proportion of hypertension (52.5 percent) compared to female respondents (49.2 percent) while similar proportions are observed for those who were at risk (20 percent). Female registers a higher proportion of respondents than male in the optimal category of blood pressure (Figure 9.5).

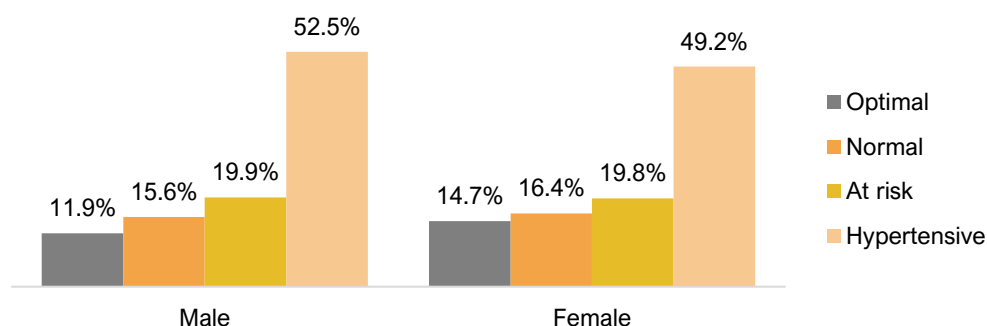


Figure 9.5: Blood pressure category by sex

Comparing blood pressure measures by age, respondents aged 40-49 reported the highest proportion with optimal blood pressure level and lowest proportion of those in the hypertensive category compared to respondents aged 50 and over (Figure 9.6). The highest proportion of respondents classified as having hypertension is among those aged 60-69 (56.3 percent). Between 15-22 percent of the respondents' blood pressure measure were at risk of hypertensive (Figure 9.6).

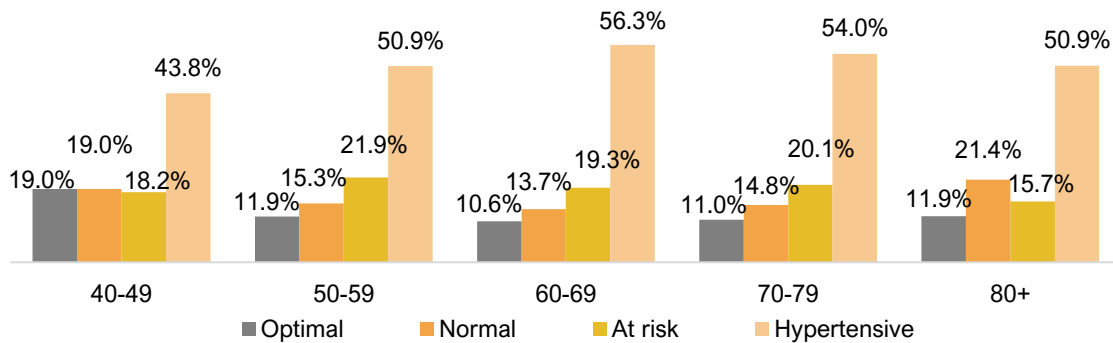


Figure 9.6: Blood pressure category by age

The prevalence of hypertension was compared between doctor-diagnosed hypertension and the measured blood pressure taken during the fieldwork. Figure 9.7 shows that the proportion of respondents who are normal in blood pressure (50.2 percent). 28 percent was found to have high blood pressure measurement screened during fieldwork, indicating that they are prone to have undiagnosed hypertension and 22 percent was found to have hypertension diagnosed by doctor.

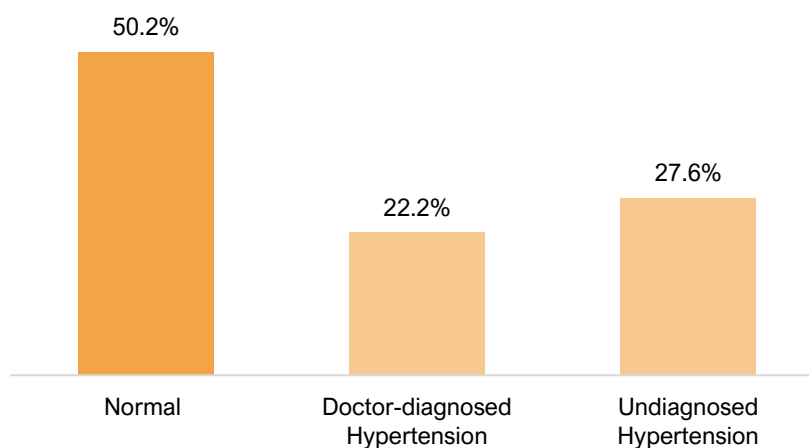


Figure 9.7: Diagnosed and undiagnosed hypertension during field screening

9.3 Body Mass Index (BMI)

Obesity has always been a major public health problem and it has been associated with various adverse health outcomes such as coronary heart disease, diabetes, and dementia (Hobbs et al., 2019; Garfield et al., 2016). Early recognition and prevention of increasing body weight will aid in population-based prevention against obesity. In this study, we measured the body mass index (BMI) calculated using the formula:

$$\text{BMI} = \text{Weight (kg)} / \text{Height}^2 \text{ (m)}$$

Based on the Clinical Practice Guidelines on Management of Obesity 2004, Ministry of Health, Malaysia, respondents can be grouped into four categories namely underweight (BMI < 18.5), normal weight (BMI 18.5-

22.9), pre-obese (BMI 23.0-27.5) and obese (BMI >27.5). Overall, similar proportions are observed for respondents who were obese and overweight or pre-obese (38%) (Figure 9.8),

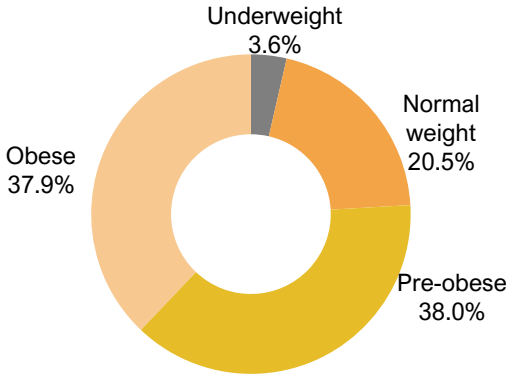


Figure 9.8: Overall BMI classification

The prevalence of obesity declines by two-fold from 42.7 percent among respondents aged 40-49 to 22.5 percent among those in the age group 80 and older (Figure 9.9). The proportion of pre-obese is highest among respondents aged 60-79 with 41 percent and lowest among those in the oldest age group with 30 percent.

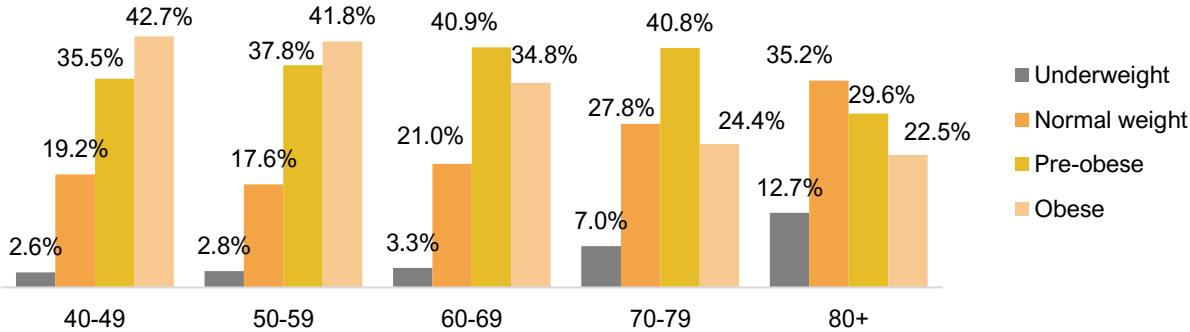


Figure 9.9: BMI by age

The prevalence of obesity among female is higher (43.1 percent) compared to male (31.3 percent) while male respondents register a higher proportion of pre-obese than female respondents (Figure 9.10).

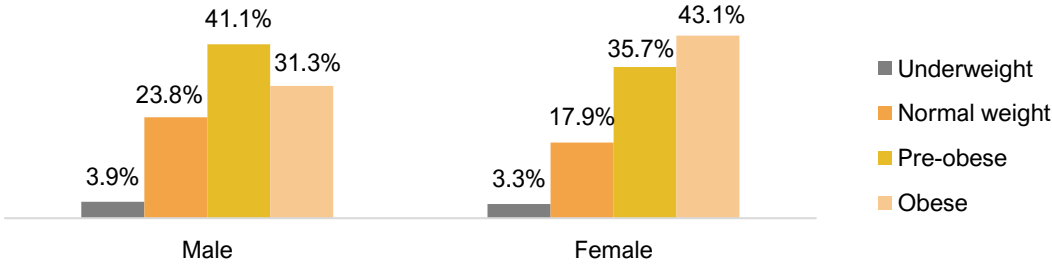


Figure 9.10: BMI by sex

9.4 Abdominal Obesity

In addition to BMI, MARS also measures abdominal obesity using the waist circumference and that abdominal obesity is superior to BMI (Ahmad et al., 2016). Abdominal obesity is one of the risk factors of frailty and pre-frailty among older adults (Badrasawi et al., 2017). The abdominal obesity is an independent risk factor for all-cause mortality and it is associated with metabolic syndrome and cardiovascular disease (Kivimäki et al., 2017; Sahakyan et al., 2015). Obesity is an emerging public health threat in the elderly population in developing countries, including Malaysia.

Waist circumference of the respondents was measured and classified based on the cut-off point used by the International Diabetes Institute/ Western Pacific World Health Organization/ International Association for the study of Obesity/International Obesity Task Force (WHO/IASO/IOTF, 2000). For male, the cut-off point is larger than 90cm while for female is larger than 80cm. MARS data show that about 72 percent of the sample respondents are considered as abdominal obese (Figure 9.11).

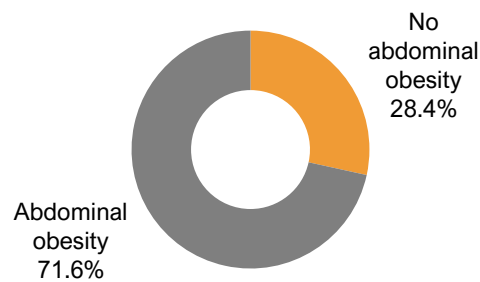


Figure 9.11: Prevalence of abdominal obesity

Overall, the prevalence of abdominal obesity is higher in females (82.6 percent) compared to males (56.4 percent). The prevalence of abdominal obesity increases gradually with the increase of age at the beginning; however, a drop is observed at the age of 70 and over (Figure 9.12).

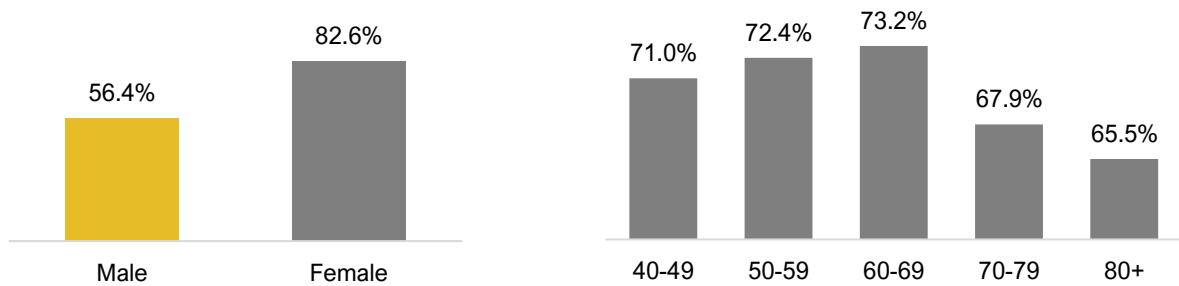


Figure 9.12: Figure 9.12: Prevalence abdominal obesity by sex and gender

10 HEALTHCARE UTILIZATION

Information on the patterns of healthcare utilisation is essential to facilitate the development of healthcare policies and planning for prevention, early diagnosis and management of health conditions. This will eventually allow a decrease in healthcare cost, facilitate sustainability as well as reduce disability and death from medical conditions. Previous studies have demonstrated that various determinants such as sex, age, social status, type of illness, access to services and perceived quality of the service influence an individual’s healthcare seeking behaviour; however there have been discrepancies across diverse populations (Lim et al., 2019; Oberoi et al., 2016; Tipping & Segall, 1995).

There is a growing trend in healthcare utilisation by older adults. Notably, there is no significant difference in the healthcare utilisation pattern of in-patient care among males and females, for both government and private sectors (Institute of Public Health, 2015). According to National Health Morbidity Survey (NHMS 2015), there was 76.7 percent of government utilisation of in-patient healthcare while 23.3 percent of private utilisation of in-patient healthcare (Institute of Public Health, 2015).

10.1 Medical Check-up

In Malaysia, nearly 75 percent of the older adults have registered for primary healthcare facilities and have attended health screenings and various health interventions (Yunus, 2017). MARS data showed that 74.4 percent of the respondents reported having done medical check-up in the past 12 months (Figure 10.1).



Figure 10.1: Medical examination among respondents

Among the respondents who went for medical check-up in the past 12 months, 97.9 percent did so for general health screening and 28.3 percent had cholesterol screening. (Figure 10.2).

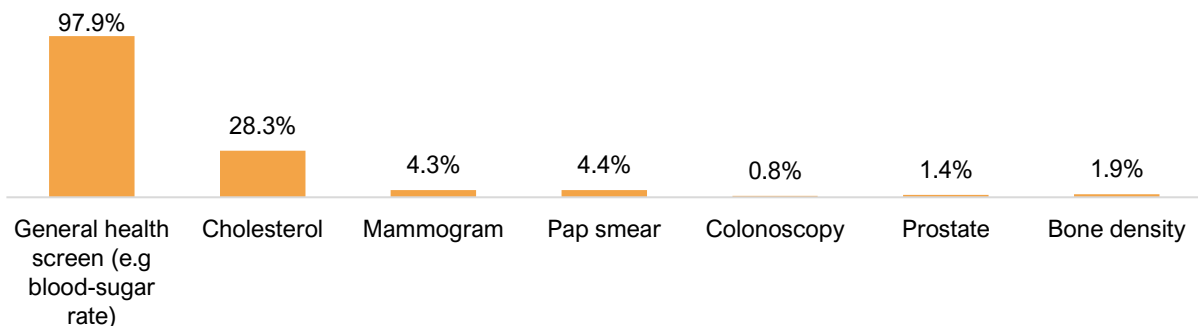


Figure 10.2: Types of medical examination in the past 12 months

Majority of the respondents reported they did not pay for medical check examination or that it was covered by the Government (70.1 percent) with about 20 percent either paid by family members or themselves (Figure 10.3).

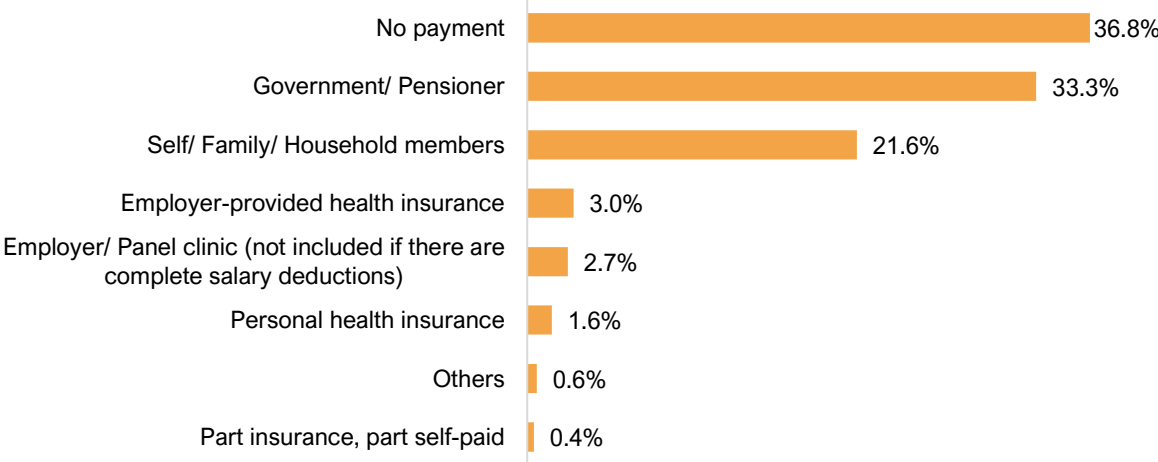


Figure 10.3: Who paid for medical check-up

The proportion of respondents whose medical check-up did not involve any payment increases with age while those who reported that their medical check-up was covered by the Government are about the same across all age groups except for the oldest age group (Figure 10.4).

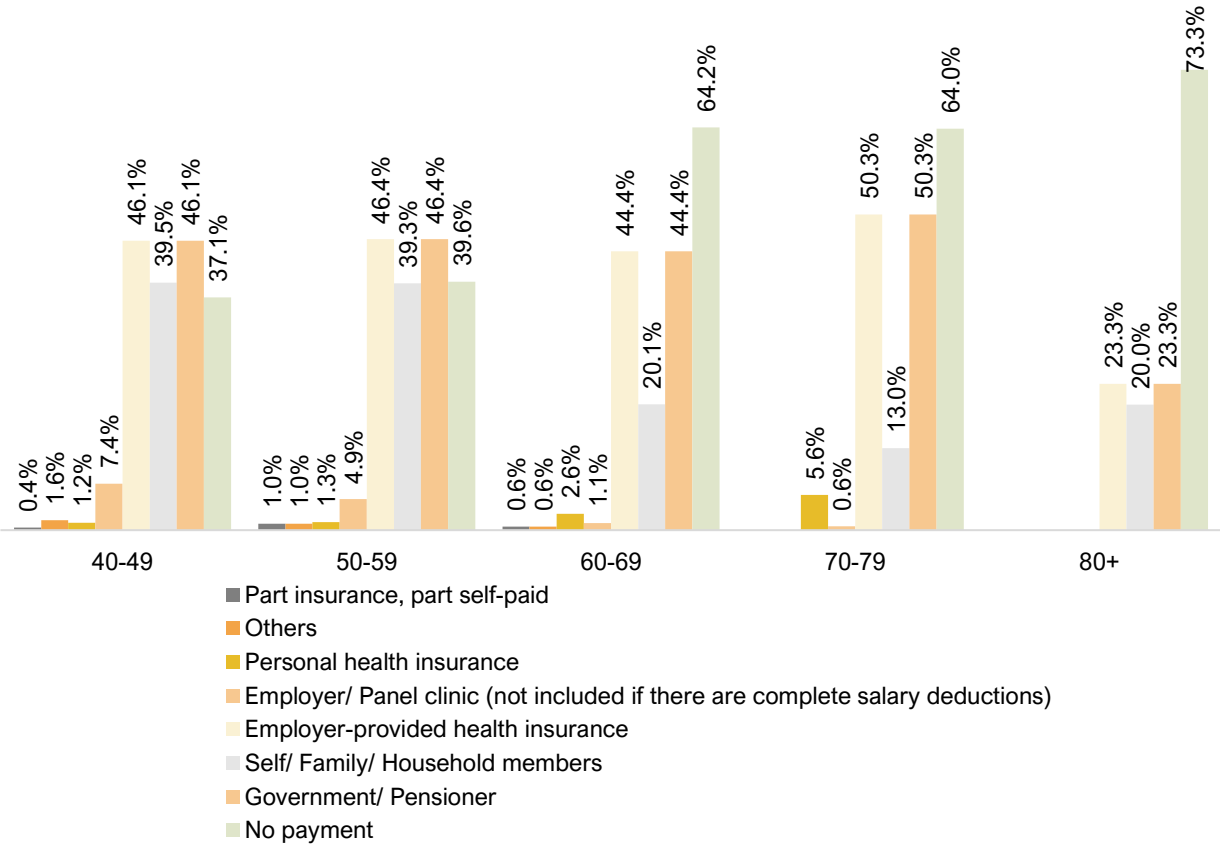


Figure 10.4: Who paid for medical check-up by age

For respondents whose medical examinations required payment, the proportion of respondents who paid for their own check-up or their employer paid for the check-up is similar for both sexes (Figure 10.5).

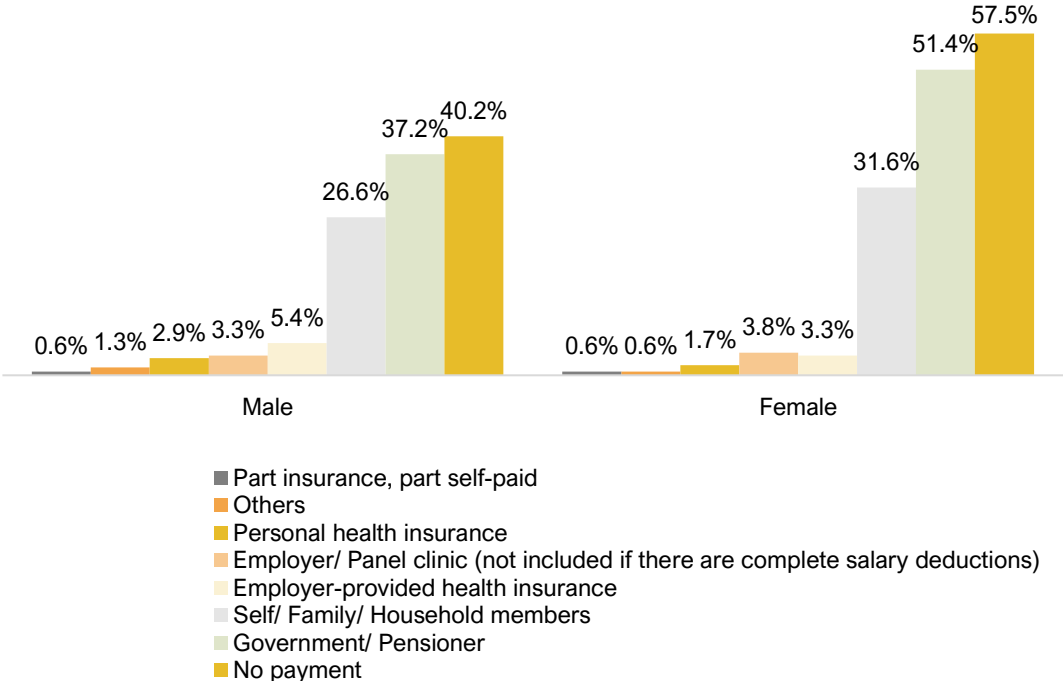


Figure 10.5: Medical check-up payment by sex

Among respondents who did not go for medical check-up, reasons given include perceived no necessity for medical examination (66.4 percent), not expecting a problem due to satisfactory results of their previous check-up (11.3 percent) and being too busy (7.6 percent) (Figure 10.6).

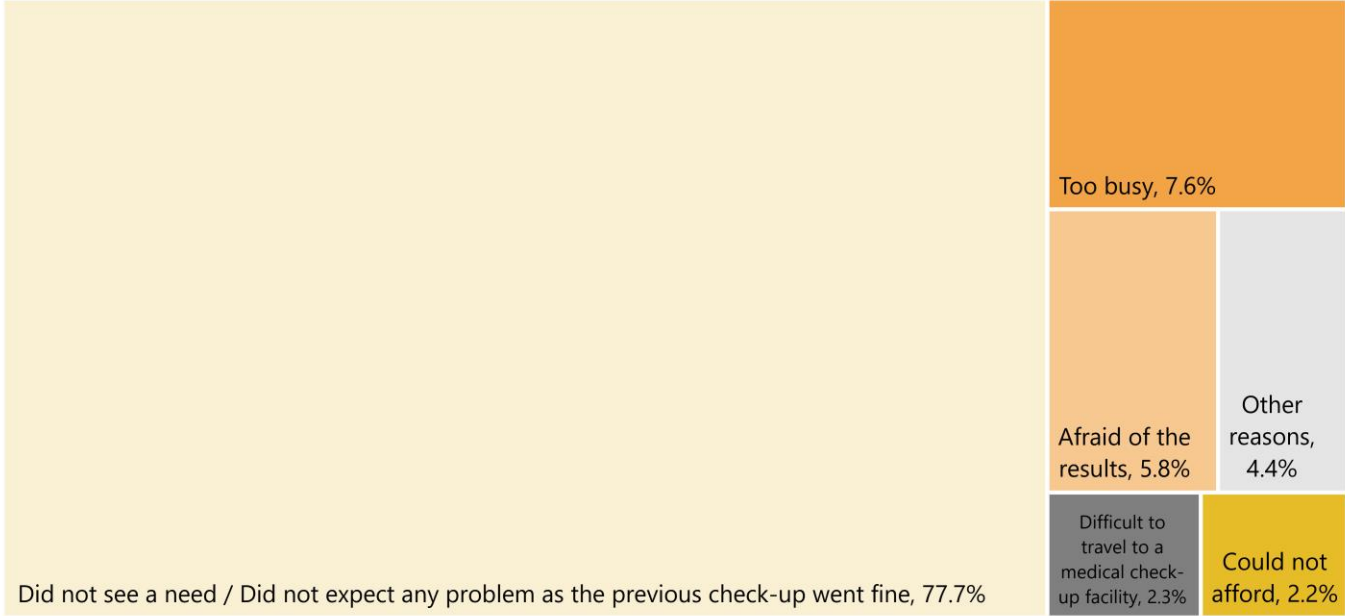


Figure 10.6: Reasons for not going for medical examination

10.2 Outpatient Treatment

About 79 percent of respondents utilise government health facility for their outpatient medical treatments. About 8 in 10 respondents aged 60 and older visited government health facilities (Figure 10.7).

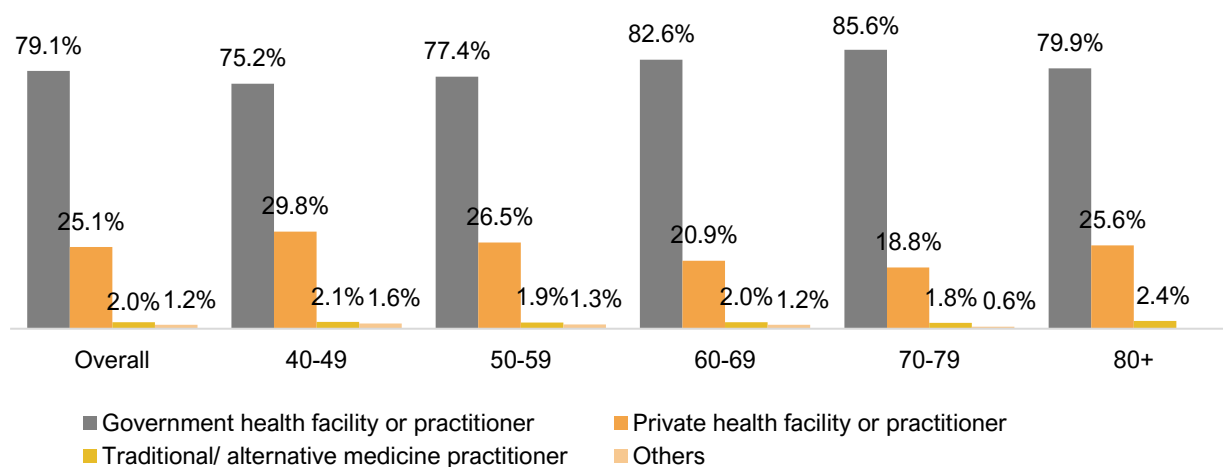


Figure 10.7: Types of outpatient medical treatment by age

Respondents were asked about accompanying person for their medical treatment. The accompanying person is considered essential of the health network and social support (Andrades et al., 2013). Studies reported that the accompanying persons consist mainly of immediate relatives (Andrades et al., 2013; Brown et al., 1998; Chen et. al, 2004).

MARS data indicates that about 41 percent of respondents reported that mostly their spouses accompanied them during medical treatment while 35 percent had no accompanying person. This include responses with multiple visits and having multiple persons accompanying them. A small proportion reported being accompanied by sons/sons-in-law and daughters/daughters-in-law as their companion (15.2 percent and 16.1 percent, respectively) (Figure 10.8).

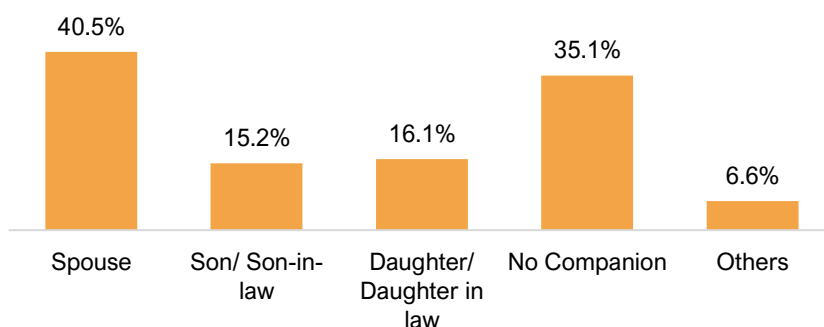


Figure 10.8: Accompanying person for medical treatment (multiple responses)

Spouse is the main accompanying person for respondents aged 40-69, accounting for 36 percent to 48 percent. On the other hand, respondents aged 70 and older depended on their sons or sons-in-law as their accompanying persons (>30 percent). The data indicates that the proportion of respondents with no accompanying person decreases with age (Figure 10.9).

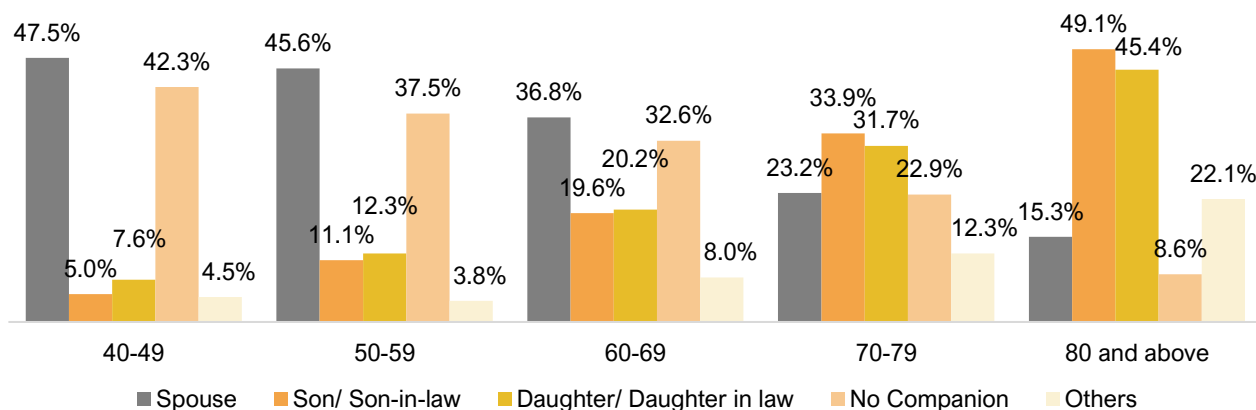


Figure 10.9: Accompanying person to outpatient medical treatment by age (multiple responses)

The proportion of respondents having their spouses to accompany them during medical treatment is higher among females than males (42.3 percent and 38.2 percent, respectively). In contrast, the proportion of respondents having no accompanying person is higher among males than females (50.0 percent and 23.3 percent, respectively). The proportion of respondents having daughters/daughters-in-law and sons/sons-in-law as their accompanying persons is lower in males compared to females (7.8 percent vs. 22.8 percent, 9.4 percent vs. 19.8 percent, respectively) (Figure 10.10).

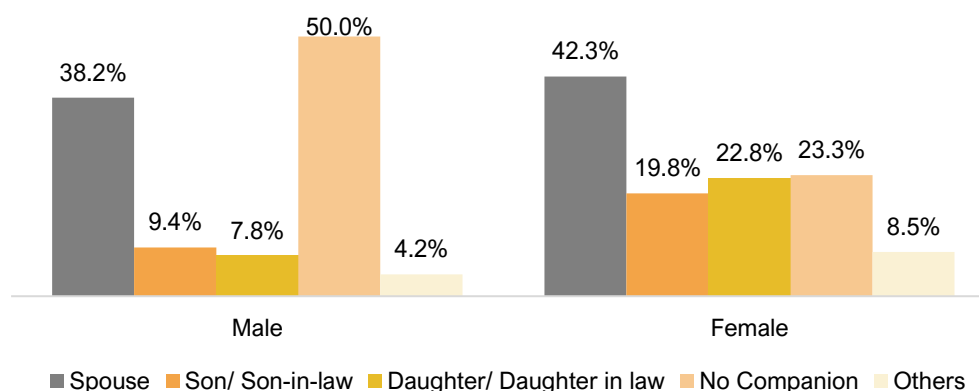


Figure 10.10: Accompanying person for medical treatment by sex (multiple responses)

10.3 Hospitalisation

Hospitalisation is an important healthcare service, especially among older adults. Repeated and prolonged hospitalisation is negatively associated with older patients' health condition (Nunes et. al, 2017). Older adults have higher overall hospital admission and longer length of stay compared to younger adults (Institute of Public Health, 2015; Yunus, 2017).

Respondents were asked whether they were hospitalised in the past 12-months and 10.8 percent admitted so. As expected, increasing trend of hospitalisation is observed as age increases from 8.1 percent among respondents aged 40-49 to 18.4 percent among the oldest age group (80+) (Figure 10.11). As shown in Figure 10.12, there is almost no difference in the proportions of respondents who were hospitalised between the two sexes.

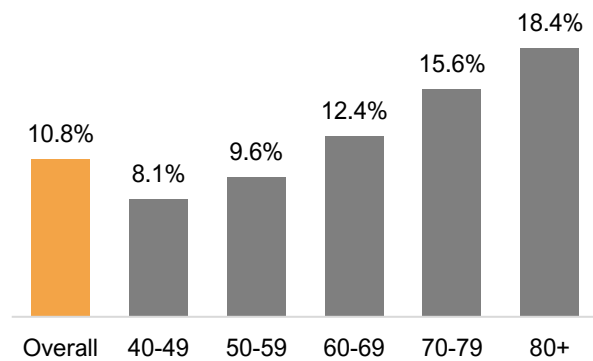


Figure 10.11: Hospitalisation in the past 12 months by age

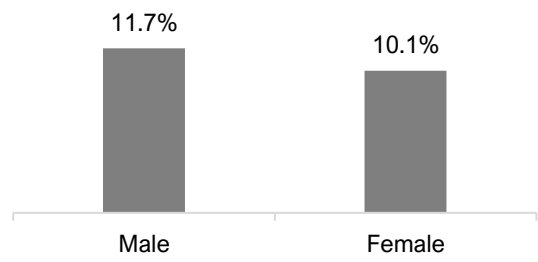


Figure 10.12: Hospitalisation in the past 12 months by sex

Among those hospitalised, majority of respondents reported they were hospitalised only once in the past one year (70.0 percent). The highest proportion of respondents hospitalised once is observed among those aged 40-49 (78.6 percent). Respondents who were hospitalised at least twice is highest among those aged 80 and older (33.4 percent) followed by respondents aged 60-69 (25.9 percent) (Figure 10.13). There were more female than male respondents that were hospitalized at least twice, although the difference is small (Figure 10.14).

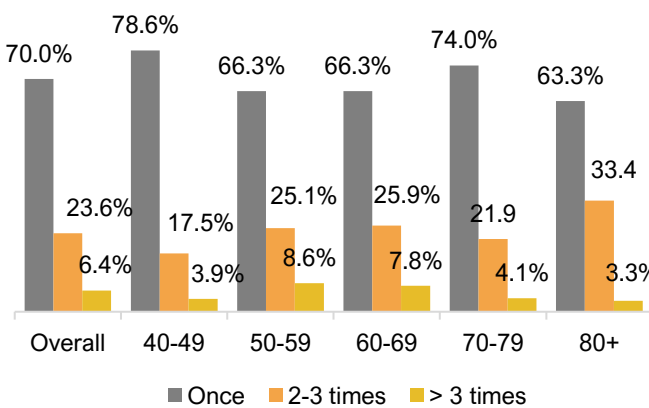


Figure 10.13: Frequency of hospitalisation by age

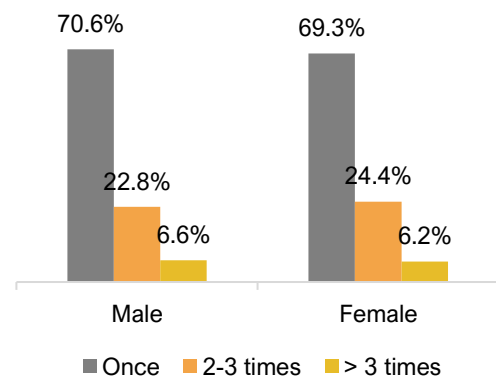


Figure 10.14: Frequency of hospitalisation by sex

Top five health conditions requiring hospitalisation are heart diseases, ulcer or gastrointestinal disorders, accidents, asthma and high blood pressure/hypertension (Figure 10.15).

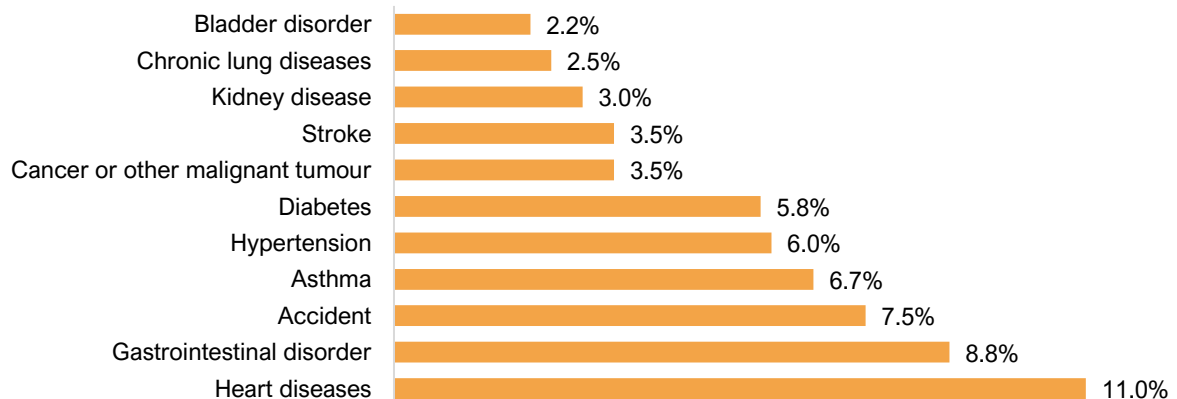


Figure 10.15: Reasons for hospitalisation

Spouses constitute the highest proportion of accompanying person during hospitalisation accounting for 44.0 percent followed by daughter/daughter-in-law (23.0 percent) and son/son-in-law (13.6 percent). About 12.4 percent of the respondents reported they had no companion during hospitalisation in the past one year.

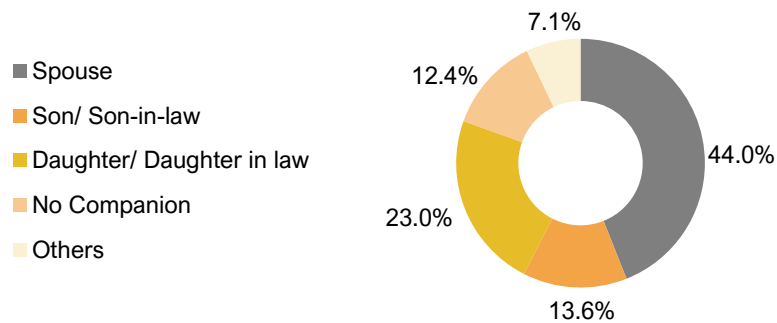


Figure 10.14: Accompanying persons during hospitalisation

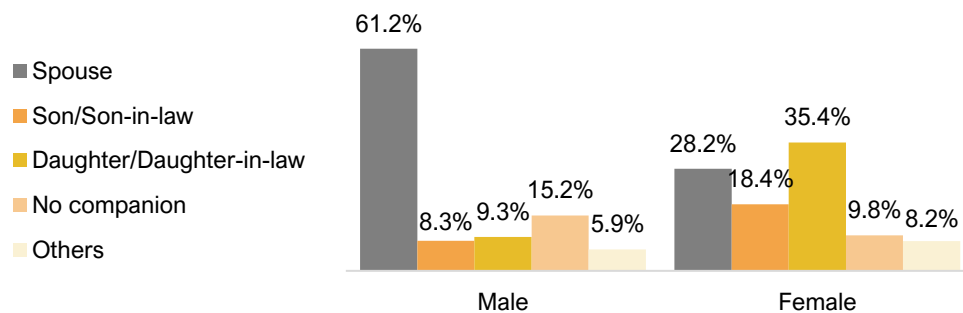


Figure 10.15: Accompanying persons during hospitalisation by sex

The proportion of respondents having spouses to accompany them during hospitalisation is high amongst males (61.2 percent) compared to females (28.2 percent). Daughter/daughter-in-law is reported to be the highest accompanying persons (35.4 percent) during hospitalisation for females. About 15 percent of males did not have anyone accompanying them during hospitalisation compared to 10 percent among females (Figure 10.17).

The role of sons/sons-in-law as accompanying person during hospitalisation ranges from about 6 percent among respondents aged 40-49 to 17 percent among those aged 60 and older. Meanwhile, the proportion of respondents reported having daughters/daughters-in-law as their accompanying persons increases sharply with age from 15 percent among respondents aged 40-49, 23 percent among those aged 60-69 and 47 percent among those aged 80 and older (Figure 10.18).

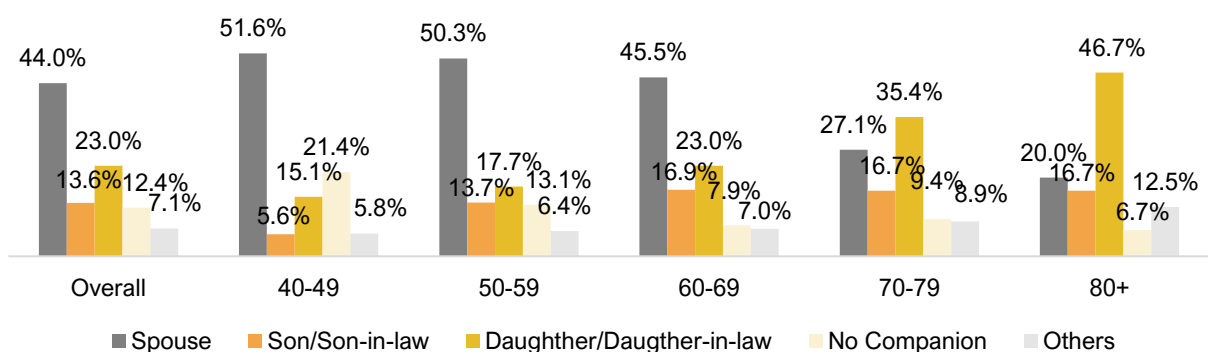


Figure 10.16: Accompanying person during hospitalisation by age

10.4 Private Health Insurance

Healthcare in Malaysia is provided by both the public and private services. Through the expansion of the network of public health facilities comprising of public clinics and hospitals, the public health system (PHS) can be considered successful in its purpose of serving the people (Ahmad, 2019). While Malaysians are enjoying universal healthcare, there has been an increasing trend in the establishment of private healthcare facilities. In view of this, MARS collects information on private health insurance.

Overall, only a small percentage (15.6 percent) of respondents has private health insurance. The proportion of respondents having private insurance sharply declines from 24.1 percent among those aged 40-49 to 1.2 percent among the oldest respondents (Figure 10.20). Higher percentage of males (19 percent) has private health insurance compared to females (12.9 percent) (Figure 10.21).

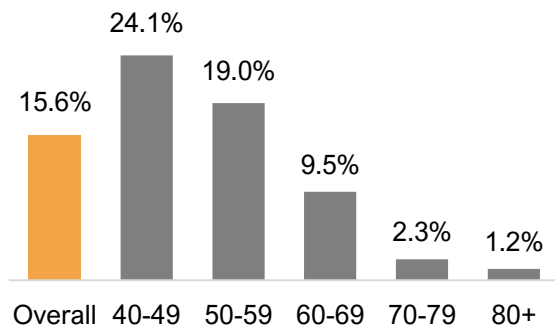


Figure 10.17: Respondents with private health insurance by age

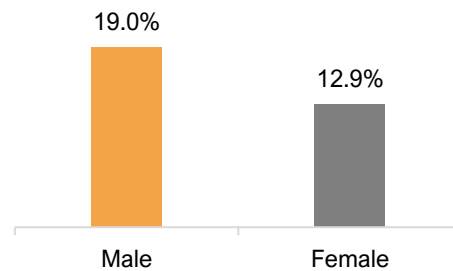


Figure 10.18: Respondents with private health insurance by sex

Figure 10.22 indicates that about 61 percent of the respondents paid for their own insurance while employer and spouse account for 16 percent and 13 percent, respectively. Male reported a higher proportion of paying for their insurance than female respondents (Figure 10.23).

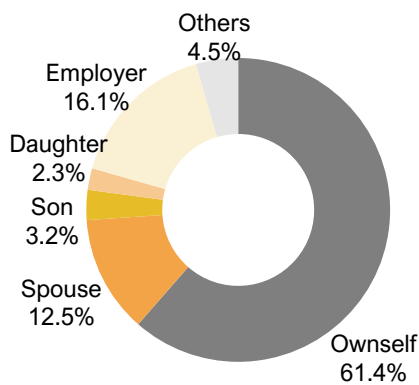


Figure 10.19: Who pays for insurance

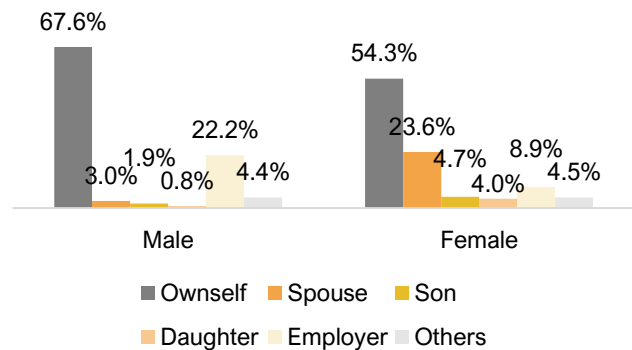


Figure 10.20: Who pays for insurance by sex

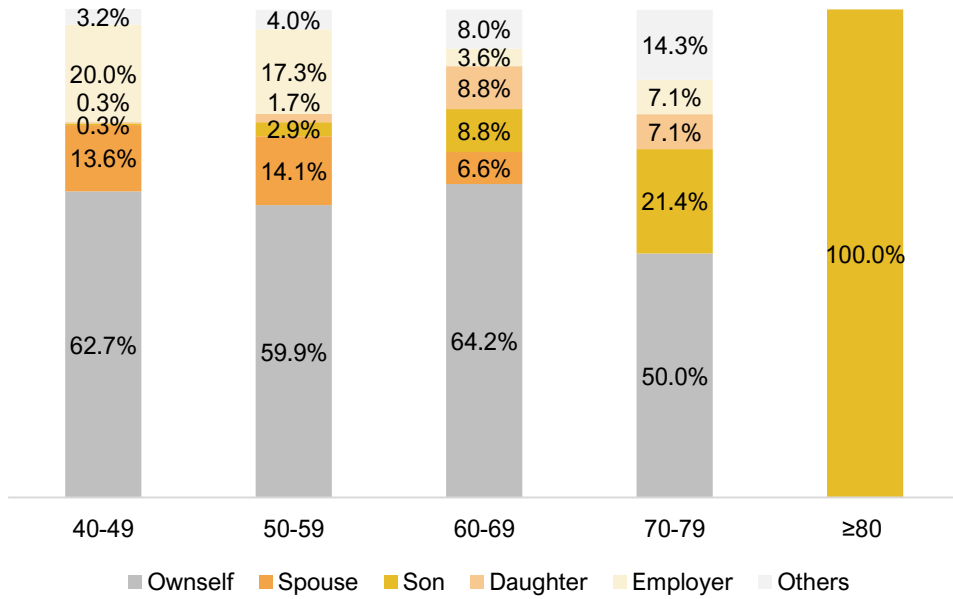


Figure 10.21: Who pays for insurance by age

Across age the proportion of respondents who paid for their own insurance is highest among those aged 60-69 (64.2 percent) followed by respondents aged 40-49 (Figure 10.24). All of the respondents aged 80 and older reported that their insurance were paid by their sons.

11

PHYSICAL ACTIVITIES

Physical activity is defined as any form of bodily movement produced by skeletal muscles, with the subdomains occupational, sports, conditioning, household and other activities (Caspersen et al., 1985). Regular physical activity is crucial for healthy ageing (Daskalopoulou et al., 2017) where inactivity is a key risk factor for morbidity and disability (Bray et al., 2016; McPhee et al., 2016). Notably, regular physical activity is crucial for healthy and safe for frail older persons (McPhee et al., 2016).

Physical activity has significant health benefits for older adults and that physical inactivity is the fourth leading risk factor for global mortality (Kaur et al., 2015). Physical functioning is the crucial determinant of basic Activities of Daily Living (ADL) ability meanwhile Instrumental Activities of Daily Living (IADL) performance is sensitive to early cognitive decline (Boyle et al., 2002; Cahn-Weiner et al., 2007). IADL is a useful tool to measure independent living skills (Lawton and Brody, 1969).

11.1 Activities of Daily Living (ADL)

Activities of Daily Living (ADLs) is frequently referred to as physical ADLs or basic ADLs which consists of the fundamental skills typically required to manage basic physical needs. These activities include grooming/personal hygiene, dressing, toileting/ continence, transferring/ ambulating and eating (Mlinac and Feng, 2016). Basic ADLs are different from Instrumental Activities of Daily Living (IADLs) which comprises of more complex activities linked to independent living in the community (e.g. managing finances and medications). On that account, physical functioning is a crucial determinant of basic ADL ability meanwhile IADL performance is sensitive to early cognitive decline (Boyle et al., 2002; Cahn-Weiner et al., 2007). The ability to perform ADLs and IADLs is determined by cognitive (e.g. reasoning, planning), motor (e.g. balance, dexterity) and perceptual (including sensory) abilities (Mlinac and Feng, 2016).

Overall, among all activities of daily living (ADL) which include climbing stairs, grooming, getting in and out of bed, mobility in the house and bathing, the highest proportion is observed for respondents requiring help to climb stairs (8.2 percent). The proportion of respondents needing help for ADLs increases with age, more so in the age groups beyond 70. Those who need help to climb stairs range from 1.6 percent among respondents aged 40-49 to 38.4 percent among those aged 80+. The oldest age group reported that they require help to move around the house (17.1 percent) (Table 11.1).

Table 11.1: Respondents requiring help for ADL by age

ADL	Overall	40-49	50-59	60-69	70-79	80+
<i>Climbing stairs</i>	8.2%	1.6%	5.4%	9.9%	20.6%	38.4%
<i>Grooming</i>	2.1%	1.4%	1.5%	2.6%	2.4%	11.6%
<i>In and out of bed</i>	2.1%	0.2%	1.2%	2.4%	5.5%	13.4%
<i>Mobility in the house</i>	1.9%	0.1%	1.0%	1.9%	4.5%	17.1%
<i>Bathing</i>	1.6%	0.3%	1.0%	1.8%	3.1%	11.6%

The proportion of respondents who needed assistance was higher among female than male respondents for all activities except grooming and dressing (Table 11.2).

Table 11.2: Respondents requiring help for ADL by sex

ADL	Male	Female
<i>Climbing stairs</i>	5.9%	10.0%
<i>In and out of bed</i>	1.5%	2.5%
<i>Mobility in the house</i>	1.3%	2.3%
<i>Bathing</i>	1.3%	1.7%
<i>Grooming</i>	3.0%	1.4%
<i>Use toilet</i>	1.2%	1.4%
<i>Dressing</i>	1.4%	1.2%
<i>Eating</i>	0.8%	0.8%
<i>Mouthcare</i>	0.5%	0.7%

11.2 Instrumental Activities of Daily Living (IADL)

Instrumental Activities of Daily Living (IADLs) are normal daily tasks comprising of meal preparation, banking and financial transactions, and shopping. The Lawton Instrumental Activities of Daily Living Scale is a useful tool to measure independent living skills (Lawton & Brody, 1969). These skills are known to be more complex compared to the basic activities of daily living as measured by the Katz Index of ADLs. The instrument is used for describing how a person is functioning at the current period and for finding improvement or deterioration over time. There are eight domains of function measured with the Lawton IADL scale. Evidence showed that females scored on all eight areas of function. Meanwhile, males did not score in the domains of food preparation, housekeeping and laundering. Nevertheless, it is important to evaluate all domains for both sexes (Coyne & Kluwer, 2019). The presence of stairs in the home was associated with prevention of IADL reduction over a 3-year period in older women without disabilities. A recent study revealed that a home with stairs might facilitate retaining the ability to perform IADL among older adults without disabilities (Tomioka et al., 2018). Moreover, participation in a variety of social activities is linked with a lower rate of IADL decline in females but not males (Tomioka et al., 2017). In addition, moderate social participation may yield positive impact in the prevention of IADL reduction, particularly in females (Tomioka et al., 2018).

Among the IADL, the data showed that for the total sample, the highest proportion of respondents needing help is driving (34.0 percent), followed by visiting friends and/or family (21.7 percent) and going shopping (19.1 percent). These proportions are observed to increase with age (Table 11.3).

Table 11.3: Respondents requiring help for IADL by age

IADL	Overall	40-49	50-59	60-69	70-79	80+
<i>Go shopping</i>	19.1%	8.9%	14.5%	23.2%	37.1%	63.4%
<i>Make a meal</i>	14.5%	8.4%	11.6%	15.6%	25.8%	54.3%
<i>Take medications</i>	5.1%	1.4%	2.9%	5.1%	12.3%	36.6%
<i>Driving</i>	34.0%	20.9%	27.5%	41.4%	56.7%	80.5%
<i>Using public transportation</i>	16.8%	5.4%	11.1%	21.1%	39.2%	67.7%
<i>Visiting friends/family</i>	21.7%	9.9%	16.0%	26.7%	43.9%	69.5%

Examining IADL across gender, female respondents reported higher proportion needing help for their mobility than male respondents. More than 50 percent of female need help with driving compared to 12.6 percent of male respondents. Similarly, the proportion of respondents needing help in visiting friends/family (31.2 percent female vs 9.7 percent male) and shopping (25.4 percent female vs 11.1

percent male). Activities around the house show higher proportion of males needing help compared to females. These include doing laundry, housework and making meals. It is also observed that the proportion of respondents needing help with use of telephone is substantially higher among female (18.2 percent) than male (10.8 percent) (Table 11.4).

Table 11.4: Respondents needing help for IADL by sex

<i>IADL</i>	<i>Male</i>	<i>Female</i>
<i>Visiting friends/family</i>	9.7%	31.2%
<i>Do laundry</i>	8.4%	23.5%
<i>Take medications</i>	12.6%	51.0%
<i>Using public transportation</i>	19.6%	8.0%
<i>Do housework</i>	14.3%	11.9%
<i>Make meal</i>	10.8%	18.2%
<i>Driving</i>	5.1%	5.1%
<i>Use telephone</i>	21.7%	8.8%
<i>Go shopping</i>	11.1%	25.4%

11.3 Participation in Sports/Physical Activities

Overall, 69.2 percent of participants rarely/never perform vigorous activities such as running, swimming, cycling, aerobics, tennis or digging with a hoe or shovel. Only a small proportion (18.1 percent) reported they always (every day or more than once a week) perform vigorous activities. Males are observed to be more active compared to females who always perform vigorous activities (25.1 percent and 12.5 percent, respectively) (Figure 11.1).

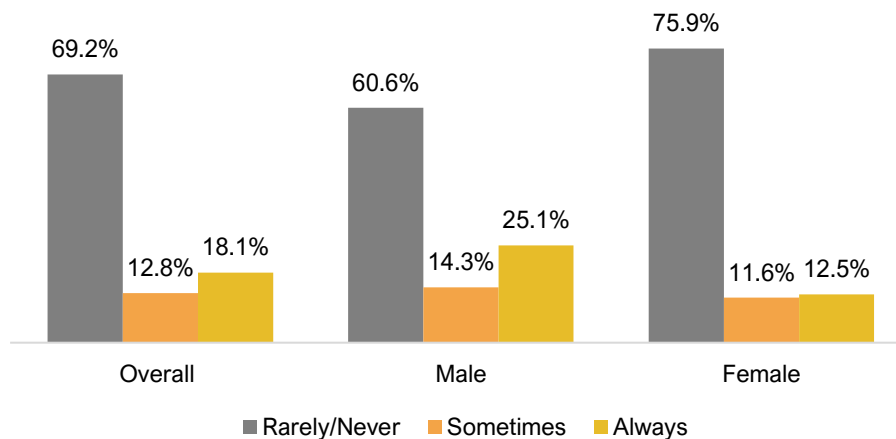


Figure 11.1: Participation in vigorous activities

With regards to moderately vigorous activities which include gardening, cleaning car, walking at a moderate pace or dancing, there is almost a similar proportion of respondents who always (39.8 percent) and rarely/never (38.9 percent) perform these activities. Higher proportion of males always participate in moderately vigorous activities (46.8 percent) compared to females (34.3 percent) (Figure 11.2).

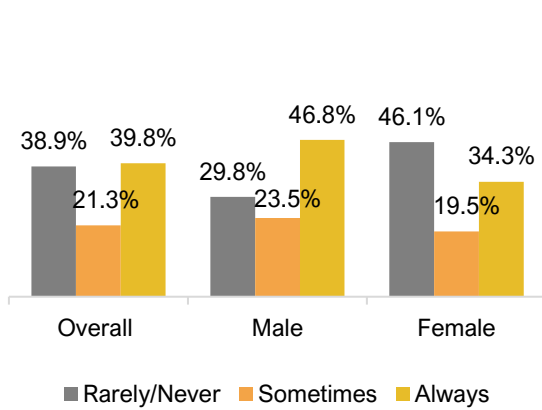


Figure 11.2: Respondents' participation in moderately vigorous activities

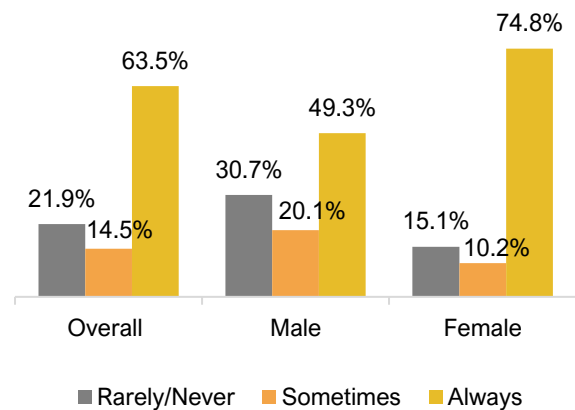


Figure 11.3: Respondents' participation in light exercise or activities

Majority of respondents (63.5 percent) perform light exercise or activities which include Tai Chi, vacuuming or home cleaning. About three quarters of female respondents (74.8 percent) reported that they always perform light exercise/activities compared to male respondents (49.3 percent) (Figure 11.3).

In terms of performing daily activities based on the NAGI Index (physical functions), the data show that overall, respondents have most difficulty in squatting/kneeling (30.4 percent) compared to getting up from chair (26.9 percent), sitting for 2 hours (21.6 percent) and walking 100m (18.9 percent). Proportion of respondents having difficulty in these basic physical functions increases with age. A big difference is observed among those aged 70 and older especially in squatting/kneeling (Table 11.5).

Table 11.5: Respondents having difficulty performing basic physical functions

Physical functions	Overall	40-49	50-59	60-69	70+
<i>Walking 100m</i>	18.9%	10.0%	16.2%	22.2%	37.0%
<i>Sitting for 2 hours</i>	21.6%	15.5%	19.5%	23.8%	34.4%
<i>Getting up from chair</i>	26.9%	18.7%	23.4%	30.4%	44.6%
<i>Squatting /Kneeling</i>	30.4%	17.5%	27.5%	36.8%	51.0%

Comparing these functions across gender, the data clearly show that the proportion of respondents having difficulty is higher among females than males. The biggest difference is observed in getting up from chair and squatting/kneeling.

Table 11.6: Respondents having difficulty performing basic physical functions

Physical functions	Overall	Male	Female
<i>Walking 100m</i>	18.9%	16.2%	21.0%
<i>Sitting for 2 hours</i>	21.6%	17.5%	24.8%
<i>Getting up from chair</i>	26.9%	21.1%	31.4%
<i>Squatting /Kneeling</i>	30.4%	24.7%	34.9%

12 COGNITION

12.1 Self-reported Memory

Cognitive impairment is a common problem among older persons. Early identification and detection of cognitive impairment is deemed important to facilitate further assessment and community-based prevention against mild cognitive impairment (MCI) and dementia.

Cherry (2019) defined cognition as mental processes involved in acquiring knowledge and comprehension whereby the processes comprise thinking, knowing, remembering, judging and problem-solving. Available scientific literature point to the occurrence of changes in cognition as a person grows older. However, the changes vary across cognitive functions and domains, where the changes in cognitive abilities of an individual are influenced by lifetime differences in experience, lifestyle, health status, socioeconomic status, and genetics (Blazer et al., 2015). Murman (2015) and Harada et al. (2013) stated that cognitive abilities such as conceptual reasoning, processing speed and memory which relate to the ability of one to quickly process information to make decisions decline with age. However, according to the authors, other abilities such as vocabulary, cumulative knowledge and experiential skills are well-maintained or even improved with age.

MARS collects data on cognition using a series of test that include word recall, simple counting arithmetic, date, object, and people naming.

Self-reported memory status indicates that 54.7 percent of the sample respondents have good memory and 34.9 percent have fair memory. Compared to their memory two years ago, 75.3 percent of the respondents reported their memory is about the same, 21.0 percent reported their memory is worse now than it was then and only 3.7 percent reported their memory is better now (Figure 12.1).

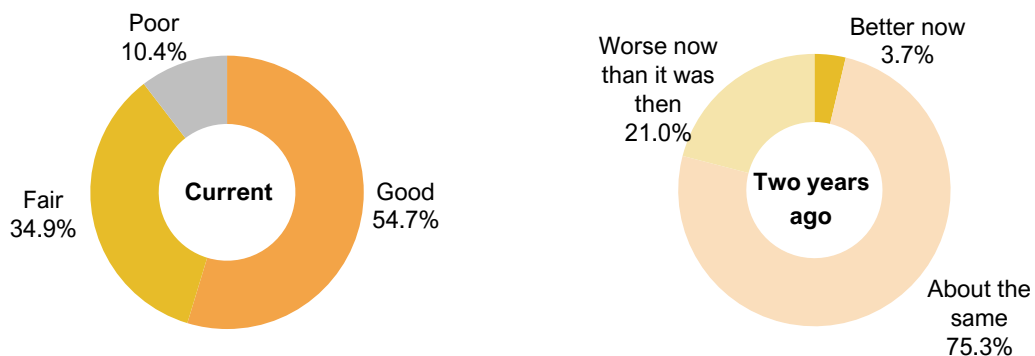


Figure 12.1: Self-reported memory now compared to two years ago

The proportion with good memory declines with increasing age from 66.7 percent among respondents aged 40-49 to 30.7 percent among those 80 and over (Figure 12.2). Across gender, male respondents register a slightly higher proportion with good memory (56.2 percent) compared to female respondents (53.5 percent).

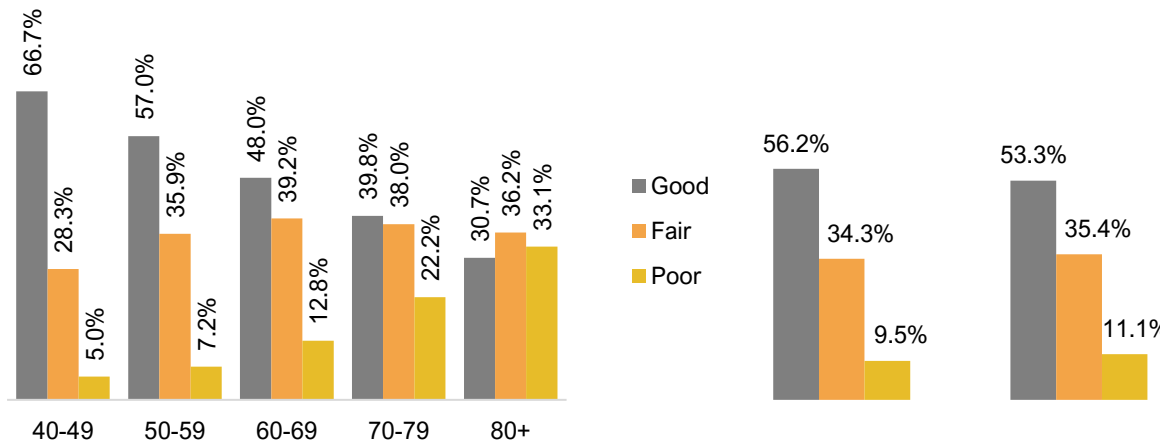


Figure 12.2: Self-reported memory by age and sex

Figure 12.3 shows that self-reported memory declines with declining respondents' self-rated health. Among respondents with good health, 79.7 percent recorded good memory compared to 70.0 percent among those with moderate health and about 40 percent among respondents with poor health.

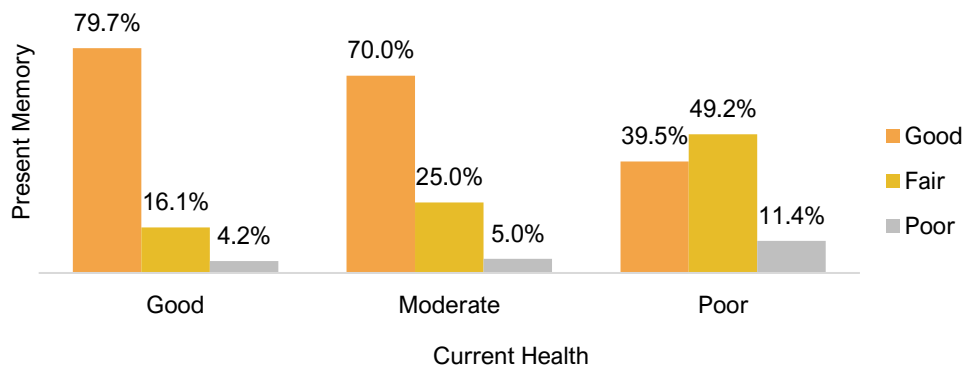


Figure 12.3: Self-reported memory by health status

Self-reported memory improves with increasing level of education (Figure 12.4). 73.2 percent of the respondents with pre-tertiary or tertiary education reported their memory is good. A significant decreasing trend is observed where the proportion of good memory is decreasing if the respondents have lower education level. For instance, 62.8% of the respondents with upper secondary education reported their memory is good while only 38.5% of the respondent with no schooling reported their memory is good.

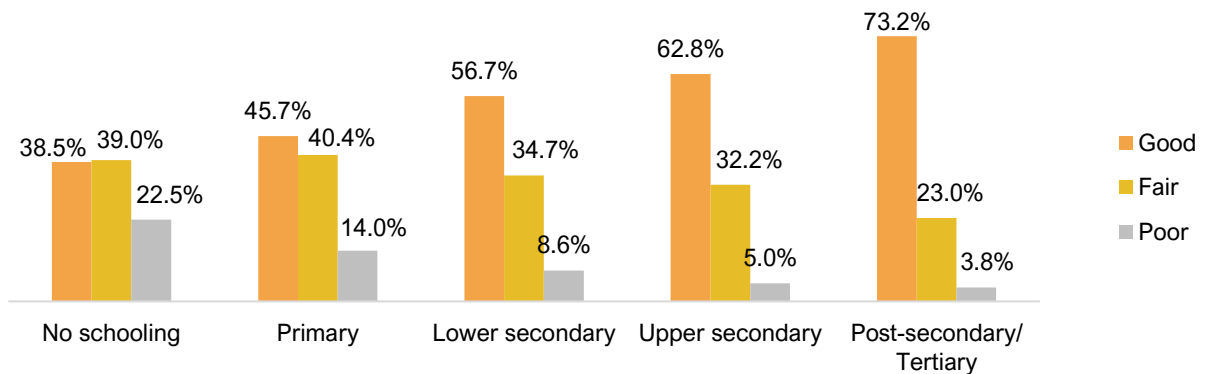


Figure 12.4: Self-reported memory by education level

A significant differential in the self-rated memory is observed between respondents who are working and not working (Figure 12.5). 63.2 percent of the respondent who are working reported their memory is good while this proportion decreases to 50.0 percent among those who are not working.

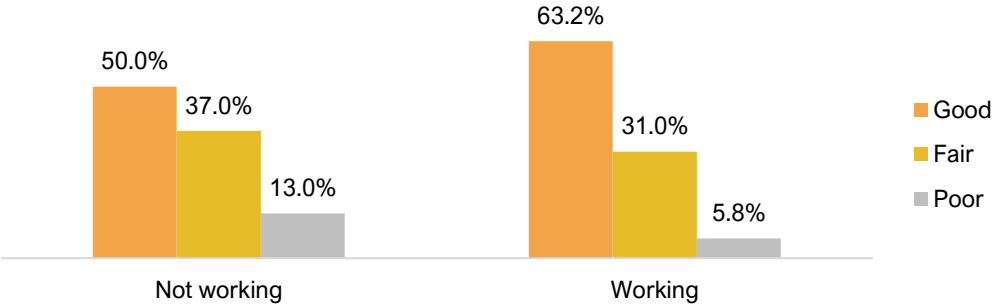


Figure 12.5: Self-reported memory by working status

12.2 Counting backwards

Figure 12.6 shows the overall counts backwards from the number twenty where 91.0 percent of all respondents managed to give the correct answers and only 9.0 percent did not manage to give the correct answers.

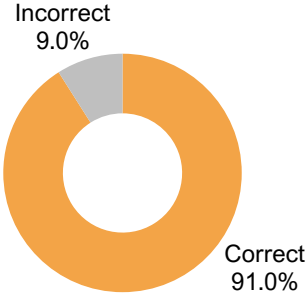


Figure 12.6: Respondents' ability to count backwards

Based on gender, it shows that 94.7 percent of male counts backwards correctly compared to female with 88.1 percent correct. Based on the age, more than 90.0 percent of those who age 40 to 69 counts backwards correctly

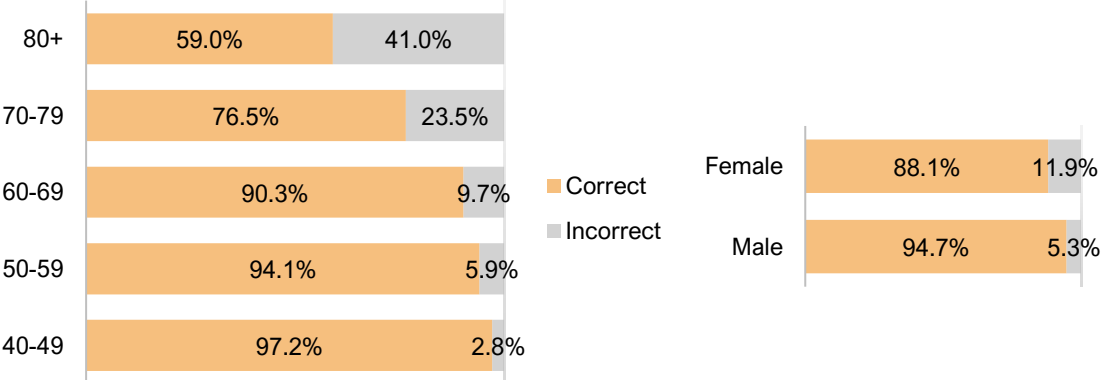


Figure 12.7: Counts backwards by age and sex

Based on the education level (Figure 12.8), those who have no schooling recorded the highest percentage of incorrect answer with 40.9 percent, followed by those who have primary school with 10.1 percent. Respondents with lower secondary and higher education recorded less than 3.0 percent of incorrect answer.

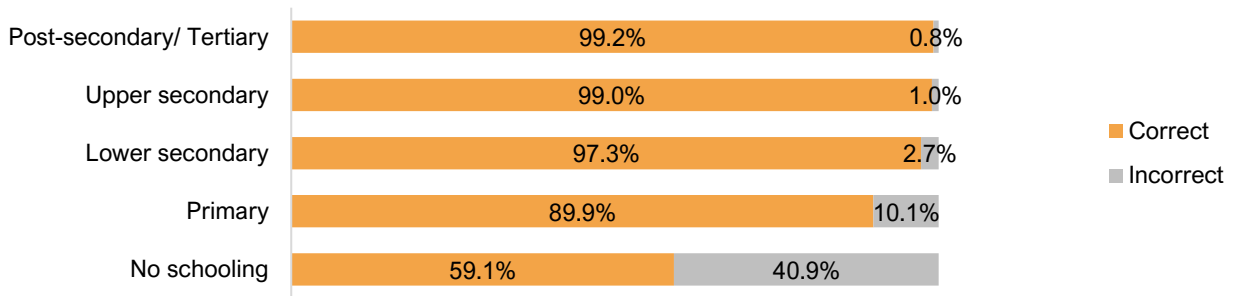


Figure 12.8: Counts backwards by education level

12.3 Serial 7 Test (Subtraction)

Figure 12.9 shows the overall results of subtraction where Subtract 1 is “one hundred minus seven”, Subtract 2 is “seven from the first answer”, and Subtract 3 is “seven from the second answer”. About 81.3 percent of the respondents answered correctly for Subtract 1, but only 48.6 percent and 50.7 percent answered correctly for Subtract 2 and Subtract 3, respectively.

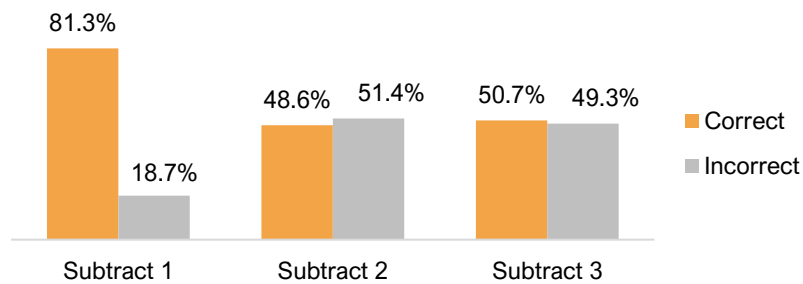


Figure 12.9: Overall subtraction

Figure 12.10 shows the Venn Diagram for the respondents with correct subtraction. 37.6 percent respondents answered correctly for all three subtractions. About 12.0 percent respondents have answered correctly for both Subtract 1 and 2 only, and 14.4 percent answered correctly for both Subtract 1 and 3 only. Nearly 0.6 percent of respondents have answered correctly for both Subtract 2 and 3 only.

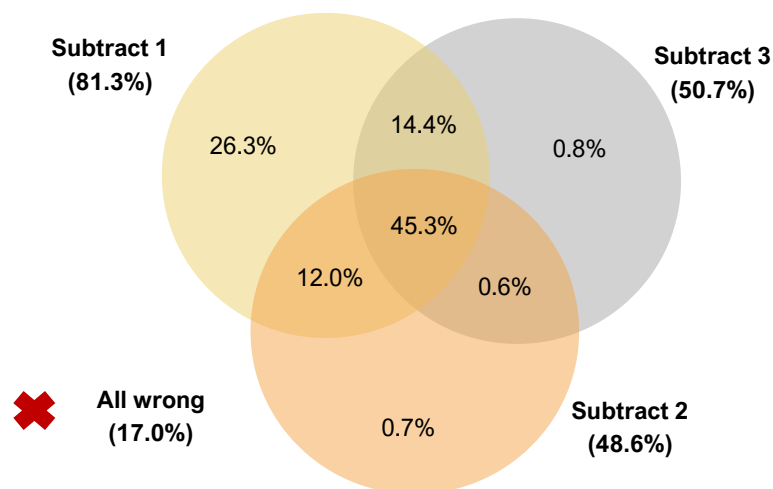


Figure 12.10: Respondents with correct subtraction 1, 2 and 3

Figure 12.11 shows the correct subtraction score by age. The data indicate the respondents' subtracting skills decline gradually with age. Majority of the respondents in each age group except 80 and over answered correctly for Subtract 1 (64.0 percent to 90.0 percent). Slightly more than 50 percent of the respondents aged 40 to 59 years answered correctly for Subtract 2, and this proportion declines to about 45 percent among respondents aged 60-69 and 35 percent among those aged 70-79. For Subtract 3, the proportion of correct answer decreases from 60.3 percent among respondents aged 40-49 to 54.0 percent among those aged 50-59 and 33 percent among respondents age 70-79.

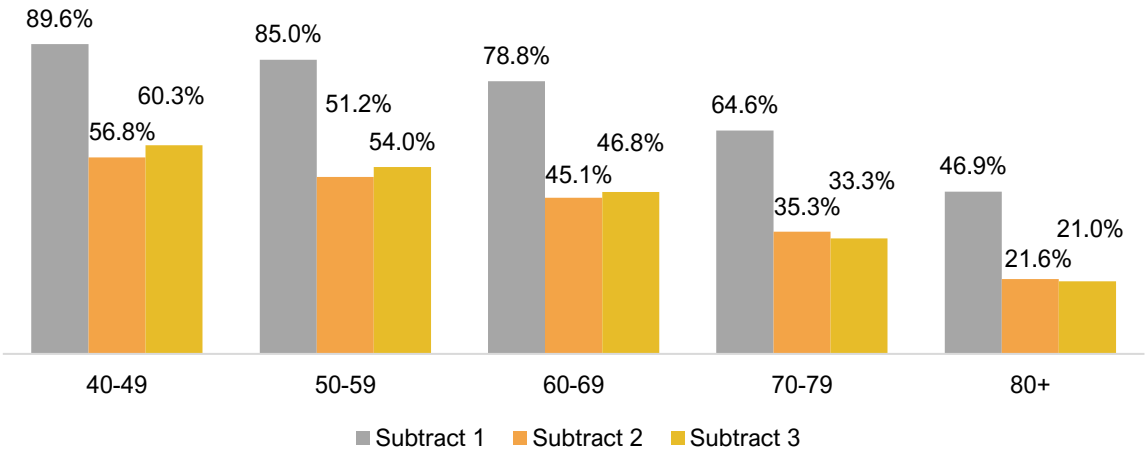


Figure 12.11: Correct subtraction by age

Figure 12.12 shows the correct subtraction score by gender. It shows that majority of male and female respondents answered correctly for Subtract 1 (88.0 percent and 76.0 percent, respectively). The proportion of correct answer for Subtract 2 for male is 53.8 percent while female is 44.4 percent. For Subtract 3, the respondents gained back the confidence to answer correctly as shown by the proportion of correct answer at 56.2 percent for male and 46.3 percent for female. Overall, it can be seen from the data that male respondents performed better compared to female across all three subtraction tests.

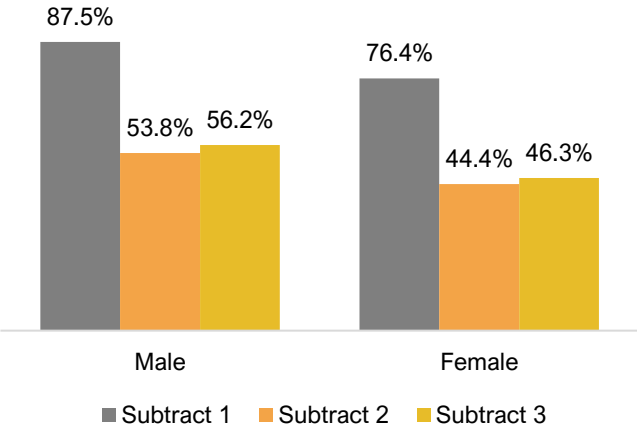


Figure 12.12: Correct subtraction by sex

12.4 Word, Name and Orientation Tests

Questions on general knowledge such as current year, current date and current month, first and current prime minister, days of the week, thorny fruit with strong smell and paper cutting tools were included in the questionnaire. Figure 12.13 shows that more than 90.0 percent of the respondents answered correctly for each question except for the question on current date and first prime minister with 81.7 percent and 67.1 percent, respectively.

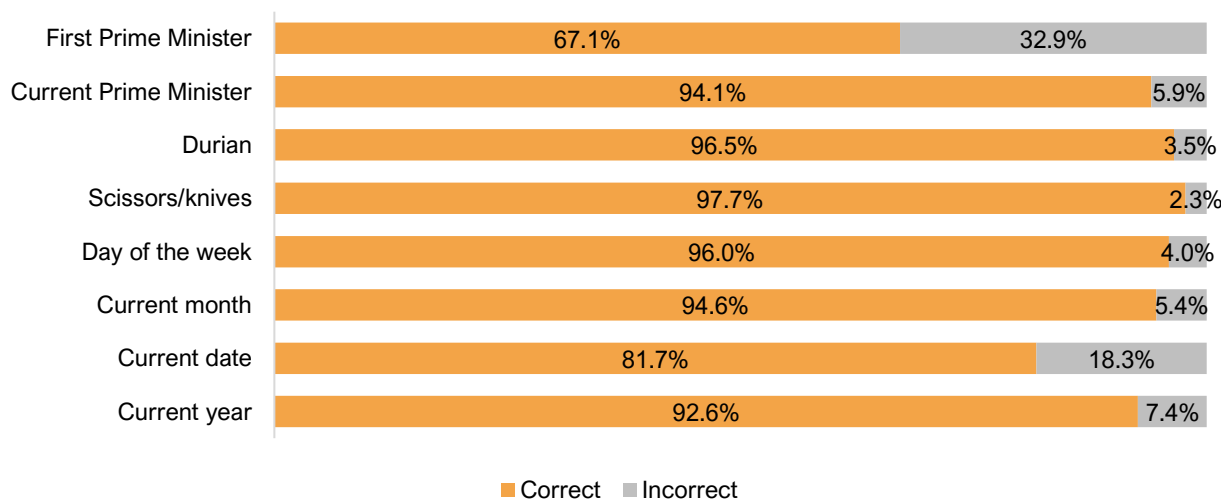


Figure 12.13: Overall General Knowledge

General knowledge based on gender shows that male respondents with correct answers are higher than female respondents. For example, about 96.1 percent of male respondents answered correctly for the current month compared to female with 93.4 percent, and 96.0 percent of male respondents answered correctly for the current year compared to female with 90.0 percent (Figure 12.14).

Table 12.1: Correct general knowledge by sex

	Male	Female
<i>First prime minister</i>	76.1%	60.0%
<i>Current prime minister</i>	97.0%	91.8%
<i>Durian</i>	97.4%	95.7%
<i>Scissors/knives</i>	97.9%	97.6%
<i>Day of the week</i>	96.2%	95.7%
<i>Current month</i>	96.1%	93.4%
<i>Current data</i>	83.2%	80.5%
<i>Current year</i>	96.0%	90.0%

General knowledge based on respondents' education level shows that those who have a higher education level has a higher percentage of correct answers. For instance, more than 90 percent of the correct answers were given for all the questions if the respondents have post-secondary or tertiary education. Oppositely, the percentage of correct answers among those who have no schooling is relatively lower than any other higher category. For example, the question of "first prime minister", only 27.4 percent of the respondents who have no schooling answered this correctly compared to those having some level of education. The proportion of correct answer ranges from 56.5 percent among respondents with primary education to 93 percent among those with at least a post-secondary education (Table 12.2).

Table 12.2: Correct general knowledge by education level

	No schooling	Primary	Lower secondary	Upper secondary	Post-secondary/Tertiary
<i>First prime minister</i>	27.4%	56.5%	69.6%	84.8%	92.8%
<i>Current prime minister</i>	76.0%	92.5%	97.1%	99.4%	100.0%
<i>Durian</i>	88.9%	95.1%	98.1%	99.2%	99.1%
<i>Scissors/knives</i>	90.9%	97.4%	99.1%	99.5%	99.7%
<i>Day of the week</i>	88.2%	99.4%	97.7%	98.8%	99.2%
<i>Current month</i>	79.1%	93.2%	97.8%	99.2%	98.8%
<i>Current data</i>	57.3%	78.6%	86.9%	88.7%	91.1%
<i>Current year</i>	67.7%	91.5%	97.6%	98.9%	99.4%

Table 12.3 shows that working respondents generally were able to give correct answers to all the questions. The proportion of correct answers among respondents who are not working is between 63 percent to 90 percent while the proportion of correct answers among those who are working is between 73 percent to 99 percent.

Table 12.3: Correct general knowledge by working status

	Not working	Working
<i>First prime minister</i>	63.6%	73.3%
<i>Current prime minister</i>	91.8%	98.1%
<i>Durian</i>	95.3%	98.6%
<i>Scissors/knives</i>	97.1%	98.9%
<i>Day of the week</i>	94.6%	98.4%
<i>Current month</i>	92.9%	97.7%
<i>Current data</i>	79.3%	86.1%
<i>Current year</i>	89.8%	97.8%

12.5 Immediate and Delayed Word Recall

Table 12.1 shows the overall minimum, maximum and mean number of words recall for immediate recall and after a while recall. The minimum and maximum word recall are 0 and 10 for both recalls, while the mean word for immediate recall and after a while recall is 4.1 and 3.7, respectively.

Table 12.4: Overall word recall

	Min	Max	Mean
Immediate	0	10	4.1
Delayed	0	10	3.7

12.6 Animal Naming

Table 12.2 shows the overall mean, median, minimum, and maximum number of animal naming of the respondents. Mean and median number of animal naming are 15.6 and 15.0, respectively. The minimum and maximum number of animal naming are 0 and 53, respectively.

Table 12.5: Overall animal naming

Mean	15.6
Median	15.0
Minimum	0
Maximum	53

Figure 12.14 shows the mean number of animal naming by age. The highest mean number of animal naming is 17.6 (40-49), followed by 16.4 (age 50-59), 14.7 (age 60-69), 11.9 (age 70-79) and 9.5 (age 80 and over), showing a declining trend in the mean number as age increases.

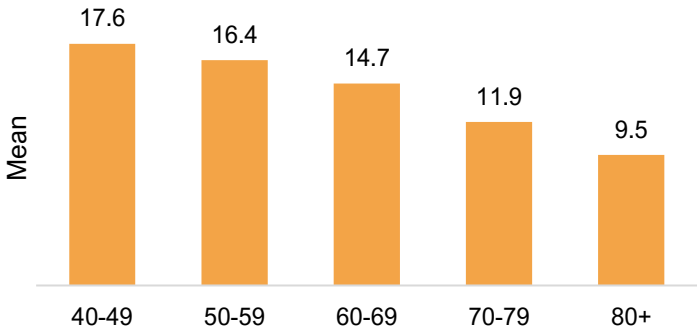


Figure 12.14: Mean number of animal naming by age

Figure 12.18 shows the mean number of animal naming increases with education level. The highest mean number of animal naming is 19.8 (Post-secondary/Tertiary education), followed by 17.6 (Upper secondary), 15.9 (Lower secondary), 13.9 (Primary), and 10.8 (No schooling).

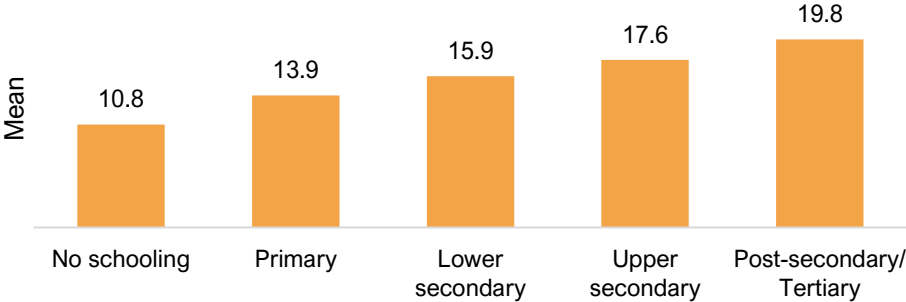


Figure 12.15: Mean animal naming by education level

13 PSYCHOSOCIAL

The objective of the psychosocial section of MARS is to collect information related to the respondent's personal thought, attitude and behaviour as well as interaction with their social environment that includes family, peers and the surrounding community. This section also includes questions on social and religious activities that respondents may participate in.

Studies on successful ageing have highlighted its broad and multidimensional nature with psychosocial factors being one of the important components (Stenner et al., 2011; Paul et. al., 2012). A systematic review of laypersons' perspective of successful ageing found that psychosocial aspects were the most frequently mentioned factors, more specifically being engagement and self-awareness (Cosco et al., 2013).

Psychological variables which enable older persons to cope with age related declines and positive outlook on life appear to be highly relevant to whether they are ageing actively or not (Paul et al., 2012). Moreover, Golden et al. (2009) reported that the elderly placed more importance on social engagement than physical health when describing their criteria of successful ageing. It is also recognized that older persons live and think differently in different cultures and that research related to ageing is predominantly based on Western populations (Cosco et al, 2013; Tohit et. al., 2012). Hence, psychosocial data collected through MARS will provide insight on the characteristics of older persons within the local context. Such data also enables cross-cultural comparison of the ageing process.

13.1 Outlook on life

Respondents were asked to respond to 18 statements related to their feelings to indicate how often they experienced those feelings in the last 6 months. The response to each statement was given a score based on a scale of 1 to 5 where 1=Never, 2=Rarely, 3=Sometimes, 4=Often and 5=Always. The 18 statements presented can be classified as: (1) Positive outlook consisting of 8 statements and, (2) Negative outlook consisting of 10 statements.

Given the 8 statements and 5 possible responses, the total score for each respondent ranges from 8 to 40. Table 13.1 shows the mean score for positive outlook statements for all respondents is 31.69 (79.2 percent).

Table 13.1: Score summary for positive outlook statements

	Minimum	Maximum	Mean	Std. Deviation
Positive outlook	8.00	40.00	31.69	5.70

Both male and female respondents reported almost the same mean score at each age group. The mean score shows a slight declining trend as age increases (Figure 13.1).

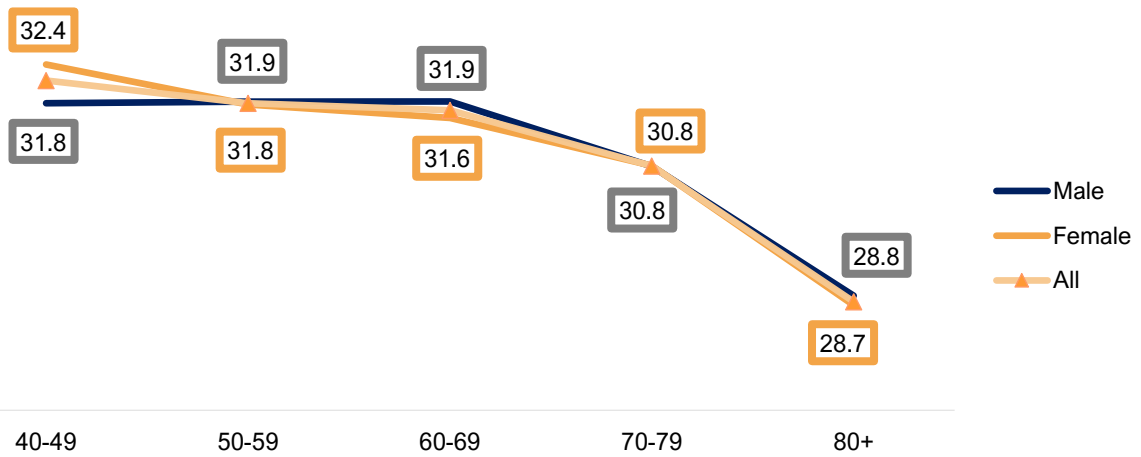


Figure 13.1: Mean score of positive statements by sex and age

Respondents' experience for each positive feelings or outlook is shown in Figure 13.2 with the responses regrouped into three categories namely Never/Rarely, Sometimes and Often/Always. The data indicate that the majority were often/always feel positive about life accounting for 67-79 percent of the total sample respondents. The statement with the highest proportion of Often/Always is 'Feel in tune with the people around you' (79.1 percent) followed by 'There are people you feel close to' (78.9 percent) while 73 percent of the respondents often/always feel that they were part of a group, that people understand them, that there are people they can turn to, and that there are people they can talk to (Figure 13.2).

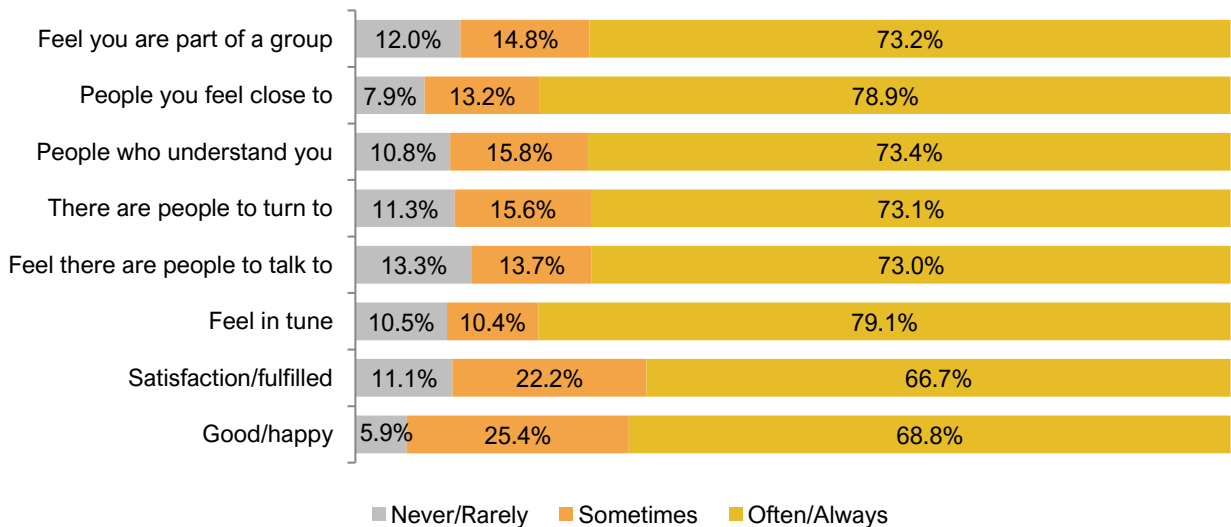


Figure 13.2: Positive outlook statements in the last 6 months

There are 10 statements related to negative outlook on life which gives a minimum score of 10 and maximum 50. The mean and median score is 20.9 and 41.8, respectively (Table 13.2).

Table 13.2: Summary score for negative outlook statements

	Minimum	Maximum	Mean	Std. Deviation
Negative outlook	10.00	50.00	20.91	6.43

The mean score for female is slightly higher than male across all age groups indicating that negative feeling/outlook on life is experienced by more female than male respondents. While the mean score for male remains relatively constant with age, there is a slight increase in the mean score for female as age increases (Figure 13.3).

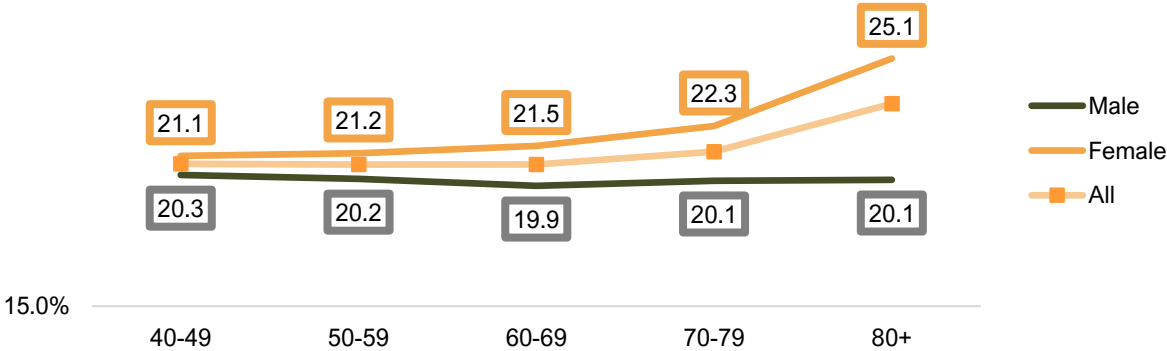


Figure 13.3: Mean score of negative statements by sex and age

The proportion of respondents who often/always experienced negative feeling/outlook on life ranges from 4.3 percent for feeling isolated to 36.5 percent for always thinking about death. About 13 percent always experienced anxiety or stress while 11 percent always experienced loneliness. In contrast, at least 79 percent of the respondents never/rarely felt lack of companionship, isolated, down or worthless (Figure 13.4).

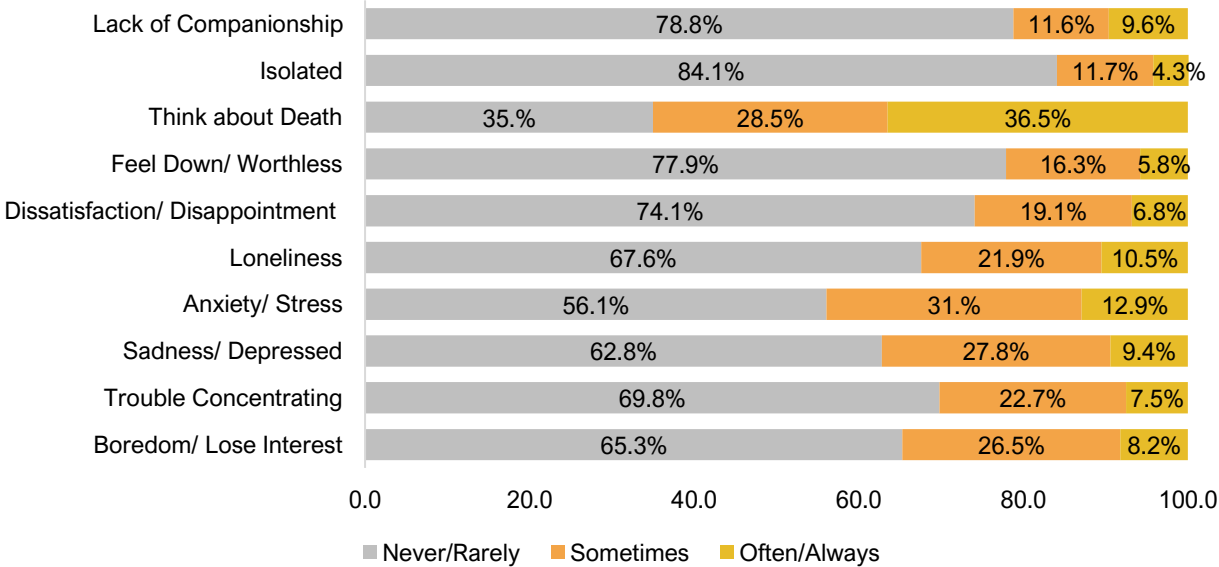


Figure 13.4: Distribution of negative outlook statements in the last 6 months

13.2 Perceived Constraints on Personal Control

Four statements that measure perceived constraints on personal control with the respondents’ level of agreement are shown in Figure 13.5. About 28 percent agree that what happens in their life is often beyond their control while 15 percent agree that they often feel helpless in dealing with the problems of life. Slightly, more than 10 percent of the respondents agree that there is no way they can solve the problem’s faced and that other people determine most of what they can and cannot do (Figure 13.5).

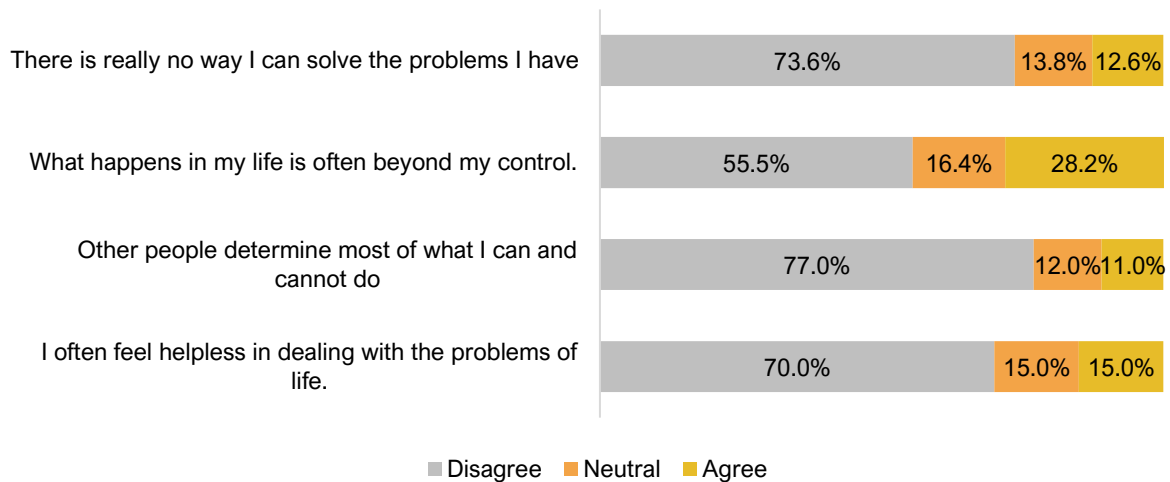


Figure 13.5: Perceived constraints on personal control

13.3 Perceived Mastery

Five statements related to perceived mastery were included and the results indicate 83.3 percent of the respondents agreed that when they really want to do something, they usually find a way to succeed at it. About 78 percent agreed that whether or not they are able to get what they want is in their own hands while 75 percent agreed that they can do the things they want to do (Figure 13.6).

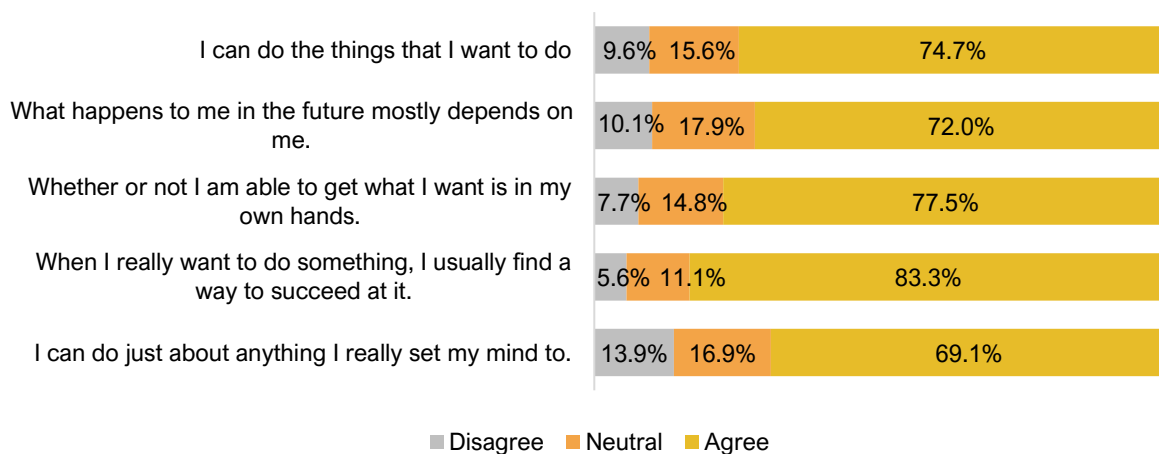


Figure 13.6: Statements related to perceived mastery

13.4 Personal Capacity

Four statements were presented to the respondents with the level of agreement shown in Figure 13.7 that provide a measure of personal capacity. Over 80 percent of the respondents agree that they will continue working as long as their mental and physical capability permit and at least 75 percent agree that they should determine when they want to retire and that they can still contribute to society. Majority of the respondents consider themselves as financially independent.

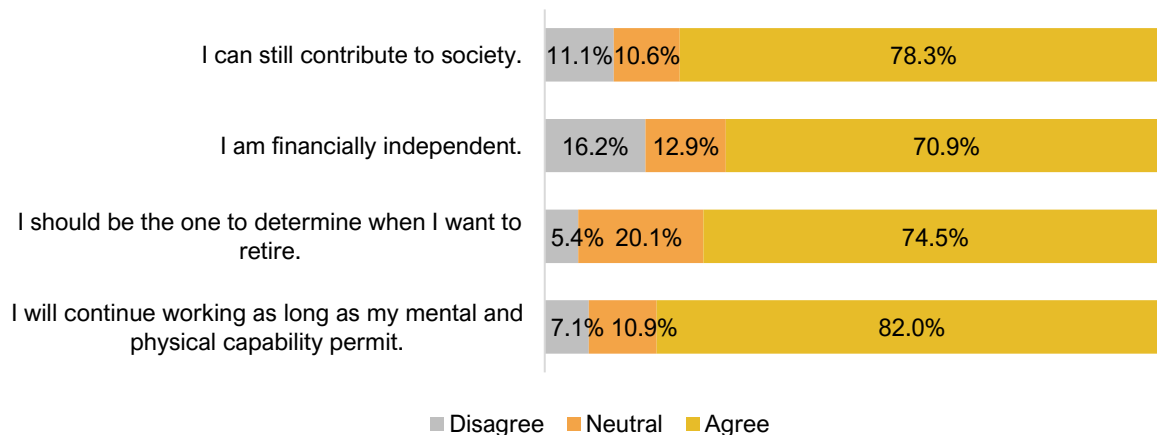


Figure 13.7: Statements related to personal capacity

13.5 Perspectives on Ageing

Respondents were asked to indicate how much they agree or disagree with the statements on preparedness to look after their health, how long they would like to live and need for long term care. About 85 percent agreed that they are prepared to take care of their health, 66 percent do want to live beyond 80 years while only 43.9 percent of the respondents believe they do not need long term care beyond 65 (Figure 13.8).

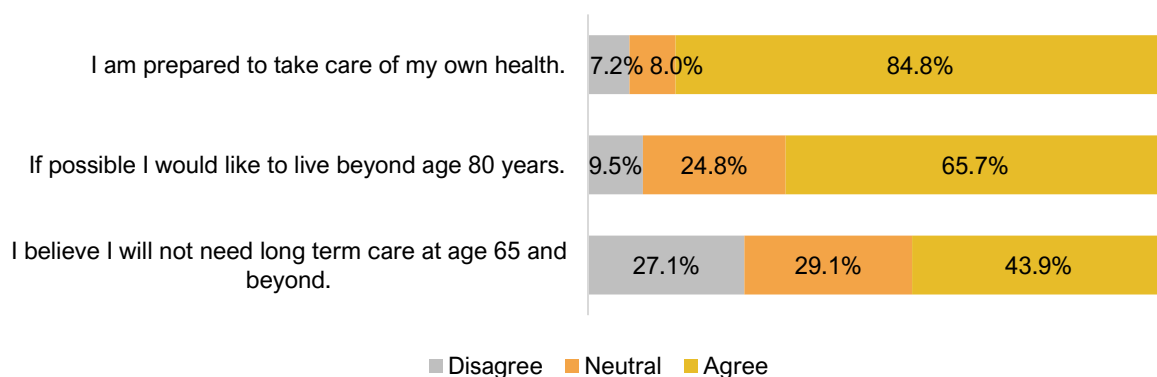


Figure 13.8: Preparedness to live and care for own health

Over 90 percent of the respondents reported they have a loving family while more than 80 percent have friends who care for them. It is encouraging to note that about 88 percent of them are leading a meaningful purpose in life (Figure 13.9).

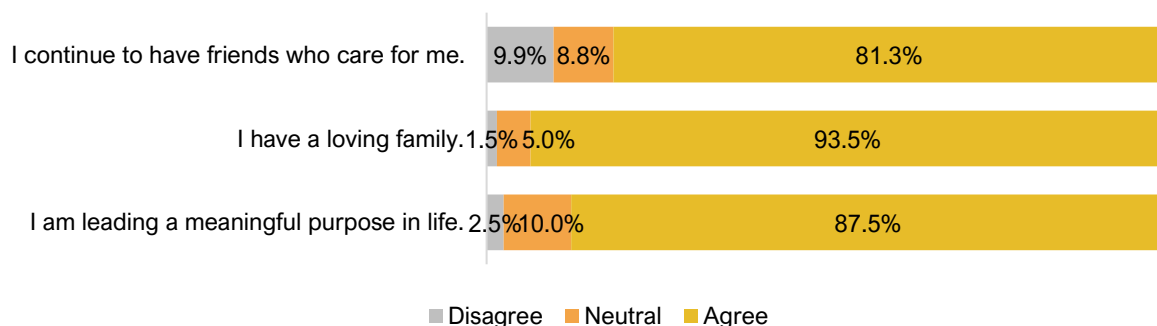


Figure 13.9: Family, friends, and purpose in life

When asked about where they would like to age, three quarters of the respondents are not prepared to live in assisted living facilities such as nursing homes or retirement village. However, only 40 percent of the respondents are prepared to live alone (Figure 13.10).

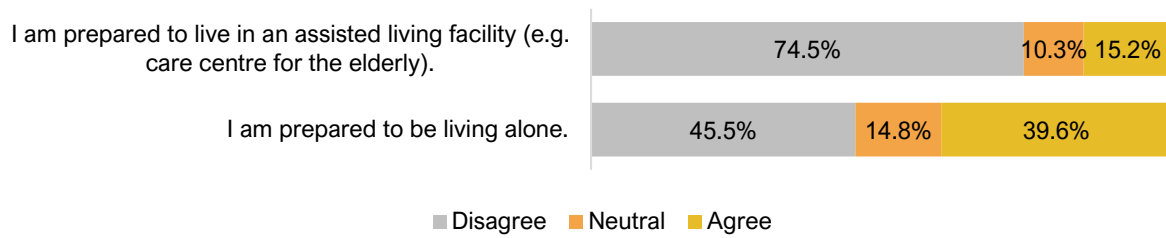


Figure 13.10: Preparedness to live in old age

Two items were included related to responsibility in looking after aged parents and grandchildren. Overall, 80 percent or 8 out of 10 respondents agree that the government should make it mandatory for children to support their parents while slightly more than half (52.2 percent) agreed that taking care of grandchildren is part of their responsibility (Figure 13.11).

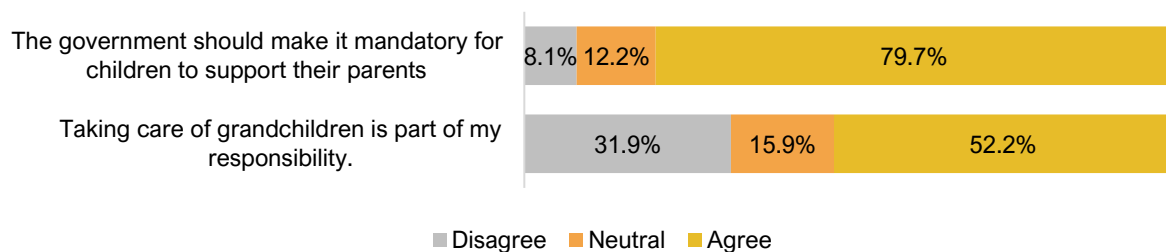


Figure 13.11: Responsibility in taking care of parents and grandchildren

13.6 Participation in Activities

Respondents were given a list of 16 activities and were asked to indicate how often they participate in each activity in the last six months. For purposes of analysis, the activities were grouped into two namely, activities within the home environment and social activities outside of their homes.

For activities within their home environment, Figure 13.12 shows that the top three activities that respondents Often/Always participate in are 'watch television' (66.0 percent), followed by 'activities with family/children' (46.8 percent) and 'gardening/pets/hobbies' (40.0 percent).

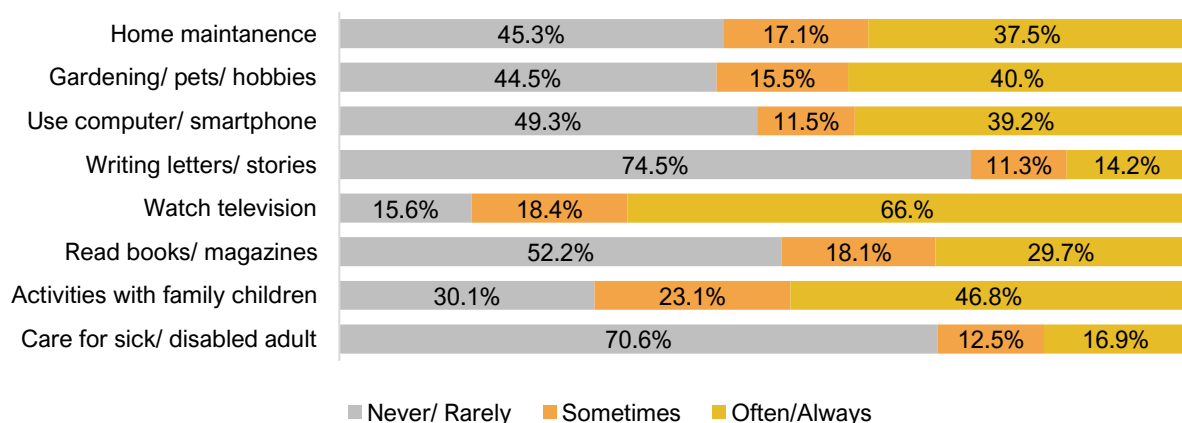


Figure 13.12: Participation in home environment activities in the last 6 months

For social activities, Figure 13.13 shows that the top three activities that respondents Often/Always participate in are ‘social outings’ (30.0 percent) followed by ‘walk/ jog/ go to gym’ (27.8 percent) and ‘volunteer/charity work’ (24.4 percent).

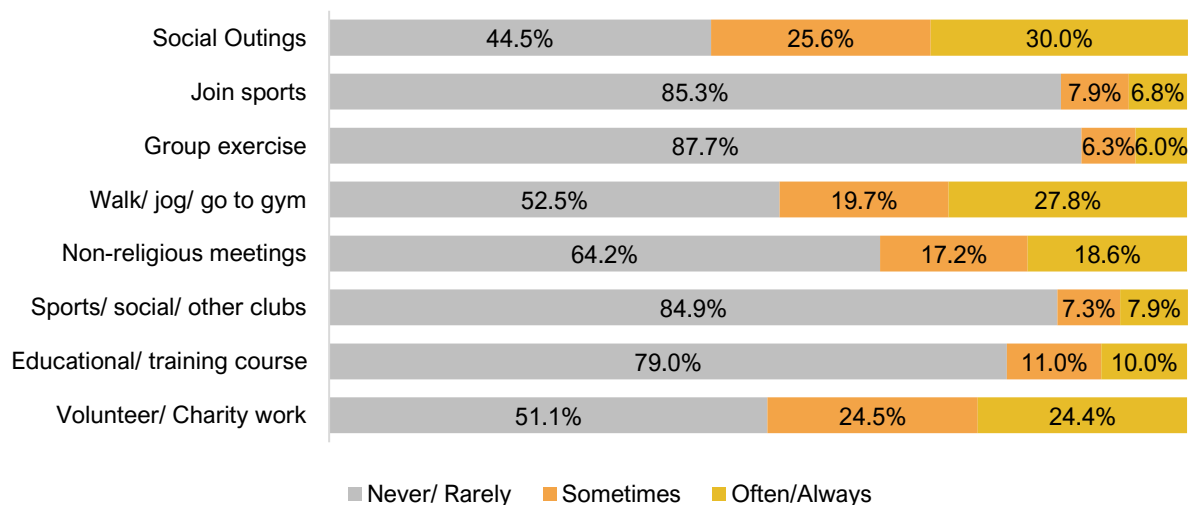


Figure 13.13: Participation in social activities in the last 6 months

13.7 Religious Activities

Respondents were also asked about their participation in religious activities. About 68 percent of the respondents reported they always perform daily prayers, 48 percent practice primary basic doctrines on holy days and 34 percent reported that they always read religious books (Figure 13.14).

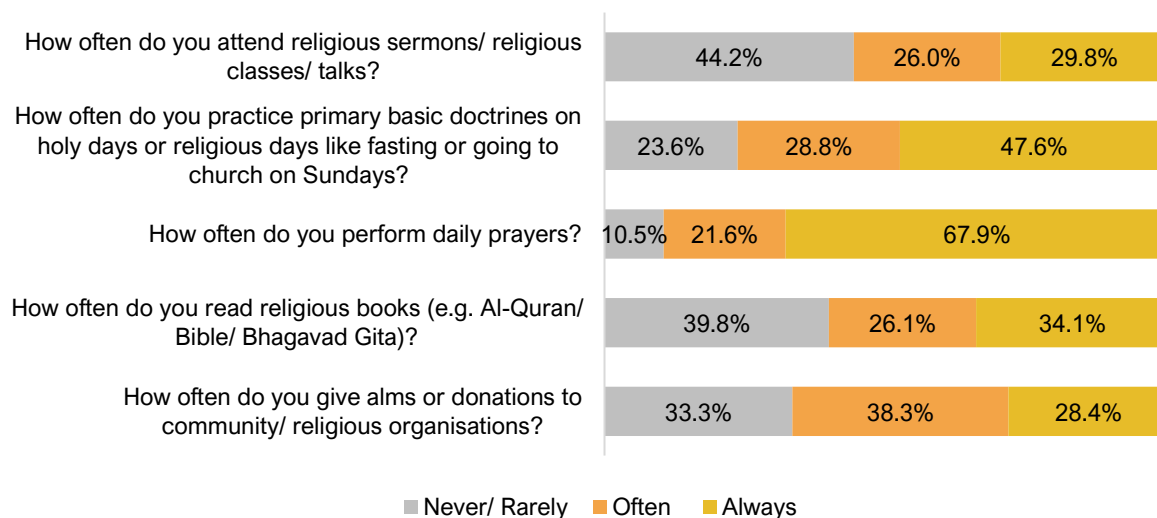


Figure 13.14: Participation in religious activities

Participation of respondents in religious activities by religion shows the proportion of respondents who always perform daily prayers is highest across all religions compared to other activities. The highest proportion is observed among the Hindu (78 percent) followed by Muslim (76 percent), and Buddhist (49 percent). Respondents who always practice on holy or religious days are highest among Muslim (55 percent) followed by Hindu (42 percent) and Christian (34 percent) (Figure 13.15).

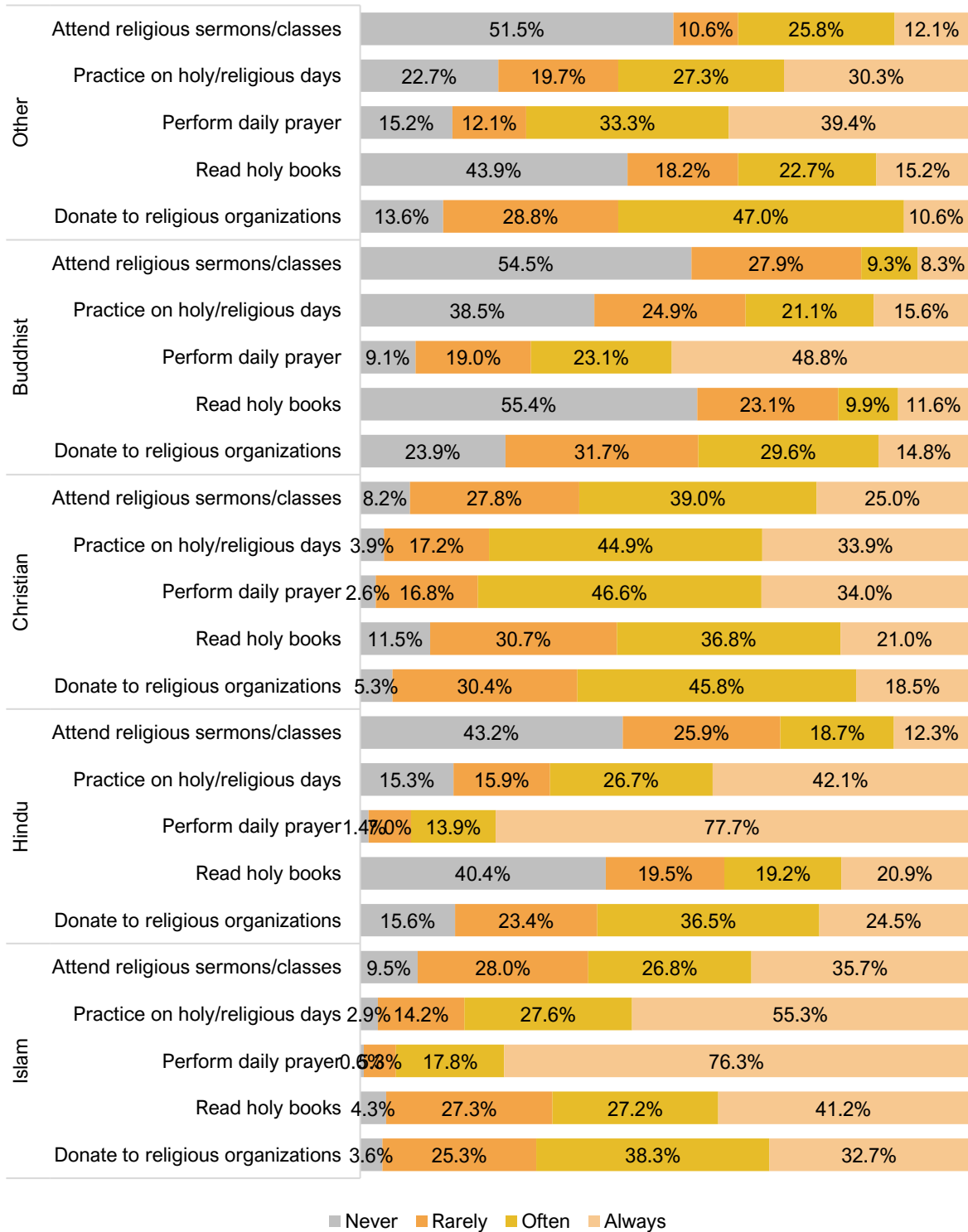


Figure 13.15: Participation of respondents in religious activities by religion

14 SUMMARY & CONCLUSION

14.1 Summary

Malaysia Ageing and Retirement Survey (MARS) was launched in 2018 to produce nationally representative longitudinal data on issues related to ageing. MARS was motivated by the fact that Malaysia is heading towards an ageing society and realising the importance of having such data for the formulation and implementation of relevant policies.

MARS collects comprehensive information on various aspects of personal life and experiences of people aged 40 years and older in Malaysia. The database consists of 5,613 sample respondents with a response rate of 84 percent and is comparable with other international family surveys such as Health and Retirement Survey (HRS) in the US and Survey of Health, Aging and Retirement Europe (SHARE) involving more than 20 countries in Europe. Key findings of the core components of MARS in this snapshot are highlighted in this concluding chapter.

14.2 Key Findings

Female account for about 56 percent of the total respondents, while about 44 percent were male. Respondents aged 60 years and older comprised about 40 percent. Majority are married with the proportion of married respondents decreasing with age. While a high proportion of them live with at least one family member, respondents who live with their spouses only ranges from 4 percent among those aged 40-49 to 20 percent among those aged 70-79.

It is comforting to observe that there are active transfers between respondents and children in both directions. 70.1 percent of the respondents give financial and non-financial support to their children while slightly lower receive such support from their children at 61.2 percent. Over 70 percent of the financial transfers occur on a monthly basis and the median amount for giving and receiving financial support is RM100.00 and RM150.00, respectively. More respondents receive financial support as age increases while the opposite trend is true of those giving financial support.

Respondents who were working at the time of the survey comprised about 39 percent. Expectedly, respondents aged 40-49 show the highest proportion of those working (60 percent) and gradually declines with age to about 14 percent among those aged 70 and older. Among those who are working, majority of them work in non-professional and managerial occupations (79.4 percent), mainly as skilled agricultural, forestry and fishery worker (22.9 percent), followed by elementary occupation (18.7 percent) and service and sales worker (15.3 percent). About 20% of the respondents work in professional and managerial occupations while only a small proportion work in the Armed Forces (0.3 percent).

While majority of the respondents have monthly income, 20 percent have very little/irregular income after including private transfers. A large proportion of the respondents (43.9 percent) have less than RM1000 monthly net income including private transfers. Data also show that four out of 10 respondents are dependent on cost-of-living allowance/subsidies given by the government.

Majority of respondents reported to have savings and assets. However, the total amount of savings and value of their assets are found to be very low. Half of the respondents reported to have savings of less than RM10,000.

Generally, respondents reported they are in good health. Hypertension tops the list of doctor-diagnosed disease (37 percent) followed by high cholesterol (21 percent) and diabetes (19 percent). However, among respondents who are not diagnosed with hypertension, 44 percent of them are in the category of hypertension based on their blood pressure measurement taken during the field interview. The physical measurement indicates that the prevalence of obesity and abdominal obesity is quite high, more so among women.

Majority of respondents utilise government healthcare facilities for outpatient treatment, medical check-up and hospitalisation. Only a small proportion of the respondents are covered under private health insurance.

With regards to attitudes towards life, majority of respondents are always feeling positive about life, especially in terms of having people they can turn to and relationships with close ones. More than half of the respondents believe that they will need long term care beyond age 65. Moreover, eight out of 10 respondents agree that the government should make it mandatory for children to look after their older parents.

MARS project has generated a rich data set containing not only comprehensive information of the participating respondents, but captured details of the respondents' immediate family members including living children, parents and parents-in-law as well as siblings. It is hoped that MARS data will provide insights and understanding of the situation of Malaysia's mid-aged and older persons for formulation and implementation of policies that can support and protect the growing elderly community. The longitudinal nature of MARS data allows a deeper understanding of life histories and experiences of the respondents at different stages of their adult life. As ageing is a continuous process, it is also hoped that MARS will provide invaluable data for researchers, private and government ministries, and agencies in years to come.

One can do so little, together we can do so much.

Let us ALL make a difference in our people's lives.

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