



UNIVERSITI PUTRA MALAYSIA

**DISABILITY AND QUALITY OF LIFE OF NON-INSTITUTIONALIZED OLDER
MALAYSIANS**

SIDIAH AK JOHN SIOP

IG 2008 1



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OF NON-INSTITUTIONALIZED
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By

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**Thesis Submitted to the School of Graduate Studies,
Universiti Putra Malaysia, in Fulfillment of the
Requirements for the Degree of Doctor of Philosophy**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

**DISABILITY AND QUALITY OF LIFE OF
COMMUNITY-DWELLING OLDER PEOPLE**

By

SIDIAH AK JOHN SIOP

2007

Chair: Associate Professor Tengku Aizan Tengku Abdul Hamid, Ph.D.

Institute: Institute of Gerontology

With the increase of life expectancy, more Malaysian will live to old ages. The rapid ageing of the population is leading to an increasing number of disabled older people as disability is associated with increasing age. The study on the prevalence, risk factors for disability and consequences of disability on quality of life is important in the face of the prevailing ageing population.

This study assessed disability prevalence and determined factors that predict disability and quality of life among the older people who lived in the community. In this study, Verbrugge and Jette's model of disablement process has been used as a conceptual frame of reference.

Data from the Mental Health and Quality of Life of Older Malaysians Survey (MHQoLOM) were used in this study, which was a national survey conducted from 2003 through 2005 that employed a cross-sectional design. A multi-stage proportional



stratified sample of 2980 older persons living in the community in Malaysia, ranging in age from 60 to 104 years were interviewed in the respondent's home. Statistical procedures for the analyses included descriptive statistics, univariate logistic regression and multivariate logistic regression.

The prevalence of disability in at least one of the activities of daily living (ADL) and instrumental activities of daily living (IADL) items was 22.8 percent. Higher prevalence of disability was observed in older women (31%) compared to older men (14.5%). The predictors for disability in men were age, ethnicity, marital status, self-rated health, heart disease, eye disorder and functional limitation. While age, ethnicity, marital status, smoking, self-rated health, respiratory disorders and functional limitation predicted disability in women. Increasing age, being of the other ethnicity compared with the Malay for men and being of Indian ethnicity compared to the Malay for women, being unmarried, poor self-rated health and functional limitations increased the risk of disability in both men and women.

The predictors of perceived good quality of life for men were ethnicity, education, income, urban/rural residence, physical activity and self-rated health. Among women, ethnicity, self-rated health and functional limitation predicted perceived good quality of life. Being of Indian and Chinese ethnicity compared to the Malay were associated with reduced perceived good quality of life for both men and women, while being of Bumiputera and other ethnicity compared to the Malay increased the odds of perceived good quality of life among men. Very poor self-rated health compared to excellent self-rated health was associated with lower perceived good quality of life in both men and women.

These findings confirmed the independent contribution of risk factors, medical conditions or disease, and functional limitation in the disablement process. The examination of perceived quality of life in relation to the disablement process indicated that risk factors and functional limitation contributed to lower perceived good quality of life.

The findings of the study will be relevant for program development to improve functional abilities and to minimize risk factors by early intervention, improve or maintain the quality of life of older people and to promote the use of appropriate health and social resources. Moreover, policy makers and service providers could effectively focus on those factors that are crucial in maintaining functional ability and quality of life of the older Malaysians.

Abstrak tesis yang dikemukakan kepada senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KETIDAKUPAYAAN DAN KUALITI HIDUP WARGA EMAS YANG
TINGGAL DI KOMUNITI**

Oleh:

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2007

Pengerusi: Associate Professor Tengku Aizan Tengku Abdul Hamid, Ph.D.

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Dengan meningkatnya jangkahayat, ramai warga Malaysia akan hidup sampai usia tua. Peningkatan penuaan penduduk yang pesat mengakibatkan pertambahan bilangan warga emas yang hilang keupayaan berdikari disebabkan ketidakupayaan berhubung kait dengan usia tua. Kajian mengenai prevalens, faktor risiko yang menyumbang kepada ketidakupayaan dan kesan ketidakupayaan ke atas kualiti hidup amat penting dalam menghadapi kepesatan penuaan penduduk.

Kajian ini menentukan prevalens ketidakupayaan dan mengenalpasti faktor-faktor yang meramal ketidakupayaan dan kualiti hidup di kalangan warga emas yang tinggal dalam komuniti. Dalam kajian ini model “disablement process” oleh Verbrugge dan Jette digunakan sebagai rangka konseptual rujukan.

Data “Mental Health and Quality of Life of Older Malaysians Survey” (MHQoLOM) digunakan dalam kajian ini. Survei tersebut adalah survei kebangsaan yang telah di jalankan pada tahun 2003 hingga tahun 2005 dengan menggunakan rekabentuk



keratan rentas. Sampel terstratum bersekadar berperingkat terdiri daripada 2980 orang warga emas berumur dalam lingkungan 60 tahun hingga 104 tahun dan di temubual di tempat tinggal responden. Prosedur statistik yang digunakan termasuk statistik diskriptif, regresi logistik “univariate” dan “multivariate”.

Hasil kajian menunjukkan prevalens ketidakupayaan dalam sekurang-kurangnya satu aktiviti harian hidup (ADL) dan aktiviti keperluan harian hidup (IADL) adalah 22.8 peratus. Prevalens ketidakupayaan adalah lebih tinggi di kalangan wanita (31%) berbanding dengan lelaki (14.5%). Faktor-faktor yang meramal ketidakupayaan di kalangan lelaki adalah umur, kumpulan etnik, taraf perkahwinan, persepsi kesihatan, sakit jantung, masalah penglihatan, dan limitasi fungsi. Bagi wanita, faktor-faktor yang meramal ketidakupayaan adalah umur, kumpulan etnik, taraf perkahwinan, merokok, persepsi kesihatan, penyakit pernafasan dan fungsi terhad. Usia yang meningkat, tergolong dalam kumpulan etnik lain-lain berbanding dengan etnik Melayu bagi lelaki dan tergolong dalam kumpulan etnik India berbanding etnik Melayu bagi wanita, tidak berkahwin, persepsi kesihatan yang teruk dan fungsi terhad menambahkan risiko ketidakupayaan di kalangan lelaki dan wanita.

Faktor-faktor yang meramal pengertian kualiti hidup yang baik untuk lelaki adalah kumpulan etnik, pendidikan, pendapatan, tempat tinggal bandar/luar bandar, aktiviti fizikal dan persepsi kesihatan. Di kalangan wanita, kumpulan etnik, persepsi kesihatan dan fungsi terhad yang meramal pengertian kualiti hidup yang baik. Tergolong dalam kumpulan etnik India dan kumpulan etnik Cina berbanding dengan etnik Melayu berhubung kait dengan tahap yang rendah dalam pengertian kualiti hidup yang baik di kalangan lelaki dan perempuan. Sebaliknya, tergolong dalam etnik

Bumiputera dan etnik lain-lain berbanding dengan etnik Melayu menambahkan kebarangkalian dalam pengertian kualiti hidup yang baik di kalangan lelaki. Persepsi kesihatan yang teruk berbanding dengan persepsi kesihatan yang sangat baik berhubung kait dengan tahap yang rendah dalam pengertian kualiti hidup yang baik di kalangan lelaki dan wanita.

Hasil kajian ini mengesahkan sumbangan penting faktor risiko, status kesihatan atau penyakit dan limitasi fungsi dalam proses ketidakupayaan. Pemeriksaan hubung kait pengertian kualiti hidup dengan proses ketidakupayaan menunjukkan faktor risiko dan limitasi fungsi menyumbang kepada tahap yang rendah dalam pengertian kualiti hidup yang baik.

Hasil kajian ini adalah relevan dalam pembentukan program untuk mempertingkatkan fungsi keupayaan dan mengurangkan faktor risiko melalui intervensi awal, meningkat atau mengekalkan kualiti hidup warga emas dan untuk menggalakkan penggunaan sumber kesihatan dan sosial yang sesuai. Tambahan pula, pihak berwajib dalam melaksanakan perancangan dan pembentukan polisi serta yang memberi perkhidmatan dapat memberi fokus yang sewajarnya ke atas faktor yang penting dalam mengekalkan fungsi keupayaan dan kualiti hidup warga emas di Malaysia.

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I certify that an Examination Committee met on..... to conduct the final examination of Sidiah ak John Siop on her Doctor of Philosophy thesis entitled “Disability and Quality of Life of Community-Dwelling Older People” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate can be awarded a relevant degree.

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declared that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

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CHAPTER 1

INTRODUCTION

1.1 Background

Population ageing has emerged as a global phenomenon in light of the universal decline in fertility and the increases in life expectancy. In the developed countries, population ageing is of immediate concern where ageing is already well advanced with consequences that impact every aspect of life (Gutierrez-Robledo, 2002). It is also gaining importance in developing countries where the rate of population ageing is unprecedented (Westley, Lee & Mason, 2000) and the consequent social and health implications are profound. The United Nations projected that 72 percent of the population over 60 years of age will be living in developing countries by the year 2025 (United Nations, 2001). Moreover, older people in developing countries are expected to experience more chronic disease and disability than in developed countries (Harwood, 2003; Gutierrez-Robledo, 2002) where socio-economic development does not occur in tandem with population ageing. Hence, the current demographic trend and expected increasing numbers of disabled older people are key challenges for health and social care systems to address in developing countries.

Malaysia, like many other countries world-wide is experiencing demographic transition. With increasing longevity, low mortality, declining fertility and a healthier living environment the proportion of older people among the Malaysian population will



increase from 6.2 percent in 1990 to an estimated 11.3 per cent by 2020 (Arokiasamy, 2000). Ong (2001) postulated that the age structure from the past four censuses in 1970, 1980, 1991 and 2000, shows that the proportion of younger age groups (15 years and below) is decreasing, while the proportion of older people is on the increase. Life expectancy at birth for Malaysian males rose from 70.2 years in the year 2000 to 71.8 years in 2006, and 75.0 years in the year 2000 to 76.3 years in 2006 for females (Department of Statistics Malaysia, 2000; 2007). Certainly, it can be assumed that the number of old people with disabilities will also increase since disability occurrence increase with age (Ng, Niti, Chiam, & Kua, 2006; Reyes-Ortiz, Ostir, Pelaez & Ottenbacher, 2006; Pèrés, Verret, Alioum, Barberger-Gateau, 2005). The trend towards an increase of the ageing population in Malaysia is expected to continue and it will have health, social and economic implications. Malaysia will need to be prepared to grapple with issues such as the financial burden of providing for old age, demands for social and medical care, as well as needs for assistance and care in cases of disability.

While increases in life expectancy over the past decades are one of the triumphs of modernity and an effective health care system (World Health Organization, 2000), it raises questions about the quality of life during the extended years of life. Knowing that state of health is a major determinant of quality of life, what will be the overall quality of additional years gained through increases in life expectancy of Malaysia's older population and will these extra years of life be healthy? These questions are critical especially in planning for long term care.

Ageing is characterized by progressive loss of adaptability of an organism as time passes (Evans, 2002; Kirkwood, 1996). Such loss of adaptability is revealed by age-specific mortality rates. In human ageing, senescence is manifested as a steady and exponential rise in mortality rates for the rest of the lifespan. Importantly, loss of adaptability is also declared in the prevalence of disability which increases with age (Evans, 2002).

Because ageing is a generalized deterioration of many organs and systems, it leads to a lower effectiveness of physiological functions accompanied by an increase in risk factors for various diseases for example a rise in blood pressure lead to cardiovascular and renal diseases, a decline in immune function cause increases in infections and cancer, a rise in blood glucose lead to diabetes, a rise in cholesterol lead to atherosclerosis, a fall in bone mass lead to osteoporosis and fractures, increased neuronal degeneration lead to decline of cognitive function and dementia, cartilage degeneration lead to arthritis and muscle loss lead to functional weakness (Matsushita et al, 2003; Evans, 2002; Kirkwood, 2002; Kirkwood & Ritter, 1997). These changes may be more prevalent in older people because they are true expression of senescence. Disease and senescent changes can each produce disability, disease directly and senescent changes indirectly through a period of frailty (Albert, Im, & Raveis, 2002).

Increasing life expectancy does not mean improving health at the population level. Two opposing theory on the trends and predictions with respect to health status in old age have been proposed. The pessimistic theory proposed the “failures of success” of medical advances (Gruenberg, 1977) and postulated that those extra years will be marred by chronic disease and disability, which increases the amount of time spent in disability,



hence increasing health costs. Consequently, this will lead to deterioration in population health. Early studies in the United States supported this hypothesis; this was evident from the late 1960s and 1970s when the overall prevalence of disability increased and mortality rates at older ages began their significant decline (Colvez & Blanchet, 1981). Since age-related conditions such as chronic disease and disability affect quality of life, living a longer life may not necessarily imply improvement in the quality of life for the older persons.

The compression of morbidity theory (Fries, 2003; 1980) represented a positive view. It noted that most illness was chronic and occurred in later life and Fries (2003; 1980) postulated that the lifetime burden of illness could be reduced if the onset of chronic disease and disability could be postponed. The period of morbidity becomes compressed between an increasing age of onset of disease and disability and a relatively fixed life expectancy. Primary and secondary interventions to improve health will compress the period of terminal morbidity and expand the years of active life. This prognosis suggests less prolonged medical care in old age and less consequent expense.

The empirical evidence for compression of morbidity is mixed and contradictory trends are observed in the older populations in different areas of the world. However, some consistent evidence has appeared supporting the notion that some declines in rates of disability among the older adults in the United States have been achieved in the late 1980s and 1990s (Freedman, Martin & Schoeni, 2002; Manton, Corder, & Stallard, 1997). The current declines are largely attributable to increased levels of education (Schoeni, Martin, Andreski, & Freedman, 2005; Manton & Gu, 2001; Freedman &



Martin, 1998). However, extending the benefits of compression of morbidity world-wide will be a challenge in the current economic and social inequalities (Harwood, Sayer & Hirschfeld, 2004). It is still possible that in the total older population where many more people survive at the oldest ages, disability rates will still be high and more years will be spent disabled (Guralnik, 2004).

Developing countries such as Taiwan experience contradictory trends in functioning and disability, difficulties in walking and climbing stairs increased between 1993 and 1999 (Zimmer, Martin, & Chang, 2002). One possible reason could be the change in old-age survival, the phenomena behind the “failure of success” proposed by Gruenberg (1977) wherein the fall of mortality increased the prevalence of chronic diseases and disability. This phenomenon occurred in the developed countries during the late 1960s and 1970s when the overall prevalence of disability increased and mortality rates at older ages began their significant decline. Given this picture more attention could be directed to primary prevention of disability among the older population in developing countries. Moreover, the number or proportion of people who are not healthy in a population is an indicator of population health at a point in time (Crimmins, 2004).

1.2 Problem Statement

The factors underlying disability in old age are multiple and vary between individuals and populations. Research on disability in old age has identified several factors, such as age and genetics (Ferruci, Guralnik, Simonsick, Salive, Corti & Langlois, 1996), and modifiable risk factors, which include both individual factors such as age-related diseases, impairments, functional limitations, sedentary lifestyles and other unhealthy



behaviours, and psychological aspects (Gill, Allore & Guo, 2003; Rantanen et al, 2001; Woo, Ho, Yu, Lau & Yuen, 1998; Lawrence & Jette, 1996). Disability is also socially constructed and that it is the existence of a disabling environment which transforms impairments and functional limitations to disabilities (Clarke & George, 2005; Stark, 2004). Estimates of disability in the older population vary depending upon the definition of disability used, the measurement methods employed and the sample studied (Jette, 1995).

Prevalence estimates of disability in major activity (predominant social role expected of a person at a given age) increase substantially with age. For example, 9.2 percent of older adults in the United States aged 65 to 74 years need assistance in performing activities of daily living (ADL), such as transferring, bathing, dressing, toileting and eating and instrumental activities of daily living (IADL), such as meal preparation, laundry, light housework, grocery shopping, getting around outside, money management, taking medicine and making calls. For those aged 75 to 84, 23.4% need help with ADL/IADL. While for the 85 years and older, 55.5% require assistance with ADL/IADL (Spillman, 2003). Moreover, older age itself is a strong correlate of one's likelihood of attributing new disability to old age (Sarkisian, Liu, Ensrud, Stone, & Mangoine, 2001). This is to be expected since it has been estimated that for every one year of extra life expectancy, people spend an average of 9.6 months (80%) in a disabled state (Cassel, 2001).

In Malaysia, the results from the Second National Health and Morbidity Survey showed that the prevalence of self-reported disability was 1.5% among 59,903 study respondents