

UNIVERSITI PUTRA MALAYSIA

ASSOCIATED FACTORS OF DEPRESSIVE SYMPTOMS AMONG ELDERLY RESIDENTS IN FELDA SCHEME IN JOHOR, MALAYSIA

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By

NUR AQLILI RIANA BINTI HAMZAH

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science

September 2017

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the Degree of Master of Science

ASSOCIATED FACTORS OF DEPRESSIVE SYMPTOMS AMONG ELDERLY RESIDENTS IN FELDA SCHEMES IN JOHOR, MALAYSIA

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September 2017

Chair: Siti Nur 'Asyura Adznam, PhD Faculty: Medicine and Health Sciences

Introduction: Elderly might experience depressive symptoms that can be associated with many factors. The objectives of this study were to determine the prevalence of depressive symptoms, characteristics of socio-demographic, psychosocial, health related, functional status, anthropometric parameters and lifestyle characteristics, their correlation with and the associated factor of depressive symptoms among FELDA schemes elderly residents in Johor. Methods: Via cross-sectional study design, 269 respondents (130 men & 139 women) were recruited by systematic sampling with mean age 69.50±5.22 years old. Socio-demographic characteristics were assessed by adapted guestionnaire, functional status assessed by using Lawton Instrumental Activity of Daily Living (IADL) Scale, Short Performance Physical Battery (SPPB) questionnaire and Hodkinson Abbreviated Mental Test (HAMT) questionnaire. Physical activity level assessed by Rapid Assessment of Physical Activity (RAPA) questionnaire. anthropometric parameter assessed using anthropometric measurements, energy and nutrients intake assessed by diet history questionnaire and depressive symptoms was assessed by using Geriatric Depression Scale-15 (GDS-15). Results: The prevalence of depressive symptoms was 3.7%. Majority of them were married and have no chewing and vision problem. Many of them disabled in performing 1 or more IADL item, had intermediate level of physical performance and had normal cognitive function. Respondents at younger age and lower monthly income, have disability in performing IADL and lower physical performance, and have lower energy and riboflavin intake were found to have correlation with depressive symptoms. Among all variables, physical performance, energy intake and monthly income found to be the associated factor towards depressive symptoms (R²= 0.081, p<0.05). Conclusion: Depressive symptoms found to have significant correlation with socio-demographic characteristics (age and monthly income), functional status characteristics (IADL and physical performance) and lifestyle characteristics (energy and riboflavin intake). Meanwhile, physical performance, energy intake and monthly income were the associated factor towards depressive symptoms in this study. Further research on nationwide should be done as respondents in this study could act as the model of low depressive symptoms prevalence.

Keywords: elderly, socio-demographic, functional, nutritional, physical activity



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Master Sains

FAKTOR YANG BERKAITAN DENGAN GEJALA KEMURUNGAN DALAM KALANGAN PENGHUNI WARGA EMAS DI SKIM FELDA DI JOHOR, MALAYSIA

Oleh

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Pendahuluan: Warga emas berkemungkinan menghidapi gejala kemurungan yang boleh dikaitkan dengan pelbagai faktor. Objektif kajian ini adalah untuk menentukan prevalens gejala kemurungan, latar belakang sosio-demografi, psikososial, latar belakang berkaitan kesihatan, status fungsian, parameter antropometri dan gaya hidup, hubung kait dan faktor yang berkaitan dengan gejala kemurungan dalam kalangan penghuni warga emas skim FELDA di Johor. Metodologi: Melalui kaedah keratan rentas, sebanyak 269 orang responden (130 lelaki & 139 wanita) telah dipilih melalui persampelan sistematik dengan min umur 69.50±5.22 tahun. Latar belakang sosio-demografi dinilai melalui borang kaji selidik, status fungsian menggunakan borang soal selidik Lawton Intrumental Activity of Daily Living (IADL) Scale, Short Performance Physical Battery (SPPB) dan Hodkinson Abbreviated Mental Test (HAMT). Aktiviti fizikal dinilai menggunakan Rapid Assessment of Physical Activity (RAPA), parameter antropometri menggunakan ukuran antropometri, pengambilan tenaga dan nutrien dinilai menggunakan borang soal selidik Sejarah Pemakanan dan gejala kemurungan dinilai menggunakan Skala Kemurungan Geriatrik-15 (GDS-15). Hasil Kajian: Prevalens gejala kemurungan adalah 3.7%. Kebanyakan responden adalah berkahwin dan tidak mempunyai masalah mengunyah dan melihat. Kebanyakannya juga tidak berupaya melaksanakan 1 atau lebih item IADL, mempunyai prestasi fizikal tahap pertengahan dan mempunyai fungsi kognitif yang normal. Responden yang lebih muda, mempunyai pendapatan bulanan yang lebih rendah, mempunyai masalah dalam melaksanakan aktiviti kehidupan seharian menggunakan instrumen, mempunyai prestasi fizikal dan pengambilan tenaga dan riboflavin yang lebih

rendah didapati mempunyai korelasi secara statististik dengan gejala kemurungan. Daripada kesemua faktor, prestasi fizikal, pengambilan tenaga dalam sehari dan pendapatan bulanan menjadi faktor yang berkaitan dengan gejala kemurungan (R²= 0.081, p<0.05). **Kesimpulan:** Gejala kemurungan mempunyai hubung kait dengan latar belakang sosio-demografi (umur dan pendapatan bulanan), status fungsian (aktiviti kehidupan seharian menggunakan instrumen dan prestasifizikal) dan latar belakang gaya hidup (pengambilan tenaga dan riboflavin). Sementara itu, prestasi fizikal, pengambilan tenaga dalam sehari dan pendapatan bulanan adalah faktor yang berkaitan dengan gejala kemurungan di dalam kajian ini. Penyelidikan selanjutnya ke seluruh negara perlu dijalankan dengan menjadikan responden kajian ini sebagai model prevalens gejala kemurungan rendah dalam kalangan warga emas.

Kata kunci: warga emas, sosio-demografi, fungsian, pemakanan, aktiviti fizikal

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I certify that a Thesis Examination Committee has met on 18 September 2017 to conduct the final examination of Nur Aqlili Riana binti Hamzah on her thesis entitled "Associated Factors of Depressive Symptoms among Elderly Residents in Felda Schemes in Johor, Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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This is to confirm that:

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LIST OF ABBREVIATIONS

BDI-II	Beck Depression Inventory-2 nd Edition
BDNF	Brain-Derived Neurotrophic Factor
BMI	Body Mass Index
BPH	Benign Prostate Hyperplasia
BRFSS	Behavioral Risk Factor Surveillance System
CES-D	Center for Epidemiologic Studies-Depression Scale
CHAMPS	Community Health Activities Models Program for Seniors
COPD	Chronic Obstructive Pulmonary Disease
DEFF	Design Effect
FELDA	Federal Land Development Authority
GDS	Geriatric Depression Scale
GHQ	General Health Questionnaire
GIT	Gastrointestinal Tract
HAMT	Hodkinson Abbreviated Mental Test
IADL	Instrumental Activity of Daily Living
NHMS	National Health and Morbidity Survey
PACE	Patient-centered Assessment and Counseling for Exercise
PPS	Probability Proportionate to Size
RAPA	Rapid Assessment of Physical Activity
RM	Ringgit Malaysia
RMC	Research Management Centre
RNI	Recommended Nutrient Intake
SPPB	Short Performance Physical Battery
VIF	Variance Inflation Factor
WC	Waist Circumference
WHO	World Health Organization

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CHAPTER 1

INTRODUCTION

1.1 Study Background

As the world's population is growing older, there are also increasing number of elderly people. The elderly is defined by most developed countries in the world as older person aged 65 years old or older (World Health Organization [WHO], 2013). Differently, according to the Department of Social Welfare Malaysia (2011), elderly in Malaysia is defined as one who is 60 years old and above. This definition is based on the description made during the 'World Assembly On Ageing 1982' at Vienna. As stated by Bloom, Boersch-Supan, McGee & Seike (2011), population aging is taking place in every country in the world, including Malaysia based on three factors namely increase in longevity, declining fertility and also the aging of the baby boom generations.

In Malaysia, the mechanism of increasing number of older people is explained by the Department of Statistics Malaysia (2011) in which, the life expectancy for males is increased from 71.3 years old in the year 2009 to 71.6 years old by the year 2010. Meanwhile, the life expectancy for female is increased from 76.5 years old (year 2009) to 77.0 years old (year 2010). Although the total fertility rate in Malaysia in year 2010 is increasing from 2.3 to 2.4 (Department of Statistics Malaysia, 2011), the world's total fertility rate is declining half to 2.5 children per woman, and this rate is predicted to decrease to 2.2 children per woman by 2050 (United Nations, 2002).

Figure 1.1 shows the world proportion of population aged 60 years old and above.United Nations (2015) reported that the world proportion of aged 60 years old and above increasing from 9.9% in year 2000 to 12.3% in year 2015 and predicted to increase to 16.3% in 2030 and increasing to 21.5% in 2050.



Figure 1.1: World proportion of population 60 years old or older (Source: Population Division of United Nations, 2015)

WHO (1999) also predicts about 60% of 580 million elderly in the world live in developing countries and by 2020, the number will increase to 70%. Among Malaysian, Figure 1.2 showed the Malaysian proportion of elderly population aged 60 years old and above. It is clear that in Malaysia, Department of Statistics Malaysia (2012) reported that Malaysian proportion aged 60 years old and above increasing from 7.4% to 7.9% and latest to 8.3% by year 2008, 2010 and 2012.



Figure 1.2: Malaysian proportions of 60 years old and older (Source: Department of Statistics Malaysia, 2012)

Figure 1.2 shows the Malaysian proportion of elderly population aged 60 years old and above. It is clear that in Malaysia, Department of Statistics Malaysia (2012) reported that Malaysian proportion aged 60 years old and above increasing from 7.4% to 7.9% and latest to 8.3% by year 2008, 2010 and 2012.

Department of Statistics Malaysia (2005) reported that faster rate of ageing phenomenon will normally experience by the developing countries compared to developed countries. Malaysia as one of the developing countries not only experiences the ageing phenomenon but also had undergone the urbanization process. Urbanization as defined by Noreen Noor, Was Haslin Aziah & Nur Adilah (2012) is the process that leads to the growth of cities due to industrialization and economic development, and this leads to urban-specific changes in specialization, labor division and human behaviors. Government of Malaysia had urbanized the rural region into agriculture projects, relocated landless families from rural and suburb areas into well-planned agricultural scheme, namely Federal Land Development Authority (FELDA) and this change the cultural and social environment of FELDA settlers (Noreen Noor et al., 2012).

Historically, FELDA (Federal Land Development Authority) is developed on 1 July 1956 under the Land Development Ordinance 1956. It is developed for poor rural Malays to resettle and work in newly developed areas of palm oil or rubber plantations. The first generation of FELDA settlers were already in their very late adulthood when they joined FELDA and now, the FELDA comprises the second and third generation of FELDA settlers (Norhayati et al., 2013). Not only that, as FELDA schemes is developed since year 1965, Normah et al. (2014) stated that the FELDA settlers that with majority of them are first

generation, must be in their old age with possessed health need that might different from other agricultural population worldwide.

Besides assessment of socio-economic development through urbanization, government of Malaysia has also conducted health and morbidity survey to evaluate health status among Malaysian population, including mental health status such as depression, generalized anxiety disorder and suicidal ideation. In this survey, it is reported that mental health problem among Malaysian adults (aged 16 years old and above) increasing from 10.7% in 1996, 11.2% in 2011 and latest, 29.2% in 2015. The increasing trend is not a good sign for Malaysian population, especially for the elderly as this might be one of the indicators of declining health status among Malaysia populations.

Focus on depression, according to Marcus, Yasamy, van Ommeren, Chisholm & Saxena (2012), depression can be defined as a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy and poor concentration. The prevalence of depression was reported higher in Malaysia community-dwelling elderly (26.0%) (Norhayati et al., 2013), compared to community dwelling elderly in Iran (23.5%) (Mohamad Reza, Majid, Maliheh, Mohamad & Naghmeh, 2010) and 12.7% in South India (Rajkumar, Thangadurai, Senthilkumar, Gayathri, Prince & Jacob, 2009). As the prevalence of depression should be addressed especially factor associated with depressive symptoms.

1.2 Problem Statement

Depression is one of common illness among elderly and it can be occurred with many factors such as socioeconomic factors (Mohamad Reza et al., 2010; Rajkumar et al., 2009 & Rashid, Azizah & Rohana, 2012), psychosocial factors (Runcan, Hategan, Barbat & Alexiu, 2010), health related factor (Vanoh, Suzana, Hanis & Tengku Aizan, 2016), anthropometric parameter (Godin, Elbejjani & Kaufman, 2012), functional factors (Biderman, Cwikel, Fried & Galinsky, 2002) and nutritional factors (Murakami et al., 2007) and also physical activity level (Ciucurel & Iconaru, 2012).

Vanoh et al. (2016) did mention that in term of socio-demographic characteristics of their respondents, they found the older age respondents, had lower education level and lower household income found to be associated with depressive disorders. Not only that, lower education level found to play an important role in determining depressive disorder among the elderly population and closely related to poor socio-economic background (Vanoh et al., 2016).

Kua (2012) stated that psychosocial is one of the factors that contribute to depression among elderly, especially when they experiences loss, might come from loss of job and colleagues, loss of finance, changes in status due to death of spouse (or divorce) and because of the children have grown up and left the home. Besides that, less communication between family members also associated with reduction in appetite among elderly (Kazushi, Yuko, Tomoko, Kiyomi & Yumiko, 2007). All the psychosocial factors might contribute to the depression and reduce their appetite, and yet the complications that are related to nutrition will occur (Suzana et al., 2007).

The elderly usually will take less amount of food and less frequent if compared to the younger age (Suzana et al., 2007). The elderly might take less amount of food as they are experiencing of physiological changes which is gastric emptying process. Throughout aging, there are changes in gastric-emptying that involving hormonal changes. The hormones are present in digestive systems such as cholecystokinin (CCK), Glucagon-like peptide 1 (GLP-1) and pancreatic polypeptide (PPY) may change their roles and slowing the emptying process, lead to delaying in gastric-emptying especially for liquid, solids or both and this become the factors of reduction in food intake among older people (de Boer, Horst & Lorist, 2013).

Besides, reduction in dietary intake, gastrointestinal problems and presents of chronic illness may give impact in deficiencies not only macronutrients but also micronutrient such as B_2 , B_6 and B_{12} and may lead to the development of depression (Pan et al., 2014). There are also many studied have shown that food intake associated with depressive symptoms (Gao et al., 2012; Lehto et al., 2013; Nabi et al., 2013; Payne, Anderson & Steffens, 2008; Saka, Kaya, Ozturk, Erten & Karan, 2010; Seppala, et al., 2012; Teymoor et al., 2010 & Woo et al., 2006) that will be discussed in Chapter 2.

The functional status in this study includes physical performance, activity daily living and also cognitive function where mostly, elderly who are suffering from non-communicable diseases such as hypertension and diabetes mellitus, ischemic heart disease, respiratory problems and gout had higher prevalence of functional dependency, and this might be one of the factors of depression among elderly (Sherina, Lekhraj & Mustaqim, 2004). While, it is truly proven that cognitive function will decrease over the age as it is part of the normal process of ageing. Sherina et al. (2004) also reported that cognitive impairment is actually common in late life, plus it is associated with physical or mental disorder and characterized by memory disturbances, which frequently occurs in elderly.

The age-related change among the elderly especially changes dietary intake is associated with the reduction in body fat and body weight (de Boer et al., 2012). Kim, Noh, Park & Kwon (2014) reported that their respondents who were underweight scored higher in depressive symptoms score than normal

weight respondents. Not only that, a study by Yu, Chen, Chau & Chang (2011) also found that underweight men had significantly higher depression risk compared to normal weight men. The relationship of body weight status and waist circumference with depressive symptoms should be taking into account as there is lack of study in Malaysia regarding this issue.

Physical activity is also associated with depressive symptoms. According to WHO (2017), physical activity can be defined as any bodily movement produced by skeletal muscles that requires energy expenditure. Higher amount of physical activity in the elderly is correlated with less prevalence of depressive symptoms (Salguero, Martínez-García, Molinero & Márquez, 2010). To add on, Ciucurel & Iconaru (2012) found that physical activity is important in determining whether an individual prone to have depression or not.

FELDA is one of the urbanization programs that had been planned by Malaysia government, involving in variety of changes, especially for FELDA settlers. Although FELDA settlement can be categorized as rural community settlement (Norhayati et al., 2013), it gives many positive impacts, especially in term of economic, demographic, social and psychological dimensions (Noreen Noor et al., 2012). However, an epidemiology study in Germany found that urbanization positively associated with psychiatric disorders (Dekker, Peen, Koelen, Smit & Schoevers, 2008).

In Malaysia, current studies have shown that there are several factors associated to the development of depressive symptoms among elderly live in rural area. Rashid et al. (2012) conducted a study in rural North Malaysia and they found that lower monthly income was the significant predictor of depressive symptoms among their respondents. Norhayati et al. (2013) had conducted their study in FELDA schemes in Selangor (central Malaysia), stated that in their study, the prevalence of severe depression among their respondents was low and they did mentioned that the factor that lead to presence low severe depression was possessed high monthly income. The latest prospective study by Vanoh et al. (2016) in both rural and urban area (Suzana et al., 2015) did mentioned that depression is associated with variety factors such as socio-demography, comorbidities, psychosocial function, calorie restriction and fitness among their respondents.

Although there were study had been conducted in assessing the prevalence of depressive symptoms among rural community dwelling in Malaysia, however, research in Malaysia is still lacking in determining the depressive symptoms and the associated factors underlying the depressive symptoms among the elderly residents specifically in the government urbanization program, namely FELDA in Southern part of Malaysia. Hence, this study was conducted to fill the gap in order to provide better understanding on the depressive symptoms and its association with factors specifically socio-demographic, psychosocial, health related, functional status, anthropometric parameter and also lifestyle among FELDA elderly residents.

1.3 Research Questions

The research questions for this study are as follows:

- a) What are the socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics, anthropometric parameters, lifestyle characteristics and prevalence of depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia?
- b) Do socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics, anthropometric parameters and lifestyle characteristics have relationship with depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia?
- c) Do socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics is (are) the associated factor of depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia?

1.4 Objectives

The objectives of this study are as follows:

1.4.1 General Objective

To assess the prevalence and associated factors of depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia.

1.4.2 Specific Objectives

 To determine the socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics, anthropometric parameters, lifestyle characteristics and prevalence of depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia.

- To investigate the correlation between socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics, anthropometric parameters and lifestyle characteristics with depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia.
- 3. To determine the associated factor(s) of depressive symptom among FELDA schemes elderly residents in Johor, Malaysia.

1.5 Hypotheses

The alternate hypotheses for this study are as follows:

H₁: There is relationship between socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics, anthropometric parameter and lifestyle characteristics with depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia.

H₁: The socio-demographic characteristics, psychosocial characteristics, health related characteristics, functional status characteristics, anthropometric parameter and lifestyle characteristics is (are) the associated factor of depressive symptoms among FELDA schemes elderly residents in Johor, Malaysia.

1.6 Conceptual Framework

The conceptual framework of this study is shown in Figure 1.3. Sociodemographic characteristics, health related characteristics, psychosocial characteristics, functional status characteristics, anthropometric parameters and lifestyle characteristics are the independent variables, while depressive symptoms is as dependent variable.



Figure 1.3: Conceptual framework of the study

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