



**UNIVERSITI PUTRA MALAYSIA**

***QUALITY OF LIFE AND ITS ASSOCIATED FACTORS AMONG ELDERLY  
RESIDENTS IN FELDA SETTLEMENTS IN JOHOR, MALAYSIA***

**SYAFINAS AZAM**

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ELDERLY RESIDENTS IN FELDA SETTLEMENTS IN JOHOR,  
MALAYSIA**

**By**

**SYAFINAS AZAM**

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

**July 2017**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

**QUALITY OF LIFE AND ITS ASSOCIATED FACTORS AMONG FEDERAL AMONG ELDERLY REDISENTS IN FELDA SETTLEMENTS IN JOHOR, MALAYSIA**

By

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July 2017

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

**Introduction:** Quality of Life (QoL) was an important concern in health status, social factors and economics of developing country like Malaysia. As Malaysia is moving towards a rapidly developing economy, its elderly populations are also expected to increase in their life expectancy. With life expectancy is increasing, QoL is declining with age. Many factors may affect elderly QoL but it is not clear whether these factors such as socio-demographic, health-related, lifestyle, psychosocial, functional, anthropometry characteristics and biochemical parameters will improve QoL. There were eight domains and two component summary of QoL. **Objective:** This study was conducted to determine the associated factors of QoL among Malay elderly residents at FELDA Schemes in Johor Malaysia. **Methodology:** This was a cross-sectional study which involved a total of 269 respondents (130 men and 139 women) with mean age  $69.50 \pm 5.22$  years in three selected FELDA Schemes. Subjects were sampled using probability proportionate to size (PPS) sampling. Age, sex, financial dependency, monthly income, chewing and vision problem, marital status, living arrangement and social engagement were measured using questionnaire developed by researcher. Sleep quality was measured with Pittsburgh Sleep Quality Index(PSQI), appetite with Simplified Nutritional Appetite Questionnaire(SNAQ), physical activity with Rapid Assessment for Physical Activity (RAPA), dietary intake with diet history questionnaire, depressive symptoms with Geriatric Depression Scale(GDS), cognitive function with Hodkinson Abbreviated Test(HAMT), hand grip strength with a dynamometer, low extremity performance(LEP) with Short Physical Performance Battery (SPPB), activity of daily living with Instrumental Activity of Daily Living (IADL), height with stadiometer, weight with weighing scale, waist circumference with measuring tape, all biochemical parameters (fasting blood sugar, lipid profile and serum albumin) were measured through respondent's fasting blood and QoL with Short Form-36(SF-36). The findings from diet history were analyses by using Nutritionist Pro version 2.4.1 software while all

data obtained from data collections were analyzed using IBM SPSS statistics version 22 software. The data collection involve face to face interview by house to house visits however data collection that involved biochemical parameters, were done at main hall in selected FELDA schemes. **Result:** The highest mean score of QoL was in Role Limitations due to Emotional Problems domain ( $94.67 \pm 20.58$ ) and the lowest mean score was in Physical Functioning domain ( $70.91 \pm 27.16$ ). LEP was the stronger significant determinant for Physical Functioning domain ( $\beta=0.300$ ), Role Limitations due to Physical Health domain ( $\beta=0.335$ ), Energy/Fatigue domain ( $\beta=0.277$ ), Emotional Well Being domain ( $\beta=0.302$ ), Social Functioning domain ( $\beta=0.311$ ), Physical Component Summary ( $\beta=0.219$ ) and Mental Component Summary ( $\beta=0.193$ ) while Role Limitations due to Emotional Problem domain ( $\beta=-0.264$ ), depressive symptoms was the strongest determinant, followed by General Health domain, sleep quality ( $\beta=-0.274$ ) was the strongest determinant and appetite was the strongest determinant ( $\beta=0.218$ ) for Pain domain. None of dietary factors had significant relationships with QoL. **Conclusion:** In conclusion, LEP was the most salient determinant of QoL. Interventional programs which targeting the physical health could appropriate be plan and implement in FELDA schemes with the efforts to maintaining the high level of LEP which will give impact on the QoL level among the FELDA elderly.

Keywords: Quality of Life, SF-36, nutrition, elderly, FELDA

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

**KUALITI HIDUP DAN FAKTOR BERKAITAN DALAM KALANGAN WARGA  
EMAS YANG MENETAP DI FELDA DI JOHOR, MALAYSIA**

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**Pengenalan:** Kualiti hidup (QoL) memainkan peranan penting dalam status kesihatan, faktor sosial dan ekonomi dalam negara membangun seperti Malaysia. Kesan daripada pembangunan pesat ekonomi Malaysia, jangka hayat warga emas turut meningkat. Peningkatan jangka hayat warga emas turut dijangka memberi kesan terhadap QoL. Terdapat banyak faktor yang mempengaruhi status kesihatan warga emas namun ia tidak jelas sama ada faktor-faktor seperti sosio-demografi, status kesihatan, gaya hidup, fungsi, anthropometri dan parameter biokimia mampu mempengaruhi QoL **Objektif:** Kajian ini dijalankan untuk mengenal pasti faktor yang berkaitan dengan QoL dalam kalangan warga emas di Skim FELDA, Johor Malaysia. **Metodologi:** Kajian ini merupakan kajian keratan rentas yang melibatkan seramai 269 responden (130 lelaki dan 139 wanita) dengan min umur  $69.50 \pm 5.22$  tahun di tiga buah FELDA yang terpilih. Responden disampel menggunakan kaedah *Probability Proportionate to Size* (PPS). Umur, jantina, kebergantungan kewangan, pendapatan bulanan, masalah mengunyah dan penglihatan, status perkahwinan, aturan kehidupan dan penglibatan sosial diukur dengan menggunakan borang soal selidik yang disediakan oleh penyelidik. Kualiti tidur diukur dengan *Pittsburgh Sleep Quality Index* (PSQI), selera makan dengan *Simplified Nutritional Appetite Questionnaire* (SNAQ), aktiviti fizikal dengan *Rapid Assessment for Physical Activity* (RAPA), pengambilan diet dengan borang sejarah pemakanan, gejala kemurungan dengan *Geriatric Depression Scale* (GDS), fungsi kognitif dengan *Hodkinson Abbreviated Test* (HAMT), kekuatan cengkaman tangan dengan dinamometer, *Low Extremity Performance* (LEP) dengan *Short Physical Performance Battery* (SPPB), aktiviti kehidupan harian dengan *Instrumental Activity of Daily Living* (IADL), ketinggian dengan stadiometer, berat dengan penimbang berat, lilitan pinggang dengan pita pengukur, semua parameter biokimia (gula dalam darah, profil lipid dan albumin serum) diukur melalui darah responden yang berpuasa dan QoL dengan *Short Form-36* (SF-36). Data daripada sejarah pemakanan dianalisis menggunakan aplikasi *Nutritionist Pro* versi 2.4.1 manakala data yang lain

dianalisis menggunakan sistem IBM SPSS statistik versi 22. Pengumpulan data melibatkan temubual dengan lawatan rumah ke rumah. Pengumpulan data melibatkan parameter biokimia dijalankan di dewan utama di setiap FELDA yang terpilih. **Hasil kajian:** Skor min yang tertinggi bagi QoL adalah dalam domain *Role Limitations due to Emotional Problems* ( $94,67 \pm 20.58$ ) dan skor min terendah adalah dalam domain *Physical Functioning* ( $70,91 \pm 27.16$ ). LEP merupakan peramal yang kuat dan signifikan untuk domain *Physical Functioning* ( $\beta=0.277$ ), domain *Emotional Well Being* ( $\beta=0.302$ ), domain *Social Functioning* ( $\beta=0.311$ ), domain *Role Limitations due to Physical Health* ( $\beta=0.335$ ), domain *Energy/ Fatigue* ( $\beta = 0.277$ ), *Physical Component Summary* ( $\beta=-0.219$ ) dan *Mental Component Summary* ( $\beta = 0.193$ ) manakala domain *Role Limitations due to Emotional Problem* ( $\beta=-0.274$ ), kemurungan merupakan peramal yang kuat diikuti dengan domain *General Health*, kualiti tidur ( $\beta = 0.193$ ) merupakan peramal terkuat dan selera makan merupakan peramal terkuat bagi domain *Pain* ( $\beta=0.218$ ). Tiada faktor diet yang mempunyai hubungan signifikansi terhadap QoL. **Kesimpulan:** Kesimpulannya, LEP merupakan peramal terkuat bagi QoL. Program intervensi yang menasaskan kesihatan fizikal perlu dilaksanakan di skim FELDA dalam usaha untuk mengekalkan tahap LEP yang tinggi seterusnya memberi kesan positif terhadap tahap QoL dalam warga emas di FELDA.

Kata kunci: Kualiti Hidup, SF-36, pemakanan, warga tua, FELDA

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I certify that a Thesis Examination Committee has met on 27 July 2017 to conduct the final examination of Syafinas binti Azam on her thesis entitled "Quality of Life and Its Associated Factors among Federal Land Development Authority (FELDA) Schemes Elderly Residents 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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## LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
APC	Annual Practicing Certificate
BMI	Body Mass Index
BMR	Basal Metabolic Rate
CDC	Centers for Disease Control and Prevention
CNAQ	Council on Nutrition Appetite Questionnaire
DEFF	Design Effect
EF	Energy and Fatigue
EI	Energy Intake
EWB	Emotional Wellbeing
EWGSOP	European Working Group on Sarcopenia in Older People
FAO	Food And Agriculture Organization
FELDA	Federal Land Development Authority
FPSK	Faculty of Medicine and Health Sciences
GDS	Geriatric Depression Scale
GH	General Health
HAMT	Hodkinson Abbreviated Test
HDL	High Density Lipoprotein
IADL	Instrumental Activity of Daily Living
JSHD	Johor State Health Department
KAP	Knowledge, Attitude and Practice
K-S	Kolmogorov-Smirnov
LDL	Low Density Lipoprotein
LEP	Low Extremity Performance
LSD	Least Significant Difference
MCS	Mental Component Summary
MOH	Ministry of Health
MYR	Malaysia Ringgit
NCEP	National Cholesterol Education Program Expert Panel
NMRR	National Medical Research Register
PAL	Physical Activity Level
PCS	Physical Component Summary
PF	Physical Functioning
PN	Pain
PPS	Probability Proportionate to Size
PSQI	Pittsburgh Sleep Quality Index
QoL	Quality of Life
RAND	Research and Development
RAPA	Rapid Assessment for Physical Activity
REP	Role limitations due to Emotional Problems
RNI	Recommended Nutrient Intakes
RPH	Role limitations due to Physical Health
SD	Standard Deviation
SF	Social Functioning
SF-12	The 12-Item Short Form Health Survey
SF-36	The 36-Item Short Form Health Survey

SNAQ	Simplified Nutritional Appetite Questionnaire
SPPB	Short Physical Performance Battery
SPSS	Statistical Package for the Social Sciences
TC	Total Cholesterol
TG	Triglycerides
UPM	Universiti Putra Malaysia
VIF	Variance Inflation Factor
WC	Waist Circumference
WHO	World Health Organization
WHOQOL Group	World Health Organization Quality of Life Group
WHOQOL- BREF	World Health Organization Quality of Life Instruments



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## CHAPTER 1

### INTRODUCTION

#### 1.1 Study Background

Ageing population has increased positively as a result of decreasing birth rate and mortality rate. In addition it might be due to the improvement in the Malaysia health care system and reduction in infectious diseases. According to the Malaysian Department of Social Welfare (2011), the elderly is defined as those who are 60 years old and above.

The elderly population has increased steadily from 6.2% in 2000 to 8.4% in the year 2012 (Malaysian Department of Statistics, 2012) as shown in Figure 1.1. This is in line with the transition of age structure towards aging population of Malaysia. As Malaysia is moving towards a rapidly developing economy, its elderly populations is also expected to increase not only in numbers and proportion but also in their life expectancy (Zaitun & Seong, 1995).

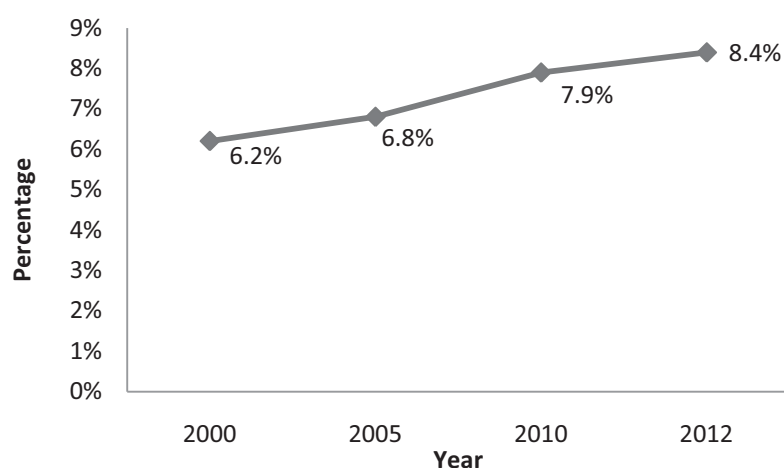
While life expectancy is increasing, a study by Mossey and Shapiro (1982) reported that quality of life (QoL) or self-rated health declined with age. This was later supported by study Van Minh, Byass, Kim Chuc and Wall (2010), which reported age was significantly associated with poor health status and poor QoL. In the process of demographic transition, it is important for the elderly to remain active and independent which will give positive effect towards their QoL (Alexandre, Cordeiro & Ramos, 2009). In 1994, World Health Organization Quality of Life Group (WHOQOL Group) defined QoL as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Income, social support, physical health, mobility, and cognitive function were viewed as essential dimensions of QoL.

QoL generally were built based on 2 summary components which were physical component summary (PCS) and mental component summary (MCS) (Preedy & Watson, 2010). PCS was derived from 4 domains of QoL which were physical functioning (PF), role limitations due to physical health (RPH), pain (PN) and general health (GH) while MCS was derived from 4 different domains of QoL which were role limitations due to emotional problems (REP), energy or fatigue (EF), emotional wellbeing (EWB) and social functioning (SF).

According to Moller, Smit and Petr (2000), PF domain scale indicates the subjects' perception of their QoL level with influenced by their physical

condition. In term of RPH domain scale, it refers to the extent to which respondents' performance of their role in daily activities was affected by their physical state of health while, for PN domain scale it was the indicator to what extent the respondents' experience of bodily pain affect their performance of daily living. GH domain scale was the perception of the subjets' regarding their health whether it was excellent, very good, good, fair or poor, getting ill easier than other people or just as healthy as anyone else.

REP domain scale indicates the emotional condition of respondents and did the emotional condition limits their daily functioning. EF which also known as vitality was the domain that related to the respondent's experienced of feeling energetic or worn out. EWB domain scale can be explained as respondents feeling whether they feel happy, calm, peaceful, very nervous, worn out and tired. Lastly, SF domain scale refers to social activities among the respondents with family members, friends, neighbor and other social relations.



**Figure 1.1: Elderly population in Malaysia (>60 years old)**

One of the factors that related to QoL is malnutrition. As stated by Mathews and Jacob (2013), malnutrition may delay recovery from illness and prolong hospitalization and leads to poor QoL of an individual. Malnutrition is the state occur by the intake of too few macronutrients (proten-energy undernutrition, vitamin and mineral deficiency), too many macronutrients (obesity) or excessive amounts of inappropriate subsatnces such as alcohol (Omran & Morley, 2000a). In addition, according to Oquzturk (2008) those people living in rural areas have poorer QoL compared with those leaving in urban areas. A study by Suzana, Zuriati, Suriah and Siti Nur 'Asyura (2007) reported that malnutrition was higher in rural areas elderly compared with urban areas elderly. The prevalence of malnutrition in rural areas elderly with BMI less than  $18.5 \text{ kg/m}^2$  was 17.7% to 37.7 % compared to 2.0% to 3.0% among urban areas elderly.



Malaysia Department of Statistics (2010) reported that majority of elderly in Malaysia was Malay elderly with 46.1% compared with Chinese (34.5%) and Indian (6.7%). Therefore, there is a need to assess the factors in relation with QoL among Malay elderly in Malaysia. Malaysia Department of Statistics (2010), reported that 32.9% of Malay elderly populations in Malaysia, were living in urban areas while 30.4% were living in rural areas. Thus, the Malaysian Government has brought changes in the rural areas by creating agriculture projects (Noreen Noor, Wan Haslin Aziah & Nur Adilah, 2012). Noreen Noor et al. (2012) reported that the agriculture projects involved re-grouping landless families from rural areas or sub-urban areas in the planned Federal Land Development Authority (FELDA) scheme throughout the country. FELDA can be explained as a Malaysian Government agency transforming the resettlement of rural poor into newly developed areas (Noreen Noor et al., 2012). Other than that, according to Abdul Hamid, Rahimah and Sulong (1987) FELDA involves land settlement schemes of the movement of people from rural setting into a new environment well served with a wide range of social amenities and infrastructure. The improvement made in infrastructure will mainly improve QoL at the effected regions (Fischer & Amekudzi, 2010). However, studies on the factors in relation with QoL among the elderly in FELDA community are very limited which make this study an important study to give a clear view on what are the factors that may associated with QoL among the elderly at FELDA community.

As mentioned by Norhayati et al. (2013), FELDA is the world's largest plantation operator, with 811,140 hectares (2,004,400 acres) of oil palm. The first generations of FELDA settlers are already in their very late adulthood when they joined FELDA. Nowadays, most of the second generations of the settlers are in the elderly age groups which are in their 60s. Study on FELDA settlers especially among the elderly population are lacking and it would be important to fill the gap between what is known about the nutrition and health situation faced by the FELDA settlers and what is not known.

Most of the elderly residents in FELDA were Malay and as mentioned earlier most of the elderly in Malaysia were Malay race. In addition, the Malay elderly residents at FELDA can be consider as very unique as the urbanization phenomenom that occur at FELDA settlerment might affect their QoL level. However there were no study had been done in related with QoL among Malays elderly residents in FELDA settlement. Other than that, study by Kumar, Majumdar and Pavitha (2014), revealed that QoL among elderly is a neglected issue especially in developing countries. In developing countries the demographic transition results in higher life expectancy and increase in the proportion of elderly population in near future, thus, elderly was considered as vulnerable populations.

Low level of QoL may affect the socio-economics security among the elderly which later results in life dissatisfaction (Mafauzy, 2000). Furthermore, poor QoL among the elderly may leads to increased number of elderly at insitutionalisation. With social changes such as urbanization in FELDA settings



and longer expectation of life in Malaysia, the number of elderly that would require institutionalisation can be expected to increase (Mafauzy, 2000). However, the existing institutions for the elderly populations will not be adequate to meet this expected demand.

Study by Onunkwor et al. (2016), reported that physical domains of QoL had highest score among their elderly respondents while social domains had the lowest score. The study by Onunkwor et al. (2016) which takes place in Malaysia, found that the existing issue that related with all domains of QoL were social support, chronic co-morbidities, gender and outdoor leisure activities. Other than that, findings of another study in Hong Kong indicate that being physically and mentally healthy, socially active and financially stable, as well as being happy, eating well and having good family relationships all positively influence towards QoL (Kwan et al., 2003).

## **1.2 Problem Statement**

There are many factors that related with QoL such as sexes, age (Van Minh et al., 2010), economic status, functional factors (Netuveli, Wiggins, Hildon, Montgomery & Blane, 2006), nutritional factors (Mathews & Jacob, 2013), physical activity level (Pernambuco et al., 2012), social support and psychological factors (WHOQOL Group, 1994).

Among all, nutritional status received most attention with QoL is significantly reduced among elderly who are at risk of malnutrition (Kvamme, Olsen, Florholmen & Jacobsen, 2010). According to Seong, Hooi and Sakinah (2012), the elderly are physiologically vulnerable to the risk of malnutrition. It is generally accepted that the elderly population is more likely to suffer from nutritional deficiencies than any other population (Nes et al., 1988; Suriah et al., 1996). The elderly are likely to become malnourished due to decreasing food intake. Loss of appetite, decrease in food intake and changes in body composition appear to be inter-related factors that can influence the well-being of older individuals (Mohamad, Suzana, Noor & Norshafarina, 2010).

On the other hand, rapid advancements in socio-economic situation in Malaysia have resulted in changes towards lifestyles of community including food habits, food purchasing and consumption patterns (Tee, 1999). Furthermore, rapid pace in socio-economic development in Malaysia has caused nutrition problem in the country namely chronic diseases associated with excessive consumption of fat and low levels of intake of other nutrient such as fiber (Tee, 1999). The nutrition problem must be encounter in order to promote a better QoL among the elderly in Malaysia. Proper nutrition can prevent health problem and increase QoL.

In tandem with Malaysia's rapid development, the proportion of urban population increased from 62.0% in 2000 to 71.0% in 2010 (Malaysia Department of Statistics, 2010). In FELDA setting, urbanization have occur which give effect on the demographic, social, economic and psychological among its residents. Urbanization is a process that involves the growth of cities due to industrialization and economic development which leads to change in human behavior (Noreen Noor et al., 2012). According to Trivendi, Sareen and Dhyan (2008) urbanization can give an impact on mental health due to depression and family disintegration especially among vulnerable population such as elderly. In addition, there is a relationship between depression and psychological factors with QoL (Alexandre et al., 2009). In addition in term of nutritional status, elderly tends to become obese and affects their bone health resulting from urbanization phenomena (Popkin, 1999) and as mention earlier there is association between nutritional status and QoL. For all the reason, there is a need to assess and report the factors that may lead towards poorer QoL especially among the elderly residents in FELDA schemes which facing urbanization phenomenon. Hence, this present study will be conducted to document the QoL level of elderly residents in FELDA schemes and related factors that contribute towards QoL in order to formulate strategies to promote better QoL level among them.

With the occurrence of urbanization phenomenom in FELDA settings and its affect towards the level QoL among elderly residents in FELDA were yet has been clarified, so it was important for this research had been done in order to know the level of QoL among elderly residents in FELDA. The level of QoL among elderly population in FELDA was ambiguity as very lack of study had been done in this setting. As mention above, in this study, we investigated the level of QoL and its associated factors mainly among elderly resident in FELDA as to fill in the research gap. The associated factors that had been investigated in this study were the various factors that had relationships with QoL based on previous studies. Eventhought the previous studies were in different settings, researcher were keen to investigatge whether the same factors will be act as associated factors of QoL among elderly residents in FELDA.

### **1.3 Significance Of The Study**

The findings of this study gave full pictures of QoL level among Malay elderly resident in FELDA scheme. The findings redound to the benefit towards FELDA management, government and health care system considered that QoL plays an important role among Malay elderly populations in FELDA. Furthermore, as Malaysia enters an ageing nation status the needs of study regarding elderly were needs for a strong ageing support system.

Other than that, the importance of this study was for the researchers to investigate the associated factors of QoL. Researchers were also looking at the big picture of which associated factors acts as contributor towards QoL. There was no doubt that our aged population will have its own unique problems and

challenges, thus, it was really important for us to investigate thoroughly on what was the level of QoL and its associated factors.

#### **1.4 Research Questions**

The study will answer the following research question:

1. What is the level of QoL among Malay elderly residents at FELDA schemes in Johor, Malaysia?
2. Do socio-demographic characteristics, health related factors, lifestyle factors, psychosocial factors, functional factors, anthropometry characteristics and biochemical parameters associate with the QoL of Malay elderly residents in FELDA schemes in Johor, Malaysia?
3. Do socio-demographic characteristics, health related factors, lifestyle factors, psychosocial factors, functional factors, anthropometry characteristics and biochemical parameters can be as contributor of QoL of Malay elderly residents in FELDA schemes in Johor, Malaysia?

#### **1.5 Objective**

The objectives of the study are as follows:

##### **1.5.1 General Objective**

The purpose of this study is to determine the associated factors of QoL among Malay elderly residents at FELDA Schemes in Johor Malaysia.

##### **1.5.2 Specific Objectives**

1. To determine the socio-demographic characteristics (age, sex, occupation, monthly income, financial dependency), health-related factors (chewing problem, vision problem, sleep quality, appetite), lifestyle factors (physical activity, dietary intake), psychosocial factors (marital status, living arrangement, social engagement, depressive symptoms), functional factors (cognitive functions, handgrip strength, low extremity performance, instrumental of daily living), anthropometry characteristics (body mass index, waist circumference), biochemical parameters (blood glucose, lipid profile, serum albumin) and QoL level among Malay elderly residents in FELDA schemes in Johor, Malaysia.
2. To determine differences in means of QoL according to socio-demographic characteristics (age, sex, occupation, monthly income,

financial dependency), health related factors (chewing problem, vision problem, sleep quality, appetite) and psychosocial factors (marital status, living arrangement, social engagement, depressive symptoms) among Malay elderly residents in FELDA schemes in Johor, Malaysia between sexes and age group.

3. To determine the relationship between socio-demographic characteristics (age, sex, occupation, monthly income, financial dependency), health related factors (chewing problem, vision problem, sleep quality, appetite), lifestyle factors (physical activity, dietary intake), psychosocial factors (marital status, living arrangement, social engagement, depressive symptoms), functional factors (cognitive functions, handgrip strength, low extremity performance, instrumental of daily living), anthropometry characteristics (body mass index, waist circumference), biochemical parameters (blood glucose, lipid profile, serum albumin) with QoL level among Malay elderly residents in FELDA schemes in Johor, Malaysia.
4. To determine the contributor of socio-demographic characteristics (age, sex, occupation, monthly income, financial dependency), health-related factors (chewing problem, vision problem, sleep quality, appetite), lifestyle factors (physical activity, dietary intake), psychosocial factors (marital status, living arrangement, social engagement, depressive symptoms), functional factors (cognitive functions, handgrip strength, low extremity performance, instrumental of daily living), anthropometry characteristics (body mass index, waist circumference), biochemical parameters (blood glucose, lipid profile, serum albumin) towards the QoL level among Malay elderly residents in FELDA schemes in Johor, Malaysia.

## 1.6 Null Hypothesis

The null hypotheses for this study are as follows:

- a) There is no significant relationship between socio-demographic characteristics (age, sex, occupation, monthly income, financial dependency), health-related factors (chewing problem, vision problem, sleep quality, appetite), lifestyle factors (physical activity, dietary intake), psychosocial factors (marital status, living arrangement, social engagement, depressive symptoms), functional factors (cognitive functions, handgrip strength, low extremity performance, instrumental of daily living), anthropometry characteristics (body mass index, waist circumference), biochemical parameters (blood glucose, lipid profile, serum albumin) with QoL level among Malays elderly residents in FELDA schemes in Johor Malaysia.

- b) There is no contributor of socio-demographic characteristics (age, sex, occupation, monthly income, financial dependency), health-related factors (chewing problem, vision problem, sleep quality, appetite), lifestyle factors (physical activity, dietary intake), psychosocial factors (marital status, living arrangement, social engagement, depressive symptoms), functional factors (cognitive functions, handgrip strength, low extremity performance, instrumental of daily living), anthropometry characteristics (body mass index, waist circumference), biochemical parameters (blood glucose, lipid profile, serum albumin) towards the QoL level of the Malay elderly residents in FELDA schemes in Johor, Malaysia.

## 1.7 Conceptual Framework

Figure 1.2 shows the conceptual framework for this study. The conceptual framework will give the overall ideas of this study. There were 2 parts of the conceptual framework. The first part (blue boxes) consists of the independent variables of the study. The independent variables are socio-demographic characteristics, health related factors, lifestyle factors, psychosocial factors, functional factors, anthropometry characteristics and biochemical parameters. The second parts (red box) of the conceptual framework consist of the study dependent variable which is QoL. The conceptual framework will organize the idea of this study which all the independent variable will contribute toward developing assessment of QoL among Malay elderly resident in FELDA schemes in Johor, Malaysia.

The other factors in the box with dot-to-dot outline are the factors that also contribute to QoL based on theoretical evidence. Medical history assessment will provide the data of chronic disease that being suffered by the respondents. Zhou and Hearst (2016) claimed that elderly that had chronic disease had lower score of QoL. In term of smoking behavior, study by Mulder, Tijhuis, Smit and Kromhout (2001), found that ex-smokers had significantly higher QoL score compared to current smokers. This study concludes that the higher the amount of smoking, the higher was QoL differences between ex-smokers and current smokers. However both of these factors (medical history and smoking behavior) were not be assessed in this study. There were several limitations why these factors do not being included in this study. As for medical history, for an acceptable data, the data must be obtained from medical record provides by respondent's physician (College of Physicians and Surgeon of Ontario, 2012). Due to time limitations of this study for the researcher team to collect the data regarding medical history from all respondent's physician, the medical history factor were not been assessed. For the smoking behavior factor, Castaldelli-Maia, Ventriglio and Bhugra (2015), noted that current smokers may well hide their habits as smoker for fear of prejudice. There was a large stigma associated with smoking in those who continue to smoke and who criticized over the smoker inability to give up smoking. Other than that, in Malaysia, the declarations of non-smoking area through Federal Government Gazette have been made from time to time. The smoking ban in public places by the



government influences on people's perceptions and attitudes toward smoking have created a feeling of discrimination against the smoker (Castaldelli-Maia et. (2015). Due to this stigma and discrimination feelings of smokers, the smoking behavior factor was not be assessed in this study.

The first independent variable for this study based on conceptual framework is socio-demographic backgrounds. Age, sex, occupation, monthly income and financial dependency are the factors under socio-demographic background variable. According to Alexandre et al. (2009), there was association between economic statuses which include income with QoL.

Chewing problem, vision problem, sleep quality and appetite will acts as factors for the second independent variables, health-related factors. According to Wilhelmson, Andersson, Waern and Allebeck (2005), health status did influence an elderly QoL. Growing old increased the risk of decreased in health status which affect the level of elderly QoL.

The third independent variable of this study is lifestyle factor. This factor includes physical activity and dietary intake as its factors. Summary article by Drewnowski and Evans (2001), summarized that physical activity and dietary intake did influence the elderly QoL. Elderly tends to neglect the physical activity training and reduce the calories intake for diet. This situation will leads to poor QoL.

The fourth independent variable is psychosocial factors. This independent variable includes marital status, social engagement, depressive symptoms and living arrangement as its factors. Wilhelmson et al. (2005) reported that social engagement which also known as social relation and living arrangement have association with QoL while on other study, marital status and depressive symptoms are found to be having association with QoL Alexandre et al. (2009).

The next independent variable is functional factors. This independent variable includes cognitive fuctions, handgrip strength, flexibility, low extremity performance and instrumental activity of daily living as its factors. Functional factors play an important role in recognizing the QOL of an individual. Study by Madureira, Bonfa, Takayama and Pereira (2010), concludes that those elderly who have good body balancing can improve QOL and reduced falls.

The sixth independent variable is anthropometry characteristics follow by the seventh independent variable biochemical parameters. The anthropometry characteristics include body mass index and waist circumference while biochemical parameters include blood glucose, lipid profile and serum albumin. Both of these independent variables which are anthropometry characteristics and biochemical parameters can be considered as nutritional factors. Mathews

and Jacob (2013) mentioned that nutritional factors were one of the factors that lead to the level of QoL.

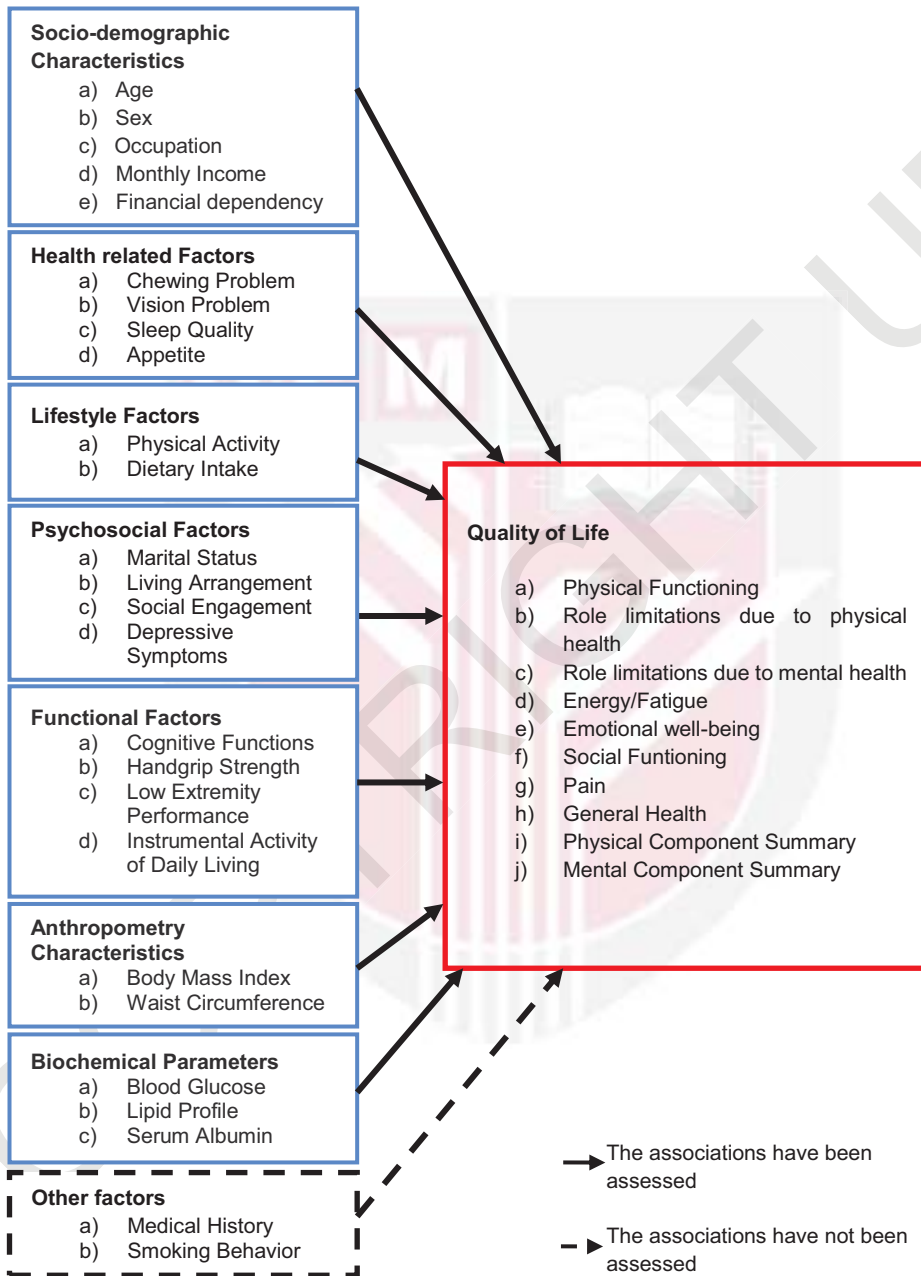


Figure 1.2: Research conceptual framework

## 1.8 Operational Definition Of The Variables

In this sub-topic, researcher would explain on how each variable had been classified under certain categories. The classification was based on previous study for instance age, sex, occupation, monthly income and financial dependency are the factors under socio-demographic background variable. According to previous study by Rashid and Ibrahim (2016), age, sex and occupation were classified under socio-demographic background variable while study by Cornman, Gleib, Rodriguez, Goldman, Hurng and Weinstein (2010) classified economic profile as socio-demographic variable. Economic profiles in this current study were monthly income and financial dependency.

Health related factors as classified in study by Chen, Cheng, Chuang and Shao (2014), were self- and researcher-rated health status and self-rated healthy eating status. In this current study, respondents were asked to rate their chewing and vision problem for their health status. In addition they also had to rate their appetite which similar with the concept of self-rated healthy eating status in Chen et al. (2014) study. Apart from that, sleep quality can be used as characteristic to represent health related factors. A better sleep quality generally associated with better health outcomes (Gadie, Shfto, Leng & Kievit, 2017).

The lifestyle factors include physical activity and dietary intake and were similar with study by Parsons (2011) which classified both of these factors as lifestyle factors. In term of psychosocial factors, marital status, living arrangement (Wallner et al., 2008), social engagement (Egan, Tannahill, Petticrew & Thomas, 2008) and depressive symptoms (Macleod & Smith, 2003) were variables that had been classified as psychosocial factors.

This independent variable for functional factors includes cognitive functions, handgrip strength, flexibility, low extremity performance and instrumental activity of daily living. According to Freitas, Fernandes, Coqueiro, Reis Junior, Rocha and Brito (2012), activity of daily living were classified under functional factors variable. As for cognitive functions, handgrip strength and low extremity performance, study by Colon-Emeric, Whitson, Pavon and Hoenig (2013), classified all the three characteristics as functional variables. In term of anthropometry measurements, Radu, Hazar and Puni (2014) reported that body mass index and waist circumference were included for assessment of physical status. Meanwhile, in term of biochemical characteristics, based on previous study, blood glucose, lipid profile (Sairam et al., 2014) and serum albumin (Kuzuya, Izawa, Enoki, Okada & Iguchi, 2006) can be classified as biochemical characteristics.



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