The Effect of Religious Intervention on Depression and Quality of Life among Indonesian Elderly: A Quasi-Experimental Study

Mr. Bayu Anggileo Pramesona

A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy Program in Public Health
College of Public Health Sciences
Chulalongkorn University
Academic Year 2017

นายบายู แองจิลลิโอ พราเมโซน่า

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรดุษฎีบัณฑิต
สาขาวิชาสาธารณสุขศาสตร์
วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2560

Thesis Title	The Effect of Religious Intervention on Depression and Quality of Life among Indonesian Elderly: A Quasi-Experimental Study
By	Mr. Bayu Anggileo Pramesona
Field of Study	Public Health
Thesis Advisor	Professor Surasak Taneepanichskul, M.D.

Accepted by the College of Public Health Sciences, Chulalongkorn University in Partial Fulfillment of the Requirements for the Doctoral Degree

.....Dean of the College of Public Health Sciences

(Professor Sathirakorn Pongpanich, Ph.D.)

THESIS COMMITTEE

.....Chairman

(Associate Professor Ratana Somrongthong, Ph.D.)

.....Thesis Advisor

(Professor Surasak Taneepanichskul, M.D.)

.....Examiner

(Associate Professor Chitlada Areesantichai, Ph.D.)

.....Examiner

(Asssitant Professor Nutta Taneepanichskul, Ph.D.)

.....External Examiner

(Nanta Auamkul, M.D.)

บายู แองจิลลิโอ พราเมโชน่า : ผลของการปฏิบัติทางศาสนาต่อระดับภาวะซึมเศร้าและระดับคุณภาพชีวิตของผู้สูงอายุในประเทศอินโดนีเซีย: การวิจัยกึ่งทดลอง (The Effect of Religious Intervention on Depression and Quality of Life among Indonesian Elderly: A Quasi-Experimental Study) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ศ. สุรศักดิ์ ฐานีพานิชสกุล, 179 หน้า.

วัตถุประสงค์: การวิจัยนี้มีวัตถุประสงค์ เพื่อศึกษาผลของการปฏิบัติศาสนากิจต่ออาการซึมเศร้าและคุณภาพชีวิตของผู้สูงอายุชาวอินโดนีเซียในบ้านพักคนชรา (Nursing Homes)

วิธีการศึกษา: การวิจัยนี้เป็นการศึกษากึ่งทดลองที่มีการวัดซ้ำในกลุ่มผู้สูงอายุจำนวน 60 คน ที่อาศัยอยู่ในบ้านพักผู้สูงอายุ 3 แห่งในเขตเมืองยอกยาการ์ตา ประเทศอินโดนีเซีย โดยคัดเลือกจากผู้สูงอายุที่มีภาวะซึมเศร้า (GDS)ตั้งแต่ 5 ถึง 11 คะแนน และคัดเลือกแบบเจาะจง โดยกลุ่มทดลองให้ปฏิบัติศาสนากิจ (ประกอบด้วย ฟังอัลกุรอาน 36 ครั้ง และการเข้าฟังเทศน์โดยนักเทศน์ 3 ครั้ง n = 30) และกลุ่มควบคุม (การรักษาตามปกติ, n = 30) ผลการวิจัยหลักคือการวัดภาวะซึมเศร้าโดยใช้แบบสอบถามภาวะซึมเศร้าในผู้สูงอายุ ผลการวิจัยรองคือคุณภาพชีวิตผู้สูงอายุโดยใช้แบบวัดคุณภาพชีวิตขององค์การอนามัยโลก (WHOQOL- BREF) ฉบับภาษาอินโดนีเซีย การเปรียบเทียบภาวะซึมเศร้าโดยใช้สถิติ Mann-Whitney U-test, Friedman test และ Wilcoxon Signed Rank test การวิเคราะห์แบบ post-hoc สำหรับการเปรียบเทียบคุณภาพชีวิต ใช้สถิติ t-Test , repeated ANOVA และ Bonferroni post-hoc โดยทั้งสองกลุ่มได้รับการวัดภาวะซึมเศร้าและคุณภาพชีวิตครั้งแรกก่อนเริ่มการวิจัย สัปดาห์ที่ 4, 8, และ 12 หลังจากได้รับกิจกรรม

ผลการศึกษา: คะแนนค่าเฉลี่ยภาวะซึมเศร้าในผู้สูงอายุทั้งสองกลุ่มลดลงอย่างมีนัยสำคัญทางสถิติหลังการปฏิบัติศาสนกิจ 12 สัปดาห์ ($p < 0.001$) รวมทั้งคะแนนค่าเฉลี่ยคุณภาพชีวิตของผู้สูงอายุในกลุ่มทดลองและกลุ่มควบคุม เพิ่มขึ้นทั้งสองกลุ่มอย่างมีนัยสำคัญทางสถิติหลังปฏิบัติศาสนกิจ 12 สัปดาห์ อย่างไรก็การปฏิบัติศาสนากิจในกลุ่มทดลองมีภาวะซึมเศร้าลดลงอย่างชัดเจนและคะแนนเฉลี่ยคุณภาพชีวิต เพิ่มขึ้นอย่างมีนัยสำคัญยิ่งกว่ากลุ่มควบคุม คะแนนค่าเฉลี่ยภาวะซึมเศร้าและคุณภาพชีวิตภาวะซึมเศร้าในผู้สูงอายุมีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติในสัปดาห์ที่ 4, 8 และ 12 หลังกิจกรรมศาสนกิจ

สรุปผล: กิจกรรมการปฏิบัติศาสนากิจส่งผลที่ดีต่อการบรรเทาอาการซึมเศร้าและเพิ่มคุณภาพชีวิตในกลุ่มผู้สูงอายุที่อาศัยอยู่บ้านพักคนชรา

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2560 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

5779191353 : MAJOR PUBLIC HEALTH
KEYWORDS: GERIATRIC DEPRESSION, INDONESIA, NURSING HOME, QUALITY OF LIFE, QUR'ANIC RECITAL INTERVENTION, RELIGIOUS LEADER APPROACH.

BAYU ANGGILEO PRAMESONA: The Effect of Religious Intervention on Depression and Quality of Life among Indonesian Elderly: A Quasi-Experimental Study. ADVISOR: PROF. SURASAK TANEEPANICHSKUL, M.D., 179 pp.

Purpose: This study aimed to investigate the effect of religious intervention on depression and quality of life among Indonesian elderly in nursing homes (NHs).

Methods: This was a quasi-experimental study with repeated measures. Sixty elderly residents at three NHs in three districts in Yogyakarta, Indonesia with the Geriatric Depression Scale (GDS) score of 5 to 11 were recruited and purposively assigned to the religious intervention group (combining 36 sessions of listening to Qur'anic recital and three sessions of attending a sermon by a preacher), n=30) and the control group (treatment as usual/TAU, n=30). The primary outcome was depression, measured by a short form GDS questionnaire. The quality of life (QOL) as the secondary outcome was assessed by the World Health Organization Quality of Life (WHOQOL)-BREF Indonesian version. Multiple comparisons on depression scores were analyzed by Mann-Whitney U-test, Friedman test, and Wilcoxon Signed Rank test post-hoc analysis. For multiple comparisons on QOL scores were analyzed by Independent t-test, repeated measurement ANOVA (analysis of variance), and Bonferroni post-hoc analysis. Both groups were evaluated at the baseline, 4^{th}, 8^{th}, and 12^{nd} week after the interventions were performed.

Results: In both groups, there were statistically significant reductions in depression scores after the12-week intervention ($p<0.001$). There was also a statistically significant improvement in QOL mean scores in both intervention and control groups at the 12-week post-intervention. However, the religious intervention group showed a greater decrease in depressive symptoms and a greater improvement in the QOL mean scores than those in the control group. There was a statistically significant difference in geriatric depression median scores and QOL mean scores between groups at the 4^{th}, 8^{th}, and 12^{nd} week post-interventions.

Conclusions: It can be concluded that religious-based intervention has a greater impact on relieving depressive symptoms and increasing the QOL amongst elderly NH residents.

Field of Study: Public Health Student's Signature .....

Academic Year: 2017 Advisor's Signature .....

ACKNOWLEDGEMENTS

First of all, I would like to thanks to Almighty Allah for giving me this great opportunity to pursue my dreams. I also would like to express my gratitude to the Indonesia Endowment Fund for Education (LPDP Scholarship), Ministry of Finance, Republic of Indonesia for fully supporting me in funding all expenses during my PhD program at College of Public Health Sciences, Chulalongkorn University. Second, I admire the help and guidance of my dissertation adviser, Prof. Surasak Taneepanichskul, MD, who always encourages and fully supports me to reach my goals. No words can describe how grateful I am of having him as my adviser. He has become a role model for me on how to learn and gain the knowledge appropriately. I also would like to offer my gratitude to Assoc. Prof. Ratana Somrongthong, PhD, who has encouraged and provided many opportunities for me to develop my knowledge and skills in the public health sectors. She gave me insights on how to be a good lecturer and researcher as well. I offer my deepest gratitude to Alessio Panza, MD, DTM&H for his guidance and sharing of valuable knowledge on methodology research. He has significantly elevating my understanding on how to write a scientific paper. Furthermore, I also would like to thank Associate Professor Chitlada Areesantichai, PhD; Assistant Professor Nutta Taneepanichskul, PhD; and Nanta Auamkul, MD as the committee of this dissertation exam for their valuable comments and advises in improving the quality of this study.

I also would to express my gratitude to my big family especially to my mother, my grand-mother, and Diah who always pray and support me during my hardships. I will never obtain all my goals without your prayers and fully supports. In addition, my gratitude also offered to my classmates (P'Pii, P'Tick, Cherry, P'Aree, P'Nana, Kak Uci, P'Pim, and others) who have been passed all the time together and gave the great support each other. I will remember every moment when we spent time and struggled together during our PhD life. Besides, I also would like to express my gratitude to my fellas in Permitha and Suwanna apartment for your sharing during our students' life in Bangkok. You are not only friend, but has become my family in my heart.

CONTENTS

Page

Page

Page

Page

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

Chapter I

Introduction

1.1 Background and Rationale

Nowadays, the rapid increment of ageing society aged ≥60 worldwide is predicted will elevate up to 22% in 2050 (World Health Organization (WHO), 2016d). The proportion of these aged group was the fastest growing population globally (United Nations Department of Economic and Social Affairs, 2013). The increment of life expectancy and decline of birth rates have concurrently resulted in a drastic increase of the ageing population in Indonesia as well (BPS - Statistics Indonesia, 2016a). Data from national census showed the life expectancy of geriatric population in Indonesia was increased from 67.89 in 2010 to 68.87 in 2014 for males and 71.83 in 2010 to 72.59 in 2014 for women (BPS - Statistics Indonesia, 2016a). Previous study also revealed that the ageing population in Indonesia was 8.6% of the total population in 2015, this number is predicted to increase to 14.1% in 2030 and will be almost triple in 2050 (Bussarawan P.T & John K, 2015). This particular condition places Indonesia as the eight largest elderly population globally (United Nations Department of Economic and Social Affairs, 2015) and ranks the country third among 25 Asia-Pacific countries (Bussarawan P.T & John K, 2015).

Mental health and emotional well-being are considered as crucial things in older age population (World Health Organization (WHO), 2016d). Mental health disorder is commonly happened amongst older adults aged 60 and above, whereas 15% to over 20% of them suffering from this particular problem (World Health Organization (WHO), 2016d). It means approximately 2 billion of the older adults have physical and mental health problems which need to be solved (World Health Organization (WHO), 2016d).

Depression has been considered as one of the most psychiatric problems amongst elderly population (World Health Organization (WHO), 2016d). The various prevalence rates amongst elderly were found in different study settings such as in community-dwelling (8%-16%), outpatients' department in primary care (5%-10%), inpatients' department (10%-12%), private households (0.9%-9.4%), and in the nursing homes (14%-67%) (Al-Jawad M, Rashid AK, & Narayan KA, 2007; Blazer, 2009; Djernes JK, 2006).

The geriatric depression amongst community-dwellers in Indonesia was ranging between 7.2%-33.8% (Mahwati Y, 2017; Wada T et al., 2005), while in western country such as America, the prevalence of depression was found to be 16% amongst older adults aged 65 and above. In the several countries in South-East Asian region such as Myanmar, Malaysia, Vietnam, and Thailand, the consecutive prevalence rates were found to be 22%, 30.1%, 47%, and 6%. In addition, in other Asian countries such as Japan, Korea, Taiwan, Pakistan, Nepal, and India, the consecutive prevalence rate

ranges between 17.8%-53.8%, 15.2%-63%, 21.3%, 19.8%, 57.1%, and 31.7%-72.4%, while in Middle-East countries, the depression prevalence rate was 63.7% in Saudi Arabia, Iran (23.5%), and Egypt (72%) (A Imran, A K Azidah, A R Asrenee, & M Rosediani, 2009; Abdul Manaf MR, Mustafa M, Abdul Rahman MR, Yusof KH, & Abd Aziz NA, 2016; Amanda Leggett, Steven H. Zarit, Ngoc H. Nguyen, Chuong N. Hoang, & Ha T. Nguyen, 2012; Chong MY et al., 2001; Eisa Y. Ghazwani & Hassan M. Al-Musa, 2013; Esmayel EM, Eldarawy MM, Hassan MM, Mahmoud AA, & Mohamed SY, 2013; Giri Smith, Kumar Aditya, Sharma Santosh Raj, Timalsina Santosh, & Yadav Vijay, 2009; Kim J-I, Choe M-A, & Chae YR, 2009; Kosulwit L, 2012; Majdi MR, Ghayour-Mobarhan M, Salek M, Shakeri MT, & Mokhber N, 2011; Murata C, Kondo K, Hirai H, Ichida Y, & Ojima T, 2008; Rashid A, Manan A, & Rohana S, 2010; Sidik S M, Zulkefli N A, & Shah S A, 2003; Sundru MB, Goru KB, & Krishnaveni A, 2013; Taqui A M, Itrat A, Qidwai W, & Qadr Z, 2007; Thilak S. A, Sarada A. K, & Sushrit A. Neloopant, 2016).

The healthcare providers and older adults were rarely recognized toward this mental health problem, and it impacts on the unwilling to seek the treatment (World Health Organization (WHO), 2016d). In primary care settings, the depression often unrecognized by both healthcare providers and patients due to the elderly visited the health facilities with the other complaints of illness (World Health Organization (WHO), 2016b).

Some stressors such as laxity due to mental health or chronic disease, mobility impairment, long-term care, retirement, and the other disability lead to loss of

independence, loneliness, being isolated and distress have been identified as several factors for depression amongst elderly (BPS - Statistics Indonesia, 2010a; World Health Organization (WHO), 2016d). The great hardships and the imbalance of daily activities were also considered as some predictors for depression in this frail population (World Health Organization (WHO), 2016d).

A depressive elderly has worse condition compared to the elderly with chronic illness. This particular condition impacts on the increasing of poor health perceptions, healthcare utilizations, and cost of healthcare services (World Health Organization (WHO), 2016d). Depression is a mental disturbance due to imbalance in emotional aspect and effects on decreased quality of life which may influence the work and interpersonal relations in different times (Beck, 1970). It is delineated by drop of mood, bereavement of motivation, lapse of physical power, failed to feel enjoyment, sleep disturbance, hopelessness, helplessness and worthlessness, and lack of concentration (National Institute of Mental Health, May 2016; World Health Organization (WHO), 2016c) . Depression is also considered as a feeling of suffering and depth of sadness which impacts on sleep, appetite, quality of life, self-esteem, and attitude pertaining own atmosphere (Carp, 2001).

In fact, depression is not a normal part of aging process. This mental health disorder can be handled through appropriate treatment with fast responses. When this particular problem is untreated well, some remained effects might be occurred such as physical, cognitive, functional and social impairment. The other consequences of

delayed treatment of depression for instance decreased quality of life, prolonged patient's health recovery, increased healthcare utilization, and even suicide (Greenberg S. A, 2012). In specific health conditions e.g. elderly with chronic illness, depressive symptoms often becoming worse in elderly aged 60 or above (Alcala V, Camacho M, & Giner J, 2007). Both in western and eastern countries, depression has correlation with stroke (Jonas BS & Mussolino ME, 2000; Ohira T, Iso H, & Sankai T, 2001) and heart failure cases (Ariyo AA, Haan M, & Tangen CM, 2000).

Some predicting factors in depressive cases such as female gender, somatic illness, cognitive and functional impairment, lack of close social contact, and the previous history of depression (Djernes JK, 2006). The depression has been predicted to be the second leading cause of disability worldwide (Murray CJL & Lopez AD, 1997). The most real problems which are faced by depressive elderly is the difficulties in diagnosing the depression amongst those older adults. Multi-medical complaints lead to unrecognized and untreated of depressive symptoms in elderly (Susman JL, Crabtree BF, & Essink G, 1995).

Unrecognized and under-diagnosed treatment of depression amongst elderly were occurred repeatedly due to the elderly come with another health complaints and considered as a part of normal ageing process (Capriotti T, 1995; Katz I.R, 1993; Reynolds CF, 1995). This particular condition is compounded due to the elderly were reluctant to seek the appropriate assistance from the mental health service providers (Fremont P, 2004). As a result, this particular problem effects on their health status,

capability to solve the disease, and finally related to a poor clinical condition (Kohn R & Epstein-Lubow G, 2006; Lyness JM et al., 2006).

Although the treatment of depressive symptoms already well-known widely, however less than 10% of depressive elderly who have received the appropriate treatments in many countries. Some existing barriers of receiving the appropriate treatment amongst depressive elderly such as lack of resources, lack of trained health care providers, and social stigma related to mental health disorders. Inaccurate assessment of depressive symptoms was also considered as another barrier which impacts on misdiagnosing and antidepressant prescribing (World Health Organization (WHO), 2016b).

Depressive elderly in the nursing homes

The burden of depressive elderly is high globally. Elderly population were highly common in suffering from depression as the health mental disorder (P Cuijpers & R.A Schoevers, 2004; Oliveira DAAP, Gomes L, & Oliveira LF, 2006a; World Health Organization (WHO), 2016d). The increment of morbidity and mortality rates were some consequences of geriatric depression (Mitchell AJ & Subramaniam H, 2005). Furthermore, it has an increasing impact on relatives and social dependence, healthcare services utilization (Cronin-Stubbs D et al., 2000; Penninx BW, Deeg DJ, Van Eijk JT, Beekman AT, & Gurainik JM, 2000), morbidity and mortality (Mitchell AJ & Subramaniam H, 2005), risk of being hospitalized (Huang BY et al., 2000; Ingold BB et

al., 2000), and eventually erodes the QOL of older adults (P. Cuijpers & R.A Schoevers, 2004).

A Previous study revealed that the depressed elderly had a lower QOL compared to those with many other chronic medical disorders (Unutzer J, 2009). Given these serious consequences, the World Health Organization (WHO) campaigned to focus on depression as a highlighted topic for the 2017 World Health Day (World Health Organization (WHO), 2017).

In Netherlands, the prevalence of geriatric depression amongst nursing home residents was found to be higher three to four times compared to the geriatric depression prevalence in the community-dwellers (Jongenelisa K et al., 2004). Approximately, around 54% of total population of elderly nursing home residents are suffering from depression (Lampert & Rosso, 2015). This mental health disorder is prevalent in NHs even though some evidence-based studies related prevention and treatment for depression have been provided (Lok N, Lok S, & Canbaz M, 2017; Meeks S, Van Haitsma K, Schoenbachler B, & Looney S.W, 2015).

Nursing home settings still present implementation challenges due to the special characteristics in this vulnerable population and confine evidence-based treatment utilization to the residents (Meeks S et al., 2015). Some psychological and behavioral alterations that correspond to depressive symptoms have been found such as loss of appetite, sleep disturbance, exsiccated libido, and psychomotor alterations

(Nemeroff CB, 1996). Thus, an applicable depression treatment should be initiated to overcome this mental health problem in these particular settings and subjects.

Some risk factors which were contributed to depression amongst elderly who live in nursing home for instance older age, less care of nursing home staff, lower income, cognitive deterioration, less of social supports, and poor of physical health conditions (Borza T et al., 2015; Jongenelisa K et al., 2004). A study found that women are more twice likely affected than men in depressive cases, whereas both the prevalence and the incidence of major depression higher twice after aged 70–85 (Palsson S, Ostling S, & Skoog I, 2001; Teresi J, Abrams R, Holmes D, Ramirez M, & Eimicke J, 2001).

Some specific consequences of geriatric depression include an increased cognitive impairment and an increased burden on both residents and NH staff who provide the care (Cody & Drysdale, 2013). Since medication-based treatment for depression was effective for relieving the symptoms of 60% of subjects (Gartlehner et al., 2011), and has minimal effect for those who have mild and moderate depression (Fournier JC et al., 2010), solid evidence emphasized the effectiveness of an integrated religion/spirituality (R/S) approach for depression treatment (Worthington EL Jr, Hook JN, Davis DE, & McDaniel MA, 2011).

Previous evidence has further indicated that faith-based interventions were effective in preventing and treating depression and improving quality of life (Lee CC, Czaja SJ, & Schulz R, 2010; Pargament KI, Tarakeshwar N, Ellison CG, & Wulff KM, 2001).

Furthermore, the effect of depression treatment will be more feasible when involving the values and beliefs into intervention in certain populations (Van Loon A, Van Schaik A, Dekker J, & Beekman A, 2013). Subjects from Muslim backgrounds show the greatest agreement compared to the other religious groups when considering the option of a religious approach to treat depression (Cinnirella M & Loewenthal KM, 1999). Given the highest percentage of elderly population in Indonesia with the highest life expectancy rate (BPS - Statistics Indonesia, 2010a, 2010b) and the old dependency ratios compared to the national standard (BPS - Statistics Indonesia, 2016b), Yogyakarta province has also nearly 92% Muslim population. However, evidence about the kind of methods used by Muslims as part of their spiritual coping methods in order to relieve depressive symptoms and improve the QOL is lacking. Hence, we tried to combine Qur'anic recital listening and preacher approach as a type of religious intervention for depressed elderly NH residents. This study aimed to investigate the effect of religious intervention on depressive symptoms and QOL amongst Indonesian elderly in a NH setting.

1.2 Research Gap

1.2.1 Lack of knowledge pertaining the prevalence of depression amongst elderly nursing home residents in Indonesia

1.2.2 Lack of information regarding the quality of life amongst depressive elderly nursing home residents in Indonesia.

1.2.3 Lack of studies regarding the alternative intervention to relieve the depression and to improve the quality of life through religious approach amongst elderly nursing home residents in Indonesia.

1.3 Research Objectives

1.3.1 General Objective

This study aimed to investigate the effect of religious intervention on depression and quality of life amongst elderly nursing homes residents in this present study.

1.3.2 Specific Objectives

1.3.2.1 To describe the socio-demographic characteristics of depressive elderly nursing home residents in this present study.

1.3.2.2 To examine the depression scores and levels amongst depressive elderly nursing home residents in this present study.

1.3.2.3 To assess the quality of life scores and levels amongst depressive elderly nursing home residents in this present study.

1.3.2.4 To test for any statistically significant difference for depression median scores over time (at baseline, week 4, week 8 and week 12) during intervention between intervention and control group.

1.3.2.5 To test for any statistically significant difference for QOL mean scores over time (at baseline, week 4, week 8 and week 12) during intervention between intervention and control group.

1.3.2.6 To test for any statistically significant changes for depression median scores over time (at baseline, week 4, week 8 and week 12) during intervention for each group.

1.3.2.7 To examine for any statistically significant changes in QOL mean scores among the four-time points for each group (at baseline, week 4, week 8 and week 12).

1.3.2.8 To test for any statistically significant difference in the pairwise comparisons on depression median scores in each group (baseline vs week 4, baseline vs week 8, and baseline vs week 12).

1.3.2.9 To test for any statistically significant difference in the multiple comparisons on QOL mean scores in each group (baseline vs week 4, baseline vs week 8, and baseline vs week 12).

1.4 Research Questions

1.4.1 Is there any effect of religious intervention on depression and QOL amongst elderly nursing home residents in this present study?

1.4.2 What are the socio-demographic characteristics of depressive elderly nursing home residents in this present study?

1.4.3 What is the scores and levels of depression amongst depressive elderly nursing home residents in this present study?

1.4.4 What is the scores and levels of quality of life amongst depressive elderly nursing home residents in this present study?

1.4.5 Are there any statistically significant differences for depression median scores over time (at baseline, week 4, week 8 and week 12) during intervention between intervention and control group?

1.4.6 Are there any statistically significant differences for QOL mean scores over time (at baseline, week 4, week 8 and week 12) during intervention between intervention and control group?

1.4.7 Are there any statistically significant changes for depression median scores over time (at baseline, week 4, week 8 and week 12) during intervention in each group?

1.4.8 Are there any statistically significant changes in QOL mean scores among the four-time points for each group (at baseline, week 4, week 8 and week 12)?

1.4.9 Are there any statistically significant differences on depression median scores at baseline vs week 4, baseline vs week 8, and baseline vs week 12 in each group?

1.4.10 Are there any statistically significant differences on QOL mean scores at baseline vs week 4, baseline vs week 8, and baseline vs week 12 in each group?

1.5 Research Hypothesis

1.5.1 Religious intervention effects on depression and quality of life amongst elderly nursing home residents in Indonesia

1.5.2 There are statistically significant differences for depression median scores over time (at baseline, week 4, week 8 and week 12) during intervention between intervention and control group.

1.5.3 There are statistically significant differences for QOL mean scores over time (at baseline, week 4, week 8 and week 12) during intervention between intervention and control group.

1.5.4 There are statistically significant changes for depression median scores over time (at baseline, week 4, week 8 and week 12) during intervention in each group.

1.5.5 There are statistically significant changes in QOL mean scores among the four-time points for each group (at baseline, week 4, week 8 and week 12).

1.5.6 There are statistically significant differences on depression median scores at baseline vs week 4, baseline vs week 8, and baseline vs week 12 in each group.

1.5.7 There are statistically significant differences on QOL mean scores at baseline vs week 4, baseline vs week 8, and baseline vs week 12 in each group.

1.6 Conceptual Framework

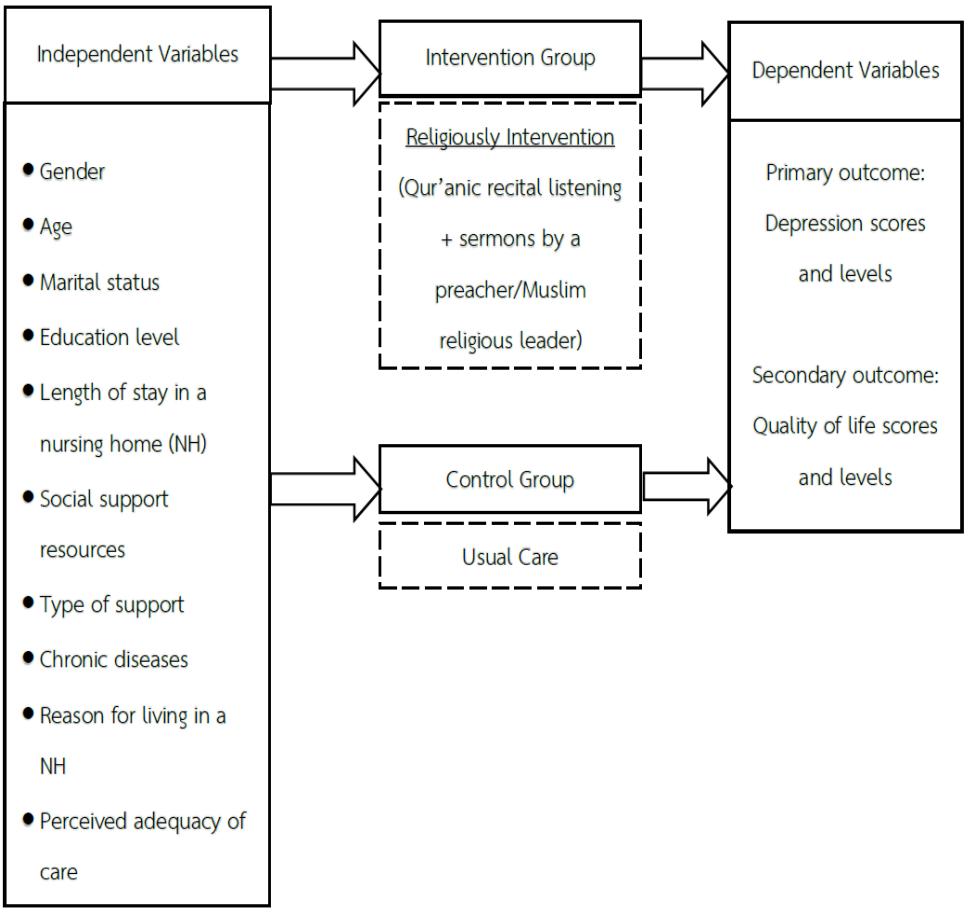


Figure 1- 1 Conceptual Framework

1.7 Operational Definition

All terms which required to be elaborated in this study are presented in the following table 1-1.

Table 1- 1 Operational definition of terms in this study

Term	Operational Definition
Religious intervention	Combining 36 sessions of listening to Qur'anic recital and three sessions of attending a sermon by a preacher in order to decrease the depressive symptoms and to increase the QOL amongst depressive elderly nursing home residents in study sites.
Depression	A serious mental disorder with the sign and symptoms such as lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide (American Psychological Association (APA), 2016).
Depression level	The level of depression amongst elderly nursing home residents which derived from Geriatric Depression Scale 15-item (GDS) score; scores of 0-4 are considered normal; scores of 5-8 indicate mild depression; scores of 9-11 indicate moderate depression; and scores of 12-15 indicate severe depression (Sheikh JI & Yesavage JA, 1986).
Elderly	Older adults those aged 60 or above based on identification card, medical record or self-reported (Badan Pengawasan Keuangan dan Pembangunan (BPKP), 1998; World Health Organization (WHO), 2016a).

Table 1- 1 *Operational definition of terms in this study (continued)*

Term	Operational Definition
Nursing home	A place of elderly residents who require continual nursing care and have significant difficulty coping with the required activities of daily living.
Quality of life	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' (World Health Organization (WHO), 1996).
Quality of life level	The level of quality of life amongst elderly nursing home residents which were derived from the measurement of WHOQOL-BREF Indonesian questionnaire and then classified as good, fair, and poor level.
Quality of life score	The score of quality of life amongst elderly nursing home residents which were derived from the measurement of WHOQOL-BREF Indonesian questionnaire which consisted of 4 domains; physical, psychological, social relationships, and environmental domain.
The mean score of quality of life	The mean score both in overall QOL and in each domain of QOL (physical, psychological, social relationships, and environmental domain). The higher score denotes the better perceived of QOL.
Chronic disease	A disease that persists for a long time, has lasted or was expected to last twelve or more months and resulted in functional limitations and/or the need for ongoing medical care (Perrin et al., 1993), including cardiovascular diseases (hypertension, stroke, cardiac disease), cancers, chronic respiratory diseases (chronic obstructed pulmonary disease,

Table 1- 1 *Operational definition of terms in this study (continued)*

Term	Operational Definition
	asthma), diabetes, obesity, and arthritis (Centers for Disease Control and Prevention (CDC), 2017; World Health Organization, 2018).
Social support resource	Social support refers to access to and use of individuals, groups, or organizations in dealing with life's vicissitudes (Whelan, 1993). Social support resource is operationalized as the source of received social support by elderly during their stay at NH. It could be either from a spouse (husband/wife), family (relatives/children), NH staff (nurses/doctors/social workers), others (neighbors/friends/visitors), or no one.
Type of support	The kind of care and support which was received by elderly from their spouse, family, NH staff, or others during their stay in NH. The type of support is classified into psychological (mental health concern of elderly and respond appropriately as needed), financial, and no support.
Perceived adequacy of care	The elderly perceptions of the adequacy of care which was provided by NH staff to them during their stay in NH.

Chapter II
Literature Review

2.1 Elderly

2.1.1 Situation of older population in Indonesia and Yogyakarta Province

The older age population is rapidly increasing nowadays. Indonesia has become the eighth largest elderly population globally (United Nations Department of Economic and Social Affairs, 2015) and ranked 3rd amongst 25 Asia-Pacific countries with almost 22 million of total elderly population in 2015 (Bussarawan P.T & John K, 2015). This current situation effects on the increasing of life expectancy rate among Indonesian older adults. Besides the increment of life expectancy of age from 67.89 for males and 71.83 for women in 2010 to 68.87 for males and 72.59 for women in 2014, the declined birth rate was also considered as a reason of the rapid growth of ageing population in Indonesia (BPS - Statistics Indonesia, 2016a). Finally, by 2030, the ageing population in Indonesia is predicted reach around 14.1% and will be increase to 21.1% of entire population by 2050 (Bussarawan P.T & John K, 2015). In term of population distribution by religion in 2010, approximately 87.2% of total population are Moslem, and almost 7% of total Moslem population were aged 60 or above (BPS - Statistics Indonesia, 2010e).

Yogyakarta province is located in Java island with total population in 2010 was almost 3.5 million people and around 11.8% were elderly (BPS - Statistics Indonesia,

2010b). The trend of life expectancy rate in Yogyakarta province is increasing in last five years and this number was higher compared to the national's life expectancy rate. This current situation puts Yogyakarta as the province with the highest of the life expectancy rate in Indonesia with the life expectancy was 72.72 years for males and 76.36 years for females (BPS - Statistics Indonesia, 2010a, 2010b). In term of the population distribution by religion, approximately 92% of total population were Moslem (BPS - Statistics Indonesia, 2010d).

In a poverty aspect, around 32.5 million Indonesian citizen still live under the poverty line, even though the government has made a good progress in order to reduce the poverty rate. Indonesia is still being considered as a medium level country in Human Development Index (HDI) in 2011. Indonesia is also in a lower position when compared to the other East Asia and Pacific countries. Data showed that only 25% of Indonesian older adults who received the old age pension (Scobie J, 2015).

The gender issue also leads to inequality of healthcare services in Indonesia. The older women became the vulnerable group to have less access in education, a lower income, being discriminated, did not being apart in a decision-making process within households and societies (Scobie J, 2015). Furthermore, the spreading of ageing population is various among Indonesian provinces due to the vary of fertility and life expectancy rate in each province. But in fact, around half of total elderly population are live in remote areas, with a relatively small income, geographically isolated, and lack of access in every single public services (BPS - Statistics Indonesia, 2010a). This

condition obviously leads to health status of elderly, both physical and psychological aspect in their daily life.

2.2 Ageing explained

Ageing is resulted from the accumulation of the molecular and cellular damage over time. This gradual damage declines the physical and psychological ability, increase the risk of getting disease, eventually death (World Health Organization (WHO), 2015). Beyond all of the biological changes, ageing process also related with life transformations such as demission, living movement, friends or partner's death, etc. Public health considers not only regarding the loses, but also trying to reinforce the recovery, adaptation toward the condition, and mental growth as well (World Health Organization (WHO), 2015).

Several common health problems related ageing process such as hearing loss, cataracts and vision impairment, back and neck pain, osteoarthritis, chronic obstructive pulmonary disease (COPD), diabetes mellitus, depression, and dementia. Even though as the older people, they may have more than one health problems at same time (World Health Organization (WHO), 2015). In older people, the present of divergent diseases tend to occur only later in life, which is namely geriatric syndromes. The other underlying factors including laxity, urinary incontinence, falls, delirium and pressure ulcers. Geriatric syndromes appear to be better predictors of death than the presence or number of specific diseases (World Health Organization (WHO), 2015).

2.3 Depression

2.3.1 Definition of Depression

Depression is the most common mental health disorder amongst elderly population, depicted by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, sleep or appetite disturbance, feelings of tiredness, and lack of concentration (World Health Organization (WHO), 2016c). Depression is defined as a condition in a person who feels discouraged, sad, hopeless, unmotivated, or disinterested in life in general (Anxiety and Depression Association of America (ADAA), August 2016).

Depression is more than just sadness. People with depression may experience a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide. Depression can be treated by a combination of therapy and antidepressant medication in order to ensure recovery (American Psychological Association (APA), 2016). Depression (major depressive disorder or clinical depression) is a common but serious mood disorder. It causes severe symptoms which impact on the daily life activities such as sleeping, eating, or working. To be diagnosed with depression, the symptoms must be present for at least two weeks (National Institute of Mental Health, May 2016).

2.3.2 Signs and Symptoms

If these several signs and symptoms occur most of the day, almost every day, for at least 2 weeks, it may indicate somebody suffering from the depression. The signs and symptoms are

(National Institute of Mental Health, May 2016; World Health Organization (WHO), 2016c):

a. Persistent sad, anxious, or “empty” mood

b. Feelings of hopelessness, or pessimism

c. Irritability

d. Feelings of guilt, worthlessness, or helplessness

e. Loss of interest or pleasure in hobbies and activities

f. Decreased energy or fatigue

g. Moving or talking more slowly

h. Feeling restless or having trouble sitting still

i. Difficulty concentrating, remembering, or making decisions

j. Difficulty sleeping, early-morning awakening, or oversleeping

k. Appetite and/or weight changes

l. Thoughts of death or suicide, or suicide attempts

m. Aches or pains, headaches, cramps, or digestive problems without a clear physical cause and/or that do not ease even with treatment.

The symptoms can be appeared variously within someone to someone else. The severity and frequency of the symptoms will vary depending on the individuals and their particular diseases, or even depending on the illness stage (National Institute of Mental Health, May 2016).

2.3.3 Types of Depression

Depressive disorders can be divided into several categories such as (Anxiety and Depression Association of America (ADAA), August 2016; National Institute of Mental Health, May 2016):

a. Major depression

This consists of some severe symptoms and may disturb the daily activities to working, sleeping, eating, and even enjoying the life. It could be occurred once in a lifetime or even several times in a certain people.

b. Persistent depressive disorder

This depressive disorders usually happen in the last 2 years with some major depression episodes along with the less severe symptoms. However, the depressive disorders will be considered as the persistent depressive disorder when this depression steadily occurs for at least within last 2 years.

c. Psychotic depression

This type of depression is happened when the individuals have severe depression added by some psychosis symptoms such as delusions (fixed beliefs) and hallucinations (hearing or seeing something that others cannot hear or see.

d. Postpartum depression

This kind of depression has happened amongst 10%-15% of women after delivery. It becomes a much more serious problem than the “baby blues” which was happened in some women when the hormonal and physical were changed after giving birth.

e. Seasonal affective disorder (SAD)

This depression happened during the winter months when the individuals got less natural sunlight and will be disappeared after spring and summer come.

f. Bipolar disorder

Actually bipolar disorder is different with depression, however in some cases, the individuals who suffering bipolar disorders have an extreme low moods episodes (depression), and also experiencing the extreme high moods or usually called mania episode.

2.3.4 Risk Factors

Depression is commonly occurred in US as the kind of mental disorders. The mixed factors which causing the depression for instance genetic, biological,

environment and psychological aspects (National Institute of Mental Health, May 2016). Even though a depression can be occurred in the all of age group, however often begins in adulthood time.

Depression is more identified as the more prominent irritability than a low mood. The high levels of anxiety in childhood may lead to chronic mood and anxiety disorders when growing up become adults. In the older adults, depression can appear simultaneously with the other serious illness e.g. diabetes mellitus, cancer, heath disease, and Parkinson's disease. This health condition often become worse if the depression occurs. The medications also sometimes have the side effect and finally contribute to the depression occurrence.

In term of the risk factors that may lead to depression occurrence can be categorized into three parts as below (National Institute of Mental Health, May 2016):

a. Personal or family history of depression

b. Major life changes, trauma, or stress

c. Certain chronic diseasees and medications

In elderly its self, studies found that several risk factors related to depression in elderly such as social engagement, family support, old age, chronic diseases, sleep disturbance (Lan Cong, Ping Dou, Daochun Chen, & Lin Cai, 2015), gender, marital status, level of education, retirement, had psycho-traumatic event, poverty, looses, and loneliness, bad emotional relationships with family (Patricia L R, Mieta H, Carmen B, & Mircea T. A, 2010; Sidik S M et al., 2003), pain, visual impairment, stroke, functional

limitations, negative life events, lack of social support, perceived inadequacy of care, supporting system (psychological & financial support) (Jongenelisa K et al., 2004; Majdi MR et al., 2011), and were length of stay for more than 2 years were also found to be risk indicators for depression (Tiong, Yap, Koh, Fong, & Luo, 2013). However, the other specific factor i.e. reason for leaving home also should be considered (Jongenelisa K et al., 2004; R. Roswiyani, Monty P. Satiadarma, Jan Spijker, & Cilia L.M. Witteman, 2014; Ranjan S, Bhattarai A, & Dutta M, 2013). Study also found that institutionalization leads to depression, bringing limitation of social relations, loss of interest in daily activities, more likely oriented toward death and even suicide (Patricia L R et al., 2010).

2.3.5 Treatment and Therapies

Depression will be better if this case is treated earlier. There are some ways to treat the depression e.g. by medication treatments, psychotherapy, or combination of two methods. Finally, when all treatments cannot reduce the depressive symptoms, the electroconvulsive therapy (ECT) and other brain simulation therapy will be the choice to help the depressive patients (National Institute of Mental Health, May 2016).

a. Medications

Medicines which are purposed to treat the depression called antidepressants. This kind of medicines work by improving the brain function to use certain chemicals in order to control mood or stress. The patients sometime need to try several medicines after finding the suitable one for each individual. The

previous history of taking medicines by the close family member will be considered as the appropriate choice (National Institute of Mental Health, May 2016).

The antidepressant need 2 to 4 weeks in time to working. The effectiveness of the therapy should be considered after all of the symptoms e.g. sleep, appetite, concentration problems disappeared. Sometimes, the depression will return after the depression symptoms disappeared and the patients decided to stop taking the medicines. When the doctor and patients have decided to stop the therapy, then the doctor will decrease the dose slowly after 6 to 12 months after medication, this is because the withdrawal symptoms can be recurrence when the medications is stopped abruptly (National Institute of Mental Health, May 2016).

b. Psychotherapies

There are some psychotherapy types in order to treat the depressive patients. Those psychotherapy types such as Cognitive Behavioral Therapy (CBT), Inter-Personal Therapy (IPT), and Problem Solving Therapy (PST) (National Institute of Mental Health, May 2016).

1) Cognitive Behavioral Therapy (CBT)

The CBT works by changing the negative thinking of the depressive patients. This therapy will help through rendering the surrounding environments and interactions with the people with a positive and realistic way. The therapy also helps the depressive patients by identifying the depression factors or causes

that may affect the worse condition (National Institute of Mental Health, May 2016).

2) Interpersonal Therapy (IPT)

This IPT is proposed to recognizing the depression related hardships in the interpersonal relationships among individuals. The behavior which worsen the relationships needed to be changed. In this type of therapy, the depressive patients needed to explore the prior problems which may make the depression become worse (National Institute of Mental Health, May 2016).

3) Problem-Solving Therapy (PST)

PST is designed to increase the patient's capability to overcome the stressful life events. This therapy is suitable to help the depressive elderly. This short-term therapy can be applied both in individual or within group. The outcome of the therapy will be coming up from gradually steps, started from identifying the problems than find out the realistic solutions in the end. This PST is suitable for mild and moderate depressive disorders. However, the PST is not adequate treatment to help the severe level of depressive disorders in certain patients (National Institute of Mental Health, May 2016).

In the older group age, the initial treatment by medication plus IPT were less likely to have depressive symptoms recurrence when the respondents continued the treatment for at least 2 years (National Institute of Mental Health, 2015).

c. Brain Stimulation Therapies

Electroconvulsive therapy (ECT) was became the last option in order to relief the depressive disorders amongst patients when the other treatments do not work. This is effective therapy which mainly purposed to the severe depressive patients. In a situation whereas the quick response is needed and the medications impossible to used due to safety issue, ECT can be a first choice as the intervention for the depressive patients (National Institute of Mental Health, May 2016). Nowadays, the ECT is not only used in the inpatients department, but also widely used in the outpatients. The treatment series typically three times a week, for two to four weeks of treatment (National Institute of Mental Health, May 2016).

Some disadvantages of ECT use such as confusion, disorientation, and even memory loss. Usually those side-effects occurred in a short-term period, however sometimes this condition reluctant to disappear. An advanced ECT with safer and more effective devices already existed. This kind of ECT is not painful, and even the patients can not feel the electrical impulses (National Institute of Mental Health, May 2016).

2.3.6 Prevalence of depression amongst elderly globally and in Indonesia

Major depression suffered around 1-4% of general elderly population (Blazer DG, 2003) and it is equal with 0.15% of depression incidence per year. Prevalence of depression among elderly are various in worldwide, the rates varied from different

settings of study site such as in the community-dwellings or clinical settings. Several studies revealed that around 16% aged 65 and older with clinically significant depressive symptoms in America, in Myanmar was 22%, Japan (17.8%-53.8%), Iran (23.5%), Malaysia (14-30.1%), Taiwan (21.3%), South Korea (15.2%-63%), Pakistan (19.8%), Thailand (6%), India (31.7%-72.4%), Saudi Arabia (63.7%), Egypt (72%), and in Nepal (57.1%) (A Imran et al., 2009; Abdul Manaf MR et al., 2016; Amanda Leggett et al., 2012; Chong MY et al., 2001; Eisa Y. Ghazwani & Hassan M. Al-Musa, 2013; Esmayel EM et al., 2013; Giri Smith et al., 2009; Kim J-I et al., 2009; Kosulwit L, 2012; Majdi MR et al., 2011; Murata C et al., 2008; Rashid A et al., 2010; Sidik S M et al., 2003; Sundru MB et al., 2013; Taqui A M et al., 2007; Thilak S. A et al., 2016) .

The prevalence and incidence of major depression was found double among elderly aged 70-85 year, and more twice likely suffered by women than men (Palsson S et al., 2001; Teresi J et al., 2001). The fact showed that due to the increasing of the older adult's population number and the elderly with the illness is elevating at the same time, possibly it impacts on the increasing of the bipolar disorders amongst elderly age group (Krishnan KRR, 2002). Another type of severity level is minor depression, and the study revealed the prevalence was 4-13% (Blazer DG, 2003).

The elderly in the middle aged of range has less likely to have depression symptoms when compared to the very old one, whereas the prevalence rated was 8-16% (Blazer D.N, 2000; Blazer DG, 2003). Some factors which contribute to this pattern such as lack of self-ability and cognitive impairment, declined socioeconomic life, and

loss of spouse due to death (Blazer DG, 2003). In term of studies site, study found that about 10-12% of the major depression prevalence in late-life elderly was occurred in the hospital, and 6-9% was suffered by patients in the primary-care units (Blazer DG, 2003). Another study stated that the minor depression prevalence amongst patients was 6% in the primary-care settings whereas less severe depression still remained within a year later for more than half the whole patients (Lyness J et al., 2002).

A very high depression prevalence was found in the nursing home population whereas it took three to four times higher compared with the elderly in the community-dwelling (Jongenelisa K et al., 2004). Study revealed that the elderly population in general has 23-40% of depressive symptoms prevalence. This number was lower than the elderly who live in the nursing homes which has approximately 54% of prevalence in depression (Galhardo VAC, Mariosa MAS, & Takata JPI, 2010), however the rated depression can reached 25-80% (Souza MCMR & Palucci TD, 2011). In a survey study found that the elderly nursing home residents around 75% felt dissatisfied and had low of self-esteem due to did not get sufficient attention in order to fulfill their well-being needs (Blazer D, Hughes DC, & George LK, 1987). Approximately 15-20% of major depressive symptoms were also found amongst institutionalized elderly, and around 25-40% were identified as the minor depression (Borson S & Fletcher P. M, 1996). Severe depression was found as 15-19% cases and mild level in at least 50% in nursing home setting (Lampert & Rosso, 2015).

In Indonesia, the prevalence of depression among elderly varied from 17.2-33.8% in the community-dwelling, it was higher than the other Asian countries (Setiati S, Harimurti K, Dewiasty E, & Istanti R, 2011; Wada T et al., 2005). The highest prevalence of depression was found in another study that found the depression rate was 54% amongst the institutionalized elderly population (Lampert & Rosso, 2015). This high rate of depression was due to the negligence of the family that felt by the elderly (Natan, 2008). The declined health function, quality of life, daily living ability, and elevated cognitive impairment as the consequences of this condition will be resulting the increasing of mortality rate among this older age group (Mansbach, Mace, & Clark, 2015).

2.3.7 Criteria for assessing the depression amongst elderly

Regardless the tools which used to detect the depression, the initial screening must be followed by a clinical interview to make the diagnosis of depression. There are some instrument tools in order to assess the depressive symptoms amongst various study population. Some instruments were used to measure the depression such as Beck Depression Inventory (BDI), Center for Epidemiological Studies Depression (CES-D), Zung Self-Rating Depression Scale (SDS), and Geriatric Depression Scale (GDS) revealed the median sensitivity was 85%, while median specificity was 74% (Williams JW, Pignone M, Ramirez G, & Perez Stellato C, 2002a). Several instrument tools will be explained in this section including Hamilton Depression Rating Scale (HDRS), BDI,

Patient Health Questionnaire (PHQ), Major Depression Inventory (MDI), CES-D, SDS, GDS, Cornell Scale for Depression in Dementia (CSDD).

2.3.7.1 Hamilton Depression Rating Scale (HDRS)

The HDRS was developed in 1960 and widely used to assess the depression severity particularly amongst inpatient group. There were a number of versions of HRDS questionnaire have been developed such as a structured interview, self-report, and computerized versions. It has 21 questions, with lasting 20 to min to complete the questionnaire. The scores between 0 to 7 were considered as normal, while scores ≥20 were considered had moderate level of depression.

They have a 5-point scale for each item, reflecting absent, mild, moderate, or severe symptoms of depression, or on a 3-point scale, indicating absent, slight or doubtful, and clearly present the depressive symptoms. In this instrument, mostly the contains are in somatic symptoms, while only few symptoms of cognitive or affective disorders (Hamilton M, 1960; Shafter AB, 2006; Williams JW, 2001).

2.3.7.2 Beck Depression Inventory

The BDI was developed by Aaron Beck in 1961 according to observation on the symptoms in depressive patients. This questionnaire composed of 21-item of emotional, behavioral, and somatic symptoms, and lasting 5 to 10 min to complete the questionnaire. The level of depression based on the scores as follows : 10-18 considered has mild depression, 19-29 considered has moderate depression, and >30

considered has severe depression (Beck AT, Ward CH, Mendelson M, Mock J, & Erbaugh J, 1961).

The revision of BDI has been published as BDI-II in 1996. In the BDI-II has slightly different in cut-offs point with the previous BDI. In order to screen the major depression, this BDI-II had a 97% sensitivity and 99% specificity rate of measurement (Steer RA, Cavalieri TA, Leonard DM, & Beck AT, 1999).

2.3.7.3 Patient Health Questionnaire (PHQ)

Given a high sensitivity and specificity (80% and 92%), the PHQ is widely used to examine the frequency of depressed mood and anhedonia over past 2 weeks through self-administered, with the range of score was 0 to 3. Furthermore, the PHQ-2 had a greater score than PHQ 3 with a higher sensitivity as 83% and 92% for specificity (American Psychiatric Association, 2013; Kroenke K, Spitzer RL, & Williams JB, 2003).

In addition, in PHQ 9 can be used in the diagnosing depression and continuously used over time to see the severity of depressive symptoms over time. The cut-off point for PH9 is ≥10, with both sensitivity and specificity were 88%. The scores of 5 indicate the mild depression, while scores of 10 indicate moderate, scores of 15 indicate moderately severe, and scores of 20 indicate the severe depression, respectively (Gilbody S, Richards D, Brealey S, & Hewitt C, 2007; Williams JW, Pignone M, Ramirez G, & Perez Stellato C, 2002b).

2.3.7.4 Major Depression Inventory

The MDI is used to assess the depression based on the DSM-IV for major depression and ICD-10 for moderate to severe depression. The depressive symptoms should be revealed almost every day for during the last 2 weeks. The core of symptoms which have to be considered according to DSM-IV and ICD-10 were a depressed mood and lack of interest.

Given the sensitivity are ranging between 86% to 92%, and specificity are between 82% to 86%, the 10-item are dichotomized for the presence (1) or absence (0) for each item. The items are given a value 0 to 5 then accumulated score will be ranging between 0 to 50. For diagnosing the major (moderate to severe level) of depression, the cut-off score was set at 26 (Bech P, Rasmussen NA, Raabaek-Olsen L, Noerholm V, & Abildgaard W, 2001).

2.3.7.5 Center for Epidemiologic Studies Depression Scale (CES-D)

The CES-D is used for general population in order to screen the depression particularly to examine the well-being in a large population. This tool was consisted of 20-item and mostly assess the affective and somatic domain of depression (Radloff LS, 1977; Shafter AB, 2006). The scores are ranging between 0 to 3 in each item, and the total scores will be ranged between 0 to 60, with the higher score indicating the greater of depressive symptoms. The CESD-R was the current version of the screening tool of depression (Van Dam NT & Earleywine M, 2011).

2.3.7.6 Zung Self-Rated Depression Scale

The SDS was published in 1965 which consisted of 20 items of self-administered questionnaire. This tool was used both in the clinical and general practice in order to monitor or screen the depression. The scores were ranged from 1 to 4, with the scores >50 represent a mild depression, while >60 represent the moderate depression and >70 represent a severe depression level (Shafter AB, 2006; Zung WW, 1965).

2.3.7.7 Geriatric Depression Scale (GDS)

The original GDS was consisted of 30-item of questions and specifically developed to assess the depression among older adults. Then, it was modified into a short form GDS which composed of 15-item scale, and currently widely used. Recently, the GDS-5 items have been developed for a better received by elderly. The “yes” or “no” responses make this screening tool was easier compared with the multiple-choice answers. Given a 94% of high sensitivity and 81% of specificity made this tool was valid to be used as the screening tool for specific geriatric depression (Rinaldi P et al., 2003).

2.3.7.8 Cornell Scale for Depression in Dementia (CSSD)

The CSDD is specifically designed for elderly patients with cognitive impairment due to unreliable answers from the elderly patients, therefore in this questionnaire using the additional information from the one who knows and has frequent contact with the patient, including the family members or the staff who taking take of patient.

The CSSD has 19 items with 0 score for absent, 1 for mild or intermittent and 2 for severe depressive symptoms. Probably major depression was indicated when the total score is 10, while a definite major depression was considered when the total score is >18. It took around 20 min to complete the questionnaire (Alexopoulos GA, Abrams RC, Young RC, & Shamoian CA, 1988; Kørner A, Abelskov K, Gulmann N, Marie Brodersen A, & Wedervang-Jensen T et al, 2006).

Considering the conceptual framework, samples, study design, study site, and the outcome of this present study, therefore we decided to use the GDS-15 items as our screening tool for geriatric depression.

2.4 Definition of the Quality of Life (QOL)

QOL is defined 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. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment (WHOQOL Group, Fall 1994). Another study defined QOL as a multidimensional evaluation of an individual’s current life circumstances in the context of the culture in which they live and the values they hold. QOL is primarily a subjective sense of wellbeing encompassing physical, psychological, social, and spiritual dimension (Carr A.J & Higginson I.J, 2001).

2.4.1 Elderly's Quality of Life

Depression is the most common psychiatric disorders and it significantly impacts the quality of life among elderly (Oliveira DAAP, Gomes L, & Oliveira LF, 2006b). Many studies found that depression can affect and decrease the quality of life (Beck, 1970; Carp, 2001; Greenberg S. A, 2012). One study analyzed the relationships between depression, distorted thinking and quality of life in an elderly population, result showed that depressed individuals reported lower quality of life than non-depressed individuals (Carissa Y F, 2006). In line with that study, significant negative correlation also emerged between depression and physical, psychological, social quality of life, overall quality of life and overall health in institutionalized elderly population (Rasquinha D.M & Acharya Y.T.B, 2013). In Turkey, the presence of a chronic disease and low educational status reduce the quality of life and increase the level of depression in the elderly (Akyol, Durmuş, Doğan, Bek, & Cantürk, 2010).

A study in Thailand found that over two-thirds (68.5%) of Thai elderly had fair level of QOL. Several factors which are significantly correlated with QOL such as gender, age, education, working, income, present illness, drinking, Activity Daily Living (ADL) and participating in elderly club (Hongthong D, Somrongthong R, & Ward P, 2015). Another study in Brazil revealed that five or more year of education, good self-rated health, no depressive symptoms, and no family dysfunction reported better QOL in both male and female respondents (Campos A.C.V, Ferreira E.F, Vargas A.M.D, & Albala C, 2014). In India, low score of QOL were related with older age, no schooling, no

spouse, nuclear family, low vision, hearing impairment, and had musculoskeletal disorder (Ganesh KS, Anindo M, & Pavithra G, 2014). A study in Indonesia found that 58% of the elderly's QOL was at fair level. In that study also showed the physical, psychological, social, and environment factors were significantly associated with QOL among elderly, whereas the psychological factor became a dominant factor in this result (Rohmah A. I. N, Purwaningsih, & Bariyah K, 2012).

2.4.2 Criteria for evaluating the quality of life

The QOL has become a commonly used end point in the evaluation of multisector public policy, including health, social, community and environmental policy action. There are many issues to consider when evaluating the Health-related Quality of Life (HRQL) literature or selecting measures for research or practice. The most fundamental issue is the match between intention and execution. Congruity between the conceptual framework, study design, sample, hypotheses, and the measures is essential.

Many measures used to assess QOL are measures of health, functional status, social behavior or psychological wellbeing of elderly population. Some studies have tried to compare the instrument tools through some methods including observation (an adaptation of Dementia Care Mapping), structured interview (Schedule for the Evaluation of Individual Quality of Life-Direct Weighting), and proxy questionnaire (Pleasant Events Schedule-Alzheimer Disease; Apparent Emotion Rating Scale) (McKee,

Houston, & Barnes, 2002). Furthermore, some studies also compared EuroQol-5 Dimension (EQ-5D) with the assessment of quality of life (AQoL) questionnaire (Holland, Smith, Harvey, Swift, & Lenaghan, 2004). However, those questionnaires were not suitable for Indonesian context since it was more suitable in European countries.

Another study also compared the World Health Organization Quality of Life Questionnaire-Brief Version (WHOQOL-Bref) and the Oral Health Impact Profile-14 (OHIP-14) questionnaire (Santos, Hugol, Leal, & Hilgert, 2013). However, the OHIP-14 questionnaire was not met with the outcome of our study which aimed to assess the QOL amongst depressive elderly. The other questionnaire like the 36-Item Short Form Health Survey (SF-36) (Ware J & Sherbourne CD, 1992) also used to measure the QOL, however, are not suitable for people living in care homes.

The Schedule for the Evaluation of the Individual Quality of Life-Direct Weighting (SEIQoL-DW) has been developed for the evaluation of QOL from the individual's perspective (Joyce CRB, Hickey A, McGee HM, & O'Boyle CA, 2003). However, physical limitations and difficulty in understanding the instructions and concepts made completing the SEIQol-DW difficult. This questionnaire required good sight, hearing and communication of elderly (Hall, Opio, Dodd, & Higginson, 2011). This suggests that the SEIQoL-DW, in its current form, cannot be considered an instrument of first choice for outcome measurement of QOL in frail older people.

In this present study, considering the congruity between the conceptual framework, study design, sample, and hypotheses, therefore we chose the WHOQOL-

BREF Indonesian version questionnaire to measure the QOL amongst elderly in NH. This instrument tool indicated that has good-to-excellent psychometric properties of reliability and performed well in preliminary tests of validity (Skevington, Lotfy, & O'Connell, 2004).

2.5 Religion, religiosity, religious practice, and well-being

2.5.1 Definition of religion and its importance in Islamic countries

The word of religion is taken from the Latin *religio*, which referred to a greater power than human's that requires a human to obedient to avoid ominous consequences (Wullf D.M, 1997). While another notion stated that the word *religio* referred to something that one does, or that one feels deeply about, or that impinges one's will, exacting obedience or threatening disaster or offering reward or binding on into one's community (Smith W.C, 1963).

Furthermore, religion is defined as the sacred ways in order to looking for the significance. Ideology, ethical conduct, emotional experience, social intercourse, and study are some manifestations of religious pathways in multi-dimensions. A diverse goal which can be obtained could be different as well (Pargament K.I, 1997). Some of goals such as personal ends (meaning in life and self-development), social ends (intimacy with others), and sacred ends (closeness to God and living a moral and ethical life) (Tarakeshwar N, Pargament K.I, & Mahoney A, 2003). In addition, sacred is defined as divine beings, higher powers, or God and other aspects of life that take on divine

character by virtue of their association with the divine (Pargament K.I & Mahoney A, 2002).

In many countries, most of them are still considered the religion as the major factor which influences the part of daily life (Hassan R, 2007; Pew Research Center, 2008; Polzer R.L & Miles M.S, 2007). This notion can be shown among the most populated Islamic countries in the world including Indonesia, Pakistan, and Egypt, where the religion will appeared in all aspects in their life, not only in a religious aspect (Hassan R, 2007).

There are 57 countries with a dominant Muslim population (Bukhari, Rafique, & Aziz, 2004), with more than 1.8 billion or 24% of the total population globally, placing Muslims as the world's second largest religious group in 2015, and also considered as the most rapid growing number of religious group in next future years (Pew Research Center, 2017a). In Islamic belief, it is essential for Muslim to reflect their faith through the religious practices, however in Indonesia, the religion is not only emerged in the religious practices, but also embedded as the part of structure both in the social and nation life. According to the data from national survey in 2010, it was found that 88% of Indonesian population are Muslim (BPS - Statistics Indonesia, 2010c). Furthermore, a study of Pew Research Center reported that Indonesia as a nation with the largest Muslim population in the world (Pew Research Center, 2017b). So, it may be beneficial when using a religious approach in order to solve some health-related problems such

as depression and concerned quality of life particularly in ageing society as a frail population.

2.5.2 Islamic perspective towards depression related-religious beliefs and tawakkal concept in Islam

The first dimension in religious beliefs consisted of three sub-dimensions; 1) warranting, 2) purposive, and 3) implementing the beliefs (Glock C.Y & Stark R, 1965). However, they proposed that those sub three dimensions could be emphasized differently in each religion. The systems of beliefs in Islam is divided into two big points: 1) Six Articles of *Iman* (faith), and 2) The Five Pillars of Islam.

The core warranting belief in Islam was elaborated in the Six Articles of *Iman* (faith), consisting of belief in *Allah* as a God, Angles, the Qur'an, the Prophets, the Resurrection, and believe in *Qadha'* and *Qadhar* (destiny) (Shepard W, 2009). While the Five Pillars of Islam considered as the manifestation of belief's implementation into practice, begin with *shahada* (the declaration of faith, which is a statement of contract in the beginning of life as a Muslim, followed by *solat* (prayer), *zakah* (almsgiving), *shiyyam* (fasting), and *hajj* (pilgrimage to Mecca) (El-Khouly E.M.A, 1982; Shepard W, 2009).

The Qur'an is considered as a book of broad principles which aims to explain the intellectual and moral foundations of the Islamic way of life. Since the holy Qur'an provides a complete code of living for Muslims. It guides in all moral matters and offers

the best values and methods of dealing with all aspects of human life. In the Qur'an, *Surah* Al-Israa:82 states that *"And We send down of the Qur'an that which is a healing and a mercy to those who believe (in Islamic Monotheism and act on it), and it increases the zalimun (polytheists and wrongdoers) in nothing but loss"* (Khan M.M & Al-Hilali M.T, 2011). It encourages believers to refer the Qur'an as a healing when they face problems. Furthermore, the Holy Qur'an also guides believers to put their trust in Allah's plan (*tawakkal*). *Surah* At-Tawba:51 states, *"Say: Nothing shall ever happen to us except what Allah has ordained for us. He is our Maula (Lord, Helper and Protector). And in Allah let the believers put their trust"* (Khan M.M & Al-Hilali M.T, 2011).

Tawakkal is derived from an Arabic word '*wakala*' (Munawwir A.M, 1997). *Tawakkal* is an Islamic concept in capitulating the efforts to the God. This concept was stated in the Qur'an which mentions the need to rely on God after the humans' efforts. This principal was stated in the Qur'an Surah Al-Imraan: 159 and Surah Ar-Ra'd: 11, which underlined to surrendering to God after taking action (Khan M.M & Al-Hilali M.T, 2011). Moreover, the principle of relying on the final outcome of God is to represent the idea of an external locus of control (Rotter J.B, 1990), which places God as an important external part of achieving the end of result. The study was inconclusive to explain how external locus of control may have a significant relationship with health care behavior (Martinelli A.M, 1999; Wallston B.S, Wallston K.A, Kaplan G.D, & Maides S.A, 1976).

However, the Qur'an in the *surah* Ar-Ra'd: 11 has underscored the human effort as an important principle in pursuing one's will *'God will not change the condition of people until they change what is in themselves ...'*, or in *surah* Al-Imran: 159, *'And when you are resolved to an act of trusting us to Allah, surely Allah loves those who put their trust (in Him)'* (Khan M.M & Al-Hilali M.T, 2011). Thus, *tawakal* underlines the principle of linking human efforts to God without ceasing to attempt. This Islamic concept of reliance on God and belief that He has the best intentions for humans more than they are capable of affecting for themselves.

A *tawakkal* will lead one to have peace, self-confidence, calm and firm action in facing any problem (Rozaq A, 2008). To some extent, the idea of giving up belief in God, or divine as a spiritual coping mechanism, aims to put transcendent meaning into every life event that might enhance self-empowerment (Baldacchino D & Draper P, 1998). Therefore, this suggest the Islamic believers in dealing with their problems related health issue including depression.

Relating to the Five Pillars of Islam as mentioned above, the Arabic word of *solat* is derived from the word *shila*, meaning 'link', or in a religious sense refers to the relationship between the Creator and mankind. In addition, relationships are expected to be dynamic and continually updated and organized, above any circumstances or personal or external possibilities (El-Khouly E.M.A, 1982). This suggests that what appears to be ritual activity may extend beyond physical rhythm; expressing the spiritual journey, the dimension of religiosity experience. Hence, *solat* is considered as

a deep-religious relationship and become the soul of religion in Islam (El-Khouly E.M.A, 1982). The obligatory *solat* is performed five times a day (Shepard W, 2009). There is a tenet in the Qur'an that says by praying fervently or humbly, one will be able to avoid mistakes against another human being, as mentioned in Surah Al-Ankabut: 45 *'Surely solat keeps (one) away from indecency and evil, and certainly the remembrance of Allah is the greatest'* (Khan M.M & Al-Hilali M.T, 2011).

Furthermore, the third pillar of Islam is *zakah* (almsgiving), which consists of *zakah mall*, which refers to the tax on the wealth of society and zakat *'id al-fitri* which is mainly done during the festival of *'id al-fitri* at the end of Ramadhan (Shepard W, 2009). All Muslims are required to give a single meal as a charity. Meanwhile, the zakat mall is levied on a certain wealth category above a certain threshold called *nisab* and distributed to eight categories of people as mentioned by the Qur'an in At-Tawba: 60 *'The alms are only for the poor and the needy, and those who collect them, and those whose hearts are to be reconciled, and to free the captives and the debtors, and for the cause of Allah, and (for) the wayfarer; a duty imposed by Allah. Allah is Knower, Wise'* (The Qur'an, 2010).

Indeed, there are many verses of Qur'an that mention praying in relation to the giving of zakah as to emphasize the strong relationship between personal and social life in Islamic belief. For example, in Surat Al-Baqarah: 83 stated that:

'And when We made a covenant with the children of Israel: you shall not serve any but Allah and (you shall do) good to (your) parents, and to near of kin and

to the orphans and the needy and you shall speak to men good words and keep up solat and pay zakah' (The Qur'an, 2010)

Or, in another verse in surah Al-Baqarah: 177 stated that:

'It is not righteousness that you turn your faces towards the East and the West, but righteousness is this that one should believe in Allah and the last day...and keep up solat and pay zakah...' (The Qur'an, 2010)

In fact, those verses illustrate that Islam encourages every Muslim not only to perform personal rituals as an act of devotion, but also to relate this to social obligations.

The fourth of pillar in Islamic belief is *shiyam* (fasting), which refers to fasting from dawn to sunset with the obligation to abstain from food, drink and sexual activities (Brown D.W, 2009). All Muslims are required to fast during Ramadan, except for those who are sick or traveling, to attain the level of piety (truth), as mentioned in the Qur'an of Surat Al-Baqarah: 183-184 (Khan M.M & Al-Hilali M.T, 2011). Ramadan supports Muslims to become more connected with others in need in strengthening the solidarity of the people/society (Shepard W, 2009). Zakat also strengthens this, because it is considered not only as a charity act but rather as a purification, 'a means of distributing some of the wealth of the rich among the disadvantaged in society (Waines D, 2003).

The last and most complex rituals, which consist of many rituals that require a strong physical effort with inherent personal rituals, such as saying prayers and

devotion, are pilgrims or pilgrimages *(hajj)* to Mecca (Waines D, 2003). It is mandatory as long as one has the necessary means, to do this once in the month of *Dhul-hijjah*. It is a religious activity with certain rituals including the circumference of the Ka'bah, a procession between the Sofa hills and Marwa, the stoning of the pillars where Prophet Ibrahim is said to be tempted by a bot to sacrifice his son, and visit the Arafat plains (Waines D, 2003). Those two systems of beliefs in Islam are explained in the following figure 2-1.

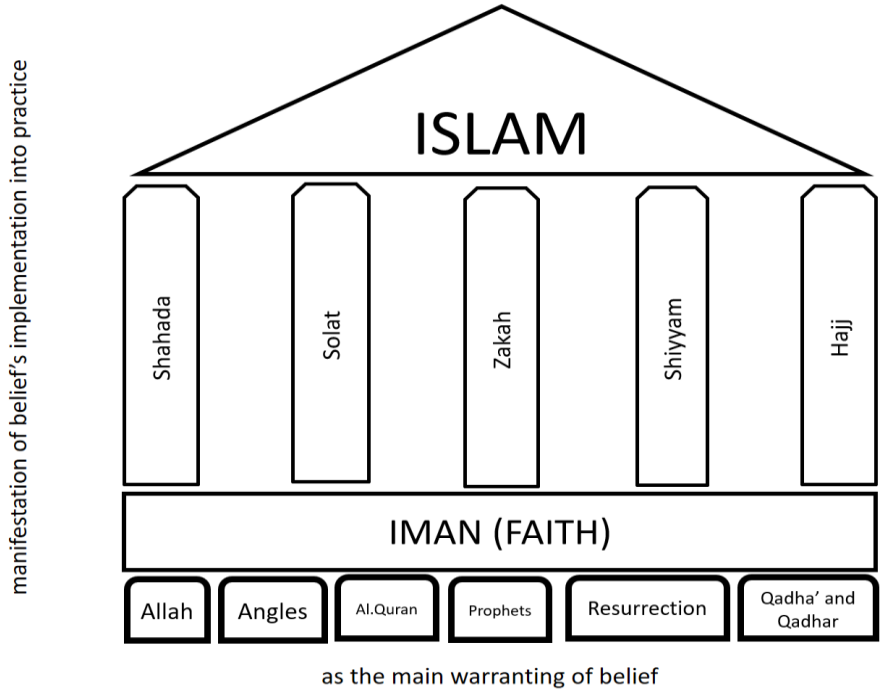


Figure 2- 1. Two systems of beliefs in Islam

2.6 Alternative interventions to reduce depression and increase the quality of life in elderly population

Table 2- 1. *List of the alternative interventions in order to reduce depression and increase QOL in elderly population*

No	Author(s), Year	Research Method	Intervention Group (IG) and Control group (CG)	Result/Outcome
1	(Linder S.M et al., 2015)	A Multisite Randomized Control Trial (RCT), 99 people <6 months after stroke; (within 8-wk home intervention)	Intervention: a robot-assisted therapy + home exercise program Control: a home exercise program	Improving quality of life and decreasing depression in people after stroke
2	(Husebo B.S et al., 2015)	Cluster randomized clinical hybrid trial; 571 patients from 67 nursing home units	Intervention: 2-day education program including written guidelines, repeated theoretical and practical training (credited education of caregivers, physicians and	Quality of life in late-stage dementia, neuropsychiatric symptoms, activities of daily living, pain, depression, sleep, medication, cost-utility analysis, hospital

Table 2-1. *List of the alternative interventions in order to reduce depression and increase QOL in elderly population (continued)*

No	Author(s), Year	Research Method	Intervention Group (IG) and Control group (CG)	Result/Outcome
			nursing home managers), case discussions and role play. The 1-day midway evaluation, information and interviews of nursing staff and a telephone hotline all support the implementation process. Control: usual care + monthly telephone contact	admission and mortality.
3	(Cuijpers, Karyotaki, Pot, Park, & Reynolds, 2014)	Meta-analysis; A total of 44 studies	Comparing psychotherapies to control groups, other therapies or pharmacotherapy	The cognitive behavior therapy and problem-solving therapy may be more effective than

Table 2-1. *List of the alternative interventions in order to reduce depression and increase QOL in elderly population (continued)*

No	Author(s), Year	Research Method	Intervention Group (IG) and Control group (CG)	Result/Outcome
				non-directive counseling and other psychotherapies may be less effective than other therapies.
4	(Meeks S et al., 2015)	RCT; 82 depressed long-term care nursing home residents	Intervention: received 10-wk of Behavioral Activities (BE-ACTIV) Intervention individual therapy after a 2-wk baseline Control: Treatment as usual (TAU)	BE-ACTIV group respondents showed better diagnostic recovery at post-treatment in intent-to-treat analyses adjusted for clustering. Self-reported depressive symptoms and functioning improved in both groups, but there was no significant

Table 2-1. *List of the alternative interventions in order to reduce depression and increase QOL in elderly population (continued)*

No	Author(s), Year	Research Method	Intervention Group (IG) and Control group (CG)	Result/Outcome
				treatment by time interactions in these variables.
5	(M. F. Chan, Chan, & Mok, 2010)	RCT; 42 elderly people	Intervention: Respondents listened to their choices of music for 30 minutes per week for 4-wk Control: respondents did not listen any music intervention	In the experimental group, there were statistically significant reductions in geriatric depression scores and sleep quality at week 4. It was not happened in the control group.
6	(Imai et al., 2015)	RCT; Enrolled 184 respondents, (93 in the intervention and 91 in the control)	Intervention: Postcards were sent to respondents once a month for eight months Control: No intervention	There was no significant difference neither in GDS score or QOL and activities of Daily Living between intervention and

Table 2-1. *List of the alternative interventions in order to reduce depression and increase QOL in elderly population (continued)*

No	Author(s), Year	Research Method	Intervention Group (IG) and Control group (CG)	Result/Outcome
				control group in Japanese elderly community-dwelling
7	(Chiang et al., 2015)	Single blind RCT; 81 depressive patients	Intervention: 12 session of Cognitive Behavioral Group Therapy (CBGT) Control: Usual outpatient psychiatric care	A statistically significant decrement in depression score was revealed in intervention group, and its therapy was effective to reduce depression at 1 year follow-up
8	(Erkkila J et al., 2011)	RCT; 79 depressive patients; 20 bi-weekly sessions of intervention	Intervention: received individual music therapy plus standard care Control: Received standard care only	Music therapy combined with usual care had more effective on depression reduction when comparing to

Table 2-1. *List of the alternative interventions in order to reduce depression and increase QOL in elderly population (continued)*

No	Author(s), Year	Research Method	Intervention Group (IG) and Control group (CG)	Result/Outcome
				standard care only
9	(Mokhtaria M, Nezakatalhossainib M, & Esfarjani F, 2013)	A quasi-experimental study with 30 female elderly as respondent in both arms	Intervention: 12-wk Pilates exercise Control: subjects did their daily activities during study period	Pilates exercise decreased depression and improved the balance related to falling among elderly
10	(M. F. Chan et al., 2010)	RCT; 50 older adult (24 Intervention, 26 Control)	Intervention: Listened to their choice of music for 30 minutes per week for 8-wk Control: Non-music intervention	Depression level reduced weekly in intervention group, and significantly significant in reducing depression level overtime compared to non-music group

2.7 Theoretical review

2.7.1 Subjective Well-Being (SWB) theory

Subjective well-being defined as an individual's evaluation of his or her own life. The three components of SWB which considered as independent factors which should be measured and studied separately are 1) life satisfaction, 2) positive affect, and 3) negative affect (Diener E & Lucas R, 1999). The following figure 2-1 is presenting a simple model of SWB.

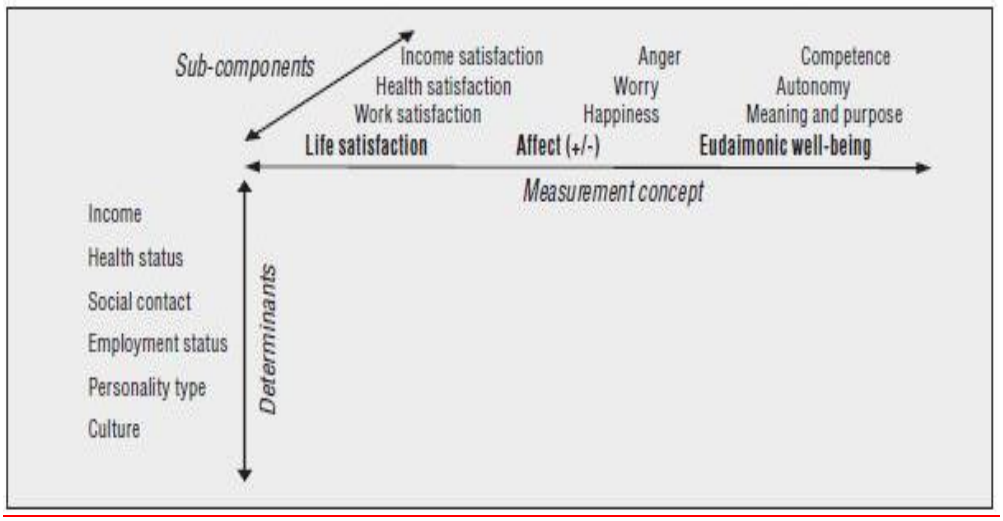


Figure 2- 2*. A simple model of Subjective Well-Being (Diener E & Lucas R, 1999)*

Development of theoretical construction of SWB have been developed based on literature review to sharping the critical concept (Kozma, Stones, & McNeil, 1991) (see figure 3). There are six predicting categories which are influencing the SWB in individuals; 1) Demographic variables; 2) Subjective satisfactions; 3) Activity

involvement; 4) Stressful life events; 5) The environment, and 6) Personality factors (Kozma et al., 1991).

a. Demographic Variables Related to Subjective Well-being Health

Monthly income, education level, and also marital status are become the factors which influence the SWB (Diener, Lucas, Suh, & Oishi, 1999). Personal's self-report also found as the more significant factor in a satisfaction of life when compared to the medical reports (McCamish-Svensson C, Samuelsson, Hagberg, Svensson, & Dehlin, 1999). Furthermore, someone perceived regarding their own health is significantly more effect on their life satisfaction than any social support or perceived by physician. In addition, the poor health condition will influence the whole of somebody's life including the life satisfaction (McCamish-Svensson C et al., 1999).

1) Age

There are many factors that influence the happiness level in somebody, some factors for instance age, gender, income, and also marital status (Mroczek D. K & Kolarz C. M, 1998). Age has been contributed in a SWB level. Although, the prevalence of elderly who suffered of chronic diseases tends to increase, the health status was decrease, loss of spouses and social supports, nevertheless the elderly still being happy (Mroczek D. K & Kolarz C. M, 1998).

The current condition in the older adults may effects their perception regarding the SWB. There are two crucial components which are influence the SWB perception; 1) Well-being-affect or happiness and 2) Satisfaction (Maddox G. L, 1994). Another study found that the age has correlation with SWB, and some factors which declining the SWB level in older adults e.g. loss of friends, being widowed, health become worsen, less of activities, and declined financial supports (Larson R, 1978).

2) Housing

Housing satisfaction is more influencing in SWB than the house type or even the house condition whereas the elderly stay at. Study revealed that the size, height and number of rooms in a house do not determine the well-being scores according to the elderly's perception (Larson R, 1978). However, improving the house condition by minimizing the inconvenience has correlation with the rotten housing (Kozma et al., 1991).

3) Income

Income's level has liner correlation with the level of happiness within individuals. It means that when someone has increased income, the happiness level will be increased as well (Bradburn. N.M & Caplovitz. D, 1965). However, the financial satisfaction is not merely talking about the amount of income, but the level of satisfaction toward the income will be more influencing the well-

being (Kozma et al., 1991). In addition, elderly who has a sufficient income resources have a higher life satisfaction level (Diener. E, 1984).

4) Marital Status

Less happy people has found within unmarried people when compared to the married peers (Bradburn. N.M & Caplovitz. D, 1965). However, when looking at the marital satisfaction perspective, the single males tend to have twice unhappier of marital satisfaction compared with the single females. This same condition also found in the divorced or separated men and widowers. However, when the income and social interaction was controlled, the married and previously married people were not different in well-being aspect (Kozma et al., 1991).

5) Employment

There is difference level of happiness among men compared to women in an employment aspect. Men who were not working tend to feel unhappier. Furthermore, the women felt unhappy in a forced working condition compared with the women who were looking for work or retired. The little difference in SWB level has been found between women who are currently working and women who are full-time homemakers (Bradburn. N.M & Caplovitz. D, 1965).

6) Gender

Actually the gender has become a poor predicting factor which

influence the SWB. There is only few research which support the difference of gender influence the SBW (Kozma et al., 1991). Little to no difference in the percentage of men as compared to women who display positive or negative feelings of happiness (Bradburn. N.M & Caplovitz. D, 1965).

7) Race

Study found the correlation between race and SWB, the African Americans have lower level of life satisfaction compared with the Whites (Krause N, 1993). Elderly Blacks reported have the lower levels of life satisfaction as well, the contributing factors may due to the educational background, less of retirement funds and financial dependency. Among the minorities racial members who have more adequate financial resources, the life satisfaction is equal with Whites (Krause N, 1993).

8) Education

The persons who could make more money tend to have a happier when considering the educational level background. However, education has not always correlate with the earning more money. The happiness perceptions are influenced by the income and age of people (Bradburn. N.M & Caplovitz. D, 1965). In the end, the education may become the better predicting factor in a life satisfaction amongst males (Kozma et al., 1991).

b. Subjective Satisfactions

Well-being status is more likely measured by a self-report of subjective satisfactions than measured by an objective measurement. There are five subjective satisfactions which are commonly measured to assess the SWB (Kozma et al., 1991):

1) Subjective Health

A health satisfaction decreases has been viewed as a normal ageing process and unavoidable. However, some studies revealed the positive correlations between SWB and health, a study found that the satisfaction level of health was high among older adults aged 60+ with physical activities and the exercise. In contrary, among the elderly aged 80 above, the satisfaction level of health tends to decrease.

2) Housing Satisfaction

In a retired older adult, housing satisfaction is more likely determined by the housing situation, whereas the elderly could establish their relationships with families, close friends, and surrounding people (Headey. B, 1999). However, in another study found that the institutionalized elderly tends to has a lower level of housing satisfaction when compared to elderly who live in rural, urban and mixed respondents (Kozma et al., 1991).

3) Financial Satisfaction

Many people think that the increased age will decrease the financial

satisfaction due to the retirement, living on fixed income or the medical expenses expenditures (Kozma et al., 1991). However, the financial satisfaction can be influenced and predicted from the level of happiness (Kozma & Stones, 1983).

4) Marital Satisfaction

The overall marital satisfaction could be considered from the individual's status e.g. being married, single, or widowed. Although marital satisfaction is one of the significant factors in the life satisfaction, but the individuals put the marital satisfaction as not important as a financial, health, and housing satisfaction (Kozma et al., 1991).

5) Job Satisfaction

Study revealed the significant indicator which influence the life satisfaction is a job satisfaction. This is significant result also found in the younger age group (Kozma et al., 1991).

c. Involvement in Social Activities

1) Friends, Family, or Others

The high proportion of time in term of building a good engagement and interaction along with close friends and family members are become the significant factor related to high positive feelings (Bradburn. N.M & Caplovitz. D, 1965). In addition, some physical and social activities in the nature have

been proven in effecting the life satisfaction in individuals (Peppers, 1976).

2) Number of Friends and Frequency of Contact

The higher level of positive feeling was appeared in men who have the close contact with friends and family (Bradburn. N.M & Caplovitz. D, 1965) and feelings of belonging (Steinkamp & Kelly, 1987) also found higher if compared to the men who have no contact with their surrounding people. However, the appreciation needs by the social life influence the contact frequency in women (Steinkamp & Kelly, 1987).

3) Intimacy

One of the main important things which predicting the well-being of elderly is the intimacy level in socialization. Even though, the quality of social activity is more important in effecting the well-being than the quantity itself (Kozma et al., 1991). However, another study revealed that the increasing of social activities number amongst pensioners will be an adequate predictor to get higher life satisfaction (Peppers, 1976).

4) Exercise Participation

An individual's engagement in physical activity tend to increase the well-being (Kozma et al., 1991). the higher level of life satisfaction was found in the older males who have the more physical activities compared with the peers (Peppers, 1976). However, there is no life satisfaction level changes

both in males or females group who participated in an exercise and yoga intervention when compared to the control group (Blumenthal et al., 1989).

The insignificant result between exercise and well-being level also was found in the individuals who forced to do some activities (Reich, Zautra, & Hill, 1987). In contrary, the study stated that the pensioners who have the good engagement toward their favorite activity show the higher life satisfaction scores (Peppers, 1976).

d. Stressful Life Events

1) Death of Spouse/Being Widowed

In term of SWB, the loss of spouse due to death will decline the level of well-being in individuals. This profound stressful life events particularly in marital satisfaction. The widowed persons show lower of well-being when compared to the married persons (Kozma et al., 1991). This conditions may lead to declining the social life and worsen the health condition. Finally, becoming widowed, living alone due to loss of spouse, and widowhood may contribute in the SWB in individuals, especially for the elderly (Kozma et al., 1991).

2) Daily Hassles

One of the stressful components in a daily life is daily hassles. This inconvenience situation could be like financial problems, stress due to work,

family conflict, etc. The study found that the older adults who more likely dislike the hassles, the SWB level tend to decline afterward (Kozma et al., 1991).

e. The Environment

1) Degree of Urbanism & Safety from Crime

Study stated that the rural elderly have the higher life satisfaction compared with the urbans (Liang & Warfel, 1983). Although there are many disadvantages were found in rural life (Hendricks & Turner, 1988), the increasing of urban crime will be an offset disadvantages of living in the rural (Kozma et al., 1991). Finally, due to the contrary result of the studies, the significant correlations between community life and well-being still debatable (Larson R, 1978).

2) Institutionalization & Age Concentration

Study revealed that the elderly nursing home residents have lower life satisfaction levels compared to the rural elderly. This result also appeared when some predicting factor which influencing the well-being e.g. housing, marital, and financial satisfaction was analyzed, the significant lower score of life satisfaction was found in the institutionalized elderly (Kozma & Stones, 1983). In another study found that the age concentration is not a significant predictor of well-being among elderly (Kozma et al., 1991).

f. Personality

Optimism and self-esteem were identified as the predicting factors for SWB (Diener et al., 1999). An individual's personality has a significant correlation with SWB, however the environment also influences the individual's personality (Headey. B, 1999). Well-being also has related with the extraversion personality, however the neuroticism personality has negatively correlated (R. Chan & Joseph, 2000). The older adults are more likely have less extraversion character when compared with younger age group (Headey. B, 1999). One study revealed that

The self-esteem also has positive correlations with the well-being. That positive correlations lead to SWB measurements (Diener et al., 1999). In contrary study stated that, the self-esteem may not affect the happiness, however the happiness and positive life satisfaction may influence the self-esteem in individuals. Additionally, an optimism (the expectation that more good things will happen in the future than bad) and an internal locus of control (the belief that one has control over his or her life) also were found as the factors which influence the SWB in individuals. Finally, SWB is a hugely complex field. Many studies have shown the strong relationships SWB with some particular factors, certain personalities are related with SWB (Diener E & Lucas R, 1999). The construct of Subjective well-Being is presented in the following figure 2-2.

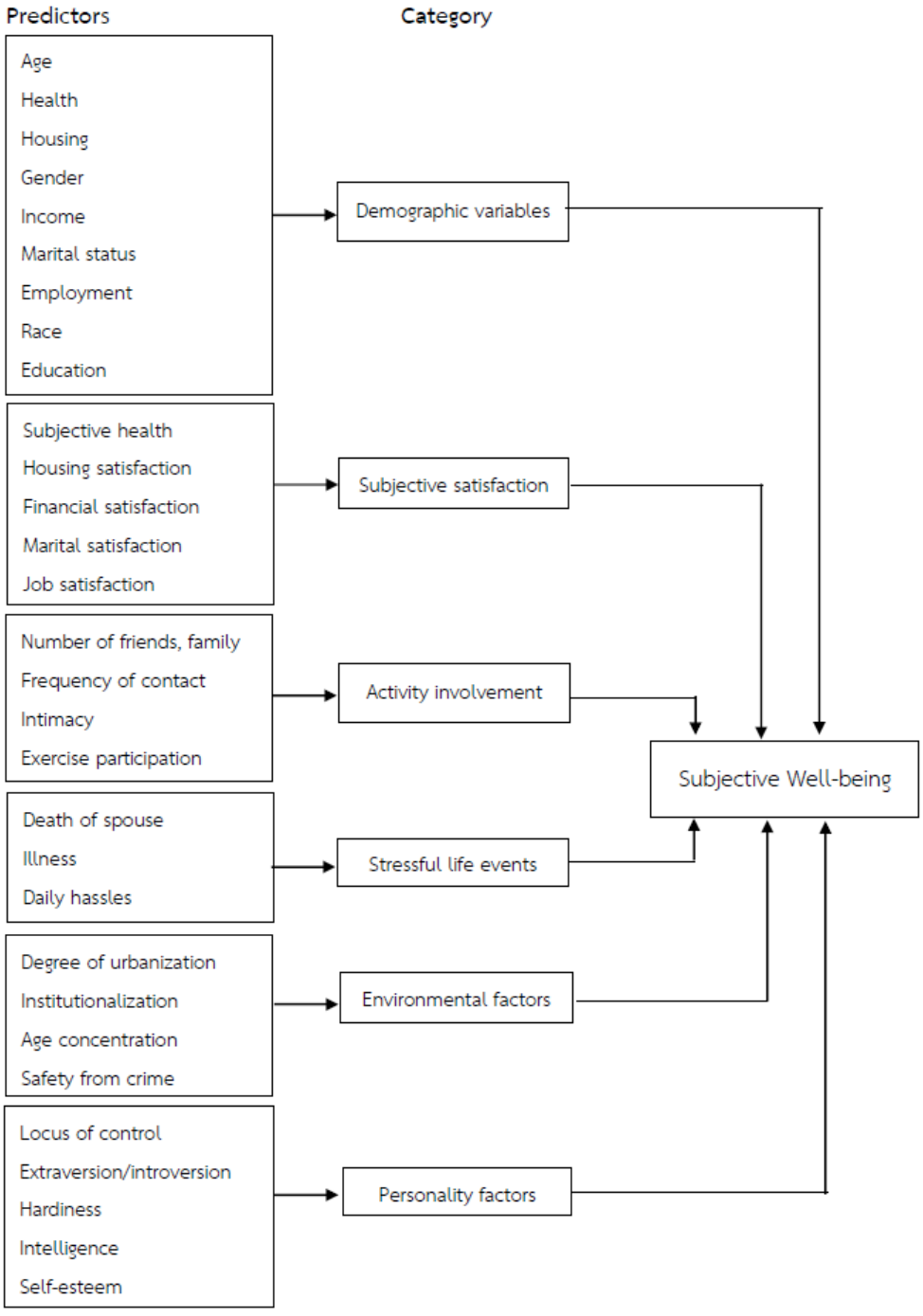


Figure 2- 3. Construct of Subjective Well-being (Kozma et al., 1991)

Based on the Subjective Well-being Theory as above, then we picked-up some variables that might be related to and considered as the predictor factors for depression and finally might affect the quality of life of elderly and their subjective well-being. The factors were 1) Demographic factors such as age, health (chronic disease), gender, marital status, and education background, 2) Subjective satisfaction on health, financial support (type of support), and marital, 3) Activity involvement such as exercise participation, intimacy with friends and family (social support resource), 4) Stressful life events, including physical illness (chronic disease) and daily hassles (perceived adequacy of care), 5) Environment factor for example institutionalization (length of stay in a nursing home/NH), and 6) Personality factor such as locus of control (reason for living in a NH). The elaboration of the conceptual thinking is explained in the following figure 2-4.

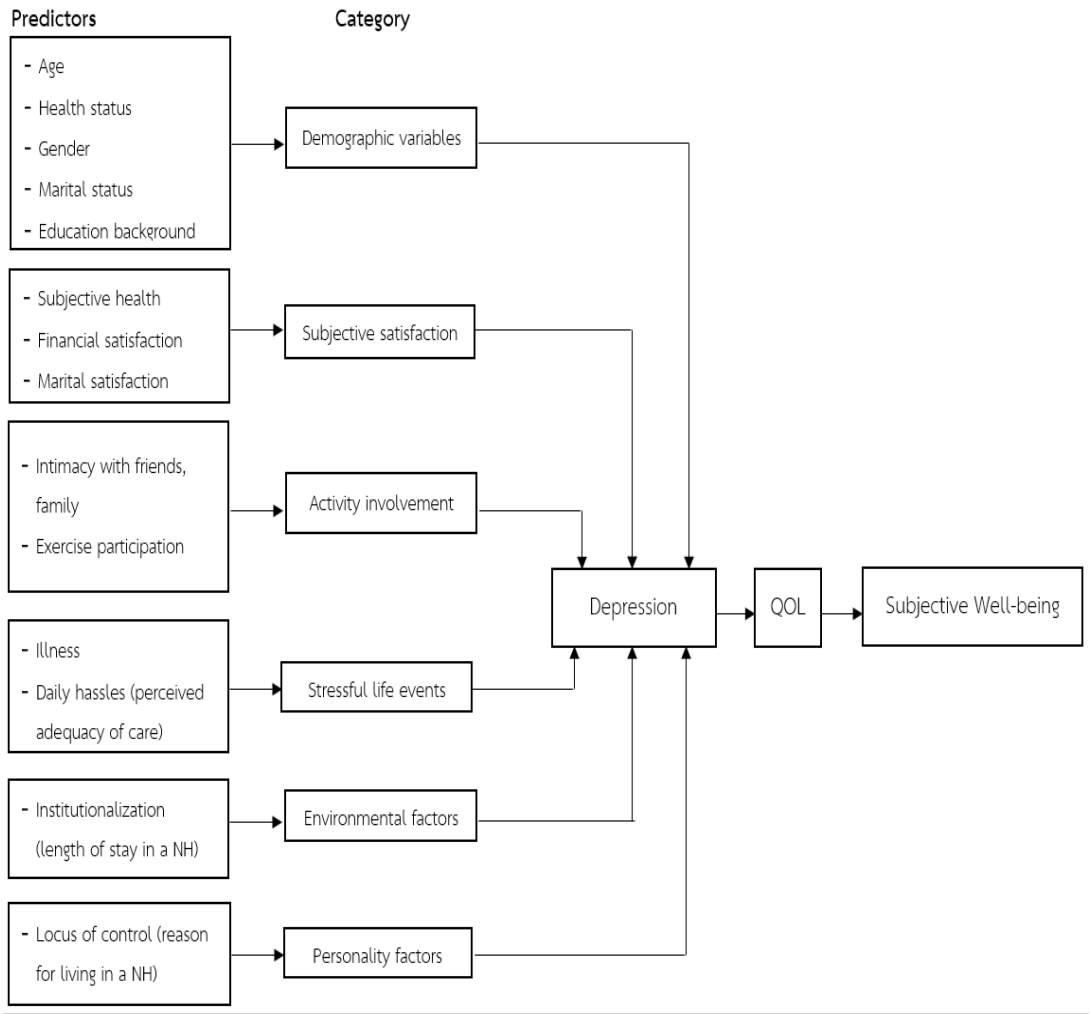


Figure 2- 4. Conceptual thinking of related factors for depression and QOL based on the Subjective Well-being Theory

Chapter III
Research Methodology

3.1 Research Design

This study was a quasi-experimental study with repeated measures. The aim of this study was to implement the religious intervention in the NH settings in Yogyakarta province, Indonesia and to investigate the effect of religious intervention on the scores and levels of depression and quality of life amongst depressive elderly NH residents after implementation.

3.2 Study Sites

This study was carried out at three NHs in three different districts in Yogyakarta province, Indonesia. Those three government nursing homes were located in Sleman, Bantul, and Yogyakarta district have been recruited in this study. The distance between those NHs is about 41 km and it takes around 1.5 hours by driving car.

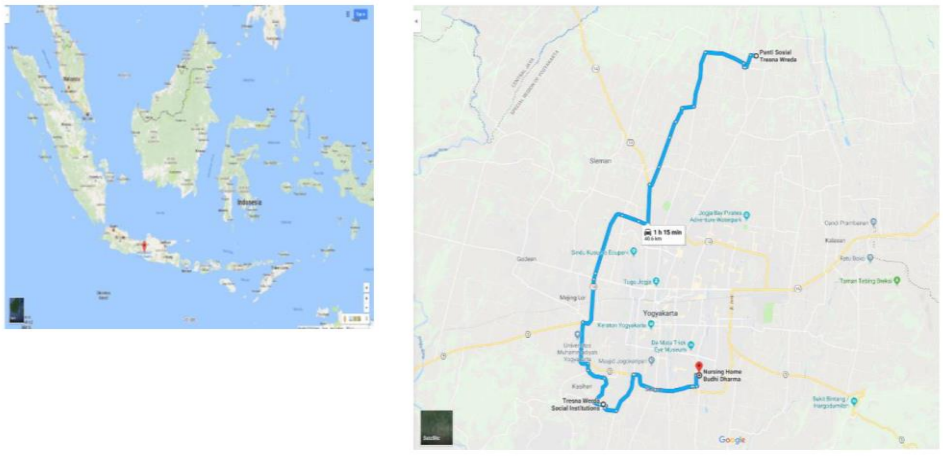


Figure 3- 1. *The map of study area*

3.3 Study Period

This study consisted of two steps. First step was database collection which was carried out within a month during February 2017 after ethical approval has been obtained. Collecting database consisted of general information about the nursing homes, socio-demographics data of respondents, and the scores and levels of depression and quality of life amongst depressive elderly NH residents in the study area. The scores and levels of depression and quality of life amongst depressive elderly nursing home residents in each nursing home were collected as baseline data. After collecting the database, the study was continued by implementing the religious intervention in the intervention group and usual care in the control group of study. Both interventions were completed within 12 weeks, from February to May 2017. The second step was the evaluation in both groups of study and measurement the outcome of this study. Both groups were evaluated at the baseline, 4th, 8th, and 12nd week after the interventions were performed (Figure 3-2).

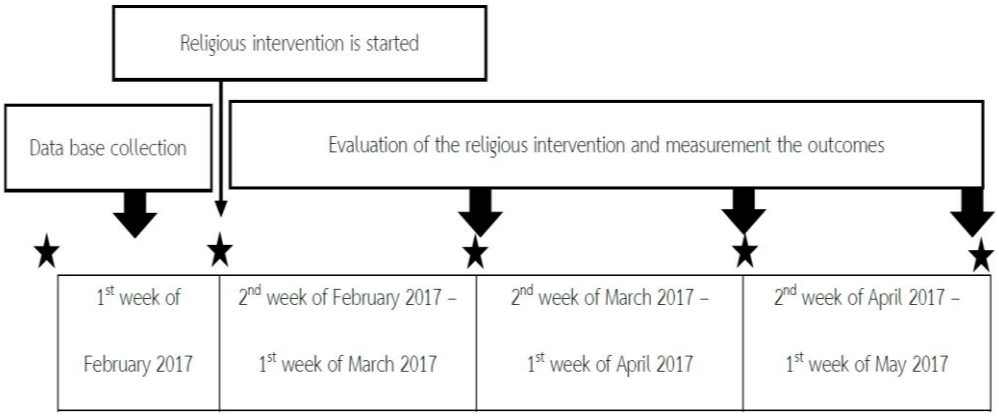


Figure 3- 2. Study Period

3.4 Study Population

The elderly residents in three government NHs which were located in Sleman, Bantul, and Yogyakarta district of Yogyakarta province, Indonesia were recruited in this study. Total population of elderly NH residents in this study were 273 respondents.

3.5 Sample Size and Sampling Technique

3.5.1 Sample size calculation

Following a G-Power program with the effect size of 0.5%, type I error of 0.01 and 80% power with an assumed correlation of 0.80 between measurement points, the required sample for each group was 30, with the total sample was 60 (Chiang et al., 2015). All 273 elderly at three NHs in three districts in Yogyakarta province, Indonesia were invited to participate. For those who were eligible and met the inclusion criteria in each NH were then recruited as the sample and allocated into intervention or control group. The sample size calculation using a G-Power program can be seen in the following figure 3-3.

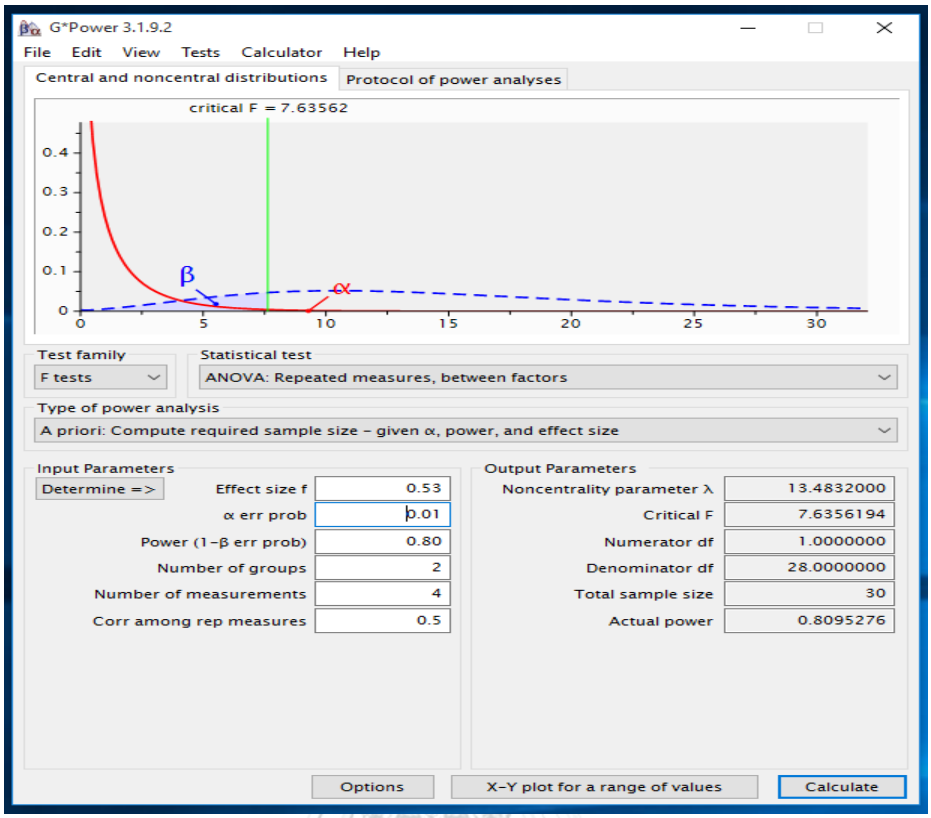


Figure 3- 3 Sample size calculation using G-Power program

3.5.2 Sampling Technique

Two hundred seventy-three elderly at three NHs as a total population were invited to participate in this present study. After excluded the ineligible respondents, 60 elderly NH residents were finally recruited as the sample in both groups and purposively assigned to the intervention and control group. All 30 eligible respondents in Budi Luhur nursing home was determined as the intervention group, while a total of 30 eligible respondents which is consisted of 16 respondents in Abiyoso and 14 respondents in Budi Dharma nursing home were allocated as the control group.

3.6 Inclusion and Exclusion Criteria

3.6.1 Inclusion Criteria

- Elderly who had to be 60 years old or older
- Had to be living in a NH for at least one month
- Could have or not have any chronic disease(s)
- Had to have a GDS score in the range of 5 to 11 (presenting with mild to moderate levels of depression)

3.6.2 Exclusion Criteria

- Non-Muslim as religion
- Had severe cognitive impairment or dementia
- Experiencing psychotic disorders
- Experiencing of alcohol/drug misuse
- Under antidepressants medication treatment
- Bed ridden patient suffering from severe physical health conditions
- Refused to participate

3.7 Recruitment and Data Collection Procedures

3.7.1 Recruitment Studies Setting and Participant

All 273 elderly residents at 3 NHs in 3 districts in Yogyakarta province, Indonesia, were invited to participate. To be an eligible respondent, residents had to be aged 60 years and above, had to have a Geriatric Depression Scale (GDS) score in the range of 5–11 (presenting with mild to moderate levels of depression), could have, or not have any chronic diseases, and had to be living in an NH for at least one month. In all, 77 residents were eligible. Exclusions from this study included one resident who refused to participate, one bedridden patient suffering from severe physical health conditions, and 15 non-Muslim elderly NH residents who were ineligible for the purposes of this study. Thus, data for this study came from 60 elderly NH residents with complete GDS and QOL measurements at the baseline examination. These 60 elderly were purposively assigned into the religious intervention group (n=30) and the control group (n=30). The process of recruitment of respondents can be explained in the following flow chart of figure 3-4.

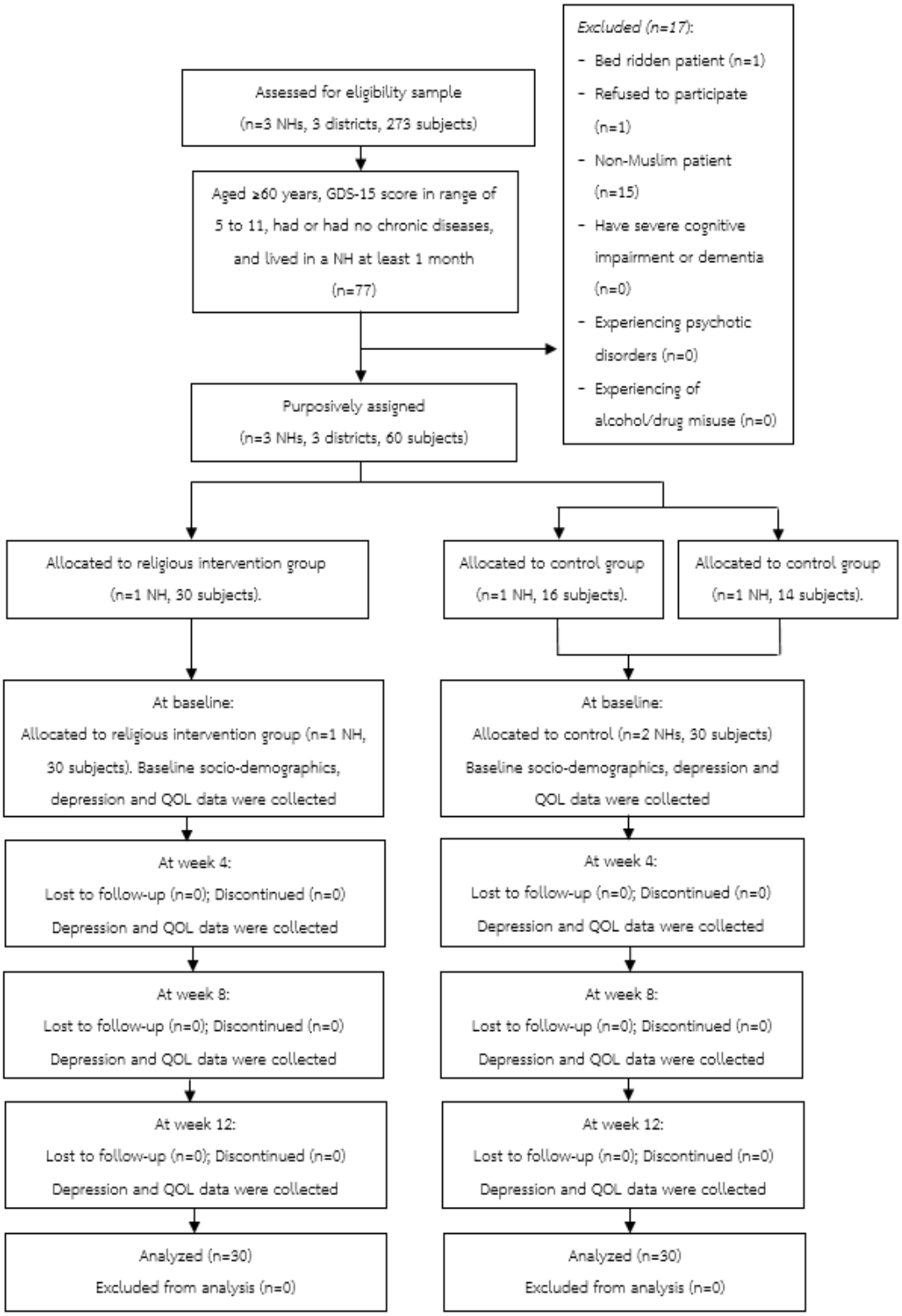


Figure 3- 4. Flow chart of recruitment studies setting and participant

Abbreviations: NH: nursing home; GDS-15: 15-item Geriatric Depression Scale; QOL: quality of life

3.8 Data Collection Process

Data collection process in this study was carried out within 12 weeks, between 1st week of February 2017 until 1st week of May 2017. The data collection process was divided into 3 steps as follows.

1) Preparation and Database collection

a. In this step, the researcher requested the permission from the Ministry of Home Affairs of Indonesia, the National Unity, Politics, and Public Protection Agency (*Kesbangpolinmas*) both in the provincial and municipality/district levels, local government officers, provincial social officer and the director of the nursing homes in each district.

b. Database collection was carried out by researcher from the studies setting area. The depression and QOL scores for this study came from 60 elderly NH residents with complete GDS and QOL measurements at the baseline examination. Medical records and information from healthcare workers or NH staff were obtained to cross check the data related to chronic diseases, cognitive impairment or dementia status.

2) Implementation

Intervention Group

All 30 residents in Budi Luhur nursing home participated in the religious intervention which was a combination of 36 sessions of listening to Qur'anic recital plus three sessions of attending a sermon by a Muslim religious leader/preacher.

In this present study, we added-up those combination of a routine qur'anic recital listening and monthly sermons approach by a preacher with the specific topic particularly in depression and QOL because in the usual care group did not provide those specific topics in their regular activities.

Besides following the preachers' advice as guidance, believe in the Qur'an as the final revelation book of *Allah* (God) is the third pillar of *Iman* (belief) in Islam which is compulsory for Muslims. The Qur'anic recital listening and preaching were chosen purposively over other Muslim spiritual practices due to the beneficial effects of these approaches being rarely investigated amongst the elderly NH residents. Furthermore, the Qur'anic recital listening and preaching sessions were deemed to be more feasibly implemented amongst this specific population. Both interventions were completed within 12 weeks.

Qur'anic recitation listening in sessions were scheduled three times a week, lasting between 20-25 min per session by using earphones with an MP3 player. There were no one of respondents who had a hearing impairment in this intervention group. 6236 verses from 114 *surah* (chapters) in the Qur'an were randomly chosen for each session. The subjects were allowed to ask the researcher to control the MP3 at a comfortable volume and to choose the most comfortable place to listen to the Qur'anic recital, for example in their bedroom, living room, or on the terrace. The researcher would stay with the subjects during intervention so that the researcher could be available for any unexpected responses. The

qur'anic recitals MP3 were existed in the market and/or can be downloaded on YouTube.

Monthly sermons relating to depression and QOL from an Islamic perspective were delivered by a preacher for 50-60 min sessions. All subjects were gathered in one place during the intervention. The topics of the preacher's sermons included themes such as the causes, signs and symptoms of depression and how to prevent depression according to Islamic perspectives, while lessons in reducing depression symptoms and increasing QOL amongst the elderly, based on Islamic perspectives were delivered through an LCD projector with PowerPoint. The sermons' content was built and derived from Qur'an verses, then discussed together between researcher and preacher to ensure that the objective of this study had been addressed. The preacher selected to deliver the sermons for the purposes of this study was a Muslim religious leader recognized by the community but also a licensed psychiatric nurse. The information related the content of the preacher's sermons is presented in the following table 3-1.

Table 3- 1*. Content of the preacher's sermons related to depression and QOL in Islamic perspective*

Session	Theme	Activities	Intervention goals	Duration
1	Depression in Islamic perspectives; the causes, sign and symptoms, and prevention.	-The preacher's sermons were delivered by a preacher in front of all respondents in a meeting room -The open discussion was performed after sermons delivered. -Evaluation was performed by measuring the score and level of depression and quality of life after sermons delivered	Building a better understanding of depression concept according to Islamic perspectives	50-60 min

***Table 3-1**. Content of the preacher's sermons related to depression and QOL in Islamic perspective (continued)*

Session	Theme	Activities	Intervention goals	Duration
2	How to relieve the depressive symptoms based on the Islamic perspectives	- The preacher's sermons were delivered by a preacher in front of the all respondents in a meeting room - The open discussion was performed after sermons delivered. - Evaluation was performed by measuring the score and level of depression and quality of life after	Self-understanding on how to reduce the depression based on Islamic perspectives	50-60 min

Table 3-1*. Content of the preacher's sermons related to depression and QOL in Islamic perspective (continued)*

Session	Theme	Activities	Intervention goals	Duration
		sermons delivered.		
3	How to increase the quality of life amongst elderly based on the Islamic perspectives	- The preacher's sermons were delivered by a preacher in front of the all respondents in a meeting room - The open discussion was performed after sermons delivered. -The conclusion was delivered in the end of meeting -Evaluation was	Self-understanding on how to increase the quality of life based on Islamic perspectives	50-60 min

Table 3-1*. Content of the preacher's sermons related to depression and QOL in Islamic perspective (continued)*

Session	Theme	Activities	Intervention goals	Duration
		performed by measuring the score and level of depression and quality of life after sermons delivered.		

Control Group

All 30 respondents in Abiyoso and Budhi Dharma nursing home allocated in the control group. They were engaged in daily routine activities such as daily prayers or s*olat*, fasting, reading the Qur'an, or the other daily routine activities such as watching television, counselling, and playing or listening music. These kinds of regular and ongoing activities in nursing homes.

3) Evaluation of the scores and levels of depression and QOL amongst respondents in both groups

- The first primary outcome in this study was evaluated from the depression scores and levels amongst elderly NH residents both in the intervention and

control groups at the baseline, 4th, 8th, and 12nd week after the interventions were performed.

- The secondary outcome was evaluated from the scores and levels of the QOL amongst elderly NH residents both in the intervention and control groups at the baseline, 4th, 8th, and 12nd week after the interventions were performed.

3.9 Research Instruments

3.9.1 Questionnaires (Appendix A)

There are three parts of questionnaires in this study in order to assess the socio-demographics data, depressive symptoms and the quality of life amongst elderly NH residents presented as below.

Part 1: Socio-demographics of respondents

These included age, gender, marital status, education level, length of stay in the NH, social support resources, type of support, chronic disease, reason for living in NH, and perceived adequacy of care. Data gathering was completed through face-to-face interviews, lasting between 30-45 min for each respondent and considered as baseline information for all subjects.

Part 2: Depressive symptoms

Depressive symptoms was measured by a short form Geriatric Depression Scale (GDS) questionnaire comprising 15 questions that have been tested and extensively used in community, clinical, and nursing home settings amongst the older population

(Lesher E.L, 1986; McGivney S.A, Mulvihill M.M, & Taylor B, 1994; Sheikh JI & Yesavage JA, 1986). The 15-item questionnaire required participants to respond by answering yes or no in reference to how they felt over the past week. Of the 15 items, 10 indicated the presence of depression when answering positively, while the rest (question numbers 1, 5, 7, 11, 13) indicated depression when answering negatively. Scores of 0-4 are considered normal; 5-8 indicate mild depression; 9-11 indicate moderate depression; and 12-15 indicate severe depression (Sheikh JI & Yesavage JA, 1986). The short form is more easily used by physically ill and mildly to moderately demented patients who have short attention spans and/or feel easily fatigued. A 5 to 7 min to complete the questionnaire.

Part 3: Quality of life measurement

The QOL as the secondary outcome was assessed by the World Health Organization Quality of Life (WHOQOL)-BREF Indonesian version which consisted of 26 items, and consisted of four domains: physical health, psychological, social relationships, and environment (World Health Organization (WHO), 1996). The four domain scores denote an individual's perception of quality of life in each particular domain. Domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life). The mean score of items within each domain is used to calculate the domain score. Mean scores are then multiplied by 4. Where more than 20% of data is missing from an assessment, the assessment should be discarded.

Higher score denotes a higher QOL; the raw score was converted to transform the scores, and the range of transformed scores was from 0 to 100 (World Health Organization (WHO), 1996). The QOL scores then were categorized into three levels (Olusina A.K & Ohaeri J.U, 2003);

- Good: > Mean + SD (Standard Deviation),
- Fair: Mean – SD to Mean + SD, and
- Poor: < Mean – SD levels

3.10 Validity and Reliability

3.10.1 The Geriatric Depression Scale (GDS) questionnaire

The GDS was found to have a 92% sensitivity and 89% specificity when evaluated against diagnostic criteria. The validity and reliability of the tool have been supported through both clinical practice and research. The 15-item GDS was validated to measure the depression at baseline and follow-up, whereas the Cronbach's alpha were 0.84 and 0.79 at baseline and follow-up, respectively (p<.001) (Sheikh JI & Yesavage JA, 1986). The GDS questionnaire in English version was translated into Bahasa Indonesia. Forward-translations and panel back-translation from three experts were employed as the content validity consideration for this questionnaire, pre-testing to ensure the GDS questionnaire in Indonesian version was done before disseminating the final version within data collection period.

Thirty elderly nursing home residents in two districts in Yogyakarta province, Indonesia aged 60 years and above were recruited randomly in the pre-testing of this study. Computation of Content Validity Index for Items (I-CVI) with three expert raters and Pearson's correlation analysis were used to determine validity instrument. Computation of I-CVI ≥0.78 considered as having excellent content validity. Pearson's correlation items-total score was set at a p-value <0.05. Multiple-item construct measurement was assessed to by using Cronbach's alpha with cut-off point 0.7 to test the internal consistency for reliability.

As a result, Pearson's correlation items-total score was found to be significant at 0.05 level (p-value <0.05) with Content Validity Index for Items (I-CVI) computation at 1.00. In terms of internal consistency, it was found that the Cronbach's alpha for the Indonesian version of the GDS questionnaire was good (Cronbach's alpha=0.80).

Finally, the GDS-15 Indonesian version was valid and having excellent content validity. This instrument was also reliable to assess the depressive symptoms among Indonesian elderly particularly in this study setting.

3.10.2 The WHOQOL-BREF questionnaire (Bahasa Indonesia version)

The WHOQOL-BREF Indonesian version has revealed that the Cronbach's **α** value for each domain ranged from 0.41 to 0.77, with the Pearson correlation coefficient between each domain ranged from 0.5 to 0.7 (Salim O C, Sudharma N. I, & Hidayat A, 2007). Analyses of internal consistency, item–total correlations, discriminant

validity and construct validity through confirmatory factor analysis, indicate that the WHOQOL-BREF has good to excellent psychometric properties of reliability and performs well in preliminary tests of validity (Skevington et al., 2004). In the other countries, the Cronbach's α for the total score was 0.839. The value for each domain ranged from 0.746 to 0.849. Pearson correlation coefficient between each domain ranged from 0.5 to 0.7 (Wan H K, Soo J H, Hyun J I, & Kyung S Y, 2013). The internal consistency of the four domains of the WHOQOL-BREF ranged from 0.66 to 0.80 in Netherlands (Trompenaars, Masthoff, van Heck, Hodiamont, & de Vries, 2005).

3.11 Data Analysis

Descriptive statistics were employed to describe the groups' socio-demographic characteristics. The Shapiro-Wilk test was used to assess the normality of sample distribution for the depression and QOL scores at baseline data. Given the p-value for depression score was <0.001 and p-value was 0.082 for QOL score, those results suggested that the Mann-Whitney U-test was appropriately used to determine whether any statically significant differences were found in depression median scores between groups at baseline, 4^{th}, 8^{th}, and 12^{nd} week after intervention, and the Independent t-test was used to examine the differences of QOL mean score between two groups at each time point.

The Friedman test was used to test for any statistically significant changes for depression median scores over time during intervention for each group. The repeated

measurement ANOVA test was used to examine for any statistically significant changes in QOL mean scores among the four-time points for each group.

The Wilcoxon signed rank test as the post hoc analysis was performed for pairwise comparisons on depression median scores in each group. Meanwhile, adjustment for multiple comparisons on QOL mean scores in each group was tested by using Bonferroni post-hoc analysis with statistical significance was set at P-value <0.05 (Peacock & Peacock, 2011).

SPSS 22.0 version under licensed of Chulalongkorn university was used to analyze the descriptive and inferential statistics in the result of this study as described in the following table below.

3.11.1 Descriptive statistics

The percentage (%), mean (x), standard deviation (SD), Minimum, Maximum, Median, and Interquartile range (IQR) were used to describe the socio-demographics data, the scores and levels both in depression and quality of life measurements.

Table 3- 2. *Descriptive Statistic Analysis*

Variables	**Measurement scales**	**Statistical analysis**
Socio-demographics: 1) Gender, marital status, education level, social support resources, reason for living in a NH, and	Nominal and ordinal	<u>Descriptive statistics</u> Frequency and percentage

Table 3- 2. *Descriptive Statistic Analysis (continued)*

Variables	Measurement scales	Statistical analysis
2) perceived adequacy of care, Age category, chronic disease category, and length of stay in a NH category.	Ordinal	Frequency and percentage
Depression score	Interval	Descriptive statistics Frequency, percentage, mean, SD, median, IQR, minimum and maximum.
Depression level	Ordinal	Frequency and percentage
Quality of life score	Interval	Descriptive statistics Frequency, percentage, mean, SD, minimum and maximum.
Quality of life level	Ordinal	Frequency and percentage

3.11.2 Inferential statistics

The inferential statistics were analyzed to assess the effect of religious intervention on the scores and levels of depression and quality of life amongst depressive elderly nursing home residents as presented in the following table 3- 3.

Table 3- 3. *Inferential statistical analysis*

Implementation and evaluation			
Variables	**Measurement scales**	**Statistical analysis**	**Objective**
Gender, marital status, education level, social support resources, reason for living in a NH, and perceived adequacy of care, age category, chronic disease category, and length of stay in a NH category.	Nominal and ordinal	Chi-square test	To test homogeneity between two groups
Depression and QOL score at baseline	Interval	Shapiro-Wilk test	To assess the normality of sample distribution for the depression and QOL scores at baseline data
Depression scores at baseline, 4th, 8th, and 12nd week	Interval	Mann-Whitney U-test	To test for any statistically significant different for depression median scores over time during intervention between

Table 3- 3. *Inferential statistical analysis (continued)*

Implementation and evaluation			
Variables	**Measurement scales**	**Statistical analysis**	**Objective**
			intervention and control (non-parametric statistics)
Quality of life scores at baseline, 4th, 8th, and 12nd week	Interval	Independent t-test	To test for any statistically significant different for QOL mean scores overtime during intervention between intervention and control (parametric statistics)
Depression scores at the baseline, 4th, 8th, and 12nd week	Interval	Friedman test	To test for any statistically significant changes for depression median scores over time during intervention for each group (non-

Table 3- 3. *Inferential statistical analysis (continued)*

Implementation and evaluation			
Variables	**Measurement scales**	**Statistical analysis**	**Objective**
			parametric statistics)
Quality of life scores at the baseline, 4th, 8th, and 12nd week	Interval	Repeated measurement ANOVA	To examine for any statistically significant changes in QOL mean scores among the four-time points for each group
Depression scores at the baseline, 4th, 8th, and 12nd week	Interval	Wilcoxon signed rank test post- hoc analysis	For pairwise comparisons on depression median scores in each group
Quality of life scores at the baseline, 4th, 8th, and 12nd week	Interval	Bonferroni post-hoc analysis	Adjustment for multiple comparisons on QOL mean scores in each group
Depression levels at the baseline, 4th, 8th, and 12nd week	Ordinal	Chi-square	To test for any statistically significant different for depression

Table 3- 3. *Inferential statistical analysis (continued)*

Implementation and evaluation			
Variables	**Measurement scales**	**Statistical analysis**	**Objective**
			levels over time between groups

3.12 Ethical Consideration

The ethical consideration was obtained from the Medical and Health Research Ethics Committee (MHREC) Faculty of Medicine, Universitas Gadjah Mada, Indonesia (Ref. KE/FK/0131/EC/2017). The purpose, benefits, data collection process, and ethical issues in this study have confidentially informed to the ethical committee. The adequate information to all of respondents regarding the purpose, benefits, data collection process were also delivered by the researcher directly. Written informed consent for data usage was obtained from all respondents and both informed verbally and written informed consent for intervention were obtained from all the respondents in the intervention arm. The permission has been obtained from the local governments and the nursing homes authority. The meeting with the NH staff was also carried out in briefly explanation pertaining this study purposes and findings. Data regarding cognitive impairment status or dementia was obtained from the medical records, information from healthcare workers or nursing home staff.

Chapter IV
Results

4.1 Baseline information on socio-demographic, health-related characteristic, and social support variables

After surveying all 273 elderly at three NHs in three districts in Yogyakarta province Indonesia, finally 60 eligible respondents were recruited in this present study. 30 respondents in a NH were allocated as the religious intervention group and the other 30 respondents in two NHs were allocated as the control group. The data regarding socio-demographic, health-related characteristic, and social support variables for those 60 respondents are presented in table 4-1.

In this present study, we found that the majority (76.7%) of respondents were aged <80 years, 76.7% were female, and 91.7% had no partner (single/widowed/divorced). A large number (88.3%) of elderly had no or low educational background, and 60% had <3 chronic diseases. Mostly (51.7%), the elderly NH residents still received social support from their family (relatives/children/parents) or the others (spouse/healthcare or social workers/neighbor), with the majority (60%) of support being psychological and/or financial support. In addition, the majority (86.7%) of elderly lived in NH due to compulsion (poverty, living alone at home, no one to take care of respondents at home and/or homelessness), and most of them (61.7%) stayed in a NH for <4 years, with near 2/3 of elderly NH residents (61.7%) having a perceived adequacy of care. It was identified that there was no difference in

terms of those socio-demographic, health-related characteristic, and social support variables between the groups (p>0.05), as presented in the table 4-1.

Table 4- 1. *Baseline comparison on socio-demographic, health-related characteristic, and social support variables of respondents using Chi-square test (n=60)*

Respondents' characteristics		Intervention group (n=30), n (%)	Control group (n=30), n (%)	X^2 (value)	*p*-value
Age	≥80 years	8 (26.6)	6 (20)	0.373	0.542
	<80 years	22 (73.4)	24 (80)		
Gender	Female	25 (83.4)	21 (70)	1.491	0.222
	Male	5 (16.6)	9 (30)		
Marital status	No partner	28 (93.4)	27 (90)	0.218	0.640
	With partner	2 (6.6)	3 (10)		
Education level	No or low education	26 (86.6)	27 (90)	0.162	0.688
	Higher education	4 (13.4)	3 (10)		
Social support resource	None	17 (56.6)	12 (40)	1.669	0.196
	From family and/or others	13 (43.4)	18 (60)		
Type of support	None	13 (43.4)	11 (36.6)	0.278	0.598
	Psychological and/or financial	17 (56.6)	19 (63.4)		
Chronic disease	≥3	9 (30)	15 (50)	2.500	0.114
	<3	21 (70)	15 (50)		
Reason for living in nursing home	Compulsion	25 (83.4)	27 (90)	0.577	0.448
	Own willingness	5 (16.6)	3 (10)		
Length of stay	≥4 years	9 (30)	14 (46.6)	1.763	0.184
	<4 years	21 (70)	16 (53.4)		
Perceived adequacy of care	No	11 (36.6)	12 (40)	0.071	0.791
	Yes	19 (63.4)	18 (60)		

4.2 Depressive symptoms measures

The Shapiro-Wilk test was used to assess the normality of the depression scores at baseline data. The p-value was found to be <0.001 and it suggested that the depression scores at baseline data was not normally distributed (p<0.05). Table 4-2 shows the result of normality test for depression scores at baseline data.

Table 4- 2. *Tests of normality for depression scores at baseline data by Shapiro-Wilk test (n=60)*

Variable	Mean (SD)	Min, Max	SE	95% CI		p-value
				Lower	Upper	
Depression	7.0 (2.2)	5, 11	0.28	6.5	7.6	<0.001

Abbreviation: SD, Standard Deviation; SE, Standard Error; CI, Confidence Interval

Table 4-3 presents the multiple comparisons on depression median scores over time within and between groups. At the baseline data, there was no statistically significant difference in the depression median scores between intervention and control group (p=0.170). In both groups, there were statistically significant reductions in depression median scores after 12-week intervention (p<0.001). However, in the religious intervention group showed a greater decrease in depressive symptoms after 12-week intervention (27% vs 14%).

Furthermore, statistically significant difference reductions in depression median scores only revealed in the intervention group after the 4-week intervention. In contrast, in the control group, there was no statistically significant difference reductions in depressive symptoms after the usual 4-week care intervention. Finally, there was

statistically significant difference in geriatric depression median scores between groups at the 4th, 8th, and 12nd week post-intervention (Table 4-3).

Table 4- 3*. Multiple comparisons on depression median scores over time within and between groups (n=60)*

Variable measure	Intervention group (n=30)	Control group (n=30)	*U*	*P*-value
Depression	Median (IQR)	Median (IQR)		
Baseline	5.5 (3)	7.0 (4)	361.0	0.170[a]
Week 4	5.5 (2)	7.0 (4)	315.0	0.042[a]
Week 8	5.0 (2)	6.0 (4)	245.0	0.002[a]
Week 12	4.0 (2)	6.0 (3)	120.0	<0.001[a]
p-value	<0.001[b]	<0.001[b]		
Decrement changes C	27%	14%		
Wilcoxon signed-rank test post-hoc[c]	A (p<0.001)	A (p=0.366)		
	B (p<0.001)	B (p=0.004)		
	C (p<0.001)	C (p<0.01)		

Notes: A: Baseline versus week 4; B: Baseline versus week 8; C: Baseline versus week 12. [a]Mann-Whitney U-test; [b]Friedman test; [c]Significant at p<0.05; IQR, interquartile range

Figure 4-1 shows the statistically significant difference in depression median scores over time between the intervention and control group using Mann-Whitney U-test (n=60).

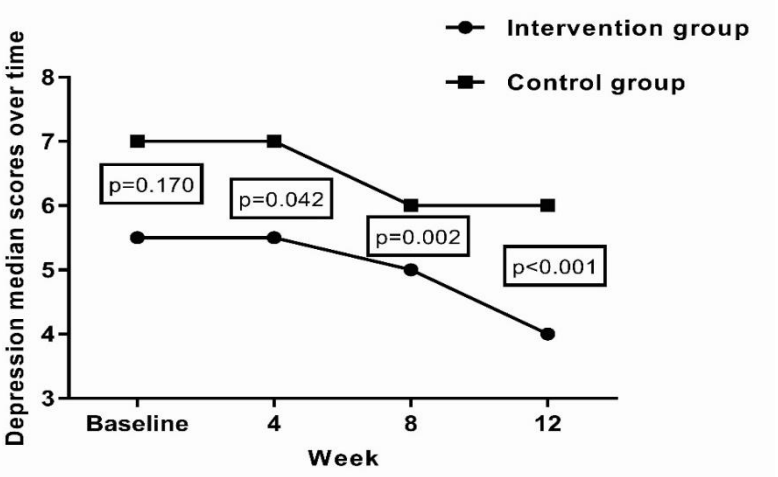


Figure 4- 1. *Depression median scores over time in both groups*

In terms of depression level alterations over time, there was also statistically a significant difference in depression levels between groups at the 4th, 8th, and 12nd week post-intervention. The details of depression level alterations over time as presented in the following table 4-4.

Table 4- 4. *Multiple comparisons on depression levels over time between groups using Chi-square (n=60)*

Depression level		Intervention group (n=30), n (%)	Control group (n=30), n (%)	X^2 (value)	*p*-value
Baseline	Mild	24 (80)	17 (56.7)	3.774	0.052
	Moderate	6 (20)	13 (43.3)		
Week 4	Normal	6 (20)	1 (3.3)	6.268	0.044[a]
	Mild	18 (60)	16 (53.3)		
	Moderate	6 (20)	13 (43.4)		
Week 8	Normal	11 (36.7)	2 (6.7)	10.118	0.006[a]
	Mild	16 (53.3)	18 (60)		
	Moderate	3 (1.0)	10 (33.3)		
Week 12	Normal	19 (63.3)	2 (6.7)	23.887	<0.001[b]
	Mild	11 (36.7)	21 (70)		
	Moderate	0 (0)	7 (23.3)		

Note: [a]Significant at p<0.05; [b]Significant at p<0.001

4.3 Quality of life measures

The Shapiro-Wilk test was used to assess the normality of the QOL scores at baseline data (Table 4-4). The p-value was 0.082 and this result indicated that QOL scores was normally distributed (p>0.05). Table 4-5 showed the results of normality test for QOL scores at baseline data.

Table 4- 5. *Tests of normality for QOL scores at baseline data by Shapiro-Wilk test (n=60)*

Variable	Mean (SD)	Min, Max	SE	95% CI		p-value
				Lower	Upper	
Quality of life	43.2 (4.8)	32.7, 56.2	0.63	41.9	44.5	0.082

Abbreviation: SD, Standard Deviation; SE, Standard Error; CI, Confidence Interval

The multiple comparisons on QOL mean scores over time within and between groups are presented in the table 4-6. There was statistically significant improvement in QOL mean scores in both intervention and control group at the 12-week post-intervention (p<0.001). However, the religious intervention group had a greater improvement in the QOL mean scores than those in the control group after the 12-week intervention (33% vs 22%). In addition, there was statistically significant difference in QOL mean scores between groups at the 4^{th}, 8^{th}, and 12^{nd} week post-intervention (Table 4-6).

In both groups, the statistically significant difference improvement also revealed in both physical health, psychological, social relationship, and environment

QOL domain mean scores (p<0.001). However, there was no statistically significant difference between groups at the 4th week post-intervention both in the physical health, social relationship, nor environment QOL domain mean scores (p>0.05).

Table 4- 6*. Multiple comparisons on quality of life mean scores over time within and between groups (n=60)*

Variable measures	Intervention group (n=30)	Control group (n=30)	*t*	*p*-value
Overall QOL	Mean (SD)	Mean (SD)		
Baseline	44.2 (5.3)	42.2 (4.1)	1.61	0.113[a]
Week 4	47.3 (5.0)	44.2 (3.9)	2.78	0.007[a]
Week 8	53.5 (4.8)	48.2 (3.1)	4.96	<0.001[a]
Week 12	58.9 (3.9)	51.3 (2.5)	8.83	<0.001[a]
p-value	<0.001[b]	<0.001[b]		
Improvement changes C	33%	22%		
Mean difference C[c]	14.7	9.1		
Bonferroni post-hoc analysis[d]	A (p<0.001) B (p<0.001) C (p<0.001)	A (p<0.001) B (p<0.001) C (p<0.001)		

[a]Independent t-test; [b]Repeated measurement ANOVA; [c]Dependent t-test; [d]Significant at p<0.05

Notes: A: Baseline vs week 4; B: Baseline vs week 8; C: Baseline vs week 12

***Table 4- 6**. Multiple comparisons on quality of life mean scores over time within and between groups (n=60) (continued)*

Variable measures	Intervention group (n=30)	Control group (n=30)	*t*	*p*-value
Physical health QOL domain				
Baseline	44.9 (6.9)	42.5 (5.0)	1.55	0.126[a]
Week 4	47.4 (7.4)	44.6 (4.5)	1.75	0.085[a]
Week 8	51.3 (6.1)	47.4 (4.0)	2.89	0.005[a]
Week 12	55.8 (5.1)	49.4 (4.5)	5.19	<0.001[a]
p-value	<0.001[b]	<0.001[b]		
Improvement changes C	24%	16%		
Mean difference C[c]	10.9	6.9		
Bonferroni post-hoc analysis[d]	A (p=0.001) B (p<0.001) C (p<0.001)	A (p=0.004) B (p<0.001) C (p<0.001)		
Psychological QOL domain				
Baseline	41.1 (6.3)	37.2 (9.4)	1.85	0.069[a]
Week 4	44.5 (6.3)	38.9 (8.5)	2.85	0.006[a]
Week 8	50.6 (5.1)	43.6 (7.6)	3.87	<0.001[a]
Week 12	56.4 (5.1)	46.0 (5.4)	7.62	<0.001[a]
p-value	<0.001[b]	<0.001[b]		
Improvement changes C	37%	24%		
Mean difference C[c]	15.3	8.8		
Bonferroni post-hoc analysis[d]	A (p<0.001) B (p<0.001) C (p<0.001)	A (p=0.018) B (p<0.001) C (p<0.001)		
Social relationship QOL domain				
Baseline	45.6 (7.5)	47.7 (7.0)	-1.08	0.285[a]
Week 4	49.9 (6.8)	48.7 (7.4)	0.67	0.505[a]
Week 8	58.5 (8.0)	54.2 (5.6)	2.37	0.021[a]
Week 12	65.2 (6.8)	57.4 (6.3)	4.59	<0.001[a]
p-value	<0.001[b]	<0.001[b]		
Improvement changes C	43%	20%		
Mean difference C[c]	19.6	9.7		
Bonferroni post-hoc analysis[d]	A (p<0.001) B (p<0.001) C (p<0.001)	A (p=0.804) B (p<0.001) C (p<0.001)		

[a]Independent t-test; [b]Repeated measurement ANOVA; [c]Dependent t-test; [d]Significant at p<0.05

Notes: A: Baseline vs week 4; B: Baseline vs week 8; C: Baseline vs week 12

***Table 4- 6**. Multiple comparisons on quality of life mean scores over time within and between groups (n=60) (continued)*

Variable measures	Intervention group (n=30)	Control group (n=30)	*t*	*p*-value
Environment QOL domain				
Baseline	44.8 (8.9)	41.5 (4.6)	1.82	0.073[a]
Week 4	47.6 (8.2)	44.4 (4.2)	1.94	0.057[a]
Week 8	53.8 (7.2)	48.0 (4.4)	3.71	<0.001[a]
Week 12	58.3 (6.5)	52.6 (4.1)	4.00	<0.001[a]
p-value	<0.001[b]	<0.001[b]		
Improvement changes C	30%	27%		
Mean difference C[c]	13.5	11.1		
Bonferroni post-hoc analysis[d]	A (p<0.001) B (p<0.001) C (p<0.001)	A (p<0.001) B (p<0.001) C (p<0.001)		

[a]Independent t-test; [b]Repeated measurement ANOVA; [c]Dependent t-test; [d]Significant at p<0.05

Notes: A: Baseline vs week 4; B: Baseline vs week 8; C: Baseline vs week 12

Figure 4-2 shows the statistically significant difference in the overall QOL mean scores over time between the intervention and control group using the Independent t-test (n=60).

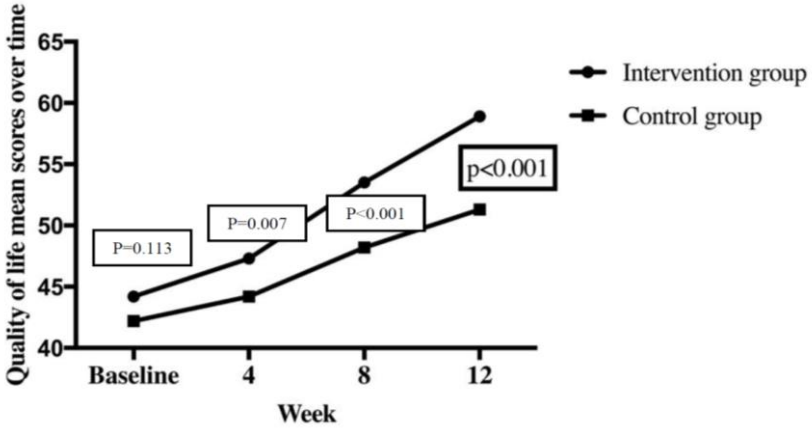


***Figure 4- 2.** QOL mean scores over time in both groups*

In terms of QOL level alterations over time, there was higher number of respondents who have a good level in both overall and all domains of QOL after 12-week intervention performed. The details of overall QOL domain level alterations over time can be seen in the following table 4-7.

Table 4- 7. *Descriptive statistic of quality of life levels over time in both groups (n=60)*

Variable measures	Intervention group (n=30)			Control group (n=30)		
	Poor n (%)	Fair n (%)	Good n (%)	Poor n (%)	Fair n (%)	Good n (%)
Overall QOL						
Baseline	4 (13.3)	19 (63.3)	7 (23.4)	5 (16.7)	24 (80)	1 (3.3)
Week 4	1 (3.3)	16 (53.3)	13 (43.4)	3 (10)	24 (80)	3 (10)
Week 8	0 (0)	3 (10)	27 (90)	0 (0)	16 (53.3)	14 (46.7)
Week 12	0 (0)	0 (0)	30 (100)	0 (0)	3 (10)	27 (90)
Physical QOL domain						
Baseline	1 (3.3)	20 (66.7)	9 (30)	2 (6.7)	23 (76.6)	5 (16.7)
Week 4	1 (3.3)	16 (53.3)	13 (43.4)	0 (0)	22 (73.3)	8 (26.7)
Week 8	0 (0)	7 (23.4)	23 (76.6)	0 (0)	16 (53.3)	14 (46.7)
Week 12	0 (0)	0 (0)	30 (100)	0	10 (33.3)	20 (66.7)
Psychological QOL domain						
Baseline	2 (6.7)	25 (83.3)	3 (10)	3 (10)	26 (86.7)	1 (3.3)
Week 4	0 (0)	22 (73.3)	8 (26.7)	0 (0)	28 (93.3)	2 (6.7)
Week 8	0 (0)	6 (20)	24 (80)	0 (0)	24 (80)	6 (20)
Week 12	0 (0)	2 (6.7)	28 (93.3)	0 (0)	19 (63.3)	11 (36.7)

Abbreviation: QOL, quality of life

Table 4- 7. *Descriptive statistic of quality of life levels over time in both groups (n=60) (continued)*

Variable measures	Intervention group (n=30)			Control group (n=30)		
	Poor n (%)	Fair n (%)	Good n (%)	Poor n (%)	Fair n (%)	Good n (%)
Social relationship QOL domain						
Baseline	4 (13.3)	23 (76.7)	3 (10)	3 (10)	24 (80)	3 (10)
Week 4	2 (6.7)	16 (53.3)	12 (40)	3 (10)	18 (60)	9 (30)
Week 8	0 (0)	8 (26.7)	22 (73.3)	0 (0)	10 (33.3)	20 (66.7)
Week 12	0 (0)	0 (0)	30 (100)	0 (0)	6 (20)	24 (80)
Environment QOL domain						
Baseline	2 (6.7)	17 (56.6)	11 (36.7)	4 (13.3)	25 (83.4)	1 (33.3)
Week 4	1 (3.3)	15 (50)	14 (46.7)	0 (0)	24 (80)	6 (20)
Week 8	0 (0)	6 (20)	24 (80)	0 (0)	13 (43.3)	17 (56.7)
Week 12	0 (0)	0 (0)	30 (100)	0 (0)	2 (6.7)	28 (93.3)

Abbreviation: QOL, quality of life

Chapter V
Discussion, Conclusion, and Recommendation

5.1 Discussion

In this present study, we provide preliminary evidence that religious intervention such as listening to Qur'anic recitals combined with a Muslim religious leader's sermon approach could probably help reduce depressive symptoms as well as improve the QOL amongst the elderly.

Basically, there are three types of recent treatment for depression, and in all three classes, the result is increased concentration of serotonin and/or norepinephrine in the extracellular fluid at synapse (Widmaier E.P, Raff H, & Strang K.T, 2008). The pathophysiological basis of depression based on the monoamine-deficiency theory is a decimation of the neurotransmitters serotonin, norepinephrine or dopamine in the central nervous system, with serotonin as the most extensively studied neurotransmitter in depression cases. While the neurobiology classical theory in depression mostly focus on serotonin and norepinephrine, the interest in dopamine's role toward depression was increased (Nutt DJ, 2006). In depressed subjects, dopamine metabolites levels in the cerebrospinal fluid and jugular vein plasma were decreased (Lambert G, Johansson M, Agren H, & Friberg P, 2000).

Several previous studies indicated that psychological stress also stimulates the secretion of steroid hormones such as cortisol and catecholamine (Hubert W, Moller M, & Nieschlag E, 1989; Kirschbaum C & Hellhammer DH, 1994), suggesting that some stressor life event could evoke those stress hormones to be released as a physiological response mechanism.

In the cortical brain regions, the hypothalamus would respond to the perception of psychological stress by releasing Corticotrophin Releasing Hormone (CRH). This hormone then induces the pituitary corticotrophin secretion, which stimulates the adrenal gland to release cortisol into the plasma (Young EA, 1998). The robust evidence of the CRH main role in the pathogenesis of certain types of depression were shown in the elevation of CRH levels in the cerebrospinal fluid among depressed individuals (Nemeroff CB et al., 1984). Post-mortem studies found the increased CRH concentrations were compensated by the elevated number of CRH secreting neurons in limbic brain regions in depressed patients (Nemeroff CB, Owens MJ, Bissette G, Andorn AC, & Stanley M, 1988; Raadsheer FC, Hoogendijk WJ, Stam FC, Tilders FJ, & Swaab DF, 1994).

Listening to Qur'anic recital appeared to have a similar result as listening to relaxing music therapy in terms of the pathophysiology of auditory stimuli mechanisms. The cerebral limbic system (*hypothalamic-pituitary-adrenal* axis and *amygdaloid* complex) mediates the audio involvement in steroid production via the pathway from the auditory system to the auditory area, particularly the neural pathway (emotion

circuit) (Fukui H & Toyoshima K, 2008). Audio stimuli evokes psychophysiological responses because of its influences on the limbic system which might stimulate the secretion of some hormones such as serotonin, dopamine, and/or norepinephrine at the synapse, eventually releasing the stress that leads to depression. The audio stimuli intervention in our study was derived from Qur'anic recital that serves as guidance for living as Muslims. It was surmised that this might have an effect in secreting those hormones that could relieve depression amongst respondents.

According to socio-demographic characteristics of respondents in our study, almost half (48.3%) of respondents did not have or lack of social support resources, with majority (86.7%) of elderly lived in NH due to compulsion (poverty, living alone at home, no one to take care of respondents at home and/or homelessness). A previous study found that the elderly who had illness and taken care by their children tend to have a lower risk of depression (Imran A, Azidah A K, Asrenee A R, & Rosediani M, 2009). Relating to QOL, the lower QOL was also significantly low among those who had no social support resources (Pramesona & Taneepanichskul, 2018). Even though the stressful condition might not be released by social support, at least it might help the elderly to be sanguine, and encourage them to cope with the misery, creating decision, and reducing desperation (Erdem K & Apay S.E, 2014; Tsai & Y.F. Tsai, 2011).

Moreover, during their admission to the NH or hospital, the interaction between elderly and their family or people around could be limited (Hung, J.S. S Ross, K. Boockvar, & A.L. Siu, 2011). Those social and environmental changes might be affect

to their stressful conditions. Hence, both social and healthcare workers should provide an adequate psychological support and health education program during their sickness (Theofanidis D, Th. Kapadohos, E. Kampisiouli, & et al, 2007). An adequate social support should be equally provided as adequate care toward the elderly who lived in NH to lessen the risk of depression.

In fact, previous studies stated that around 60-70% depressive disorders are attributed to non-genetic factors such as past adverse events. Some factors were found to be contributors to depression amongst elderly including experiencing sexual abuse, recent stress due to interpersonal difficulties, lifetime trauma, lack of social support, marital problems, and divorce (Kendler KS, Gardner CO, & Prescott CA, 2002, 2006).

Sensitivity toward stress in depression is also unique by gender. In this present study, we found that 76.7% of respondents were female and a huge number (91.7%) of respondents had no partner due to being single, widowed, or divorced. Previous study revealed that women are more responsive to stress compared to men, which is in line with the greater incidence of depression in women (Young EA, 1998). In men, some conditions such as divorce, separation, and work difficulties are more likely to affect their developing depression, while women are more sensitive towards difficulty in socializing, developing a serious illness, or a response to death (Kendler KS, Thornton LM, & Prescott CA, 2001).

Gender and marital status seemed to affect perceived psychological well-being amongst the geriatric population. Relating to QOL, previous study in general population

found that there are gender differences in the correlation between QOL and marriage. Married men had a higher QOL compared to single men, on the contrary, single women had a higher QOL than married, separated or divorced women (Han KT, Park EC, Kim JH, Kim SJ, & Park S, 2014). Furthermore, majority (60%) of respondents in this present study experienced <3 chronic diseases. A study in Turkey showed that the presence of a chronic disease declined the QOL amongst the geriatric population (Akyol et al., 2010).

Another factor which might influence those findings is related to educational background of respondents. Mostly (88.3%) the elderly in our study had no or had low educational backgrounds. This factor could probably influence their perceived mental health well-being. A lower educational background was noticed as one of predictors for a poor psychological QOL amongst the elderly, both in the community and in the NH study settings (Kuok K.C.F et al., 2017).

Those findings show the gender-sensitive psychosocial approaches are important in preventing and treating depressive disorder cases which may eventually impact on their QOL, so the clinician should be aware that family background history and personal life experiences could continue to be the most solid source of information to estimate the risk of depressive disorders.

Delivering audio stimuli also effects the cardiovascular system (Trappe H. J, 2012). Specific musical phrases can synchronize inherent cardiovascular rhythms, thus modulating cardiovascular control (Grewe O, Nagel F, Kopiez R, & Altenmüller E, 2005),

inducing the skin vasodilatation, and resulting in reduced blood pressure (Bernardi L et al., 2009). Listening to Qur'anic recitals which consist of many rules of *Tajwid* (science of recitation) in the sound production such as the beats (*harakat*), segment quality, and single-breath phrase (Al-Tawil A, 1999) seems to have similar role to the musical phrases in alleviating stress that may lead to depression. One of the modern Qur'anic recitation styles, called the *Murattal* was selected for this study for its straight-forward, speech-bound style of recitation. Its intent is the clear rendering of the text whether practiced for instructional or devotional purposes (Nelson X, 1987).

Some supportive studies related to Qur'anic intervention have been conducted in various settings or subjects. A study amongst university faculty members found the effective role of reading the Qur'an in reducing depression (Mohammadi Laeini MB, Azadbakht M, Hosayni SH, & Pezeshkan P, 2009). Learning Qur'anic recitation is also effective in relieving stress amongst adolescents and youngsters (Taghiloue S, 2009). Another clinical study in Pakistan indicated that the most significant reduction of depression levels amongst hospitalized patients were from those who listened to rhythmic Qur'anic recitation (Rana S.A & North A.C, 2007). While Qur'anic-related interventions show beneficial effects particularly on the psychological aspect in human beings, a Cochrane meta-analysis study indicated that music therapy only provides short-term beneficial effects for people with depression when compared to TAU alone. Furthermore, music therapy and TAU was not more effective than TAU alone for improving QOL (Aalbers S et al., 2017).

Considering the limitation of music therapy above, our study findings propose the notion that involving religious beliefs and faith-based intervention has a greater impact on relieving depressive symptoms and eventually resulting in improved QOL amongst elderly NH residents. Indeed, both groups in our study had reduced depression and increased QOL which may be because there were members in both groups who might be engaged in other Islamic rituals and practices such as daily prayers or *salat*, fasting, reading the Qur'an, or the other daily routine activities such as watching television, counselling, and playing or listening music. These types of activities might affect the measurement outcomes in our study findings. However, it should be underlined that statistically significant difference reductions in depression scores only revealed in the intervention group after the 4-week intervention, whereas the statistically significant difference reductions in depression scores in the control group were revealed at the 8-week post-intervention. This suggests that the intervention group had a faster impact in lessening depressive symptoms than those in the control group.

Noticeably, the Holy Qur'an provides a complete code of living for Muslims. It guides in all moral matters and offers the best values and methods of dealing with all aspects of human life. In the Qur'an, *Surah* Al-Israa:82 states that *"And We send down of the Qur'an that which is a healing and a mercy to those who believe (in Islamic Monotheism and act on it), and it increases the zalimun (polytheists and wrongdoers) in nothing but loss"* (Khan M.M & Al-Hilali M.T, 2011). It encourages believers to refer

the Qur'an as a healing when they face problems. Furthermore, the Holy Qur'an also guides believers to put their trust in Allah's plan (*tawakkul*). *Surah* At-Tawba:51 states, *"Say: Nothing shall ever happen to us except what Allah has ordained for us. He is our Maula (Lord, Helper and Protector). And in Allah let the believers put their trust"* (Khan M.M & Al-Hilali M.T, 2011). This Islamic concept of reliance on God and belief that He has the best intentions for humans more than they are capable of affecting for themselves seems to have an effect in achieving the expected outcomes amongst respondents in this present study.

Besides using the Qur'anic recital listening, a preacher's approach was also applied simultaneously and considered as an additional religious intervention in our study. Previous studies that support this claim revealed the potential roles of religious leaders in influencing certain faith community members on health education and promotion programs, eventually resulting in positive health outcomes (Toni-Uebari & Inusa, 2009). In Islam, the primary source of guidance and advice is also derived from religious leaders, *Imams*, or preachers. Religious leaders who have been trained and briefed by health workers will become powerful agents of social change and are therefore able to change their followers and community's health behaviors (Freij, 2009).

In Nigeria, religious leaders have an important role in taking up reproductive health services (Maiwada, Rahman, Abdurrahaman, Mama, & Ann-Walker, 2016), while in Malaysia, play a part in shaping health polices relating to HIV prevention (Barmania

& Aljunid, 2016). However, these Islamic religious leaders that have great influence on communities are rarely involved in health projects. A religious leader's credibility, strong long-term relationships with followers, as well as excellent communication skills should be considered key factors in influencing the health behavior alterations amongst targeted groups. This is the underlying reason why a preacher with a licensed psychiatric nursing background was selected to deliver the sermon and speech in our study.

In terms of QOL, a systematic review found the stable significant association between depression severity and poorer QOL amongst elderly over time, regardless of which QOL assessment tools were used (Sivertsen, Bjørkløf, Engedal, Selbæk, & Helvik, 2015). This suggests that when individuals suffer from depression, their QOL tends to be lower, and vice versa. So, by relieving depressive symptoms, it would also affect the QOL improvement amongst respondents. As a multidimensional and multilevel concept, generic health-related QOL (HQOL) has a more comprehensive concept than the current individuals' health status due to its covering physical, psychological, social, and environmental domains as the life evaluations, with both positive and negative aspects (Bowling A, 2005; The WHOQOL Group, 1995).

Depression is the most common psychiatric disorders and it significantly impacts on QOL amongst the elderly (Oliveira DAAP et al., 2006b). The robust previous studies found that depression could lessen the QOL in elderly population (Beck, 1970; Carp, 2001; Greenberg S. A, 2012). In our study, we found that the mean and SD score

of elderly NH residents was lower when comparing to a study in India (43.2±4.8 vs 49.7±10.2) (Ganesh KS et al., 2014). This our finding also has a lower mean SD score both in physical, psychological, social relationships, and environment QOL domain when compared with a previous study in Indonesia (Candrawati & Wirasto, 2017). This lower mean SD score might be due to in our study we assessed the QOL amongst elderly who were presenting depressive symptoms. A previous study in Macao found a lower QOL was more strongly associated with a severe depression amongst elderly both in community and NH setting (Kuok K.C.F et al., 2017).

One study analyzed the relationships between depression, distorted thinking and quality of life amongst elderly population, the finding showed that depressed individuals reported lower quality of life than non-depressed individuals (Carissa Y F, 2006). In line with that study, significant negative correlation also emerged between depression and physical, psychological, social quality of life, overall quality of life and overall health amongst the institutionalized elderly population (Rasquinha D.M & Acharya Y.T.B, 2013). While in Turkey, the presence of a chronic disease and low educational status reduce the quality of life and increase the level of depression in the elderly (Akyol et al., 2010).

Furthermore, a study in Thailand found that over two-thirds (68.5%) of Thai elderly had fair level of QOL. Several factors which are significantly correlated with QOL such as gender, age, education, working, income, present illness, drinking, Activity Daily Living (ADL) and participating in elderly club (Hongthong D et al., 2015). Another

study in Brazil revealed that five or more year of education, good self-rated health, no depressive symptoms, and no family dysfunction reported better QOL in both male and female respondents (Campos A.C.V et al., 2014). In India, low score of QOL were related with older age, no schooling, no spouse, nuclear family, low vision, hearing impairment, and had musculoskeletal disorder (Ganesh KS et al., 2014). A study in Indonesia found that 58% of the elderly's QOL was at fair level. In that study also showed the physical, psychological, social, and environment factors were significantly associated with QOL among elderly, whereas the psychological factor became a dominant factor in this result (Rohmah A. I. N et al., 2012).

There are 57 countries with a dominant Muslim population (Bukhari et al., 2004), with more than 1.8 billion or 24% of the total population globally, placing Muslims as the world's second largest religious group in 2015, and also projected to be the fastest growing major religious group in the decades ahead (Pew Research Center, 2017a). Given that Indonesia has the largest Muslim population in the world (Pew Research Center, 2017b) and because of its rapidly growing elderly population, Indonesia should appropriately consider and anticipate the projected problems related to the elderly population growth in the years ahead.

5.2 Conclusions

There are some points can be concluded in this present study as follows:

5.2.1 The socio-demographic characteristics of depressive elderly NH residents in this present study were a majority (76.7%) of respondents were aged <80 years, 76.7% were female, and 91.7% had no partner. A large number (88.3%) of elderly had no or low educational background, and 60% had <3 chronic diseases. More than half (51.7%) of the elderly still received social support from family or the others, with the majority (60%) of support being psychological and/or financial support. In addition, the majority (86.7%) of elderly lived in NH due to compulsion and most of them (61.7%) stayed in a NH for <4 years, with near 2/3 of elderly NH residents (61.7%) having a perceived adequacy of care.

5.2.2 At baseline, overall mean score of depression amongst depressive elderly NH residents in this present study was 7.0 with SD was 2.2. Furthermore, the majority (68.3%) of depressive elderly had mild level of depression in our study.

5.2.3 At baseline, overall mean and SD score for quality of life was 43.2 (4.8) and the majority (71.7%) of depressive elderly had moderate level of QOL.

5.2.4 In both groups, there were statistically significant reductions in depression median scores after 12-week intervention ($p<0.001$). However, in the religious intervention group showed a greater decrease in depressive symptoms after 12-week intervention (27% vs 14%).

5.2.5 The statistically significant difference reductions in depression median scores only revealed in the intervention group after the 4-week intervention. In contrast, in the control group, there was no statistically significant difference reductions in depressive symptoms after the usual 4-week care intervention.

5.2.6 There was statistically significant difference in geriatric depression median scores between groups at the 4th, 8th, and 12nd week post-intervention.

5.2.7 There was statistically significant improvement in QOL mean scores in both intervention and control group at the 12-week post-intervention ($p<0.001$). However, the religious intervention group had a greater improvement in the QOL mean scores than those in the control group after the 12-week intervention (33% vs 22%).

5.2.8 There was statistically significant difference in QOL mean scores between groups at the 4th, 8th, and 12nd week post-intervention.

5.3 Strengths, limitations, and practical recommendations

5.3.1 Strengths and limitations

The first strength of our study is that we provided the 12-week intervention with a 100% follow-up rating on all follow-up sessions with no respondents in either group withdrawing. A second strength was the use of widely validated and reliable questionnaires to screen geriatric depression and measure the QOL in various study

site settings. Third, we randomized the Qur'an verses while delivering the Qur'anic recital listening intervention sessions in order to minimize the bias. Fourth, we chose the preacher with a licensed psychiatric nursing background to deliver the sermons to ensure the study goals were obtained.

Despite these strengths, the limitations included the inability to distinguish between the comparative success of the Qur'anic recitations versus the sermons in reducing depressive symptoms for the intervention group. Future researchers might separate those interventions into three arms (Qur'anic recital listening, preacher's approach, and TAU) in order to reduce the bias. The second limitation is that there were members in the both groups who might be engaged in other Islamic rituals such as daily prayers or *salat*, fasting, reading the Qur'an, etc. which could affect the outcome measurements of this present study. Another limitation is that non-parametric tests to analyze the depression variable were used but it is advisable to use parametric methods to examine the effects on the outcome measures in future studies.

5.3.2 Health policy and practical recommendations

The growing trend of studies on the effect of Qur'an and religious leader approaches in multi-dimensions and functions of human beings indicates that the researchers are paying more attention and interest toward this new basis of complementary therapy in their clinical practice. This is a great opportunity for Islamic

states in the world to involve Muslims religious leaders and to make care-giving policies based on Qur'an issues and then implementing the findings in decision making. The healthcare providers such as psychiatrists, nurses, and psychologists could probably also consider using faith-based therapy as part of their intervention in reducing depression and eventually improving QOL.

REFERENCES

A Imran, A K Azidah, A R Asrenee, & M Rosediani. (2009). Prevalence of Depression and its Associated Factors Among Elderly Patients in Outpatient Clinic of Universiti Sains Malaysia Hospital. *Med J Malaysia, 64*.

Aalbers S, Fusar-Poli L, Freeman RE, SpreenM, Ket JCF, Vink AC, . . . Gold C. (2017). Music therapy for depression (Review). *Cochrane Database of Systematic Reviews*(11). doi:10.1002/14651858.CD004517.pub3.

Abdul Manaf MR, Mustafa M, Abdul Rahman MR, Yusof KH, & Abd Aziz NA. (2016). Factors Influencing the Prevalence of Mental Health Problems among Malay Elderly Residing in a Rural Community: A Cross-Sectional Study. *PLoS ONE, 11*(6), 1-12. doi:10.1371/journal.pone.0156937

Akyol, Y., Durmuş, D., Doğan, C., Bek, Y., & Cantürk, F. (2010). Quality of Life and Level of Depressive Symptoms in the Geriatric Population. *Turk J Rheumatol, 25*, 165-173.

Al-Jawad M, Rashid AK, & Narayan KA. (2007). Prevalence of undetected cognitive impairment and depression in residents of an elderly care come. *Med J Malaysia, 62*(5), 375-379.

Al-Tawil A. (1999). *Fannu al-Tartil wa 'Ulumuhu*. Medina: Mujamma' al-Malik Fahd.

Alcala V, Camacho M, & Giner J. (2007). Affections and depression in the elderly. *Psicothema, 19*(1), 49-56.

Alexopoulos GA, Abrams RC, Young RC, & Shamoian CA. (1988). Cornell scale for depression in dementia. *Biol Psych, 23*, 271-284.

Amanda Leggett, Steven H. Zarit, Ngoc H. Nguyen, Chuong N. Hoang, & Ha T. Nguyen. (2012). The Influence of Social Factors and Health on Depressive Symptoms and Worry: A Study of Older Vietnamese Adults. *Aging Ment Health, 16*(6), 780–786. doi:10.1080/13607863.2012.667780.

American Psychiatric Association. (2013). *Diagnosis and Statistical Manual of Mental Disorders* (Fifth ed.). Washington DC: American Psychiatric Association,.

American Psychological Association (APA). (2016). Depression. Retrieved from http://www.apa.org/topics/depression/

Anxiety and Depression Association of America (ADAA). (August 2016). Depression. Retrieved from https://www.adaa.org/understanding-anxiety/depression

Ariyo AA, Haan M, & Tangen CM. (2000). Depressive symptoms and risks of coronary heart disease and mortality in elderly Americans. *Circulation, 102*, 1773-1779.

Badan Pengawasan Keuangan dan Pembangunan (BPKP). (1998). *Undang-Undang Republik Indonesia Nomor 13 Tahun 1998 Tentang Kesejahteraan Lanjut Usia*. Jakarta Retrieved from www.bpkp.go.id/uu/filedownload/2/45/438.bpkp.

Barmania, S., & Aljunid, S. M. (2016). Navigating HIV prevention policy and Islam in Malaysia: contention, compatibility or reconciliation? Findings from in-depth interviews among key stakeholders. *BMC Public Health, 16*(524), 1-8. doi:10.1186/s12889-016-3247-y

Bech P, Rasmussen NA, Raabaek-Olsen L, Noerholm V, & Abildgaard W. (2001). The sensitivity and specificity of the Major Depression Inventory, using the Present State Examination as the index of diagnostic validity. *J Affect Disord, 66*(2-3), 159.

Beck, A. T. (1970). The core problem in depression: the cognitive Triad. *Science and Psychoanalysis, 17*.

Beck AT, Ward CH, Mendelson M, Mock J, & Erbaugh J. (1961). An inventory for measuring depression. *Arch Gen Psychiatry, 4*, 561-571.

Bernardi L, Porta C, Casucci G, Balsamo R, Bernardi NF, Fogari R, & Sleight P. (2009). Dynamic interactions between musical, cardiovascular, and cerebral rhythms in humans. *Circulation, 30*(119), 3171-3180. doi:10.1161/CIRCULATIONAHA.108.806174

Blazer D, Hughes DC, & George LK. (1987). The epidemiology of depression in an elderly community population. *Gerontologist, 27*, 281-287.

Blazer D.N. (2000). Psychiatry and the oldest old. *Am J Psychiatry, 157*, 1915–1924.

Blazer, D. G. (2009). Depression in late life: Review and commentary. *FOCUS, 7*(1), 118-136.

Blazer DG. (2003). Depression in late life: review and commentary. *J Gerontol Med Sci, 56A*, 249–265.

Blumenthal, J. A., Emery, C. F., Madden, D. J., George, L. K., Coleman, R. E., Riddle, M. W., . . . Williams, R. S. (1989). Cardiovascular and behavioral effects of aerobic exercise training in healthy older men and women. *Journal of Gerontology: Medical Sciences, 44*(5), M147-M157.

Borson S, & Fletcher P. M. (1996). *Mood disorders*. Oxford: Oxford University.

Borza T, Engedal K, Bergh S, Barca M.L, Benth J.S, & Selbæk G. (2015). Research report: The course of depressive symptoms as measured by the Cornell scale for depression in dementia over 74 months in 1158 nursing home residents. *Journal of Affective Disorders, 175*, 209–216. doi:10.1016/j.jad.2014.12.053

Bowling A. (2005). *Measuring Health* (3 ed.). Maidenhead: Open University Press.

BPS - Statistics Indonesia. (2010a). Indonesia-Population Distribution. Retrieved from http://sp2010.bps.go.id/index.php/site?id=34&wilayah=DI-Yogyakarta

BPS - Statistics Indonesia. (2010b). The Number and Distribution of Population in DI Yogyakarta Province. Retrieved from http://sp2010.bps.go.id/index.php/site?id=34&wilayah=DI-Yogyakarta

BPS - Statistics Indonesia. (2010c). *Population by Age Group and Religion*. Jakarta Retrieved from http://sp2010.bps.go.id/index.php/site/tabel?search-tabel=Penduduk+Menurut+Kelompok+Umur+dan+Agama+yang+Dianut&tid=320&search-wilayah=Indonesia&wid=0000000000&lang=id.

BPS - Statistics Indonesia. (2010d). Population by Age Group and Religion in DI Yogyakarta Province. Retrieved from http://sp2010.bps.go.id/index.php/site/tabel?tid=320&wid=3400000000

BPS - Statistics Indonesia. (2010e). Population by Age Group and Religion in Indonesia. Retrieved from http://sp2010.bps.go.id/index.php/site/tabel?tid=320&wid=0

BPS - Statistics Indonesia. (2016a). Life Expectacy Rate by Gender and Province, 2010-2014. Retrieved from http://www.bps.go.id/linkTableDinamis/view/id/1114

BPS - Statistics Indonesia. (2016b). *Statistik Penduduk Lanjut Usia 2015*. (2086-1036). Jakarta: Badan Pusat Statistik Retrieved from

https://www.bps.go.id/website/pdf_publikasi/Statistik-Penduduk-Lanjut-Usia-2015--.pdf.

Bradburn. N.M, & Caplovitz. D. (1965). *Reports on happiness*. Retrieved from Chicago, IL:

Brown D.W. (2009). *Islamic Law A New Introduction to Islam* (Second ed.). Wesr Sussex: Wiley-Blackwell.

Bukhari, A., Rafique, M., & Aziz, R. (2004). *The Role of Religious Leaders in the Prevention of HIV/AIDS*. Pakistan: UNICEF-Ministry of Health of Pakistan-National AIDS Control Program Retrieved from http://www.nacp.gov.pk/library/reports/Advocacy%20&%20Communication/Role_of_Religious_Leaders%20(%20English%20).pdf.

Bussarawan P.T, & John K. (2015). Data mapping on ageing in Asia and the Pacific. Retrieved from https://www.researchgate.net/profile/Bussarawan_Teerawichitchainan/publication/276204522_Data_mapping_on_ageing_in_Asia_and_the_Pacific/links/5552195b08ae980ca606a8a7.pdf

Campos A.C.V, Ferreira E.F, Vargas A.M.D, & Albala C. (2014). Aging, Gender and Quality of Life (AGEQOL) study: factors associated with good quality of life in older Brazilian community-dwelling adults. *Health and Quality of Life Outcomes, 12*(166), 1-11.

Candrawati, O., & Wirasto, R. T. (2017). Risk Factors of Stroke Survivors' Quality of Life. *Jurnal Kedokteran dan Kesehatan Indonesia, 8*(3), 176-182. doi:10.20885/JKKI.Vol8.Iss3.art6

Capriotti T. (1995). Unrecognized depression in the elderly: a nursing assessment challenge. *Medsurg Nurs, 4*(1), 47-54.

Carissa Y F. (2006). *Older Adults and Depression : the Relationships Between Distorted Thinking, Quality of Life and Depressive Themes.* (Doctoral PCOM Psychology Dissertations), Philadelphia College of Osteopathic Medicine. (46)

Carp, L. (2001). Depression in the light of current scociety, human psyche Ecology. *Chisinau*, 34-37.

Carr A.J, & Higginson I.J. (2001). Measuring quality of life: Are quality of life measures patient centred? *British Medical Journal (BMJ), 322*, 1357–1360.

Centers for Disease Control and Prevention (CDC). (2017). Chronic Disease Overview. Retrieved from https://www.cdc.gov/chronicdisease/overview/index.htm

Chan, M. F., Chan, E. A., & Mok, E. (2010). Effects of music on depression and sleep quality in elderly people: A randomised controlled trial. *Complementary Therapies in Medicine, 18*, 150-159.

Chan, R., & Joseph, S. (2000). Dimensions of personality, domains of aspiration, and subjective well-being. *Personality and Individual Differences, 28*, 347-354.

Chiang, K.-J., Chen, T.-H., Hsiu-TsuHsieh, Tsai, J.-C., Ou, K.-L., & Chou, K.-R. (2015). One-Year Follow-Up of the Effectiveness of Cognitive Behavioral Group Therapy for Patients' Depression: A Randomized, Single-Blinded, Controlled Study. *Te ScientificWorld Journal*, 1-11. doi:dx.doi.org/10.1155/2015/373149

Chong MY, Chen CC, Tsang HY, Yeh TL, Chen CS, KLee YH, . . . Lo HY. (2001). Community Study of Depression in Old Age in Taiwan. *British Journal of Psychiatry, 178*, 29-35.

Cinnirella M, & Loewenthal KM. (1999). Religious and ethnic group influences on beliefs about mental illness: a qualitative interview study. *Br J Med Psychol, 72*(Pt 4), 505-524.

Cody, R. A., & Drysdale, K. (2013). The effects of psychotherapy on reducing depression in residential aged care: A meta-analytic review. *Clinical Gerontologist, 36*(1), 46-69. doi:10.1080/07317115.2012.731474

Cronin-Stubbs D, De Leon CF, Beckett LA, Filed TS, Glynn RJ, & Evans DA. (2000). Six-year effect of depressive symptoms on the course of physical disability in community-living older adults. *Arch of Int Medicine, 160*, 3074-3080.

Cuijpers, P., Karyotaki, E., Pot, A. M., Park, M., & Reynolds, C. F. (2014). Managing depression in older age: psychological interventions. *Maturitas, 79*(2), 106-109. doi:10.1016/j.maturitas.2014.05.027.

Cuijpers, P., & Schoevers, R. A. (2004). Increased mortality in depressive disorders: a review. *Current Psychiatry Reports, 6*, 430-437.

Cuijpers, P., & Schoevers, R. A. (2004). Increased mortality in depressive disorders: a review. *Current Psychiatry Reports, 6*, 430–437.

Diener E, & Lucas R. (1999). *Personality and Subjective Well-being* (D. Kahneman, E. Diener & N. Schwarz ed.). New York Russell Sage Foundation.

Diener, E. F., Lucas, R. E., Suh, E. M., & Oishi, S. (1999). Cross-cultural variations in predictors of life satisfaction: Perspectives from needs and values. . *Personality and Social Psychology Bulletin, 25*(8), 980-990.

Diener. E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 543-575.

Djernes JK. (2006). Prevalence and predictors of depression in populations of elderly: a review. *Acta Psychiatr Scand, 113*(5), 372-387.

Eisa Y. Ghazwani, & Hassan M. Al-Musa. (2013). Depression among Elderly Subjects Attending Primary Health Care Centers in Abha City, Kingdom of Saudi Arabia. *Middle East Journal of Family Medicine, 11*(7), 4-16.

El-Khouly E.M.A. (1982). *Islam and the Pillars of its Faith*. London: Longman.

Erdem K, & Apay S.E. (2014). A Sectional Study: The Relationship Between Perceived Social Support and Depression in Turkish Infertile Women. *International Journal of Fertility & Sterility, 8*(3), 303–314.

Erkkila J, Punkanen M, Fachner J, Ala-Ruona E, Pontio I, Tervaniemi M, . . . Gold C. (2011). Individual music therapy for depression; randomised controlled trial. *The British Journal of Psychiatry, 199*, 132-139. doi:10.1192/bjp.bp.110.085431

Esmayel EM, Eldarawy MM, Hassan MM, Mahmoud AA, & Mohamed SY. (2013). Mental Health Problems and Sociodemographic Correlates in Elderly Medical Inpatients in a University Hospital in Egypt. *Current Gerontology and Geriatrics Research*, 1-4.

Fournier JC, DeRubeis RJ, Hollon SD, Dimidjian S, Amsterdam JD, Shelton RC, & Fawcett J. (2010). Antidepressant Drug Effects and Depression Severity A Patient-LevelMeta-analysis. *Journal of the American Medical Association, 303*(1), 47–53. doi:10.1001/jama.2009.1943

Freij, L. S. (2009). *Muslim religious leaders as partners in fostering positive reproductive health and family planning behaviors in Yemen: A best practice*. Washington, DC: USAID.

Fremont P. (2004). Clinical aspects of the depression in the elderly. *Psychol Neuropsychiatr Vieil, 2*(Suppl 1), S19-S27.

Fukui H, & Toyoshima K. (2008). Music facilitate the neurogenesis, regeneration and repair of neurons. *Medical Hypotheses, 71*, 765-769. doi:10.1016/j.mehy.2008.06.019

Galhardo VAC, Mariosa MAS, & Takata JPI. (2010). Depressão e perfis sociodemográfico e clínico de idosos institucionalizados sem déficit cognitivo. *Rev Med Minas Gerais, 20*, 16-21.

Ganesh KS, Anindo M, & Pavithra G. (2014). Quality of Life (QOL) and Its Associated Factors Using WHOQOL-BREF Among Elderly in Urban Puducherry, India. *Journal of Clinical and Diagnostic Research, 8*(1), 54-57. doi:10.7860/JCDR/2014/6996.3917

Gartlehner, G., Hansen, R., Morgan, L., Thaler, K., Lux, L., Van Noord, M., & Lohr, K. (2011). *Second-generation antidepressants in the pharmacologic treatment of adult depression: An update of the 2007 comparative effectiveness review* Rockville, MD: Agency for Healthcare Research and Quality (US) Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK83442/.

Gilbody S, Richards D, Brealey S, & Hewitt C. (2007). Screening for depression in medical settings with the Patient Health Questionnaire (PHQ): a diagnostic meta-analysis. *J Gen Intern Med, 22*(11), 1596-1602.

Giri Smith, Kumar Aditya, Sharma Santosh Raj, Timalsina Santosh, & Yadav Vijay. (2009). *High Prevalence of Depression and Anxiety Symptoms among Hospitalized Geriatric Medical Inpatients of Nepal: A study from a Tertiary Level Hospital of Nepal.* Institute of Medicine, Tribhuvan University Teaching Hospital, Maharajgunj Kathmandu, Nepal, Nepal.

Glock C.Y, & Stark R. (1965). *Religion and Society in Tension*. London: Rand Mc Nally & Company.

Greenberg S. A. (2012). The Geriatric Depression Scale (GDS). *Try This: Best Practices in Nursing Care to Older Adults*.

Grewe O, Nagel F, Kopiez R, & Altenmüller E. (2005). How does music arouse “chills”? Investigating strong emotions, combining psychological, physiological, and psychoacoustical methods. *Ann NY Acad Sci, 1060*, 446-449.

Hall, S., Opio, D., Dodd, R. H., & Higginson, I. J. (2011). Assessing quality-of-life in older people in care homes. *Age and Ageing, 40*, 507-512. doi:10.1093/ageing/afr027

Hamilton M. (1960). A rating scale for depression. *Neurol Neurosurg Psychiatry, 23*, 56-62.

Han KT, Park EC, Kim JH, Kim SJ, & Park S. (2014). Is marital status associated with quality of life? *Health Qual Life Outcomes, 12*(109).

Hassan R. (2007). On Being Religious: Pattern of religious Commitment in Muslim Societies. *The Muslim World, 97*(42).

Headey. B. (1999). Old age is not downhill: The satisfactions and well-being of older australians. *Australasian Journal of Ageing, 18*(3), 32-37.

Hendricks, J., & Turner, H. B. (1988). Social dimensions of mental illness among rural elderly populations. *International Journal of Aging and Human Development, 26*, 169-189.

Holland, R., Smith, R. D., Harvey, I., Swift, L., & Lenaghan, E. (2004). Assessing quality of life in the el de rly: a direct com parisonof the EQ-5D and AQoL. *Health Econ, 13*, 793-805. doi:10.1002/hec.858

Hongthong D, Somrongthong R, & Ward P. (2015). Factors Influencing the Quality of Life (Qol) Among Thai Older People in a Rural Area of Thailand. *Iran J Public Health, 44*(4), 479-485.

Huang BY, Comoni-Huntley J, Hays JC, Huntley RR, Galanos AN, & Blazer DG. (2000). Impact of depressive symptoms on hospitalization risk in community dwelling older persons. *J of Am Geriatrics Society*, 1279-1284.

Hubert W, Moller M, & Nieschlag E. (1989). Stress reactions in response to the procedure of LHRH tests as measured by salivary and serum cortisol and psychological variables. *Horm Res, 32*, 198–202.

Hung, W. W., J.S. S Ross, K. Boockvar, & A.L. Siu. (2011). Recent Trends in Chronic Disease, Impairment and Disability among Older Adults in the United States. *BMC Geriatrics, 11*(47), 1-12.

Husebo B.S, Flo E, Aarsland D, Selbaek G, Testad I, Gulla C, . . . Ballard C. (2015). COSMOS—improving the quality of life in nursing home patients: protocol for an effectiveness-implementation cluster randomized clinical hybrid trial. *Implementation Science, 10*(131). doi:10.1186/s13012-015-0310-5

Imai, H., Furukawa, T. A., Okumiya, K., TaizoWada, Fukutomi, E., Sakamoto, R., . . . Matsubayashi, K. (2015). Postcard intervention for depression in community-dwelling older adults: A randomised controlled trial. *Psychiatry Research, 229*, 545–550.

Imran A, Azidah A K, Asrenee A R, & Rosediani M. (2009). Prevalence of Depression and its Associated Factors Among Elderly Patients in Outpatient Clinic of Universiti Sains Malaysia Hospital. *Med J Malaysia, 64*(2), 134-139.

Ingold BB, Yersin B, Wietlisbach V, Burckhardt P, Bumand B, & Bula CJ. (2000). Characteristics associated with inappropriate hospital use in elderly patients admitted to a general internal medicine service. *Aging & Mental Health, 12*, 430-438.

Jonas BS, & Mussolino ME. (2000). Symptoms of depression as prospective risk factor for stroke. *Psychosomatic Medicine, 62*, 463-471.

Jongenelisa K, Pota A.M, Eissesc A.M.H, A.T.F., B., Kluiterc H, & Ribbe M.W. (2004). Prevalence and risk indicators of depression in elderly nursing home patients: the AGED study. *Journal of Affective Disorders, 83*, 135–142.

Joyce CRB, Hickey A, McGee HM, & O'Boyle CA. (2003). A theory based method for the evaluation of individual quality of life: The SEIQoL. *Qual Life Res 12* 275–280.

Katz I.R. (1993). Drug treatment of depression in the frail elderly; discussion of the NIH consensus development conference on the diagnosis and treatment of depression in late life. *Psychofarmacol. Bull. , 29*(1), 101-108.

Kendler KS, Gardner CO, & Prescott CA. (2002). Toward a comprehensive developmental model for major depression in women. *Am J Psychiatry, 159*, 1133-1145.

Kendler KS, Gardner CO, & Prescott CA. (2006). Toward a comprehensive developmental model for major depression in men. *Am J Psychiatry, 163*, 115-124.

Kendler KS, Thornton LM, & Prescott CA. (2001). Gender differences in the rates of exposure to stressful life events and sensitivity to their depressogenic effects. *Am J Psychiatry, 158*, 587-593.

Khan M.M, & Al-Hilali M.T. (2011). *Interpretation of the meanings of the Noble Qur'an in the English language* (Revised Edition ed.). Riyadh, Kingdom of Saudi Arabia: Darussalam.

Kim J-I, Choe M-A, & Chae YR. (2009). Prevalence and Predictors of Geriatric Depression in Community-Dwelling Elderly. *Asian Nursing Research, 3*(3), 121-129.

Kirschbaum C, & Hellhammer DH. (1994). Salivary cortisol in psycho- neuroendocrine research: Recent developments and applications. *Psychoneuroendocrinology, 19*, 313–333.

Kohn R, & Epstein-Lubow G. (2006). Course and outcomes of depression in the elderly. *Curr Psychiatry Rep, 8*(1), 34-40.

Kørner A, L. L., Abelskov K, Gulmann N, Marie Brodersen A, & Wedervang-Jensen T et al. (2006). The Geriatric Depression Scale and the Cornell Scale for Depression in Dementia: A validity study. *Nord J Psychiatry, 60*(5), 360-364.

Kosulwit L. (2012). Mental health status, including depression and quality of life among members of an elderly club in suburban Bangkok. *J Med Assoc Thai, 95*(Suppl 1: S92-101).

Kozma, A., & Stones, M. J. (1983). Predictors of happiness. *Journal of Gerontology, 38*(5), 626-628.

Kozma, A., Stones, M. J., & McNeil, J. K. (1991). *Psychological well-being in later life*. Toronto, Canada: Butterworths.

Krause N. (1993). Race differences in life satisfaction among aged men and women. *Journal of Gerontology, 48*(5), S235-S244.

Krishnan KRR. (2002). Biological risk factors in late life depression. *Biol Psychiatry, 52*, 185–192.

Kroenke K, Spitzer RL, & Williams JB. (2003). The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care, 41*(11), 1284-1292.

Kuok K.C.F, Li L, Yu-Tao Xiang, Nogueira B.O.C.L, Ungvari G.S, Ng C.H, . . . Meng Li-Rong. (2017). Quality of life and clinical correlates in older adults living in the

community and in nursing homes in Macao. *PSYCHOGERIATRICS, 17*, 194-199. doi:10.1111/psyg.12214

Lambert G, Johansson M, Agren H, & Friberg P. (2000). Reduced brain norepinephrine and dopamine release in treatment-refractory depressive illness: evidence in support of the catecholamine hypothesis of mood disorders. *Arch Gen Psychiatry, 57*, 787-793.

Lampert, M. A., & Rosso, A. L. P. (2015). Depression in elderly women resident in a long-stay nursing home. . *Dementia & Neuropsychologia, 9*(1), 76-80.

Lan Cong, Ping Dou, Daochun Chen, & Lin Cai. (2015). Depression and Associated Factors in the Elderly Cadres in Fuzhou, China: A Community-based Study. *International Journal of Gerontology, 9*, 29-33.

Larson R. (1978). Thirty years of research on the subjective well-being of older americans. *Journal of Gerontology, 33*(1), 109-125.

Lee CC, Czaja SJ, & Schulz R. (2010). The moderating influence of demographic characteristics, social support, and religious coping on the effectiveness of a multicomponent psychosocial caregiver intervention in three racial ethnic groups. *J Gerontol B Psychol Sci Soc Sci, 65B*, 185-194.

Lesher E.L. (1986). Validation of Geriatric Depression Scale among nursing home residents. *Clin. Gerontol, 4*, 21-28.

Liang, J., & Warfel, B. L. (1983). Urbanism and life satisfaction among the aged. *Journal of Gerontology, 38*(1), 97-106.

Linder S.M, Rosenfeldt A.B, Bay R.C, Sahu K, Wolf S.L, & Alberts J.L. (2015). Improving Quality of Life and Depression After Stroke Through Telerehabilitation. *American Journal of Occupational Therapy, 69*(2), 1-10.

Lok N, Lok S, & Canbaz M. (2017). The effect of physical activity on depressive symptoms and quality of life among elderly nursing home residents: Randomized controlled trial. *Archives of Gerontology and Geriatrics, 70*, 92-98. doi:10.1016/j.archger.2017.01.008

Lyness J, Caine E, King D, Conwell Y, Duberstein P, & Cox C. (2002). Depressive disorders and symptoms in older primary care patients. *Am J Geriatr Psychiatry, 10*, 275–282.

Lyness JM, Heo M, Datto CJ, Ten Have TR, Katz IR, & Drayer R. (2006). Outcomes of minor and subsyndromal depression among elderly patients in primary care settings. *Ann Intern Med, 144*(7), 496-504.

Maddox G. L. (1994). *Sociology of aging* (W. R. Hazzard, E. L. Bierman, J. P. Blass, W. H. Ettinger, Jr., J. B. Halter, & R. Andres ed.). New York, NY: McGraw-Hill, Inc.

Mahwati Y. (2017). The Relationship between Spirituality and Depression Among the Elderly in Indonesia. *Makara J. Health Res, 21*(1), 13-19. doi:10.7454/msk.v21i1.6206

Maiwada, A. M., Rahman, N. A. A., Abdurrahaman, S., Mama, N. M., & Ann-Walker, J. (2016). The Islamic Religious Leaders as Health Promoters: Improving Maternal Health in Selected Communities of Zamfara State, Nigeria. *Journal of Reproduction and Infertility, 7*(1), 8-14. doi:10.5829/idosi.jri.2016.7.1.102118

Majdi MR, Ghayour-Mobarhan M, Salek M, Shakeri MT, & Mokhber N. (2011). Prevalence of Depression in an Elderly Population: A Population-Based Study in Iran. *Iranian Journal of Psychiatry and Behavioral Sciences, 5*, 17-21.

Mansbach, W. E., Mace, R. A., & Clark, K. M. (2015). The brief anxiety and depression scale (bads): A new instrument for detecting anxiety and depression in long-term care residents. *International Psychogeriatrics, 27*(4), 673-681. doi:10.1017/S1041610214002397

Martinelli A.M. (1999). An explanatory model of variables influencing health promotion behaviors in smoking and nonsmoking college students. *Public Health Nursing, 16*(4), 263-269.

McCamish-Svensson C, Samuelsson, G., Hagberg, B., Svensson, T., & Dehlin, O. (1999). Social relationships and health as predictors of life satisfaction in advanced old age: Results from a swedish longitudinal study. *International Journal of Aging and Human Development, 48*(4), 301-324.

McGivney S.A, Mulvihill M.M, & Taylor B. (1994). Validating the GDS depression screen in the nursing home. *J. Am. Geriatr Soc, 42*, 490-492.

McKee, K. J., Houston, D. M., & Barnes, S. (2002). Methods for Assessing Quality of Life and Well-Being in Frail Older People. *Psychology and Health, 17*(6), 737-751. doi:10.1080/0887044021000054755

Meeks S, Van Haitsma K, Schoenbachler B, & Looney S.W. (2015). BE-ACTIV for Depression in Nursing Homes: Primary Outcomes of a Randomized Clinical Trial. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences,, 70*(1), 13-23. doi:10.1093/geronb/gbu026

Mitchell AJ, & Subramaniam H. (2005). Prognosis of depression in old age compared to middle age: A systematic review of comparative studies. *Am J of Psychiatry Research, 162*, 1588-1601.

Mohammadi Laeini MB, Azadbakht M, Hosayni SH, & Pezeshkan P. (2009). Knowledge and attitudes of some faculty members of Mazandaran university of medical sciences about the Quran, 2007 to 2008. . *Mazandaran Univ Med Sci J, 1*(69), 73-78.

Mokhtaria M, Nezakatalhossainib M, & Esfarjani F. (2013). The effect of 12-week pilates exercises on depression and balance associated with falling in the elderly. *Procedia - Social and Behavioral Sciences, 70*, 1714 – 1723. doi:10.1016/j.sbspro.2013.01.246

Mroczek D. K, & Kolarz C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology, 75*(5), 1333-1349.

Munawwir A.M. (1997). *Al Munawwir, Kamus Arab-Indonesia (Al Munawwir, Arabic-Indonesian dictionary)*. Surabaya: Pustaka Progresif.

Murata C, Kondo K, Hirai H, Ichida Y, & Ojima T. (2008). Association between depression and socio-economic status among community-dwelling elderly in Japan: The Aichi Gerontological Evaluation Study (AGES). *Health & Place, 14*, 406-414. doi:10.1016/j.healthplace.2007.08.007

Murray CJL, & Lopez AD. (1997). Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. *Lancet, 349*, 1436–1442.

Natan, B. M. (2008). Perceptions of nurses, families, and residents in nursing homes concerning residents' needs. *International Journal of Nursing Practice*(14), 195–199. doi:10.1111/j.1440-172X.2008.00687.x

National Institute of Mental Health. (2015). *Depression*. Bethesda, MD: NIH Publication : U.S. Government Printing Office.

National Institute of Mental Health. (May 2016). Depression. Retrieved from https://www.nimh.nih.gov/health/topics/depression/index.shtml

Nelson X. (1987). *The Art of Reciting the Qur'an*.

Nemeroff CB. (1996). The corticotropin-releasing factor (CRF) hypothesis of depression: new findings and new directions. *Mol Psychiatry, 1*, 336-342.

Nemeroff CB, Owens MJ, Bissette G, Andorn AC, & Stanley M. (1988). Reduced corticotropin releasing factor binding sites in the frontal cortex of suicide victims. *Arch Gen Psychiatry, 45*, 577-579.

Nemeroff CB, Widerlov E, Bissette G, Walleus H, Karlsson I, & Eklund K. (1984). Elevated concentrations of CSF corticotropin-releasing factor-like immunoreactivity in depressed patients. *Science, 226*, 1342-1344.

Nutt DJ. (2006). The role of dopamine and norepinephrine in depression and antidepressant treatment. *J Clin Psychiatry, 67*(Suppl. 6), 3-8.

Ohira T, Iso H, & Sankai T. (2001). Prospective study of depressive symptoms and risk of stroke among Japanese. *Stroke, 32*, 903-908.

Oliveira DAAP, Gomes L, & Oliveira LF. (2006a). Prevalência de depressão em idosos que freqüentam centros de convivência. *Rev Saúde Pública, 40*, 734-736.

Oliveira DAAP, Gomes L, & Oliveira LF. (2006b). Prevalência de depressão em idosos que freqüentam centros de convivência. *Rev Saúde Pública, 40*, 734-736.

Olusina A.K, & Ohaeri J.U. (2003). Subjective quality of life of recently discharged Nigerian psychiatric patients. *Soc Psychiatry Psychiatr Epidemiol, 38*, 707-714. doi:10.1007/s00127-003-0691-7

Palsson S, Ostling S, & Skoog I. (2001). The incidence of first onset depression in a population followed from the age of 70 to 85. *Psychol Med, 31*, 1159–1168.

Pargament K.I. (1997). *The psychology of religion and coping*. New York: The Guilford Press.

Pargament K.I, & Mahoney A. (2002). *Spirituality: discovering and conserving the sacred*. New York: Oxford University Press.

Pargament KI, Tarakeshwar N, Ellison CG, & Wulff KM. (2001). Religious Coping Among The Religious: The Relationship Between Religious Coping and Well-Being in a

National Sample of Presbyterian Clergy, Elders, and Members. *J Scientific Study of Religion, 40*, 497-513.

Patricia L R, Mieta H, Carmen B, & Mircea T. A. (2010). The emergence of depression in the elderly. *Procedia Social and Behavioral Sciences 2*, 4966–4971. doi:10.1016/j.sbspro.2010.03.804

Peacock, J. L., & Peacock, P. J. (2011). *Oxford Handbook of Medical Statistics*. New York, US: Oxford University Press.

Penninx BW, Deeg DJ, Van Eijk JT, Beekman AT, & Gurainik JM. (2000). Changes in depression and physical decline in older adults: a longitudinal perspective. *J of Affect Dis, 61*, 1-12.

Peppers, L. G. (1976). Patterns of leisure and adjustment to retirement. *The Gerontologist, 16*(5), 441-446.

Perrin, E. C., Newacheck, P., Pless, I. B., Drotar, D., Gortmaker, S. L., Leventhal, J., . . . Weitzman, M. (1993). Issues Involved in the Definition and Classification of Chronic Health Conditions. *Pediatrics, 91*(4), 787-793.

Pew Research Center. (2008). *US Religious Landscape Survey. Religious Affilition: Diverse and dynamic*. Retrieved from

Pew Research Center. (2017a). The Changing Global Religious Landscape. Retrieved from http://www.pewforum.org/2017/04/05/the-changing-global-religious-landscape/

Pew Research Center. (2017b). The Future of World Religions: Population Growth Projections, 2010-2050. *Religious composition by country and territory, 2010 and 2050.* Retrieved from http://www.pewforum.org/files/2015/04/PF_15.04.02_ProjectionsAppendixC.pdf

Polzer R.L, & Miles M.S. (2007). Spirituality in African Americans with diabetes: self-management through a relationship with God. *Qual Health Res, 17*(2), 176-188. doi:10.1177/1049732306297750

Pramesona, B. A., & Taneepanichskul, S. (2018). Factors Influencing the Quality of Life among Indonesian Elderly: A Nursing Home-Based Cross-Sectional Survey. *Journal of Health Research, 32*(5).

R. Roswiyani, Monty P. Satiadarma, Jan Spijker, & Cilia L.M. Witteman. (2014). *Social Art Activities in a Nursing Home: A Pilot Study in Indonesia.* Radboud University.

Raadsheer FC, Hoogendijk WJ, Stam FC, Tilders FJ, & Swaab DF. (1994). Increased numbers of corticotropin releasing hormone expressing neurons in the hypothalamic paraventricular nucleus of depressed patients. *Neuroendocrinology, 60*, 436-444.

Radloff LS. (1977). The CES-D Scale. A self-report depression scale for research in the general population. *Appl Psychol Measurement, 1*, 385.

Rana S.A, & North A.C. (2007). The Effect of Rhythmic Quranic Recitation on Depression. *Journal of Behavioural Sciences, 17*(1-2).

Ranjan S, Bhattarai A, & Dutta M. (2013). Prevalence of depression among elderly people living in old age home in the capital city Kathmandu. *Health Renaissance, 11*(3), 213-218.

Rashid A, Manan A, & Rohana S. (2010). Depression Among The Elderly Malays Living In Rural Malaysia. *The Internet Journal of Public Health, 1*(2), 1-10.

Rasquinha D.M, & Acharya Y.T.B. (2013). Relationship between Depression and Quality of Life among Institutionalised Elderly. *IJSR - International Journal Of Scientific Research, 2*(10), 1-3.

Reich, J. W., Zautra, A. J., & Hill, J. (1987). Activity, event transactions, and quality of life in older adults. *Psychology and Aging, 2*(2), 116-124.

Reynolds CF. (1995). Recognition and differentiation of elderly depression in the clinical setting. *Geriatrics 50*((Suppl 1): S6-15).

Rinaldi P, Mecocci P, Benedetti C, Ercolani S, Bregnocchi M, & Menculini G. (2003). Validation of the five-item geriatric depression scale in elderly subjects in three different settings. *J Am Geriatr Soc, 51*(5), 694-698.

Rohmah A. I. N, Purwaningsih, & Bariyah K. (2012). Kualitas Hidup Lanjut Usia. *Jurnal Keperawatan, 3*(2), 120-132.

Rotter J.B. (1990). Internal versus external control of reinforcement. *American psychologist, 45*(4), 5.

Rozaq A. (2008). *Konsep tawakkal menurut imam Al Ghazali dan relevansinya dengan kesehatan mental (the concept of tawakkal according to imam Al Ghazali and*

the correlation with mental health). (Bachelor), Institut Agama Islam Negeri Walisongo, Semarang.

Salim O C, Sudharma N. I, & Hidayat A. (2007). Validitas dan reliabilitas World Health Organization Quality of Life-BREF untuk mengukur kualitas hidup lanjut usia. *Universa Medicina, 26*(1), 27-38.

Santos, C. M. d., Hugol, F. N., Leal, A. F., & Hilgert, J. B. (2013). Comparison of two assessment instruments of quality of life in older adults. *Rev Bras Epidemiol, 16*(2), 328-337.

Scobie J. (2015). *Global AgeWatch Index 2015: Insight report*. Retrieved from London UK: http://reports.helpage.org/global-agewatch-index-2015-insight-report.pdf

Setiati S, Harimurti K, Dewiasty E, & Istanti R. (2011). Predictors and Scoring System for Health-related Quality of Life in an Indonesian Community - Dwelling Elderly Population. *Acta Med Indones-Indones J Intern Med, 43*(4).

Shafter AB. (2006). Meta-analysis of the factor structures of four depression questionnaires: Beck, CES-D, Hamilton, and Zung. *J Clin Psychol, 62*(1), 123-146.

Sheikh JI, & Yesavage JA. (1986). Geriatric Depression Scale (GDS): Recent Evidence and Development of a Shorter Version. *Clinical Gerontologist, 5*, 165-173.

Shepard W. (2009). *Introducing Islam*. London: Routledge.

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

Sivertsen, H., Bjørkløf, G. H., Engedal, K., Selbæk, G., & Helvik, A.-S. (2015). Depression and Quality of Life in Older Persons: A Review. *Dement Geriatr Cogn Disord, 40*, 311–339. doi:10.1159/000437299

Skevington, S. M., Lotfy, M., & O'Connell, K. A. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. A Report from the WHOQOL Group. *Quality of Life Research, 13*, 299-310.

Smith W.C. (1963). *The meaning of religion: A new approach to the religious traditions of mankind*. New York: Macmillan.

Souza MCMR, & Palucci TD. (2011). Análise da sintomatologia depressiva em Idosas Institucionalizadas. *Enferm Cent O Min, 1*, 40-46.

Steer RA, Cavalieri TA, Leonard DM, & Beck AT. (1999). Use of the Beck Depression Inventory for Primary Care to screen for major depression disorders. *Gen Hosp Psychiatry, 21*(2), 106-111.

Steinkamp, M. W., & Kelly, J. R. (1987). Social integration, leisure activity, and life satisfaction in older adults: Activity theory revisited. *International Journal of Aging and Human Development, 25*(4), 293-307.

Sundru MB, Goru KB, & Krishnaveni A. (2013). Epidemiological Study of Depression among Population Above 60 Years in Visakhapatnam, India. *Int J Med Sci Public Health, 2*(3), 695-702.

Susman JL, Crabtree BF, & Essink G. (1995). Depression in rural family practice. Easy to recognise, difficult to diagnose. *Arch of Fam Med, 4*, 427–431.

Taghiloue S. (2009). Effect on reducing stress in the Quran reading among youth. *Gilan Univ Med Sci J, 18*(17), 72-81.

Taqui A M, Itrat A, Qidwai W, & Qadr Z. (2007). Depression in the elderly: Does family system play a role? A cross-sectional study. *BMC Psychiatry, 7*(57), 1-12. doi:10.1186/1471-244X-7-57

Tarakeshwar N, Pargament K.I, & Mahoney A. (2003). Measures of Hindu Pathways: Development and preliminary evidence of reliability and validity. *Culture Diversity and Ethnic Minority Psychology, 9*, 316-332.

Teresi J, Abrams R, Holmes D, Ramirez M, & Eimicke J. (2001). Prevalence of depression and depression recognition in nursing homes. *Soc Psychiatry Psychiatr Epidemiol, 36*, 613–629.

The Qur'an. (2010). *The Qur'an*. Birmingham: Maktabah Booksellers and Publishers.

The WHOQOL Group. (1995). The World Health Organization Quality of Life Assessment (WHOQOL). *Soc Sci Med, 41*(10), 1403-1409.

Theofanidis D, Th. Kapadohos, E. Kampisiouli, & et al. (2007). Changes in Psychological State of Elder Patients During their Hospitalization. *Rostrum of Asclepius, 2*, 1-9.

Thilak S. A, Sarada A. K, & Sushrit A. Neloopant. (2016). Prevalence and factors associated with depression among the elderly in rural areas of Kannur, North Kerala, India: a cross sectional study. *International Journal of Community Medicine and Public Health, 3*(8), 1986-1991. doi:http://dx.doi.org/10.18203/2394-6040.ijcmph20162184

Tiong, W. W., Yap, P., Koh, G. C. H., Fong, N. P., & Luo, N. (2013). Prevalence and risk factors of depression in the elderly nursing home residents in Singapore. *Aging & Mental Health, 17*(6), 724-731. doi:10.1080/13607863.2013.775638

Toni-Uebari, T. K., & Inusa, B. P. (2009). The role of religious leaders and faith organisations in haemoglobinopathies: a review. *BMC Blood Disorders, 9*(6). doi:10.1186/1471-2326-9-6

Trappe H. J. (2012). Music and medicine: The effects of music on the human being. *Applied Cardiopulmonary Pathophysiology, 16*, 133-142.

Trompenaars, F. J., Masthoff, E. D., van Heck, G. L., Hodiamont, P. P. G., & de Vries, J. (2005). Content validity, construct validity, and reliability of the WHOQOL-Bref in a population of Dutch adult psychiatric outpatients. *Quality of Life Research, 14*(1), 151-160.

Tsai, H. H., & Y.F. Tsai. (2011). Changes in Depressive Symptoms, Social Support, and Loneliness Over 1 year After a Minimum 3-month Videoconference Program for Older Nursing Home Residents. *Journal of Medical Internet Research, 13*(4). doi:10.2196/jmir.1678

United Nations Department of Economic and Social Affairs. (2013). *World Population Prospects: The 2012 Revision, Highlights and Advance Tables*. Retrieved from https://esa.un.org/unpd/wpp/publications/Files/WPP2012_HIGHLIGHTS.pdf

United Nations Department of Economic and Social Affairs. (2015). *World Population Ageing 2015*. Retrieved from New York: http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf

Unutzer J. (2009). Top cited papers in International Psychogeriatrics: 2. Quality adjusted life years in older adults with depressive symptoms and chronic medical disorders. *International Psychogeriatrics, 21*, 265–266.

Van Dam NT, & Earleywine M. (2011). Validation of the Center for Epidemiologic Studies Depression Scale--Revised (CESD-R): pragmatic depression assessment in the general population. *Psychiatry Research, 186*(1), 128-132.

Van Loon A, Van Schaik A, Dekker J, & Beekman A. (2013). Bridging the gap for ethnic minority adult outpatients with depression and anxiety disorders by culturally adapted treatments. *J Affect Disord, 147*, 9-16.

Wada T, Ishine M, Sakagami T, Kita T, Okumiya K, Mizuno, . . . Matsubayashi K. (2005). Depression, activities of daily living, and quality of life of community-dwelling elderly in three Asian countries: Indonesia, Vietnam, and Japan. *Archives of Gerontology and Geriatrics 41 (2005) 271–280, 41*, 271-280.

Waines D. (2003). *An Introduction to Islam* (2 ed.): Cambridge University Press.

Wallston B.S, Wallston K.A, Kaplan G.D, & Maides S.A. (1976). Development and validation of the health locus of control (HLC) scale. *J consult Clin Psychol, 44*(4), 580-585.

Wan H K, Soo J H, Hyun J I, & Kyung S Y. (2013). Reliability and Validity of the Korean World Health Organization Quality of Life (WHOQOL)-BREF in People With Physical Impairments. *Ann Rehabil Med, 37*(4), 488-497.

Ware J, & Sherbourne CD. (1992). The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Medical Care, 30*, 473–483.

Whelan, C. T. (1993). The role of social support in mediating the psychological consequences of economic stress. *Sociology of Health & Illness, 15*(1), 86-101.

WHOQOL Group. (Fall 1994). Development of the WHOQOL: Rationale and Current Status. *International Journal of Mental Health, 23*(3), 24-56.

Widmaier E.P, Raff H, & Strang K.T. (2008). *Vander's Human Psychology: The Mechanism of Body Function* (Eleventh ed.). New York, US: McGraw-Hill.

Williams JW. (2001). Standardizing the Hamilton Depression Rating Scale: past, present, and future. *Eur Arch Psychiatry Clin Neurosci, 251*(Suppl 2), 116.

Williams JW, Pignone M, Ramirez G, & Perez Stellato C. (2002a). Identifying depression in primary care: a literature synthesis of case-finding instruments. *Gen Hosp Psychiatry, 24*(4), 225-237.

Williams JW, Pignone M, Ramirez G, & Perez Stellato C. (2002b). Identifying depression in primary care: a literature synthesis of case-finding instruments. *Gen Hosp Psychiatry, 24*(4), 225-237.

World Health Organization. (2018). Noncommunicable diseases. Retrieved from http://www.who.int/topics/noncommunicable_diseases/en/

World Health Organization (WHO). (1996). WHOQOL-BREF Introduction, Administration, Scoring and Generic Version of The Assessment. Retrieved from http://www.who.int/mental_health/media/en/76.pdf

World Health Organization (WHO). (2015). Ageing and health. Retrieved from http://www.who.int/mediacentre/factsheets/fs404/en/

World Health Organization (WHO). (2016a). Definition of an older or elderly person. Retrieved from http://www.who.int/healthinfo/survey/ageingdefnolder/en/

World Health Organization (WHO). (2016b). Depression. Retrieved from http://www.who.int/mediacentre/factsheets/fs369/en/

World Health Organization (WHO). (2016c). Health topics *Depression.* Retrieved from http://www.who.int/topics/depression/en/

World Health Organization (WHO). (2016d). Mental health and older adults. Retrieved from http://www.who.int/mediacentre/factsheets/fs381/en/#

World Health Organization (WHO). (2017). World Health Day - 7 April 2017. *Depression: Let's talk.* Retrieved from http://www.who.int/campaigns/world-health-day/2017/en/

Worthington EL Jr, Hook JN, Davis DE, & McDaniel MA. (2011). Religion and spirituality. *Journal of Clinical Psychology: In Session, 67*(2), 204-214. doi:10.1002/jclp.20760

Wullf D.M. (1997). *Psychology of religion: Classic and contemporary* (second ed.). New York: Willey.

Young EA. (1998). Sex differences and the HPA axis: implications for psychiatric disease. *J Gend Specif Med, 1*, 21-27.

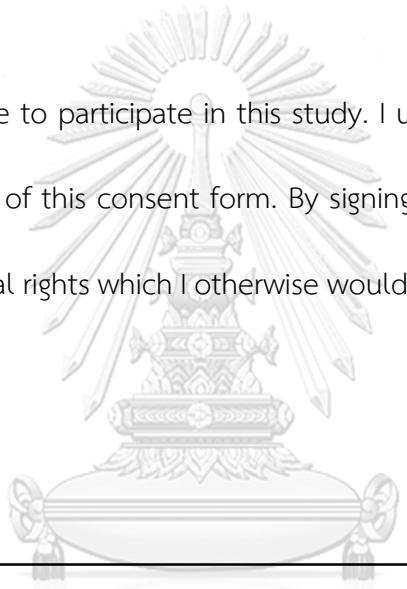
Zung WW. (1965). A Self-Rating Depression Scale. *Arch Gen Psychiatry, 12*, 63-70.

APPENDICES

APPENDIX A. CONSENT FORM

I have read and understand the information in this consent form. All my questions regarding the study and my participation in it have been answered to my satisfaction. I have been informed of the risks involved and my rights as a research subject.

I voluntary agree to participate in this study. I understand that I will receive a signed and dated copy of this consent form. By signing this consent form, I have not waived and any the legal rights which I otherwise would have as a subject in a research study.



Printed name of participant Participant's signature

Place and Date

The above-named subject has been fully informed of the study.

Bayu Anggileo Pramesona

Signature of person conducting informed consent discussion Place and Date

APPENDIX B. CONSENT FORM IN BAHASA INDONESIA

PERSETUJUAN KEIKUTSERTAAN DALAM PENELITIAN

Semua penjelasan tersebut telah disampaikan kepada saya dan semua pertanyaan saya telah dijawab oleh peneliti. Saya mengerti bahwa bila memerlukan penjelasan, saya dapat menanyakan kepada **Sdr. Ns. Bayu Anggileo Pramesona, S.Kep., MMR, PhD (Cand)**

Dengan menandatangani formulir ini, saya setuju untuk ikut serta dalam penelitian ini

Tanda tangan pasien/subyek: Tanggal:

(Nama jelas :.....)

Tanda Tangan saksi :

(Nama jelas :.....)

APPENDIX C. INFORMATION FORM IN BAHASA INDONESIA

LEMBAR PENJELASAN KEPADA CALON SUBJEK

Saya, Ns. Bayu Anggileo Pramesona, S.Kep., MMR, PhD (Cand) dan Prof. Surasak Taneepanichskul, MD yang diketuai oleh **Ns. Bayu Anggileo Pramesona, S.Kep., MMR, PhD (Cand)** dari College of Public Health Sciences, Chulalongkorn University Thailand akan melakukan penelitian yang berjudul **Pengaruh Intervensi Keagamaan terhadap Depresi dan Kualitas Hidup Lansia Indonesia : Studi Kuasi Eksperimen**. Penelitian ini disponsori oleh Lembaga Pengelola Dana Pendidikan (LPDP).

Penelitian ini bertujuan untuk mengetahui pengaruh intervensi keagamaan terhadap depresi dan kualitas hidup lansia Indonesia di panti wreda di Provinsi Yogyakarta.

Peneliti mengajak bapak/ibu untuk ikut serta dalam penelitian ini. Penelitian ini membutuhkan sekitar 66 subyek penelitian, dengan jangka waktu keikutsertaan masing-masing subyek sekitar 3 bulan.

A. Kesukarelaan untuk ikut penelitian

Bapak/Ibu bebas memilih keikutsertaan dalam penelitian ini tanpa ada paksaan. Bila Bapak/Ibu sudah memutuskan untuk ikut, Bapak/Ibu juga bebas untuk mengundurkan diri/ berubah pikiran setiap saat tanpa dikenai denda atau pun sanksi apapun.

Bila Bapak/Ibu tidak bersedia untuk berpartisipasi maka Bapak/Ibu tetap akan akan menerima perawatan dari pihak panti wreda sebagaimana biasanya.

B. Prosedur Penelitian

Apabila Bapak/Ibu bersedia berpartisipasi dalam penelitian ini, Bapak/Ibu diminta menandatangani lembar persetujuan ini rangkap dua, satu untuk Bapak/Ibu simpan, dan satu untuk untuk peneliti. Prosedur selanjutnya adalah:

1. Bapak/Ibu akan diwawancarai oleh peneliti untuk menanyakan: Nama, usia, jenis kelamin, lama tinggal di panti wreda, status pernikahan, pendidikan terakhir, orang

terdekat yang memberikan dukungan selama di panti wreda, jenis dukungan yang diberikan oleh orang terdekat, riwayat penyakit, jenis penyakit kronis, alasan tinggal di panti wreda, persepsi tentang layanan yang diberikan oleh petugas kesehatan di panti wreda. Selain itu, Bapak/Ibu juga akan diwawancara lebih lanjut untuk mengetahui tingkat depresi dan kualitas hidup sebagai lansia yang hidup di panti wreda.

2. Pada hari pertama dimulainya penelitian, Bapak/Ibu akan diwawancara sekitar 20 menit oleh peneliti sendiri. Total pertemuan wawancara akan dilaksanakan sebanyak 4 kali yaitu saat pertama kali pertemuan, minggu ke-4, ke-8, dan ke-12 setelah pertemuan pertama.
3. Peneliti akan meminta Bapak/Ibu untuk mendengarkan lantunan ayat suci Al.qur'an melalui *headset* (alat bantu dengar yang dipasang di telinga) selama 20-30 menit setiap pertemuan. Peneliti akan meminta Bapak/Ibu untuk melakukan hal yang sama setiap 3 kali dalam seminggu selama 12 minggu berturut-turut atau selama 3 bulan lamanya.
4. Selain itu Bapak/Ibu juga akan diminta untuk menghadiri ceramah yang akan disampaikan oleh ustadzah dari kampus Universitas Muhamamdiyah Yogyakarta setiap 1 bulan sekali selama 3 bulan lamanya. Durasi ceramah sekitar 30 menit setiap pertemuan.
5. Karena dalam penelitian ini terdapat kelompok yang tidak diberi perlakuan, ada kemungkinan intervensi yang diberikan kepada Bapak/Ibu bukan merupakan intervensi berupa mendengarkan lantunan ayat suci Al.qur'an dan mengikuti ceramah dari ustadzah seperti yang dijelaskan di atas.

C. Kewajiban subyek penelitian

Sebagai subyek penelitian, Bapak/Ibu berkewajiban mengikuti aturan atau petunjuk penelitian seperti yang tertulis di atas. Bila ada yang belum jelas, Bapak/Ibu bisa bertanya lebih lanjut kepada peneliti.

D. Risiko dan Efek Samping dan Penanganannya

Intervensi keagamaan sejauh ini sudah banyak dilakukan dan tidak memberikan efek samping yang berbahaya khususnya terhadap kesehatan fisik. Selama penelitian, peneliti menyiapkan perlindungan yang diperlukan seandainya terjadi sesuatu yang tidak diinginkan. Perlindungan yang diberikan oleh peneliti adalah merujuk pasien yang mengalami peningkatan depresi kategori berat ketika sedang berlangsungnya penelitian ke dokter spesialis jiwa atau dokter yang bertangung jawab di panti wreda tempat dilaksanakannya penelitian. Segala obat dan biaya perawatan yang timbul akibat depresi berat tersebut tidak ditanggung oleh peneliti.

E. Manfaat

Keuntungan langsung yang Bapak/Ibu dapatkan adalah menambah ilmu agama terkait pencegahan dan penanganan depresi serta cara meningkatkan kualitas hidup lansia dilihat dari perspektif agama.

F. Kerahasiaan

Semua informasi yang berkaitan dengan identitas Bapak/Ibu akan dirahasiakan dan hanya akan diketahui oleh peneliti dan tim peneliti. Hasil penelitian akan dipublikasikan tanpa mencantumkan identitas subyek penelitian.

G. Kompensasi

Bapak/Ibu akan mendapatkan uang lelah pengganti penghasilan yang hilang akibat berpartisipasi dalam penelitian ini sebesar Rp.50.000/orang di akhir penelitian.

H. Pembiayaan

Semua biaya yang terkait penelitian akan ditanggung oleh peneliti dan Lembaga Pengelola Dana Pendidikan (LPDP).

I. Informasi Tambahan

Bapak/Ibu diberi kesempatan untuk menanyakan semua hal yang belum jelas sehubungan dengan penelitian ini. Bila sewaktu-waktu terjadi efek samping atau membutuhkan penjelasan lebih lanjut, Bapak/Ibu dapat menghubungi **Ns. Bayu Anggileo Pramesona, S.Kep., MMR, PhD (Cand) pada no. HP 081274004767.**

Bapak/Ibu juga dapat menanyakan tentang penelitian kepada Komite Etik Penelitian Kedokteran dan Kesehatan Fakultas Kedokteran UGM (Telp. 0274-588688 ext 17225 atau +62811-2666-869; email: mhrec_fmugm@ugm.ac.id).

APPENDIX D. QUESTIONNAIRE 1: DEMOGRAPHICS SURVEY

RESPONDENT'S CODE:

Instructions

- This survey asks for your data demographics and will take about 10 to 15 minutes to complete.
- Please, do not write your name on this questionnaire. Hence, nobody will be able to identify who has completed this particular form.
- Please listen each questions carefully before answering it.
- Choose the answer that best describes what you believe and feel to be correct.
- Choose only one answer for each question except multiple answers as indicate at the end of the question.
- If you have to change your answer, just inform it to the interviewer (researcher).
- This is not a test, therefore there are no "right" or "wrong" answers.
- Make sure that you have answered all questions before leaving the interview session.

The first few questions ask about your general background information:

1. How old are you?.....years old
2. What is your gender? ☐ Male ☐ Female
3. How long you have been staying at this nursing home?.....months
4. What is your marital status? ☐ Single ☐ Married ☐ Widowed ☐ Divorced
5. What is the highest education level that obtained by you?

☐ No education ☐ Secondary school ☐ Bachelor ☐ Others.....

☐ Primary school ☐ High school ☐ Master degree

6. Who is your close persons that you think still giving supports to you during your stay at nursing home?

☐ Spouse (Husband/wife)

☐ Family (Relatives, children)

☐ Healthcare workers (nurses, doctor, etc.)

☐ Other, please specify: .....

☐ No one

7. What kind of the supports that your close persons give to you during your stay at nursing home?

☐ Spirit/psychological support ☐ No one

☐ Financial support ☐ Other, please specify: .....

8. Do you have chronic illness?

☐ Yes ☐ No

9. What kind of chronic disease that do you have?

☐ Hypertension

☐ Hyper-cholesterolaemia

☐ Cardiac diseases

☐ Obesity (BMI ≥30)

☐ Arthritis

☐ Vision abnormality

☐ Uric acid/gout

☐ Chronic respiratory diseases

☐ Diabetes Mellitus

☐ Hearing problem

☐ Stroke

☐ Liver diseases

☐ Tuberculosis (TB)

☐ Cancer

10. What is the reason you staying at this nursing home?

☐ Lonely

☐ Less family care

☐ No support income

☐ Other, please specify.....

11. Do you think the healthcare workers (nurses, doctor, therapist, etc.) in this nursing home have been providing the good care for you as an elderly?

☐ Yes ☐ No yet

APPENDIX E. QUESTIONNAIRE 1: DEMOGRAPHICS SURVEY (INDONESIAN VERSION)

KODE RESPONDEN:

Petunjuk Pengisian

1. Survei ini akan menanyakan data demografi Anda dan membutuhkan waktu sekitar 10 – 15 menit untuk menjawab semua pertanyaan.
2. Mohon tidak mencantumkan nama Anda di dalam kuesioner. Karena tidak ada seorangpun yang dapat mengetahui siapa yang telah mengisi kuesioner tersebut.
3. Mohon dengar setiap pertanyaan dengan seksama sebelum mengisi kuesioner ini.
4. Pilih jawaban yang paling mewakili perasaan dan keyakinan Anda yang sebenar-benarnya.
5. Pilih hanya satu jawaban untuk setiap pertanyaan yang diajukan kecuali pertanyaan yang memperbolehkan Anda mengisi lebih dari satu jawaban.
6. Jika Anda ingin mengganti jawaban, silakan sampaikan jawaban Anda kepada pewawancara (peneliti).
7. Pertanyaan yang diajukan bukan merupakan sebuah tes, jadi tidak ada jawaban "Benar" dan "Salah".
8. Pastikan Anda telah menjawab semua pertanyaan yang diajukan sebelum meninggalkan sesi wawancara ini.

Beberapa pertanyaan berikut akan menanyakan informasi tentang latar belakang Anda secara umum:

1. Berapa umur Anda saat ini?.....tahun
2. Apa jenis kelamin Anda? ☐ Laki-laki ☐ Perempuan
3. Sudah berapa lama Anda tingal di PSTW ini?.....bulan
4. Apakah status pernikahan Anda?
   ☐ Lajang ☐Menikah ☐Janda/Duda ditingal mati oleh pasangan ☐ Cerai
5. Apakah jenjan pendidikan tertinggi Anda?

☐ Tidak sekolah ☐ SMP ☐ Sarjana ☐ Others.....

☐ SD ☐ SMA ☐ Magister (S2)

6. Siapakah orang terdekat yang Anda pikir masih memberikan dukungan kepada Anda selama Anda berada di PSTW ini?

☐ Pasangan (Suami/istri)

☐ Keluarga (Saudara/anak/orangtua)

☐ Petugas kesehatan (perawat, dokter, dsb.)

☐ Lainnya, Sebutkan: .....

☐ Tidak ada seorang pun

7. Jenis dukungan seperti apa yang orang terdekat Anda berikan kepada Anda selama Anda berada di PSTW ini?

☐ Dukungan semangat/psikologis ☐ Tidak ada dukungan apapun

☐ Dukungan materi ☐ Lainnya, Sebutkan: .....

8. Apakah Anda memiliki penyakit kronis?

☐ Ya ☐ Tidak

9. Apakah jenis penyakit fisik yang Anda miliki?

☐ Hipertensi / tekanan darah tinggi

☐ Hiperkolesterol/ kadar kolesterol di atas normal

☐ Penyakit Jantung Kronis

☐ Obesitas (Indeks Massa Tubuh≥30)

☐ Arthritis

☐ Penglihatan terganggu

☐ Asam urat

☐ Penyakit Patu Obstruksi Kronik (PPOK)

☐ Diabetes Mellitus

☐ Gangguan pendengaran

☐ Stroke

☐ Penyakit Hati/Liver

☐ Tuberkulosis (TB)

☐ Kanker

10. Apakah alasan Anda tinggal di PSTW ini?

☐ Kesepian di rumah

☐ Kurang perhatian dari keluarga

☐ Tidak ada dukungan materi/dana

☐ Lainnya, Sebutkan: .....

11. Apakah Anda merasa petugas kesehatan (perawat, dokter, fisioterapis, dsb) yang bekerja di PSTW ini sudah memberikan pelayanan kesehatan/perawatan yang baik bagi Anda sebagai lansia?

☐ Ya, sudah ☐ Belum

APPENDIX F. QUESTIONNAIRE 2: Geriatric Depression Scale (Short Form) English Version (Sheikh JI & Yesavage JA, 1986).

No.	Question	Answer	Score
1.	Are you basically satisfied with your life?	YES / NO	
2.	Have you dropped many of your activities and interests?	YES / NO	
3.	Do you feel that your life is empty?	YES / NO	
4.	Do you often get bored?	YES / NO	
5.	Are you in good spirits most of the time?	YES / NO	
6.	Are you afraid that something bad is going to happen to you?	YES / NO	
7.	Do you feel happy most of the time?	YES / NO	
8.	Do you often feel helpless?	YES / NO	
9.	Do you prefer to stay in your room, rather than going out and doing new things?	YES / NO	
10.	Do you feel you have more problems with memory than most people?	YES / NO	
11.	Do you think it is wonderful to be alive?	YES / NO	
12.	Do you feel pretty worthless the way you are now?	YES / NO	
13.	Do you feel full of energy?	YES / NO	
14.	Do you feel that your situation is hopeless?	YES / NO	
15.	Do you think that most people are better off than you are?	YES / NO	
TOTAL			

Patient's Name: _____ Date: _____

***Instructions*: Choose the best answer for how you felt over the past week.**

APPENDIX G. QUESTIONNAIRE 2: Geriatric Depression Scale (Short Form)

Indonesian Version

No.	Pertanyaan	Jawaban	Skor
1.	Apakah Anda merasa puas dengan kehidupan Anda?	Ya / Tidak	
2.	Pernahkah Anda meninggalkan banyak kegiatan dan hobi Anda?	Ya / Tidak	
3.	Apakah Anda merasa hidup Anda tidak berharga?	Ya / Tidak	
4.	Apakah Anda sering merasa bosan?	Ya / Tidak	
5.	Apakah Anda selalu bersemangat ketika melakukan kegiatan?	Ya / Tidak	
6.	Apakah Anda berpikir sesuatu yang buruk akan menimpa Anda?	Ya / Tidak	
7.	Apakah setiap saat Anda selalu bahagia?	Ya / Tidak	
8.	Apakah Anda sering merasa tidak berdaya?	Ya / Tidak	
9.	Apakah Anda lebih senang berada di kamar dibandingkan pergi keluar dan mengerjakan hal-hal baru?	Ya / Tidak	
10.	Apakah Anda merasa Anda lebih sulit mengingat dibandingkan orang lain?	Ya / Tidak	
11.	Apakah Anda pikir kehidupan Anda patut disyukuri?	Ya / Tidak	
12.	Apakah Anda merasa Anda tidak berguna?	Ya / Tidak	
13.	Apakah Anda merasa sangat bersemangat?	Ya / Tidak	
14.	Apakah Anda merasa Anda dalam kondisi tidak memiliki harapan?	Ya / Tidak	
15.	Apakah Anda pikir orang lain lebih baik daripada Anda?	Ya / Tidak	
TOTAL			

Nama pasien: _____ Tanggal: _____

***Petunjuk**: Pilih jawaban terbaik sesuai yang Anda rasakan seminggu terrakhir.* (Sheikh & Yesavage, 1986)

APPENDIX H. QUESTIONNAIRE 3: WHOQOL-BREF ENGLISH VERSION (World Health Organization (WHO), 1996)

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

No	Question	Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

No	Question	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

No	Question	Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1

4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

No	Question	Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

No	Question	Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5

12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

No	Question	Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

No	Question	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5

19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

No	Question	Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as	5	4	3	2	1

	blue mood, despair, anxiety, depression?					

Do you have any comments about the assessment?

_____

_____

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 □ + □ + □ + □ + □ + □ + □	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) □ + □ + □ + □ + □ + □	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 □ + □ + □	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 □ + □ + □ + □ + □ + □ + □ + □	a. =	b:	c:

APPENDIX I. QUESTIONNAIRE 3: WHOQOL-BREF INDONESIAN VERSION (World Health Organization (WHO), 1996).

Pertanyaan berikut ini menyangkut perasaan anda terhadap kualitas hidup, kesehatan dan halhal lain dalam hidup anda. Saya akan membacakan setiap pertanyaan kepada anda, bersamaan dengan pilihan jawaban. **Pilihlah jawaban yang menurut anda paling sesuai.** Jika anda tidak yakin tentang jawaban yang akan anda berikan terhadap pertanyaan yang diberikan, pikiran pertama yang muncul pada benak anda seringkali merupakan jawaban yang terbaik.

Camkanlah dalam pikiran anda segala standar hidup, harapan, kesenangan dan perhatian anda. Kami akan bertanya apa yang anda pikirkan tentang kehidupan anda **pada empat minggu terakhir.**

		Sangat buruk	Buruk	Biasa-biasa saja	Baik	Sangat baik
1.	Bagaimana menurut anda kualitas hidup anda?	1	2	3	4	5

		Sangat tdk memuaskan	Tdk memuaskan	Biasa-biasa saja	Memuaskan	Sangat memuaskan
2.	Seberapa puas anda terhadap kesehatan anda?	1	2	3	4	5

Pertanyaan berikut adalah tentang **seberapa sering** anda telah mengalami hal-hal berikut ini dalam empat minggu terakhir.

		Tdk sama sekali	Sedikit	Dlm jumlah sedang	Sangat sering	Dlm jumlah berlebihan
3.	Seberapa jauh rasa sakit fisik anda mencegah anda dalam beraktivitas sesuai kebutuhan anda?	5	4	3	2	1
4.	Seberapa sering anda membutuhkan terapi medis untuk dpt berfungsi dlm kehidupan sehari-hari anda?	5	4	3	2	1
5.	Seberapa jauh anda menikmati hidup anda?	1	2	3	4	5
6.	Seberapa jauh anda merasa hidup anda berarti?	1	2	3	4	5
7.	Seberapa jauh anda mampu berkonsentrasi?	1	2	3	4	5
8.	Secara umum, seberapa aman anda rasakan dlm kehidupan anda sehari-hari?	1	2	3	4	5
9.	Seberapa sehat lingkungan dimana anda tinggal (berkaitan dgn sarana dan prasarana)	1	2	3	4	5

Pertanyaan berikut ini adalah tentang seberapa penuh anda alami hal-hal berikut ini dalam 4 minggu terakhir?

		Tdk sama sekali	Sedikit	Sedang	Seringkali	Sepenuhnya dialami
10.	Apakah anda memiliki vitalitas yg cukup untuk beraktivitas sehari[2]?	1	2	3	4	5
11.	Apakah anda dapat menerima penampilan tubuh anda?	1	2	3	4	5
12.	Apakah anda memiliki cukup uang utk memenuhi kebutuhan anda?	1	2	3	4	5
13.	Seberapa jauh ketersediaan informasi bagi kehidupan anda dari hari ke hari?	1	2	3	4	5
14.	Seberapa sering anda memiliki kesempatan untuk bersenangsenang /rekreasi?	1	2	3	4	5

		Sangat buruk	Buruk	Biasa-biasa saja	Baik	Sangat baik
15.	Seberapa baik kemampuan anda dalam bergaul?	1	2	3	4	5

		Sangat tdk memuaskan	Tdk memuaskan	Biasa-biasa saja	Memuaskan	Sangat memuaskan
16.	Seberapa puaskah anda dg tidur anda?	1	2	3	4	5
17.	Seberapa puaskah anda dg kemampuan anda untuk menampilkan aktivitas kehidupan anda sehari-hari?	1	2	3	4	5
18.	Seberapa puaskah anda dengan kemampuan anda untuk bekerja?	1	2	3	4	5
19.	Seberapa puaskah anda terhadap diri anda?	1	2	3	4	5
20.	Seberapa puaskah anda dengan hubungan personal / sosial anda?	1	2	3	4	5

21.	Seberapa puaskah anda dengan kehidupan seksual anda?	1	2	3	4	5
22.	Seberapa puaskah anda dengan dukungan yg anda peroleh dr teman anda?	1	2	3	4	5
23.	Seberapa puaskah anda dengan kondisi tempat anda tinggal saat ini?	1	2	3	4	5
24.	Seberapa puaskah anda dgn akses anda pd layanan kesehatan?	1	2	3	4	5
25.	Seberapa puaskah anda dengan transportasi yg hrs anda jalani?	1	2	3	4	5

Pertanyaan berikut merujuk pada seberapa sering anda merasakan atau mengalami hal-hal berikut dalam empat minggu terakhir.

		Tdk pernah	Jarang	Cukup sering	Sangat sering	Selalu
26.	Seberapa sering anda memiliki perasaan negatif seperti '*feeling blue*' (kesepian), putus asa, cemas dan depresi?	5	4	3	2	1

Komentar pewawancara tentang penilaian ini?

_____

_____

[Tabel berikut ini harus dilengkapi setelah wawancara selesai]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 □ + □ + □ + □ + □ + □ + □	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) □ + □ + □ + □ + □ + □	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 □ + □ + □	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 □ + □ + □ + □ + □ + □ + □ + □	a. =	b:	c:

VITA

Name: Mr. Bayu Anggileo Pramesona

Place/Date of Birth: Kotabumi, 2 August 1986

Current position: Government officer, Nursing Services Department, Mayjend HM. Ryacudu General Hospital, Kotabumi, North Lampung, Indonesia

Email: ners.bayu@gmail.com

Educational Background:

2018: PhD student in Public Health, Major in Health Policy and Management, College of Public Health Sciences, Chulalongkorn University, Thailand

2012: Master of Hospital Management, Universitas Muhammadiyah Yogyakarta (UMY), Indonesia

2011: Nurse Profession Program, Universitas Muhammadiyah Yogyakarta (UMY), Indonesia

2008: Bachelor of Nursing Science, Universitas Muhammadiyah Yogyakarta (UMY), Indonesia

Journal publications and conferences during PhD program:

1. Pramesona, B. A., & Taneepanichskul, S. (2018). The effect of religious intervention on depressive symptoms and quality of life among Indonesian elderly in nursing homes: A quasi-experimental study. Clinical Interventions in Aging, 13, 473-483.

2. Pramesona, B. A., & Taneepanichskul, S. (2018). Prevalence and risk factors of depression among Indonesian elderly: A nursing home-based cross-sectional study. Neurology, Psychiatry and Brain Research, 30, 22-27.

3. Pramesona, B. A., & Taneepanichskul, S. (2018). Factors Influencing the Quality of Life among Indonesian Elderly: A Nursing Home-Based Cross-Sectional Survey. Journal of Health Research, 32 (5).

4. Oral presentation at the International Health Conference, St Hugh's College Oxford University

5. Oral and poster presentation in Kyoto Global Conference for Rising Public Health Researchers in Kyoto University, Japan

6. Oral presentation in the 49th Asia Pacific Academic Consortium for Public Health at Yonsei University, South Korea

7. Oral presentation in the Emerging Health Policy Research Conference, The University of Sydney, Australia

Awards during PhD program:

1. Overseas Academic Presentation Scholarship for Graduate Students from Chulalongkorn University (2018)

2. Full funding for an oral and poster presentation in Kyoto Global Conference for Rising Public Health Researchers in Kyoto University, Japan (2017)

3. Yonsei Fund Award as the one of promising researchers in the 49th APACPH Conference in Yonsei University, South Korea (2017)

4. JASSO Short courses scholarship at Teikyo University, Japan (2017)

5. Research Fund Scholarship from the Indonesia Endowment Fund for Education (LPDP Scholarship (2017)