FACTORS ASSOCIATED WITH DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE IN KUALA TERENGGANU

BY

SITI SUHANA BINTI ZAKARIA

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

2023

FACTORS ASSOCIATED WITH DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE IN KUALA TERENGGANU

BY

SITI SUHANA BINTI ZAKARIA

A dissertation submitted in fulfilment of the requirement for the degree of Master of Nursing Science

Kulliyyah of Nursing
International Islamic University Malaysia

JANUARY 2024

ABSTRACT

The ageing population is expected to experience mental health challenges, as shown by the increasing trends in the prevalence of these ailments. Older people are vulnerable to depression due to a number of factors, but it is often undertreated. The aim of this study is to determine the prevalence and associated factors of depression among community-dwelling older people in Terengganu. A quantitative cross-sectional study was conducted in several areas of Terengganu using a multi-layered, stratified sampling technique. A total of 240 participants were randomly selected. Several instruments were used, namely the Geriatric Depression Scale (GDS), the Elderly Cognitive Assessment Questionnaire (ECAQ), the University of California Los Angeles (UCLA) Loneliness Scale, the Multidimensional Scale of Perceived Social Support (MSPSS), the Barthel Modified Index, the Instrumental Activities of Daily Living Scale, the Pittsburgh Sleep Quality Index, and the Duke University Religion Index (DUREL). The prevalence of depression symptoms among community-dwelling older people in Kuala Terengganu was 24.6%. In addition, the multivariable logistic regression model revealed that single older people, regardless of whether they were unmarried, widowed or divorced (aOR = 4.42; CI = 1.22, 15.96), poor social support (aOR = 3.06; CI = 1.18, 7.93), loneliness (aOR = 21.11; CI = 9.87, 45.18), impaired functional status (aOR = 3.39; CI =1.22, 9.39), impaired instrumental function (aOR = 6.09; CI = 1.95, 19.0), and older people with asthma (aOR =14.14; CI = 2.83, 70.5) were associated with depression symptoms in older people. Therefore, screening of older people in primary care for early detection of depression symptoms and initiation of community-based intervention for psychological aspects is needed to address the problem.

KEYWORDS: ageing, community-dwelling, depression, older people, factor, mental health.

خلاصة البحث

من المتوقع أن يواجه السكان المسنون تحديات في الصحة العقلية، كما يتضح من الاتجاهات المتزايدة في انتشار هذه الأمراض. كبار السن معرضون للاكتئاب بسبب عدد من العوامل، ولكن غالبًا ما يتم إجراؤه. الهدف من هذه الدراسة هو تحديد مدى انتشار الاكتئاب والعوامل المرتبطة به بين كبار السن الذين يعيشون في المجتمع في ولاية ترنجانو. وأجريت دراسة كمية شاملة للقطاعات في عدة مناطق من ولاية ترنجانو باستخدام تقنية متعددة الطبقات لأخذ العينات. تم اختيار ما مجموعه 240 مشاركًا بشكل عشوائي. تم استخدام العديد من الأدوات، وهي مقياس كساد الشيخوخة (GDS)، واستبيان التقييم المعرفي للمسنين (ECAQ)، ومقياس الوحدة بجامعة كاليفورنيا في لوس أنجلوس (UCLA)، والمقياس المتعدد الأبعاد للدعم الاجتماعي المتصور (MSPSS)، ومؤشر بارثيل المعدل، والأنشطة المفيدة لمقياس الحياة اليومية، ومؤشر جودة النوم في بيتسبرغ، ومؤشر الدين بجامعة ديوك (DUREL). بلغ انتشار أعراض الاكتئاب بين كبار السن الذين يعيشون في المجتمع المحلي في محافظة كوالا ترنجانو 24.6٪. وبالإضافة إلى ذلك، كشف نموذج الانحدار اللوجستي المتعدد المتغيرات أن المسنين العازبين، بصرف النظر عما إذا كانوا غير متزوجين أو أرامل أو مطلقين (aOR = 4.42؛ CI = 1.22، 15.96)، ضعف الدعم الاجتماعي (aOR = 3.06؛ CI = 1.18, 7.93)، الوحدة (aOR = 21.11; CI = 9.87، 45.18)، اختلال الحالة الوظيفية (aOR = 3.39؛ CI = 1.22، 9.39)، ضعف وظيفة الأداة (aOR = 6.09؛ CI = 1.95، 19.0)، وكبار السن المصابون بالربو (aOR = 14.14؛ CI = 2.83، 70.5) ارتبطت بأعراض الاكتئاب لدى كبار السن. لذلك، هناك حاجة إلى فحص كبار السن في الرعاية الأولية للكشف المبكر عن أعراض الاكتئاب والبدء في التدخل المجتمعي للجوانب النفسية لمعالجة المشكلة.

الكلمات الرئيسية: الشيخوخة، السكن المجتمعي، الاكتئاب، كبار السن، العامل، الصحة العقلية.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Nursing Science.

……..
Siti Nur Illani Binti Jaafar
Supervisor

……..
Muhammad Kamil bin Che Hasan
Co-Supervisor

……..
Nik Kausar Binti Nik Mohd Hatta
Co-Supervisor

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Nursing Science.

……..
Aniawanis Binti Makhtar
Internal Examiner

……..
Rekaya Anak Vincent Balan
External Examiner

This dissertation was submitted to the Office of the Deputy Dean (Postgraduate & Responsible Research and Innovation Kulliyyah of Nursing and is accepted as a fulfilment of the requirement for the degree of Master of Nursing Science.

……..
Salizar Bt. Mohamed Ludin
Deputy Dean (Postgraduate & Responsible Research and Innovation
Kulliyyah of Nursing

This dissertation was submitted to the Kulliyyah of Nursing and is accepted as a fulfilment of the requirement for the degree of Master of Nursing Science.

……..
Muhammad Kamil Bin Che Hasan
Dean, Kulliyyah of Nursing

DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Siti Suhana Binti Zakaria

Signature ……Date 5.Jauary 2024

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

DECLARATION OF COPYRIGHT AND AFFIRMATION OF FAIR USE OF UNPUBLISHED RESEARCH

FACTORS ASSOCIATED WITH DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE IN KUALA TERENGGANU

I declare that the copyright holders of this dissertation are jointly owned by the student and IIUM.

By signing this form, I acknowledged that I have read and understand the IIUM Intellectual Property Right and Commercialization policy.

Affirmed by Siti Suhana Binti Zakaria

…….…….. 5 January 2024 ……..

Signature Date

ACKNOWLEDGEMENTS

All, glory is due to Allah Almighty, whose grace and mercy have accompanied me throughout my studies. Even though it has been exhausting, His grace and blessings make the herculean task of completing this thesis easier for me.

I am greatly indebted to my supervisor, Dr Siti Nur Illani binti Jaafar, whose enduring disposition, kindness, promptness, thoroughness, and friendship have enabled the successful completion of my thesis. I place on record my appreciation of her detailed comments, useful suggestions, and thought-provoking questions which greatly enhanced the thesis. Her brilliant sense of the purpose and content of this work led to insightful comments, suggestions, and queries that helped me greatly. Despite her commitments, she listened and attended to me upon request. The moral support she gave me was undoubtedly an incentive that helped me in preparing and writing the draft of this thesis. I am also grateful to my co-supervisor, Muhammad Kamil bin Che Hasan and Dr Nik Noor Kaussar binti Nik Mohd Hatta, whose support and cooperation contributed to the success of this thesis.

I would also like to thank the village leaders, Mr Zamrus bin Omar from Kampung Ladang Flat, Mr Mat Said Embong from Kampung Banggol, and Mr Mohd Jamil bin Ngah from Kampung Masjid Haji Kadir, Kuala Terengganu. I am grateful to them for allowing me to conduct my study in their village. I would like to take this opportunity to thank all the participants and residents of the village for their cooperation and help. My special thanks go to the village leader who appointed a village committee called 'muslimat' to support me throughout data collection, especially during the home visits.

Finally, my thanks to my beloved husband and lovely children for their prayers, unconditional social support, and encouragement to complete this study.

We praise Allah once again for His infinite mercy in enabling us to successfully complete the work on this thesis. *Alhamdulillah*.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADL	Activity of Daily Living
*a*OR	Adjusted Odds Ratio
BMI	Body Mass Index
CES-D	Centre for Epidemiological Studies-Depression Scale
CES-D-ML	Centre for Epidemiological Studies-Depression Minus Loneliness
CI	Confidence Interval
CMCO	Conditional Movement Control Order
DASS-21	Depression and Anxiety Scale-21
df	Degrees of Freedom
DOSM	Department of Statistics Malaysia
DSM-IV	Diagnostic and Statistical Manual of Mental Disorder Edition IV
DSSI	Duke Social Support Index
DUREL	Duke University Religion Index
EBP	Evidence-Based Practice
EBP	Evidence-Based Practice
ECAQ	Elderly Cognitive Assessment Questionnaire
GDS	Geriatric Depression Scale
HADS-A	Hospital Anxiety and Depression Scale
HAMT	Hodkinson Abbreviated Mental Test
IADL	Instrumental Activities of Daily Living
ICD9	International Classification of Diseases 9th Revision
ICD10	International Classification of Diseases 10th Revision
IIUM	International Islamic University Malaysia
IREC	IIUM Research Ethics Committee
JBI	Joanna Briggs Institute
JPKK	Jawatankuasa Kemajuan dan Keselamatan Kampung
KMO	Kaiser-Meyer-Olkin
KNPGRC	Kulliyyah of Nursing Postgraduate & Research Committee
MBI	Modified Barthel's Index
MCO	Movement Control Order
MMSE	Mini-Mental State Examination
MOH	Ministry of Health
MSPSS	Multidimensional Scale of Perceived Social Support
NRP	National Recovery Plan
NSHAP	National Social Life, Health, and Aging Project
OR	Odds Ratio
OSS	Social Support Scale
PICOT	Population/Patient Problem, Intervention, Comparison, Outcome, and Time
PSQI	Pittsburgh Sleep Quality Index
R	Ratio
RMCO	Recovery Movement Control Order
ROC	Receiver Operating Characteristic
SAGE	Study on Global Aging and Adult Health
SD	Standard Deviation
SOP	Standard Operating Procedures

SPPB	Short Physical Performance Battery
SPSS	Statistical Package for the Social Sciences
UCLA	University of California Los Angeles
WHO	World Health Organization
YLD	Years Lost due to Disability

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This chapter begins with the background of the study, describing the increasing number of older people worldwide and the various challenges associated with ageing, followed by the problem statement, which clearly explains the important factors to be considered in this study, the objectives, and the research questions. Then, the next section outlines the significance of the study for the field of nursing, the population of older people, and health policy.

1.2 BACKGROUND OF THE STUDY

The world population has seen a significant increase in the number of older people in recent years due to increasing life expectancy and declining birth rates. In 2020, there were 727 million people over the age of 65 worldwide, and over the next three decades, the number of older people worldwide is expected to more than double, reaching over 1.5 billion in 2050 (United Nations, 2020). The proportion of the world's population aged 65 or older is projected to increase from 9.3% in 2020 to 16.0% in 2050 (United Nation, 2019). Between 2019 and 2050, nine out of ten countries from East and Southeast Asia experience the largest percentage increases in the proportion of older people globally. These include the Republic of Korea (23%), followed by Singapore (20.9%) and Taiwan Province, People's Republic of China (19.9%) (United Nations, 2019). Meanwhile, Spain will be the only country in Europe to remain in the top ten countries with the largest increase in the proportion of older people by 2050 (United Nation, 2019).

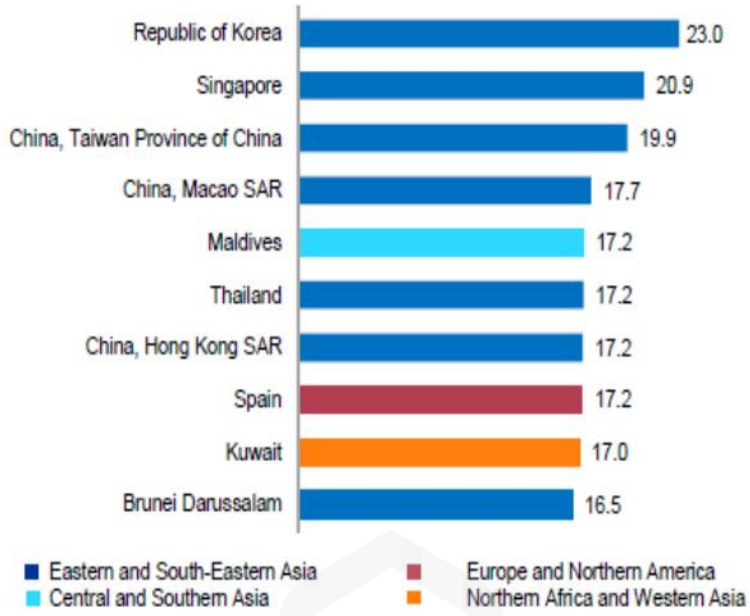


Figure 1.1 The Increase in the Percentage of Older People Worldwide Between 2019 and 2050

Source: (United Nations, Department of Economic and Social Affairs, Population Division, 2019).

Malaysia is also experiencing a rapid growth of double the population aged 65 years by 23 years compared to other Asian countries which take only 18 to 22 years (Tengku Aizan, 2015). The proportion of elderly over 60 in Malaysia will double from 7% to 14% between 2020 and 2046 (Department of Statistics Malaysia (DOSM),(DOSM, 2016). According to DOSM (2020), the number of people aged over 60 was 3.4 million (10.3%) in 2019, which increased to 3.5 million (10.7%) in 2020. The increase could be due to the longer life expectancy of the population. Currently, the changes in the age structure of the population are dramatically significant. The proportion of those aged below 14 decreased from 23.3% in 2018 to 23.5% in 2019, while the proportion of 15–64-year-olds decreased from 69.8% in 2019 to 69.7% in 2020. Meanwhile, the proportion of the population aged 65 and over (old age) increased from 6.7% in 2019 to 7.0% in 2020 (DOSM, 2020). Furthermore, life expectancy in Malaysia is 77.6 years for women and 72.7 years for men, according to statistics (DOSM, 2018).

With the increase in the elderly population, older people face various challenges associated with age-related changes and unpleasant experiences. These populations are vulnerable to depression due to complex multifactorial interactions that follow a multifaceted process in all aspects of life, including biological, social, psychological (Dziechciaż & Filip, 2014), and spiritual (Winahyu & Sari, 2017). Common symptoms of geriatric depression include persistent sadness, feeling slowed down, excessive worry about finances and medical problems, frequent tearfulness, and feeling worthless or helpless (Anand et al., 2019). Other symptoms also include weight changes, restlessness or fidgetiness, difficulty concentrating and sleeping, somatic complaints such as unexpected physical pain, gastrointestinal problems, and withdrawal from social activities (Anand et al., 2019). The World Health Organization (WHO) reported that depression occurs in 7% of the elderly population and in 5.7% of the years of life lost (YLD) due to disability in the age group 60 and older (WHO, 2017). Epidemiological studies from South Asian countries reported a high prevalence of depression symptoms in the elderly, such as 34.4% in India (Pilania et al., 2019), 40.6% in Pakistan (Bhamani et al., 2013), 44.2% in Bangladesh (Cherry et al., 2012), 36.94% in China (He et al., 2016), 18.5% in Thailand (Charoensakulchai et al., 2019), 34.6% in Singapore (Li et al., 2015) and 19.3% in Malaysia (Aznan et al., 2019).

Various factors across the life cycle can trigger the development of depression symptoms in older people. It is associated with complex multifactorial interactions such as biological, psychological, health-related, social, and spiritual factors (Abdul Manaf et al., 2016; Babatsikou et al., 2017; Mohammad Abbas, 2017). The ageing process can be healthy ageing, typical ageing or pathological ageing. It is due to involutional changes in organs that lead to decreased body function from co-existing with the disease and changes in symptomatology. With age, adverse changes in memory and cognitive functions occur and there is a higher likelihood of depression (Rashid & Tahir, 2015). Several studies in Malaysia examined some biological characteristics that are considered associated factors. Demographically, women had a higher prevalence of depression symptoms compared to men (aOR = 1.03; 95% CI [1.02, 1.89]; $p < 0.00$) (Kavithai et al., 2018). A higher age group had significantly more depression symptoms (X^2 (2, N = 2005) = 32.02; $p < .001$) (Rashid & Tahir, 2015). In addition, health-related factors such as hypertension (57.9%) (aOR = 1.32; 95% CI [1.02, 1.71]; $p < 0.05$), osteoarthritis (34.0%) (aOR = 1.57; 95% CI [1.19, 2.06]; $p < 0.01$), and the presence of

a neurotic disorder (aOR = 1.10; 95% CI [1.03, 1.14]; $p < .001$) were associated with a higher EPQ score. It was more pronounced in participants with depression disorders than in those without depression symptoms (Vanoh et al., 2016). In addition, older people are more likely to have cognitive changes and somatic symptoms such as sleep disturbances (Anand et al., 2019), comorbid illnesses, poor physical health, and cognitive impairment due to structural changes in the brain that are associated with depressive symptoms (Harris et al., 2011). A study by Rashid and Tahir (2015) found that the factor associated with disease variables such as cognitive impairment (aOR = 2.5; 95% CI [1.3, 4.6]; $p < .001$), poor activities of daily living (ADL) due to illness or disability (aOR = 1.6; 95% CI [1.3, 4.6]; $p < .001$), and poor sleep quality (aOR = 3.6; 95% CI [2.2, 5.9]; $p < .001$) were significantly pronounced in older people.

In addition, social ageing is related to emotional instability, such as living alone, being socially isolated and having little social interaction. Recent functional dependence may put older people at risk for developing depressive symptoms (Yánez et al., 2019). Living arrangements are an important element of the overall quality of life of older people who experience changes in their lives, such as retirement, death of a spouse, and deteriorating health. Moreover, about 7% of the 1.4 million older people in Malaysia live alone and in rural areas (Eira, 2019). In a study by Rashid and Manan (2010), the prevalence of severe depression was found to be highest among older people living alone (aOR = 2.32; 95% CI [1.25, 4.31]; $p < 0.003$) and this was in a rural area. In comparison, a study by Rashid and Tahir (2015) in an urban area found that the prevalence of severe depression was highest among participants who lived with others, followed by those living alone, children/family, and spouse (X^2 (3, N = 2005) = 26.25; $p < .001$).

The rapid migration of young adults from rural to urban areas have increased the number of older people living alone, and this situation could lead to the emptiness syndrome (Shao et al., 2017). This syndrome refers to the feeling of grief and loneliness that parents may experience when their children leave home for the first time (Li-qin et al., 2010). The persistence of this syndrome can lead to loneliness and contribute to a higher risk of psychological disorders, mental health problems, depression, or suicide (Anand et al., 2019). In addition, changes in family structure and the resulting financial insecurity among older people seem to cause them to lose significance and relevance to themselves and increase their loneliness (Bhamani et al., 2015).

Most studies found that social characteristics such as marital status, illiteracy, living alone, low socioeconomic position, unemployment, and living arrangement were associated with depression symptoms (Ashe & Routray, 2019; Dai et al., 2019; Disu et al., 2019; El-Gilany et al., 2018; Fatima et al., 2019; Giang et al., 2019; Güzel & Kara, 2020; Kavithai et al., 2018; Khaltar et al., 2017; Kugbey et al., 2018; Manandhar et al., 2019; Park et al., 2016; Rajapakshe et al., 2019; Rashid & Tahir, 2015; Shao et al., 2017; Thilak et al., 2016; Vanoh et al., 2016; Yadav et al., 2020).

Furthermore, spiritual needs could be considered protective factors for depression symptoms. Spiritual fulfilment is the core factor for healthy ageing, and it can be achieved through worship, prayer or other religious activities (Jumadi et al., 2018). In a study by Winahyu and Sari (2017), all subscales of religiosity were significantly negatively correlated with depression, with rituals showing the greatest strength of relationship ($r = 0.71$, $p < 0.01$). This result suggests that the older people who perceived higher religiosity had fewer depression symptoms.

In summary, the factors for depression symptoms in older people can be classified into biological factors such as age, gender, health status, cognitive level, and functional status, while psychological factors such as living alone, degree of loneliness, retirement, and unemployment play a role. Sociological aspects include marital status, educational level, financial status, and social support, while the spiritual aspect includes religious practice. In the next section, the gap of the study is discussed based on the results of previous studies.

1.3 PROBLEM STATEMENT

Numerous studies on the prevalence of depression in older people have been conducted in Asian countries. Several studies from South Asian countries reported high prevalence of depression symptoms in the older people such as 44.2% in Bangladesh (Cherry et al., 2012), 40.6% in Pakistan (Bhamani et al., 2013), 34.4% in India (Pilania et al., 2019), 36.9% in China (He et al., 2016), 34.6% in Singapore (Li et al., 2015), and 18.5% in Thailand (Charoensakulchai et al., 2019). In Malaysia, the prevalence of older people with depressive symptoms ranged from 3.7% (Hamzah et al., 2018) to 59.1% (Leong et al., 2020). The large difference could be due to the different study settings. However, most studies were conducted in urban areas (Aznan et al., 2019) or in institutions (Leong

et al., 2020) and targeted a specific population. For example, a study by Aznan et al. (2019) reported that 19.3% of the older people in Felda Bukit Goh community, Kuantan Pahang, had depression symptoms, while a study by Leong et al. (2020) found that 59.1% of the older people who lived in a day care centre had depression symptoms. Both studies were conducted in structured community settings, so the study results cannot be generalised to the group dwelling in communities.

In addition, a community-based study in Egypt found that 44.4% of older people in that country has depression symptoms (El Gilany et al., 2018). In this study, several instruments were used to measure health-related problems, cognitive impairment, level of loneliness, lack of social support, physical mobility, sleep disturbance, and spiritual factor compared to previous studies in Malaysia which only focus on several factors of depression such as data, health-related problems, cognitive impairment, level of loneliness, social support, and physical mobility (Aznan et al., 2019; Hamzah et al., 2018; Leong et al., 2020; Rashid & Tahir, 2015; Vanoh et al., 2016).

Due to the different study settings, target populations, and lack of a comprehensive assessment of factors associated with depression symptoms in older people, this study aims to determine the prevalence of depression symptoms in community-dwelling older people., Factors associated with depression symptoms are also assessed using the biopsychosocial and spiritual framework.

1.4 RESEARCH OBJECTIVES

The objectives of this study are divided into two, namely general and specific objectives.

1.4.1 General Objective

This study aims to determine the prevalence and associated factors of depression symptoms among community-dwelling older people in Kuala Terengganu.

1.4.2 Specific Objective

The specific objective of this study is as follows:

1. To determine the prevalence of depression symptoms among Malay community-dwelling older people in Kuala Terengganu.
2. To determine the associated factors of depression symptoms among Malay community-dwelling older people in Kuala Terengganu.

1.5 RESEARCH QUESTIONS

1. What is the prevalence of depression symptoms among Malay community-dwelling older people in Kuala Terengganu?
2. What are the associated factors of depression symptoms among Malay community-dwelling older people in Kuala Terengganu?

1.6 RESEARCH HYPOTHESIS

1.6.1 Null Hypothesis, H_0

1. There are no associated factors of depression among Malay community-dwelling older people in Kuala Terengganu.

1.6.2 Alternative Hypothesis, H_A

1. There are associated factors of depression symptoms among Malay community-dwelling older people in Kuala Terengganu.

1.7 SIGNIFICANCE OF THE STUDY

The study of the prevalence of depression and its determinants is essential to improve the understanding of depression, especially among older people, family members, and health professionals. This study will assist policymakers in planning appropriate screening programmes and prevention strategies for older people.

In terms of nursing, the results of this study could be useful for early detection of depression symptoms in older people. Therefore, a nursing care plan can be created that takes into account several factors to ensure holistic care. As a result, nurses can identify better coping mechanisms or methods to deal with conflict, interpersonal problems, and grief. This encourages older people to share their actual and potential losses, which speeds up recovery from their depression. In addition, the nurse can help the older person identify and reduce negative self-talk and unrealistic expectations and point out how negative thinking affects depression. Therefore, early detection with the help of appropriate assessment in primary care (physician or nurse) is important to treat depression symptoms in older people, especially as the population group is at different risk. This is because untreated depression makes them vulnerable to medical complications leading to further isolation, despair, and possibly suicide.

In addition, psychoeducational programmes, building support systems, and counselling can help reduce distress, anxiety, and depression. The nurse can refer the patient to a psychoeducational programme that can help the patient and family members understand depression, treatment options, and coping strategies. One study shows that psychoeducational interventions have a positive impact on psychological discomfort (depressive symptoms, anxiety, and stress) and self-esteem in older people (Maheshwari et al., 2021). These interventions could improve the quality of the nursing profession by providing holistic care for older people.

1.8 DEFINITION OF TERMS

1.8.1 Prevalence

Conceptual Definition

The total number of cases present in a specified population at a given time (Venes, 2017).

Operational Definition

The total number of cases with depression symptoms among community-dwelling older people at a given time.

1.8.2 Associated Factor

Conceptual Definition

An associated factor is a related factor that increases a person's chance of getting a particular condition (Oxford University, 2016).

Operational Definition

Associated factors consist of eight demographic descriptors used as factors associated variables, namely sociodemographic data (age, gender, education level, monthly household income, occupational status, living arrangement, smoking status, and alcohol consumption), health status (past medical history and present disease), cognitive level, loneliness level, social support, body functionality, sleep status, and religiosity. Other than that, an associated factor may be multifactorial from complex interactions such as biological, psychological, social, and spiritual factors.

Biological factors include demographic data such as age and gender, health status, physical mobility, and sleep status.

Psychological factors are components of mental health status, such as loneliness, living arrangement, and depression.

Social factors include social and environmental information such as marital status, living situation, education level, employment and unemployment, monthly household income, social support, and social networking.

Spiritual factors are adherence of Malay community-dwelling older people towards perceptions of religious beliefs, worship, and prayer.

1.8.3 Depression

Conceptual Definition

Depression is a pathological state associated with feelings of loss or guilt and characterised as sadness, lowering of self-esteem, disturbed sleep or appetite, tiredness, and poor concentration (Venes, 2017).

Operational Definition

Based on the Malay version of the short-form Geriatric Depression Scale (GDS) with 15 items (Norhayati et al., 2013), scores of 5 and below were considered typically normal or without depression. Participants who scored between 6 and 7 were considered to have moderate depression, and participants who scored 8 and above were considered to have indicative or probable depression.

1.8.4 Community-Dwelling Older People

Conceptual Definition

Community-dwelling older people are defined as those who are 60 years old and above and are living independently (Steultjens et al., 2004).

Operational Definition

Older people aged 60 years old and above living in the community by living alone or with a spouse, children, or others in their own or children's house.

1.9 SUMMARY

In this chapter, the background and problem statement of the study were explicitly used to specify the research gap in the literature. The research objective and questions of the study were explained. The significance of the study for nursing and healthcare practice was elaborated. The next chapter describes the process of finding relevant literature, summarises the previous studies, and describes the conceptual framework of this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter contains a literature review that provides information and evidence based on the systemic literature search strategy. The first section describes the literature search strategy in which the articles found were critically analysed and synthesised. Then, based on the selected literature review, the knowledge gap regarding the prevalence and associated factors of depression symptoms in community-dwelling older people is identified. Based on the review of the literature, a conceptual framework is formulated and a conclusion is drawn.

2.2 LITERATURE SEARCH STRATEGY

This part explains the literature search strategy used to find the relevant articles based on previous studies on the prevalence and associated factors of depression symptoms in community-dwelling older people. The search also found an evidence-based report on the factors associated with depression symptoms in community-dwelling older people The evidence was then critically analysed and synthesised to identify the knowledge gaps for this study.

The questions for this literature review were:

1. What is the prevalence of depression symptoms among community-dwelling older people?
2. What are the associated factors of depression symptoms among community-dwelling older people?

2.2.1 Description of Search Engine Strategies and Database Used

The first step was to search for relevant articles in four electronic databases of the International Islamic University Malaysia (IIUM). In this literature search, databases from the fields of health and psychology such as Wiley Online Library, Springer Link,

Science Direct, and PubMed were selected. The literature search focused on recent articles and the last five years, from 2015 to the present, to utilise current evidence on the prevalence and associated factors of depression among community-dwelling older people.

The next step was to define a list of keywords for the search for evidence. The use of keywords for relevant articles could easily be found. In this study, the keywords used were prevalence, factor, depression, and older people in community-dwelling. Boolean terms such as 'AND', 'OR' and 'NOT' were combined with the keywords.

2.2.2 Inclusion and Exclusion Criteria of the Literature Review Search

The inclusion and exclusion criteria for searching the literature review were set as follows to maintain the focus of the review:

Inclusion Criteria

1. The articles reported the prevalence of community-dwelling older people with depression symptoms.
2. The articles reported the factors associated with depression symptoms among community-dwelling older people.
3. The articles were written in English.

Exclusion Criteria

1. The articles reported clinical depression or mixed psychiatric disorders.
2. The articles reported the prevalence and factors associated with depression symptoms among older people who are hospitalised or living in residential or institutional facilities.
3. The articles have been published for more than five years.

2.2.3 Objectives of the Literature Review

The objectives of the literature review were:

- To determine the prevalence of depression symptoms among community-dwelling older people.
- To determine the associated factors of depression symptoms among community-dwelling older people.

2.2.4 Literature Search Strategy Process

The literature search was conducted using PRISM 2020. The databases yielded 10,469 potential articles relevant to the research topic. After removing duplicate articles, 2,513 articles were excluded. After screening the titles and abstracts, 7,956 articles were assessed for eligibility. Only 1,754 articles were available as full text. Of these, 1,718 articles were excluded because these articles did not meet the inclusion criteria. On the other hand, 324 articles reported on clinical symptoms of depression, 205 articles on chronic illnesses, 212 articles on frailty, 99 articles on environmental influences, 307 articles on primary care/hospital/community support services, 290 articles on quality of life, 118 articles on behaviour related to depression symptoms, and 163 articles on nutritional deficiencies related to depression symptoms. In the end, only 36 articles were considered, as well as 13 additional articles identified through hand-searching from the reference lists of relevant articles. Therefore, a total of 49 articles were selected for review. The flow chart can be referred in Figure 2.1.

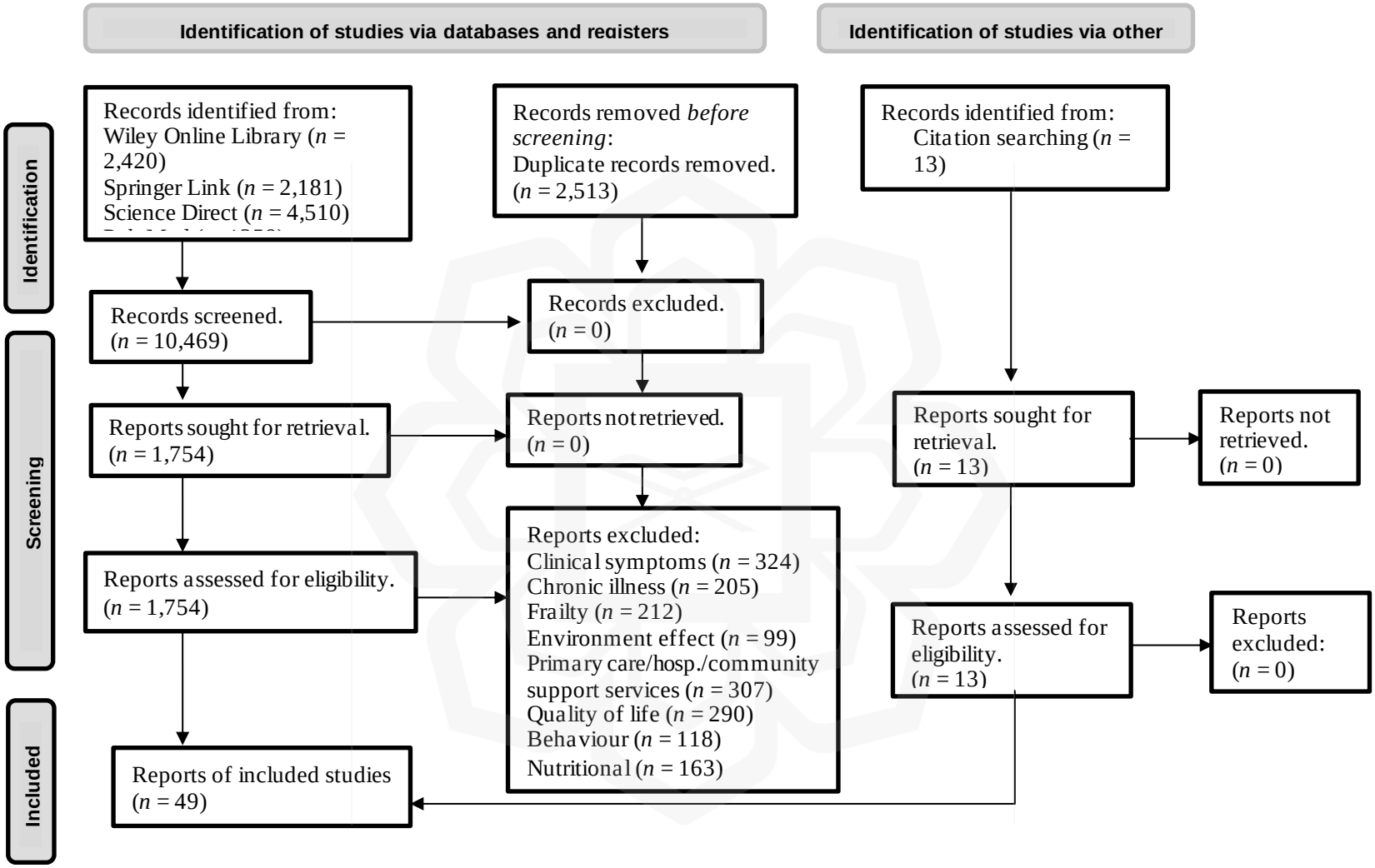


Figure 2.1 Flow Chart of the Literature Search Strategy Process

2.2.5 Assessment of the Included Studies

After searching for the relevant articles, they were assessed for quality of results, validity, and relevance. Assessing the quality of the studies was essential for the researcher to find information on previous studies on depression and its associated factors in community-dwelling older people based on high quality results.

The quality of relevant studies was assessed using appropriate tools. The Joanna Briggs Institute (JBI) was selected to conduct a quality assessment of the articles (see Appendix I). This assessment aims to ensure a judgement of methodological quality and adequate evidence based on the study design. The JBI, as an assessment tool, had developed over time and delivered unique evidence practice and guidance for conducting a review of research effectiveness using checklists (Moola et al., 2017). The assessment checklist for a cross-sectional study included the sample, setting, validity, reliability of instruments, confounding factors, strategies to address confounding factors, outcome measures, and appropriate analysis. The checklist for a cohort study included the sample group, setting, validity, reliability of instruments, confounding factors, outcome (measurement, group, follow-up), follow-up strategy, and appropriate statistical analysis. The quality of a study was rated "yes", "no" and "unclear" to "not applicable" for each question. The overall appraisal was either "included", "excluded" or "seek further information" based on the recommendation of the JBI grading.

In addition, the quality of the identified systemic review articles was assessed using the “Health Evidence™ Quality Assessment Tool – Review Article” guidelines developed by the National Collaborating Centre for Method and Tools (2018). Studies were classified as ‘strong’ if their total score was 8-10 and ‘weak’ if their total score was 4 or lower (Health Evidence, 2018) (see Appendix II).

Based on the literature search in four databases and the hand search, 49 articles were evaluated. The table below (Table 2.1) shows the distribution of the study on factors associated with depression only in community-dwelling older people. The study focused on both the prevalence and associated factors of depression among community-dwelling older people. There were seven studies that looked at the associated factor of depression among community-dwelling older people, and 42 of the studies reported on both, including the prevalence and associated factor of depression among community-dwelling older people. All studies used quantitative methods, with 41 articles using the

cross-sectional design, 3 articles using the longitudinal study design, 2 articles using meta-analyses, and 3 articles using systematic reviews. Although the studies had different study designs, the selection of these designs was methodologically sound and appropriate as they are commonly used for quantitative studies (Gordis, 2014). The summary of the included studies can be found in Appendix III (Table 2.2).

Table 2.1 List of Studies Included in the Review

Context of Studies	**Type of Study Design**	**Authors**
Factor predictor with depression among older people	Cross-Sectional Study (*n* = 4)	Winahyu & Sari (2017 Foong et al. (2018) Han et al. (2018) Tengku Aizan et al. (2019)
	Systematic Review (*n* = 1)	Tengku Amatullah Madeehah et al. (2019)
	Cohort Study (*n* = 2)	Santini et al. (2020) Almeida et al. (2016)
Prevalence and factor predictor of depression among older people	Cross-Sectional Study (*n* = 37)	Park et al. (2016) Dao et al. (2018) Dai et al. (2019) Bae (2020) Song et al. (2019) Vu et al. (2019) Giang et al. (2019) Yadav et al. (2020)
Prevalence and factor predictor of depression among older people		Igbokwe et al. (2020) Rashid & Tahir (2015) Li et al. (2015) Cong et al. (2015) Bhamani et al. (2015) He et al. (2016) Thilak et al. (2016)

		Vanoh et al. (2016) Tanjanai et al. (2017) Shao et al. (2017) Khaltar et al. (2017) Mirkena et al. (2018) Simkhada et al. (2018) El-Gilany et al. (2018) Hamzah et al. (2018) Kugbey et al. (2018) Rajapakshe et al. (2019) Kavithai et al. (2018) Konda (2018) Manandhar et al. (2019) Charoensakulchai et al. (2019) Mohebbi et al. (2019) Ashe & Routray (2019) Aznan et al. (2019) Disu et al. (2019) Fatima et al. (2019) Kathari et al. (2020) Bincy et al. (2021) Güzel & Kara (2020)
	Systematic Review (*n* = 4)	Sarokhani et al. (2018) Pilania et al. (2019) Zhang et al. (2020) Salari et al. (2021)
	Cohort Study (*n* = 1)	Kiyoshige et al. (2019)
Total		49

2.2.6 Assessment of the Included Studies: Cross-Sectional Studies

The Joanna Briggs Institute (JBI) quality assessment tool was used to assess included articles for cross-sectional studies.

2.2.6.1 Selection

In all selected articles, the criteria for inclusion in the sample were clearly defined, namely older people aged 60 years and over. The study was conducted in residential communities. 14 studies were included to represent the level of depression symptoms among community-dwelling older people (Bae, 2020; Bincy et al., 2021; Cong et al., 2015; Dai et al., 2019; Foong et al., 2018; Giang et al., 2019; Han et al., 2018; Igbokwe et al., 2020; Mohebbi et al., 2019; Park et al., 2016; Rajapakshe, 2018; Shao et al., 2017; Tanjanai et al., 2017; Vanoh et al., 2016). Meanwhile, the selection of the population was represented by the target population. 11 studies were conducted in rural areas (Bincy et al., 2021; Charoensakulchai et al., 2019; Disu et al., 2019; Giang et al., 2019; Hamzah et al., 2018; Kavithai et al., 2018; Manandhar et al., 2019; Simkhada et al., 2018; Thilak et al., 2016; Vu et al., 2019; Yadav et al., 2020). The only study conducted in rural and urban areas was by El-Gilany et al. (2018) and Rajapakshe (2018). Although the population areas were different, the studies had a similar objective, namely to determine the prevalence and associated symptoms of depression among community-dwelling older people.

Regarding the selection of study instruments, two studies used the Zung Self Rating Depression (ZSRD) to assess the level of depression symptoms in older people (Dao et al., 2018; Shao et al., 2017). On the other hand, the Centre for Epidemiological Studies-Depression Scale (CES-D) was used in four of the studies (Bae, 2020; Han et al., 2018; Mohebbi et al., 2019). One study used the Depression and Anxiety Scale-21 (DASS-21), which was appropriate to determine the level of depression (Igbokwe et al., 2020). Meanwhile, 39 studies used the Geriatric Depression Scale (GDS) in their studies to determine the level of depression symptoms in community-dwelling older people. Moreover, all of these self-reported depression symptom assessment instruments showed adequate reliability, validity, and responsiveness. Several studies used sociodemographic data to determine the risk factor for depression symptoms, rather than appropriate instruments to measure physical mobility, social support, and

loneliness (Bae, 2020; Disu et al., 2019; Fatima et al., 2019; Giang et al., 2019; Han et al., 2018; He et al., 2016; Manandhar et al., 2019; Shao et al., 2017; Simkhada et al., 2018; Thilak et al., 2016; Yadav et al., 2020). The author only used constructed questions to determine the risk factor for depression symptoms. Nevertheless, these articles were useful because the findings could be used as baseline for important results. Other studies used validated measurement instruments, which were described in the articles. In addition, the instruments selected were appropriate to assess the outcome of the studies.

2.2.6.2 Confounders

Regarding the confounding factors criterion, only three studies controlled for the potential of confounding factors for different factors (Konda, 2018; Rajapakshe et al., 2019; Tanjanai et al., 2017). All three studies had different strategies for dealing with confounding factors. A study by Rajapakshe et al. (2018) found that 17 variables were associated with depression symptoms after univariable analysis. However, after adjusting for confounding factors, only 13 variables were identified as correlates of depression symptoms. Among sociodemographic variables, female gender (odds ratio (OR) = 10.60), age between 60 and 64 years (OR = 1.61), being unmarried, separated, divorced or widowed ((OR = 3.73), income ≤ 20 000 Sri Lankan rupees (OR = 2.27)), and perceived financial burden (OR = 3.15) were significantly associated with depression symptoms. Among health-related variables, smoking (OR = 2.18), alcohol consumption (OR = 7.58), the presence of a chronic illness (OR = 1.51), limitation in performing one or more instrumental activities of daily living (OR = 1.73), an unsatisfactory partner relationship (OR = 2.94), perceived inadequate social support (OR = 2.47), experiencing abuse (OR = 3.90), and experiencing major life events (OR = 2.11) were significantly associated with depression symptoms.

A study by Tanjanai et al. (2017) examined sociodemographic variables using bivariate analysis. Gender, education level, marital status, income satisfaction, occupation, relationship with financial provider, leisure time, daily activities, and frequency of meetings with friends and relatives were factors that determined the likelihood of depression symptoms. However, after multivariate control of confounding variables, marital status and educational level were removed from the final model.

Furthermore, Konda (2018) found the older people who were single, overweight and obese, and had poor self-reported health were significantly associated with depression symptoms. After controlling for confounders, the overall logistic regression model showed that depression was significantly associated with being single and having poor self-rated health.

In another study by Vanoh et al. (2016), factors associated with depression symptoms were determined using binary logistic regression with GDS categories as dependent variables (reference group without depression and group with depression). The adjusted odds ratio (aOR) was determined by controlling for the influence of several confounding variables such as age, income, gender, alcohol, and living arrangement. In addition, Charoensakulchai et al. (2019) found that the final model for multivariate analysis included marital status, gender, education level, tobacco use, and family relationship. After adjustment, the association factors for depression symptoms were female (aOR = 2.78; 95% CI [1.54, 7.49]; $p < 0.01$), illiteracy (aOR = 2.86; 95% CI [1.19, 6.17]; $p < 0.04$), current smoker (aOR = 4.25; 95% CI [2.12, 10.18]; $p < 0.009$), and unbalanced family type (aOR = 4.52; 95% CI [2.14, 7.86]; $p < .001$).

In the context of research, a confounding variable is one that is related to both the independent variable (the factor being studied) and the dependent variable (the outcome being measured), and which may distort or obscure the true relationship between them. Controlling for a confounding variable means taking steps to account for its effects so that its influence on the relationship between the independent and dependent variables is minimised or eliminated. This is usually done using statistical techniques such as regression analysis or stratification. If a confounding variable has been effectively controlled for in a study, it means that the study design and statistical analysis have taken into account its possible influence on the results. This is important because it allows researchers to more accurately determine the true relationship between the independent and dependent variables under study (Hatim, 2017; Norsa'adah, 2011). When a study has successfully controlled for confounding variables using advanced statistical analyses, it is considered a well-designed and rigorous study. As a result, such studies are highly valued in literature searches as they provide more accurate and reliable results that can serve as a basis for future research and clinical practice.

2.2.6.3 Outcomes of the Studies

Regarding the outcome criterion, the selection of an appropriate statistical analysis technique is crucial to answer the study results. Most studies used univariate (such as Pearson's chi-square test) and multivariate analyses (such as regression) to find the risk factor predicting depression among community-dwelling older people mediated by another characteristic (demographic variables). In addition, almost all studies used descriptive statistics in the form of percentages (%) and frequencies (*n*), which are reported in tabular form. The statistical test is clearly described and the important values, such as CIs and probability values (*p*-values), are mentioned in the texts and tables. In summary, the outcome measure was clearly stated and described by presenting the relevant statistical test and values in tabular form. The quality of the included cross-sectional studies based on each ticked criterion in the JBI assessment tool and the results of most studies can provide much information and improve the understanding of the phenomenon in the study samples if the statistical analysis techniques are selected appropriately.

2.2.7 Assessment of the Included Studies: Cohort Studies

The "Health Evidence™ Quality Assessment Tool – Review Articles" guidelines were chosen to guide the assessment of the quality of the review papers. Three studies applied a cohort study design to determine the associated factor of depression symptoms among community-dwelling older people (Almeida et al., 2016; Kiyoshige et al., 2019; Santini et al., 2020).

2.2.7.1 Selection

These three studies selected a group of community-dwelling older people. A study by Almeida et al. (2016) recruited 4,568 men aged 65 years and older living in Perth, Western Australia, with no cognitive impairment at baseline follow-up. During the 5-year follow-up period, 534 developed cognitive impairment, 811 died, and 1,455 were lost. On the other hand, a study by Santini et al. (2020) used a longitudinal mediation analysis with data from the National Social Life, Health, and Ageing Project (NSHAP). The study included individuals from the US born between 1920 and 1947. Using data

from 3,005 adults aged 57–85 years, two significant longitudinal mediation patterns with symptoms of depression and two with symptoms of anxiety were identified. Data were collected from 2005 to 2006 for cohort 1, from 2010 to 2011 for cohort 2, and from 2015 to 2016 for cohort 3, which was a reasonable time period for follow-up. A study by Kiyoshige et al. (2019) also conducted a longitudinal analysis among participants aged 70 and 80 years, with baseline data from septuagenarians, and using the Tokyo Metropolitan Institute of Gerontology (TMIG) index of competence. This study was conducted over a 3-year period and included a total of 1000 participants aged 69-71 years, 973 participants aged 79-81 years, and 272 participants aged 89-91 years. After three years of follow-up, the number of participants was 1,078, including 539 participants in the 70-year-old group and 519 participants in the 80-year-old group. Participants with missing information on Instrumental Activity Daily Living (IADL) and depression symptoms were excluded (122 participants aged 70 years and 51 participants aged 80 years).

Regarding instrument selection, eligible men were measured with the Mini-Mental Health State Examination and scored more than 24 between 2001 and 2004 (Almeida et al., 2016). During the follow-up period, the men were assessed for level of depression using ICD9, ICD10, and GDS. Cognitive abilities were also reassessed using the Mini-mental Health State Examination (MMSE). The study by Santini et al. (2020) used the Centre for Epidemiological Studies-Depression Minus Loneliness Scale (CES-D- ML) and the Hospital Anxiety and Depression Scale (HADS-A). These instruments were considered suitable screening tools to assess factors associated with depression symptoms. Constructed instruments were also used. The scales for Social Disconnectedness and Perceived Social Isolation were validated using data from the NSHAP. In a study by Kiyoshige et al. (2019), the GDS-5 and Diagnostic and Statistical Manual of Mental Disorder Edition IV (DSM-IV) criteria were used to classify participants as either non-depressed or depressed. In addition, this study measured IADL at baseline and at the 3-year follow-up periods.

2.2.7.2 Confounders

In the study by Santini et al. (2020), residual confounding could be due to potential confounders that the author was unable to include or adjust for in the analysis, such as

stressful life events, family history of mental disorders or genetic profiles. In a study by Kiyoshige et al. (2019), potential confounders were considered, including gender, cognitive function, economic condition, education, solitary living, past medical history, dyslipidaemia, diabetes, and body mass index. The factor was found based on previous studies on the association between depression symptoms and IADL decline. In a study by Almeida et al. (2016), however, there was no study control for comparability.

2.2.7.3 Outcome of the Studies

The assessment of outcome was clearly explained in the articles. To compare the baseline between two groups, *p*-values were calculated using logistic regression analysis with adjustment for age. Age-adjusted relative risk was calculated to examine the relationship between depression states and the onset of functional disability. Cox regression analysis examined the difference in functional disability stratified by depression status. The multivariate models were adjusted for age and gender.

In addition, the cohort study used Cox regression analysis to control for confounding factors. In the study by Almeida et al. (2016), the Pearson chi-squared (χ^2) statistic was used to determine the probability that the distribution of exposures among individuals with past, current, and no history of depression was attributable to chance. It gave the number of degrees of freedom (*df*) and the probability (*p*-value) that the associations were due to chance. Then multinomial logistic regression was used to calculate the Risk Rate (RR) ratio. For cognitive follow-up in 2008, a 95% CI was calculated for mild cognitive impairment, cognitive impairment, death, and unavailability. According to depression history and other explanatory variables, the RR ratio of clinical outcomes was later adjusted for other measured factors. Alpha was set at 0.05 and all tests reported were two-tailed. The study by Kiyoshige et al. (2019) also used logistic regression models stratified by age group (70s/80s) to obtain OR and 95% CI, including the possible confounding factor.

The assessment of the outcome was clearly explained in the article by Santini et al. (2020), namely that perceptions of social isolation (e.g., loneliness, perceived lack of support) contribute to the severity of anxiety and depression symptoms in community-dwelling older people aged 57-85 years at baseline. Little's χ^2-test was used in this study, which indicated that the data were not missing completely at random.

Structural equation modelling (SEM) with observed variables assessed associations and statistical mediations between social disconnectedness, perceived isolation, depression symptoms (model 1), and anxiety symptoms (model 2) at all time points.

In brief, these studies were evaluated as 'included' based on each ticked criterion and these studies were reviewed to improve understanding in relation to the context of the study. The cohort studies by Almeida et al. (2016), Kiyoshige et al. (2019), and Santini et al. (2020) were included in the literature search. These studies discovered the risk of depression in community-dwelling older people via follow-up after several years of exposure to a life event. Therefore, the study could provide important insights into the factor of depression symptoms in older people.

2.2.8 Assessment of the Included Studies: Systematic Reviews

The "Health Evidence™ Quality Assessment Tool – Review Articles" guidelines were selected to guide the assessment of the quality of the review papers. Based on the literature search, five review papers addressed the association of depression symptoms in community-dwelling older people (Pilania et al., 2019; Salari et al., 2021; Sarokhani et al., 2018; Tengku Amatullah Madeehah et al., 2019; Zhang et al., 2020).

The study by Pilania et al. (2019) examined the prevalence of depression symptoms among the older people population in India. The comprehensive database search strategy included PubMed, Web of Science, Embase, PsycINFO, and IndMed for articles published between 1997 and 2016. Two studies examined the prevalence of depression among older people in Iran (Sarokhani et al., 2018; Salari et al., 2021). The study by Sarokhani et al. (2018) also used comprehensive databases such as ISI, Scopus, PubMed, Google Scholar, and Iranian databases such as Iran Index, Magiran, SID, and Med Lib. The selected articles were published between 2001 and 2015. For Salari et al. (2021), Scopus, Science Direct, SID, PubMed, Google Scholar, and Iranian databases such as Magiran, Knowledge Network System, and Barakat were used as the database for the article search. The articles found were from 2000 to 2019.

In addition, two studies measured the prevalence of depression symptoms among older people who experienced emptiness (Zhang et al., 2020) and the other focused on social support (Mohd et al., 2019). Both used a variety of database search

strategies to find valid articles. The study by Tengku Amatullah Madeehah et al. (2019) used the CINAHL, PubMed, PsychINFO, Psychology and Behavioural Sciences Collection, SocINDEX, and Web of Science databases. The databases were assessed from 2010 to January 2020, while the study by Zhang et al. (2020) used the databases of PubMed, EMBASE, Web of Science, PsycINFO, Cochrane Library, China National Knowledge Infrastructure, and Wan Fang. All databases were suitable for use.

Five articles mentioned the research design, study population, sample size, and data analysis. The variance of the studies could be determined and compared with each other. Even though two studies focused on different variables, they were still included in the assessment of the present study. The results of each study were tabulated and the table was used to assess the similarities between the studies. The articles were given scores of 7 to 10, which meant that they were 'strong' papers that fulfilled all the criteria of the assessment tool. In summary, most of the review papers had good methodological quality. The transparency and weightage of the selected studies were also clearly described.

2.2.9 Summary of the Assessment of the Included Studies

Overall, the quality of the included studies was assessed using the "Health Evidence™ Quality Assessment Tool – Review Articles" guidelines, which were selected to guide the assessment of the quality of review papers for meta-analysis and cohort study. In contrast, the JBI tool was selected to assess the quality of cross-sectional studies. The quality of all included studies were good in terms of study population selection, confounders, and study outcomes. Even though several weaknesses were identified, the results could be used for this study. They also helped the researcher understand the phenomenon and complexity of problems related to depression symptoms and associated factors among community-dwelling older people. The summary of the JBI checklist for the critical appraisal of cross-sectional analytical studies can be found in Table 2.3, while the summary of the "Health Evidence™ Quality Assessment Tool – Review Articles" guidelines that guide the assessment of the quality of review papers for meta-analyses and cohort studies can be found in Table 2.4.

Table 2.2 The Summary of JBI Critical Appraisal Checklist for Analytic Cross-Sectional Studies

Authors	**Inclusion Criteria**	**Study Setting**	**Validity and Reliability of Tools**	**Standard Criteria Used for Measurement**	**Confounder**		**Outcomes**	
					Confounder Identified	**Strategies to Deal with Confounder**	**Measurement is Valid and Reliable**	**Appropriate Analysis**
Park et al., 2016	/	/	/	/	/	/	/	/
Dao et al., 2018	/	/	/	/	-	-	/	/
Dai et al., 2019	/	/	/	/	-	-	/	/
Bae, 2020	/	/	/	/	-	-	/	/
Song et al., 2019	/	/	/	/	/	/	/	/
Vu et al., 2019	/	/	/	/	/	/	/	/
Giang et al., 2019	/	/	/	/	/	/	/	/
Yadav et al., 2020	/	/	/	/	-	-	/	/
Igbokwe et al., 2020	/	/	/	/	/	/	/	/
Rashid & Tahir, 2015	/	/	/	/	/	/	/	/

Authors	Inclusion Criteria	Study Setting	Validity and Reliability of Tools	Standard Criteria Used for Measurement	Confounder		Outcomes	
					Confounder Identified	Strategies to Deal with Confounder	Measurement is Valid and Reliable	Appropriate Analysis
Li et al., 2015	/	/	/	/	-	-	/	/
Cong et al., 2015	/	/	/	/	-	-	/	/
Bhamani et al., 2015	/	/	/	/	/	/	/	/
He et al., 2016	/	/	/	/	/	/	/	/
Thilak et al., 2016	/	/	/	/	-	-	/	/
Vanoh et al., 2016	/	/	/	/	/	/	/	/
Tanjanai et al., 2017	/	/	/	/	/	/	/	/
Shao et al., 2017	/	/	/	/	-	-	/	/
Khaltar et al., 2017	/	/	/	/	/	/	/	/
Mirkena et al., 2018	/	/	/	/	-	-	/	/
Simkhada et al., 2018	/	/	/	/	/	/	/	/

Authors	Inclusion Criteria	Study Setting	Validity and Reliability of Tools	Standard Criteria Used for Measurement	Confounder		Outcomes	
					Confounder Identified	Strategies to Deal with Confounder	Measurement is Valid and Reliable	Appropriate Analysis
El-Gilany et al., 2018	/	/	/	/	/	/	/	/
Hamzah et al., 2018	/	/	/	/	-	-	/	/
Kugbey et al., 2018	/	/	/	/	-	-	/	/
Rajapakshe et al., 2019	/	/	/	/	/	/	/	/
Kavithai et al., 2018	/	/	/	/	-	-	/	/
Konda, 2018	/	/	/	/	/	/	/	/
Manandhar et al., 2019	/	/	/	/	-	-	/	/
Charoensakulchai et al., 2019	/	/	/	/	/	/	/	/
Mohebbi et al., 2019	/	/	/	/	-	-	/	/
Ashe & Routray, 2019	/	/	/	/	/	/	/	/

Authors	Inclusion Criteria	Study Setting	Validity and Reliability of Tools	Standard Criteria Used for Measurement	Confounder		Outcomes	
					Confounder Identified	Strategies to Deal with Confounder	Measurement is Valid and Reliable	Appropriate Analysis
Aznan et al., 2019	/	/	/	/	-	-	/	/
Disu et al., 2019	/	/	/	/	-	-	/	/
Fatima et al., 2019	/	/	/	/	-	-	/	/
Kathari et al., 2020	/	/	/	/	-	-	/	/
Bincy et al., 2021	/	/	/	/	-	-	/	/
Güzel & Kara, 2020	/	/	/	/	-	-	/	/
Winahyu & Sari, 2017	/	/	/	/	-	-	/	/
Foong et al., 2018	/	/	/	/	-	-	/	/
Han et al., 2018	/	/	/	/	-	-	/	/
Tengku Aizan et al., 2019	/	/	/	/	-	-	/	/

Meta-analysis										
Authors	**Study population, intervention & outcome**	**Inclusion criteria**	**Description of search strategy**	**Year of study search**	**Evidence of study review**	**Quality of methodology in primary study**	**Transparency in review**	**Combining / Comparing findings**	**Method of combining /Comparing used**	**Data support the author's interpretation**
Tengku Amatullah et al., 2018	/	/	/	/	/	/	/	/	/	/
Madeehah et al., 2019	/	/	/	/	/	/	/	/	/	/
Sarokhani et al., 2018	/	/	/	/	/	/	/	/	/	/
Pilania et al., 2019	/	/	/	/	/	/	/	/	/	/
Zhang et al., 2020	/	/	/	/	/	/	/	/	/	/

Salari et al., 2021	/	/	/	/	/	/	/	/	/	/
Cohort Study										
Authors	**Study population, intervention & outcome**	**Inclusion criteria**	**Description of search strategy**	**Year of study search**	**Evidence of study review**	**Quality of methodology in primary study**	**Transparency in review**	**Combining /Comparing findings**	**Method of combining /Comparing used**	**Data support the author's interpretation**
Kiyoshige et al., 2019	/	/	/	/	/	/	/	/	/	/
Santini et al., 2020	/	/	/	/	/	/	/	/	/	/
Almeida et al., 2016	/	/	/	/	/	/	/	/	/	/

2.2.10 Findings of the Included Studies

A total of 49 articles were selected for inclusion in the literature review. The study findings were written in narrative form and divided into two main themes, namely the prevalence of depression symptoms among community-dwelling older people and the factors associated with depression symptoms among community-dwelling older people.

2.2.10.1 The Prevalence of Depression Symptoms among Community-Dwelling Older People

Recently, many studies have been conducted to measure the prevalence of depression symptoms in older people worldwide. There were two studies from West Africa (Igbokwe et al., 2020; Kugbey et al., 2018) and one study was conducted in East Africa (Mirkena et al., 2018). There were two studies from the Middle East (El-Gilany et al., 2018; Tanjanai et al., 2017) and one from Australia (Mohebbi et al., 2019). Most studies were conducted in Asian countries such as China (Cong et al., 2015; He et al., 2016; Shao et al., 2017), India (Thilak et al., 2016; Simkhada et al., 2018; Konda, 2018; Kavithai et al., 2018; Manandhar et al., 2019; Ashe & Routray, 2019; Kathari et al., 2020;), Pakistan (Bhamani et al., 2015; Fatima et al., 2019), Bangladesh (Disu et al., 2019), Sri Lanka (Khaltar et al., 2017; Rajapakshe et al., 2018), Thailand (Charoensakulchai et al., 2019), Singapore (Li et al., 2015), Vietnam (Giang et al., 2019), and Malaysia (Rashid & Tahir, 2015; Vanoh et al., 2016; Aznan et al., 2019; Hamzah et al., 2018). All these studies presented the prevalence of depression symptoms among community-dwelling older people.

Two studies conducted in West Africa in Ghana (Kugbey et al., 2018) and Nigeria (Igbokwe et al., 2020) found the prevalence of depression symptoms to be 37.8% and 52.0% respectively, while a study in East Africa (Ethiopia) (Mirkena et al., 2018) found 41.8%. These differences could be attributed to the socioeconomic status of the participants who were women, widowed, advanced in age (> 75 years), retired, and had low incomes. In addition, women bear the burden of household responsibilities and caring for family members (Igbokwe et al., 2020). These conditions are likely to have a negative impact on their psychological well-being (Charoensakulchai et al., 2019). In addition, living status issues may also contribute to depression symptoms, for

example poor relationships between family members or dependence on other family members.

Two studies from the Middle East, Iran and Egypt, showed an almost similar prevalence of depression in the older people at 36.7% and 44.4% respectively. In contrast, studies in Australia and the United States using the CES-D 10 to measure depression symptoms in older people showed a prevalence of 9.8%, which was low compared to other studies using GDS. This could be due to the different inclusion and exclusion criteria for participants.

Moreover, the systematic review and meta-analysis (1997-2016) on the prevalence of depression symptoms among the elderly population in India revealed that the prevalence of depression symptoms among the elderly Indian population was 34.4% (Pilania et al., 2019). The rural area of Kannur reported high prevalence of depression symptoms (72.4%) (Thilak et al., 2016), while in the other study by Kavithai et al. (2018), depression symptoms among the elderly in rural areas were 41.1%. In a study conducted in semi-urban areas, the prevalence of depression symptoms among the older people was 60.6% (Simkhada et al., 2018). According to a study by Konda (2018), the figure was slightly lower in urban areas (23%) than in rural and semi-urban areas. Alternatively, Ashe & Routray (2019) reported that depression symptoms were 44.9% among older people. In contrast, a study by Kathari et al (2020) reported that depression symptoms among the elderly were 60%, which was slightly higher compared to Konda (2018) and Ashe and Routray (2019). Moreover, in a study by Manandhar et al. (2019), 56.0% was reported in both rural and urban areas. In Karachi, Pakistan, a study by Bhamani et al. (2015) found that the prevalence was 40%, while the study by Fatima et al. (2019) indicated 37%. Meanwhile, Sri Lanka had a low prevalence of 13.9% (Rajapakshe et al., 2018). On the other hand, a study by Khaltar et al. (2017) showed 31.8% due to a confounding factor. Furthermore, a study in Thailand by Charoensakulchai et al. (2019) reported the prevalence of 18.5%, while in Singapore, it was 34.6% (Li et al., 2015).

In Malaysia, there are several studies on the prevalence of depression symptoms in the older people. Two studies in urban areas came to the same conclusion regarding the prevalence of depression symptoms among the older people (19%) (Aznan et al., 2019; Rashid & Tahir, 2015). In contrast, a study by Vanoh et al. (2016) found a value

of 16%, which was slightly lower compared to the studies by Aznan et al. (2019) and Rashid and Tahir (2015). This was because the secondary data from the "Longitudinal Study Towards Useful Ageing" was lower compared to the two studies where the inclusion sample did not have severe mental illnesses and dementia. Another systematic review study of the determinants of healthy ageing found that older people who had good social, mental, cognitive, and physical statuses were at low risk for any psychological illnesses (Abud et al., 2022). However, in a study by Hamzah et al. (2018) in a rural area in southern Malaysia, it was found that only 3.7% had symptoms of depression. This could be due to the lack of factors contributing to depressive symptoms and that they reported having no life issues. This finding suggests that the older people in this study had high resilience to problems related to life. In a similar qualitative study on the resilience factor self-reported by older people living in communities, personal strength was described as a strategy for coping with health challenges and contributes to positive thinking (Whitmore et al., 2023).

2.2.10.2 Factors Associated with Depression Symptoms among Community-Dwelling Older People

In recent years, there have been a growing number of studies on the factors associated with depression symptoms in community-dwelling older people. These factors have been identified on the basis of previous findings and classified into several groups of factors.

2.2.10.2.1 Sociodemographic of Participants

The relationship between depression symptoms and sociodemographic data among community-dwelling older people has been widely studied. Most studies have found that older female adults were more likely to suffer from depression symptoms than older men. In the study by Mirkena et al. (2018), it was reported that older female adults were 1.7 times more likely to suffer from depression than older male adults due to the burden of household responsibilities (aOR=1.72; 95% CI [1.1.2, 2.66]; $p < .001$). The life expectancy of older women are higher compared to older men, at 77.6 years and 72.7 years respectively (DOSM, 2018). Therefore, older women are more vulnerable and susceptible to negative stressors in life (Vu et al., 2019). However, some studies have

shown that there were not significant differences between genders. For example, several studies found no statistically significant differences between women and men (Aznan et al., 2019; Cong et al., 2015; Dao et al., 2018; Hamzah et al., 2018; Kugbey et al., 2018; Li et al., 2015; Shao et al., 2017). This could be due to hormonal changes and decreased serotonergic signalling at receptors 5-HT-1A and 5-HT-2A, which are responsible for emotional changes (Karrer et al., 2019). Therefore, older people are more susceptible to depressive symptoms.

Being single, unmarried, or widowed has been found to be significantly related to depression symptoms in older people (Rajapakshe et al., 2019). This finding is supported by other studies (Bincy et al., 2021; Manandhar et al., 2019; Rashid & Tahir, 2015), which explain that grief over the loss of a spouse affects the psychosocial health of older people because dependence and emotional attachment to a spouse increase with age (Fatima et al., 2019). In addition, changes in family dynamics, where parents remain at home alone due to children moving out, loss of a spouse or retirement, may cause older people to lose the opportunity for informal social interactions, which means they are more sensitive to rejection, criticism, and separation (Rashid & Tahir, 2015). Consequently, they feel lonely and are prone to depressive symptoms (Rajapakshe et al., 2019). Apart from this, severe depression was highest among participants who had completed primary school, were illiterate, and unemployed (Rashid & Tahir, 2015). Illiteracy among older people contributes to the factor associated with depression symptoms, which prevents older people from pursuing better employment or becoming unemployed, and the level of socioeconomic status is low (Simkhada et al., 2018). As a result, this can lead to persistent stress and negative perceptions of social support and contribute to depression symptoms (Rashid & Tahir, 2015; Vanoh et al., 2016; Park et al., 2016; Thilak et al., 2016; He et al., 2016; Shao et al., 2017; Khaltar et al., 2017; Rajapakshe et al., 2018; Manandhar et al., 2019; Kugbey et al., 2018; Kavithai et al., 2018; El-Gilany et al., 2018; Disu et al., 2019; Fatima et al., 2019; Giang et al., 2019; Ashe & Routray, 2019; Dai et al., 2019; Güzel & Kara, 2020; Yadav et al., 2020). In addition, changes in family dynamics, where parents remain at home alone due to children moving out, the loss of a spouse or retirement, may result in older people losing opportunities for informal social interactions, meaning they may be more sensitive to rejection, criticism, and separation (Rashid & Tahir, 2015). In all these studies, the

above variables were found to be significantly associated with depression symptoms among community-dwelling older people.

2.2.10.2.2 Health-Related Past Medical and Present Disease

Several factors, including poor health, chronic diseases such as stroke, hearing loss, poor eyesight, cardiac disease, chronic lung disease, chronic pain, hypertension, diabetes mellitus or the interaction of medications, are associated with depressive symptoms in the elderly. A study by Ashe and Routray (2019) reported that older people who have diabetes mellitus and hypertension are two to three times more likely to develop severe depression symptoms. Another study by Kugbey et al. (2018) reported that people with chronic illnesses such as hypertension, diabetes mellitus, cancer or human immunodeficiency virus (HIV) were most likely to have high rates of depression compared to older people without chronic illnesses. Most studies found that the presence of multiple chronic diseases was a significantly associated factor for depression symptoms (He et al., 2016; Güzel & Kara, 2020; Rajapakshe et al., 2018; Simkhada et al., 2018; Yadav et al., 2020; Dai et al., 2019). Accordingly, having multiple chronic diseases worsened health status due to symptoms of illness and reduced quality of life, i.e., being dependent on someone in daily life. For example, in a study by Vanoh et al. (2016), chronic diseases such as hypertension and osteoarthritis were found to be significantly associated with depression symptoms. Hypertension can lead to a change in the circuitry between the basal ganglia and frontal cortex, which in turn can lead to depression symptoms. In contrast, osteoarthritis can cause chronic pain, fatigue, disability, and mood changes, which can lead to depression. In addition, typical or pathological ageing is also associated with an increased risk of dementia, physical disability, sensory function loss, frailty, and depression (Szymkowicz et al., 2023). The ageing process can be serendipitous, whether typical or pathological. It is characterised by involutionary changes in certain systems and organs, which lead to a gradual reduction in the body's efficiency, co-existence of diseases, and changes in symptomatology (Dziechciaż & Filip, 2014). The author therefore concludes that health-related past medical and present illnesses contribute to depressive symptoms among community-dwelling older people.

2.2.10.2.3 Cognitive Status

Dementia is defined as a normal ageing process associated with a syndrome of behaviour and cognitive abilities, including executive functions, attention and memory, and emotional disturbances due to degenerative parts of the brain (Taylor, 2014). As a result, older people may have poor memory function, making them unable to cope well with everyday life, which increases depression symptoms (Kathari et al., 2020). Depression symptoms are a risk factor for cognitive impairment, which was also confirmed by Aznan et al. (2019). They found that older people with cognitive impairment have a threefold higher risk of depression than older people with normal cognition. This is also supported by Bincy et al (2021) who found that older people with dementia have 3.3 times higher risk of developing depression than others. This could be due to degeneration of the brain, such as reduction in brain volume, loss of myelin sheath integrity, thinning of the cortex, and impaired release of neurotransmitters such as serotonin and acetylcholine. If serotonin is impaired at the same time, this affects mood and can lead to depression (Kathari et al., 2020).

Another study using a Mini-Mental State Examination (MMSE) instrument reported that cognitive impairment was associated with geriatric depression in the elderly. (Kathari et al., 2020; Vanoh et al., 2016). A study by Charoensakulchai et al. (2019) used the Thailand Mini-Mental State Examination (T-MMSE). Nevertheless, they have to exclude it because most older people have visual and hearing impairments. The time limit to answer the questions in the T-MMSE must not exceed seven minutes. Similarly, a study by Rashid and Tahir (2015) using the Elderly Cognitive Assessment Question (ECAQ) instrument found that the association between severe depression symptoms and cognitive impairment was significant. These will be confounders in cross-sectional studies of depression in older people (Aznan et al., 2019). In contrast, a study of depression as a risk factor for cognitive impairment in older age found a lack of association between past depression symptoms and cognitive impairment in men, suggesting that the association between depression symptoms and cognitive impairment is not due to the presence of clinically significant depression symptoms later in life (Almeida et al., 2016). However, this study was not comparable as most depression symptoms occurred in women (Fatima et al., 2019). Another study found that there was no correlation between the Hodkinson Abbreviated Mental Test (HAMT) score ($r = -0.041$) measuring cognitive level and the GDS-15 score (Hamzah et al., 2018).

Meanwhile, a study by Konda (2018) found that there was no significant relationship between depression level and cognitive level. In conclusion, cognitive impairment may be associated with depression among community-dwelling older people.

2.2.10.2.4 Loneliness Among Older People

Social isolation refers to a life without companionship and social connectedness. In general, there are four interrelated concepts that define social isolation, namely being alone (i.e., spending time alone), living alone (i.e., lacking a significant other), social isolation (i.e., low levels of social contact with others), and loneliness (i.e., negative feelings individuals have about their level of social interaction) (Victor et al., 2005). Loneliness is a multidimensional phenomenon that includes social isolation (subjective), deficient social network (perceived), and emotional isolation (i.e., the absence of a person to whom one feels attached) (Roudsari et al., 2018). Loneliness is associated with a number of significant negative health outcomes. It affects the ability to live independently in the community, and the physiological toll of loneliness is also likely to become more pronounced with age (Yang & Victor, 2011).

The relationship between age and loneliness is intriguing. Loneliness is widely perceived as a problem of old age, arising from retirement, death of a spouse and migration of children, as older people are left behind to live alone. A study by Igbokwe et al. (2020) examining the association between loneliness, depression, and anxiety found that lonely retirees were 1.19 times more likely to be depressed compared to non-lonely retirees (aOR = 1.1.9; 95% CI [0.84, 1.69]; $p < 0.03$). A study by Mirkena et al. (2018) found that older retired people were four times more likely to have depression compared to older working people (aOR = 3.94; 95% CI [2.11, 7.35]; $p < .001$). This could be due to the fact that people in retirement do not have enough opportunities to meet with others to share ideas and feelings (Igbokwe et al., 2020). They may also feel isolated and lack support. A study by Susanty et al. (2022) found that older people who live alone are likely to be less lonely than those who live with their families. This finding is consistent with previous studies in West Africa (Kugbey et al., 2018), the Middle East (El-Gilany et al., 2018), Australia (Mohebbi et al., 2019), China (He et al., 2016; Shao et al., 2017), Korea (Bae, 2020), India (Ashe & Routray, 2019; Konda, 2018), Pakistan (Fatima et al., 2019), Vietnam (Giang et al., 2019), Sri Lanka (Khaltar et al., 2017), and

Malaysia (Rashid & Tahir, 2015) which found that living alone was associated with depression. One possible explanation could be that family members are unaware of how the elderly are doing and pay less attention to them. The migration of children to urban areas for economic reasons and the resulting lack of communication with parents who stayed behind in rural areas could also be an explanation.

A study by Shao et al. (2017) found that depression symptoms were significantly associated with community activities ($\chi^2 = 6.2$, $p < .001$), interaction with relatives ($\chi^2 = 22.1$, $p < .001$), neighbours ($\chi^2 = 11.6$, $p < 0.003$), and relationship with a spouse ($\chi^2 = 86.7$, $p < .001$). These results demonstrate that social support plays an important role in psychological status. Social isolation and social network size, such as involvement in community activities, interaction with relatives and neighbours, were also related to social support, which in turn was related to loneliness. A lack of social engagement thus leads to social isolation and increases loneliness, which is associated with depression (Czaja et al., 2021).

In another study by Tanjanai et al. (2017), depression symptoms were found to be significantly related to how older people spend their leisure time, representing the highest prevalence of depression symptoms (48.0%). This suggests that older people who preferred to spend their time at home rather than with their relatives and friends were only 26.4% affected. The likelihood of depression symptoms among older people who visited friends and relatives decreased by less than 60% compared to those who stayed at home alone. Several studies showed that lack of social engagement was associated with depression symptoms (Cong et al., 2015; Tengku Aizan et al., 2019; Dao et al., 2018; Song et al., 2019; Simkhada et al., 2018).

A longitudinal mediation analysis was conducted among older people in America using the CES-D- ML and found that depression symptoms predicted higher perceived isolation, which in turn predicted higher social disconnectedness (Santini et al., 2020). The study by Li et al. (2015) using the Short UCLA Loneliness Scale (ULS-8) examined the three main psychosocial factors (psychological resilience, social support, and loneliness) and found that of the three main psychological factors, loneliness had the strongest association with geriatric depression symptoms in the model ($\beta = 0.41$, $p < .001$), indicating that older people who experience higher levels of loneliness are more likely to experience depression. In summary, although loneliness is

influenced by variables such as depression symptoms, the studies show that loneliness is significantly associated with depression symptoms among community-dwelling older people.

2.2.10.2.5 Social Support

Social support is defined as the function and quality of social relations one receives from other people, such as help and support (Yildirim & Tanrýverdi, 2020). Social support can be classified according to the type of support (i.e., instrumental, emotional, companionship), sources of support (i.e., family, friends, significant others), or qualitative and quantitative aspects (i.e., adequacy, availability, seeking support) (Hazwan et al., 2020). The majority of previous studies have found that low perceived social support is indicative of depression symptoms among community-dwelling older people (Bhamani et al., 2013; Cong et al., 2015; Rajapakshe, 2018; Simkhada et al., 2018; Tanjanai et al., 2017) Low perceived social support was significantly associated with depression symptoms in the study by Khaltar et al. (2017) using the Scale of Perceived Social Support. A similar study by Rashid and Tahir (2015) found that low or moderate support, source of emotional support, and loneliness were risk factors for severe depression symptoms. This was found using the Social Support Scale (OSS) instruments. A study conducted in Singapore using the Duke Social Support Index (DSSI) questionnaire for the social activities and social networks domain also showed that the three main psychosocial factors (psychological resilience, social support, and loneliness) had a strong negative association between perceived social support and depression symptoms. The older people who had higher perceived social support experienced fewer depression symptoms than those who had lower perceived social support (Li et al., 2015). A study by Rajapakshe (2018) found that lower perceived support was significantly associated with depression symptoms.

Older people in retirement had less social support from friends or their significant other because they no longer participated in social activities, meetings or discussions. Loss of social contact with close friends was associated with depressive symptoms (Cong et al., 2015). People older than 80 years had very low social support and were 1.4 times at higher risk of developing depressive symptoms (OR =1.91; 95% CI [0.88, 1.33]; $p < .001$). This is due to the fact that they do not have the opportunity

to interact with others and share their feelings and thoughts. Apart from this, their health condition limits them in this regard (Bincy et al., 2021). Moreover, attachment to family members is related to psychological well-being, as noted by Bincy et al. (2021), who found a strong association between lack of family bonding and depression symptoms (OR =1.48; 95% CI [1.23, 1.638]; $p < .0001$). In a study by Bhamani et al. (2015), Manandhar et al. (2019) and Bae (2020), financial support from family members was found to have a significant impact on the life stage of older people, with children (especially adult male children) becoming important sources of support for older people. As a result, this scenario can create feelings of insecurity and increase vulnerability to depression.

In contrast, two studies found that chronically ill older people who were placed with family members and required care were six times more likely to become depressed due to lack of financial support (Ashe & Routray, 2019; Thilak et al., 2016). In contrast, a study by Song et al. (2019) found no association with depression symptoms as most participants lived with their family members (β= -0.278, $p < .001$). Meanwhile, a study by Giang et al. (2019) also found no association with depression symptoms in rural or urban areas in Vietnam. This is because older people and their children support each other, either as family duty or as risk sharing. In Thailand, living with extended families and integrating into a supportive relationship was practised in the neighbourhood (Charoensakulchai et al., 2019). Older people who are divorced, widowed or single still have the support of their relatives and neighbours (aOR 4.52; 95%, CI [2.14, 7.86]; $p < .001$). From the previous results, it appears that the level of social support could be a factor associated with depression among community-dwelling older people.

2.2.10.2.6 Functional Status of Older People

Activities of daily living (ADLs) are a collective term for the basic skills required for independent self-care, such as eating, bathing, and mobility. The term activities of daily living were first coined by Katz (1983). A person with multiple comorbidities, mental, intellectual or sensory impairments may not routinely perform the ADLs. A study by Tanjanai et al. (2017) reported that depression symptoms were significantly more common in older people who were unable to perform more than three ADLs, i.e., 3.8 times more common than in older people who were independent. A similar study by

Aznan et al. (2019) found that older people with marked dependence on ADL were a significant risk factor for depression symptoms in older people. They were three times more likely to develop depression symptoms compared to older people who were independent.

Inability to leave the house due to physical immobility and physical health problems were associated factors for depression symptoms (aOR = 5.62; 95% CI [1.76, 17.99]; $p < 0.05$) compared to older people who could leave the house (Simkhada et al., 2018). Another study by Manandhar et al. (2019) found a similar result (aOR = 1.4; 95% CI [0.9, 2.3]; $p < 0.04$). Two other studies by Disu et al. (2019) and Shao et al. (2017) found that older people who are ADL impaired have depression symptoms (50.0% vs. 29.2%; $\chi^2 = 7.237$, $df = 1$, $p < 0.007$) and (OR = 2.27; 95% CI [1.91, 2.69]; $p < .001$), respectively. This could be due to the fact that ageing leads to general physical frailty and chronic diseases, and disabilities may further affect ADL levels. This is confirmed by Konda (2018), in which physical frailty, such as being bedridden in the past six months, was significantly associated with depressive symptoms (OR = 5.29; 95% CI [1.21, 23.04]; $p < 0.05$). A study by Konda (2018) also found that chronic diseases such as osteoarthritis were associated with depression symptoms (OR = 4.91; 95% CI [1.39, 17.28]; $p < 0.01$) and osteoarthritis was associated with pain, discomfort, and limited ADL. A similar study by Vu et al. (2019) found difficulties with mobility and ADL due to pain and discomfort (OR = 1.92, $p < 0.05$). Meanwhile, there was a study by Song et al. (2019) that found that low physical activity with the Functional Activity Question (FAQ) measure was significant for depression symptoms ($\beta = -0.154$; $p < 0.014$) in older people with mild cognitive impairment. Therefore, physical impairment could also be due to cognitive level status.

A cohort study conducted in Japan by Kiyoshige et al. (2019) found that depression symptoms were significantly associated with a decrease in IADL in older people aged 70 years (aOR = 2.33; 95% CI [1.13, 4.78]) and not in older people aged 80 years (OR = 0.85, 95% CI [0.46, 1.53]), with a significant interaction between depression symptoms and age group in terms of lower IADL ($p < 0.03$). These were generally older people, aged 80 years and older. In a study by Vanoh et al. (2016), functional status (IADL) was found to have a significant association with depression symptoms. In this study, osteoarthritis was also found to have a significant association with depression, i.e., chronic pain due to osteoarthritis leading to IADL limitation,

disability, fatigue and eventually depressed mood. In addition, a study by Hamzah et al. (2018) found that the Lowton IADL and Short Physical Performance Battery (SPPB) score had a significant correlation with the GDS-15 score in the negative direction with r = -0.171 and r = -0.194 ($p \leq 0.01$), respectively. This could be due to the fact that depression is associated with decreased energy, fatigue, loss of interest, and poor concentration, which are common in older people with depression symptoms (Anand et al., 2019).

In contrast, there is only one study in Malaysia by Rashid and Tahir (2015), which reported that physical activity was not a significantly associated factor variable. However, limited physical activity due to illness or disability is a significantly associated factor for severe depression with marked dependence on ADL (OR = 10.8), and whose activities were limited due to illness and disability (OR = 1.4) was higher. Another study by Giang et al. (2019) found that ADL was significantly associated with depression in older people living in rural and urban areas. Based on the previous findings, physical performance could be a factor associated with depression among community-dwelling older people.

2.2.10.2.7 Sleep Quality of Older People

The 24-hour sleep-wake cycle in humans is tightly regulated by the master circadian clock, located in the suprachiasmatic nucleus of the hypothalamus. The day after sleep loss, more sleep is needed to compensate (homeostatic sleep pressure) (Suzuki et al., 2017). Therefore, the homeostatic system promotes the amount of sleep needed, while the circadian system optimises the best time for sleep (Carley & Farabi, 2016). As one ages, the physiology of sleep changes and homeostatic sleep pressure decreases, reducing the amount of slow-wave sleep. The timing of sleep-wake cycles is regulated by two interacting regulatory systems: the homeostatic sleep-wake drive and the internal circadian clock. The interaction of these two systems ensures that young adults are awake during the day and can sleep without interruption at night. As one ages, the internal clock becomes less efficient, resulting in interrupted sleep, falling asleep earlier and waking up earlier. With age, the amplitude of the circadian oscillation decreases in all physiological parameters, including melatonin levels. A decline in the efficiency of the central master clock, the suprachiasmatic nucleus in the hypothalamus, is the key

element responsible for this age-related decline. This affects day/night synchronisation in the various peripheral cellular clocks in the metabolic pathways and endocrine mechanisms (Gulia & Kumar, 2018).

A study by Ashe and Routray (2019) found that 69.5% of older people sleep less than six hours. In another study, sleep duration was found to be significantly related to depression symptoms and whether older people slept less or more (Park et al., 2016). Meanwhile, a study by El-Gilany et al. (2018) showed that insomnia was associated with depression symptoms in older people (aOR = 5.2; 95% CI [3.2, 8.4], $p < .001$). Older people with poor sleep patterns suffered more from depressive symptoms (aOR = 3.45; 95% CI [2.08, 5.73]; $p < 0.00$) (Kavithai et al., 2018). A similar study by Rashid and Tahir (2015) found that poor sleep quality (aOR = 3.6; 95% CI [2.2, 5.9]; $p < .001$) was a significant predictor of depressive symptoms in older people. Prolonged sleep disturbances can lead to fatigue, tension, and irritability, which can manifest in depressive symptoms. Overall, some studies have shown that older people with sleep problems are more likely to develop depression symptoms than those who do not have sleep problems.

2.2.10.2.8 Religious Practice

Religion provides coping mechanisms that can increase the frequency of positive emotions and reduce the risk of stress leading to emotional disorders such as depression, anxiety, suicide, and substance abuse (Koenig et al., 2020). Religious people are synonymous with older people as they are very interested in religious practices (Ibrahim, 2009). They also play a role as protective preventive factors against depression symptoms (Roudsari et al., 2018). A previous study by Bae (2020) showed that older people with the highest religious activity are less likely to develop depression symptoms, with marriage and spiritual activities increasing social connectedness and may be associated with lower levels of depression symptoms. Social connectedness was measured using a version of Dao et al.'s (2018) adapted social capital assessment instrument. High levels of social connectedness, particularly participation in social activities, religion, and neighbourhood, were found to be associated with a lower risk of developing depression symptoms in older people. A similar finding was found by Tengku Aizan et al. (2019) that social network ($r = -0.154$; $p < .001$), social support (r

= -0.128; $p < 0.002$), and religiosity (r = -0.119; $p < 0.004$) were negatively correlated with depression symptoms among older people with an experienced life event. This means that older people with a lack of social networks, social support, and religiosity were more likely to be at risk for depression symptoms. Meanwhile, a study by El-Gilany et al. (2018) showed that depression symptoms were significantly higher in older people with no or low religiosity (OR = 3.4; 95% CI [2.3, 5.0]; $p < .001$). This could be due to the fact that older people who practice their religion privately at home do not meet with friends or significant others compared to older people who practice their religion at the mosque, church or other religious institution, which prevents them from sharing their fears, hopes, and expectations about their lives with their friends and significant others (Roh et al., 2015).

In addition, a study by Vanoh et al. (2016) showed that 58% (n = 1,089) of participants without depression symptoms actively participated in religious classes, compared to 42% (n = 787) of other participants. A study by Winahyu and Sari (2017) found that there was an association between religiosity and a strong relationship between rituals and the 'mua'malat' subscale. A finding on religiosity was significantly negatively correlated with depression symptoms (r = 0.71, $p < 0.01$), i.e., older people practice higher religiosity in daily life had lower depression symptoms. In addition, practicing religiosity was found to reduce the impact of depression symptoms on cognitive function in older people (β = 0.092, $p < 0.023$) (Foong et al., 2018). This suggests that participation in physical, social, and religious activities can improve the spirit and mood and positively influence mental well-being.

2.3 SUMMARY OF THE LITERATURE REVIEW

From the literature review, depression symptoms have been reported in community-dwelling older people and the prevalence is widespread. Most of these populations are vulnerable to depression symptoms. Therefore, early detection and prevention must be initiated before the psychiatric illness develops.

Although the prevalence and associated factors of depression symptoms in community-dwelling older people have been widely researched, no single study has measured a specific mechanism as part of the factors associated with depression symptoms. Numerous previous studies examined the prevalence and associated factors

of depression symptoms, measuring only several individual variables. In addition, several studies used non-validated instruments and constructed questions to measure the risk factor for depression symptoms.

The literature review revealed that the factors associated with depression symptoms among community-dwelling older people were related to biopsychosocial spirituality, which included sociodemographic characteristics. However, from previous studies in Malaysia, the factor that was significantly associated with depression symptoms were only variables related to biopsychological factors. Therefore, in this study, the researcher will determine the prevalence and associated factors of depression symptoms among community-dwelling older people.

2.4 CONCEPTUAL FRAMEWORK

The conceptual framework was adapted from the biopsychosocial-spiritual model to guide research in determining depression symptoms in community-dwelling older people. The biopsychosocial model, originally developed by George L. Engel (1977), views disease and health as the product of physiological, psychological, and sociocultural elements. This model looks at the connection between biological, psychological, and sociological factors to holistically understand the phenomenon of clinical scenarios.

Because of the continuing importance of religion and spirituality to health, Onarecker and Sterling (1995) proposed revising the biopsychosocial model to include spirituality. This model is consistent with the holism definition, which "addresses health problems in their physical, psychological, social, cultural, and existential dimensions." In a study by Sulmasy (2002), the rationale for expanding the model to a biopsychosocial–spiritual model is that truly holistic health care must take into account the totality of the patient's relational existence. According to this expanded model, correlations between spiritual and clinical parameters as well as between biopsychosocial symptoms and spiritual factors were found in a study (Katerndahl, 2008).

The biopsychosocial model can be applied to explore multiple factors of geriatric depression symptoms that may contribute to health, in addition to enabling the

risk factor of unhealthy ageing or development (Frady, 2014). In addition, the link between biological, psychological, sociological, and spiritual factors may be important in identifying the factors that contribute to depression symptoms in community-dwelling older people. Based on the literature findings, the variables can be categorised as biological, psychological, social, and spiritual factors. The variables age, gender, health status, cognitive level, and functional status can be classified as biological factors. Psychological factors include living alone, level of loneliness, retirement, and unemployment. Social factor variables also include marital status, educational level, financial status, and social support. The spiritual factor includes frequency of attending houses of worship/religious gatherings, frequency of spending time in private religious activities, presence of the divine (God), feeling secure in faith and religious practice in life. The conceptual framework of the biopsychosocial-spiritual model is shown in Figure 2.2.

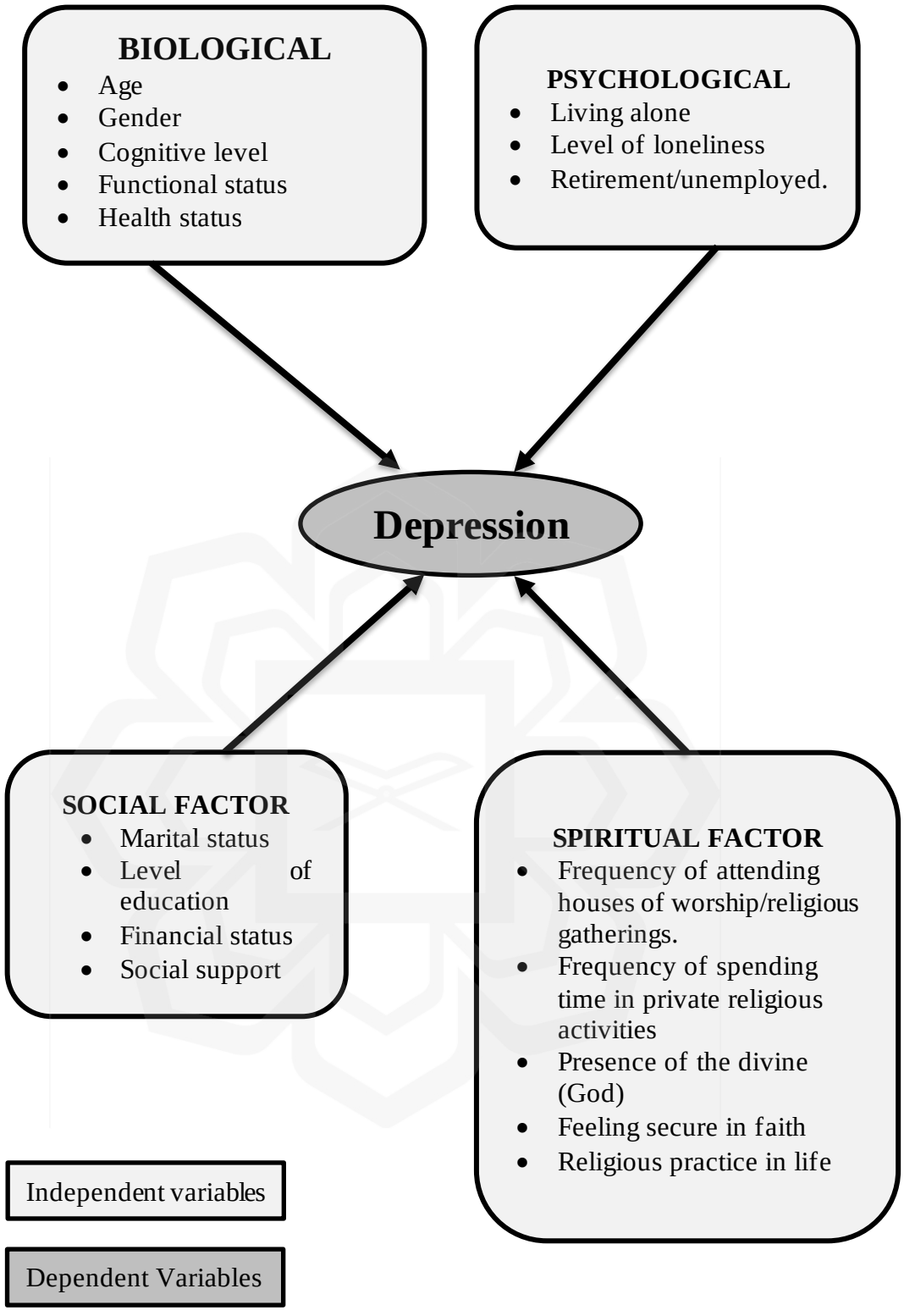


Figure 2.2 Conceptual Framework of the Factors Associated with Depression Among Community-Dwelling Older People

Source: (Katerndahl, 2008)

2.5 SUMMARY

In summary, a large and growing body of literature has highlighted the prevalence and factors associated with depression symptoms in community-dwelling older people around the world. Some studies have been conducted in Malaysia, but studies on community-dwelling older people remain scant. The factors associated with depression symptoms in the elderly can be determined by multidimensional factors that include biological, psychological, social, and spiritual aspects. However, the findings of such studies were minimal and only focused on biopsychological factors. Several other factors such as social and religiosity (or spirituality) are still missing. Therefore, this study aims to measure the prevalence of depression symptoms among community dwelling older people and to identify the factors associated with depression symptoms in this population. Based on the findings from the literature, the variables can be categorised into biopsychosocial and spiritual factors. These factors were adopted in the study's conceptual framework to determine the factors associated with depression symptoms among community-dwelling older people. Further explanation can be found in the data analysis section in the next chapter, where the methodology of this study is explained.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter aims to explain the method used to achieve the objectives of the study. It begins with details of the study setting, sample selection and size, instruments, ethical considerations, design, and population. The data collection procedure is explained using the flow chart of the study. The study instrument used is also described in this chapter and the ethical considerations, duration of the study, and the process of data analysis are explained. The last section provides a summary.

3.2 STUDY DESIGN

A quantitative study with a cross-sectional design was chosen to measure the prevalence and associated factors of depression symptoms in community-dwelling older people. In line with the aim of the study, a cross-sectional study is appropriate to estimate the proportion of older people at a given point in time. This study design was chosen because it allows for a positive outcome, depression, by examining and identifying the associated factor for the disease. Time exposure to elements such as biological, psychological, sociological, and spiritual factors within a short period of time is commonly used to measure exposure and outcomes simultaneously in a representative sample of the population (Chua, 2016; Polit & Beck, 2018).

Furthermore, a cross-sectional study design is the most commonly used study design to investigate the factor associated with the disease in the population of interest at a specific time point within a representative sample of a population. Obtaining data from a representative sample allows the result to be generalised to the whole population (Chua, 2016). In previous studies, a cross-sectional design was chosen to determine the prevalence and predictors of depression symptoms in community-dwelling older people (Ashe & Routray, 2019; Aznan et al., 2019; Bhamani et al., 2015; Charoensakulchai, et al., 2019; Cong et al., 2015; El-Gilany et al., 2018; Güzel, 2020; Hamzah et al., 2018; He et al., 2016; Kavithai et al., 2018; Khaltar et al., 2017; Kugbey et al., 2018; Li et al., 2015; Manandhar et al., 2019; Mirkena et al., 2018; Mohebbi et al., 2019; Rajapakshe

et al., 2019; Rashid & Tahir, 2015; Simkhada et al., 2018; Tanjanai et al., 2017; Thilak et al., 2016; Vanoh et al., 2016).

In addition, the data from these studies are useful in providing information about the current phenomenon and generating inferences and hypotheses. Moreover, a cross-sectional study design is efficient, economical, and convenient to manage within a brief study period. Data can also be collected through a survey and a cross-sectional study can also be used as a preliminary study (Polit & Beck, 2018). Therefore, it can provide more data that can be used in health systems research. Based on these findings, a cross-sectional study design was chosen.

3.3 STUDY SETTING

3.3.1 Selection of the Study Setting

This study was conducted in Kuala Terengganu, Terengganu. Terengganu is located in the east of Peninsular Malaysia, bordering Kelantan to the northwest, Pahang to the southwest, and the South China Sea to the east. The state has a total area of 13,035 km^2 (5,033 sq mi) (Roslan, 2015). The total population is 1,183,400, with 84,300 elderly people living in Terengganu (Data Asas Negeri Terengganu, 2017). Terengganu was chosen as the study site because Malays are the largest ethnic group in the state with more than 97% of the population, followed by Chinese with 2.6%, Indians with 0.2%, and 0.1% others. In addition, Malay Muslims were selected as the sample because Muslims make up the largest percentage of religiosity. There are 96.9% Muslims, 2.5% Buddhists, 0.2% Hindus, 0.2% Christians, and 0.2% followers of Chinese folk religions or of unknown affiliation (Roslan, 2015). In addition, the Malay population was selected as the sample for this study because they are homogeneous samples and the researcher can control them in terms of the same practice, culture, and society.

Terengganu consists of eight districts, namely Kuala Terengganu, Kuala Nerus, Hulu Terengganu, Marang, Dungun, Kemaman, Setiu, and Besut. Kuala Terengganu was selected for the area study because it is located in an urban area and is the capital city. It is also the main economic centre of Terengganu. In addition, the total population in Kuala Terengganu is estimated at 21,300 elderly people, more than in other districts (Data Asas Negeri Teregganu, 2017).

3.3.2 Sample Selection and Size

3.3.2.1 Sampling

In this study, a multi-layered area sampling procedure was used to select the location of the study population because the area is extensive. In this procedure, every individual from every layer of the study population area has an equal opportunity of being selected (Chua, 2016). The explanation of the sampling procedure is as follows:

1. Sampling was performed by first identifying the primary sampling unit. This unit is a region in the country. Each unit has similar characteristics and is close to the subjects of a previous study (Aznan et al., 2019). The location is also an urban area.

2. The regional unit of Terengganu was identified as the second layer, which comprised of several districts (Kuala Terengganu, Kuala Nerus, Hulu Terengganu, Marang, Dungun, Kemaman, Setiu, and Besut). Terengganu is on the east coast of Malaysia and near the state of Pahang. A town was randomly selected. The researcher chose Kuala Terengganu because of the high number of elderly people.

3. After a district was selected, the third layer involved the selection of *mukim*. Kuala Terengganu has twenty *mukim*. The *mukim* was selected randomly using the lottery method. The names of the twenty *mukim* were written on small pieces of paper, rolled, and placed in a box for withdrawal. The rolled papers were mixed and randomly selected by the researcher who was blindfolded. The random selection process was conducted three times to identify three *mukim*. The three *mukim* selected were Bukit Besar, Bandar, and Kuala Ibai.

4. For each *mukim* selected, the researcher chose several villages at random using the lottery method. *Mukim* Bandar had 14 villages, *mukim* Bukit Besar had 27 villages, and *mukim* Kuala Ibai had 17 villages. The researcher wrote down the names of the villages and placed them in three boxes representing each *mukim*. The selection procedure was performed and three villages were selected at random. Thus, the villages identified as locations for the study population were Kampung Ladang Flat (*mukim* Bandar), Kampung Banggol (*mukim* Kuala Ibai), and Kampung Masjid Haji Kadir (*mukim* Bukit Besar).

Simple random sampling was used to select each layer. Thus, the multi-layered area sample falls under the probability sampling procedure (Chua, 2016).

Systematic random sampling was chosen as the sampling method. The study location was identified and the researcher sought permission from the village leaders or *Jawatankuasa Kemajuan dan Keselamatan Kampung* (JPKK). Once approval was granted, the researcher asked the JPKK to compile a list of the names and addresses of the elderly in each village. The names were arranged randomly and not according to any particular pattern. The stone that determined the first study participant to be selected was thrown at pieces of paper with numbers written on it. The stone fell on number 1, so the first subject on the list was selected as the first participant. Subjects which carried the number 3, 5, 7, 9, and so on were selected until 80 participants were reached for each village. The village leader offered the assistance of JPKK committee members known as 'muslimat' (local female representatives) to accompany the researcher during home visits. The flow chart of the sampling method is shown in Figure 3.1 below.

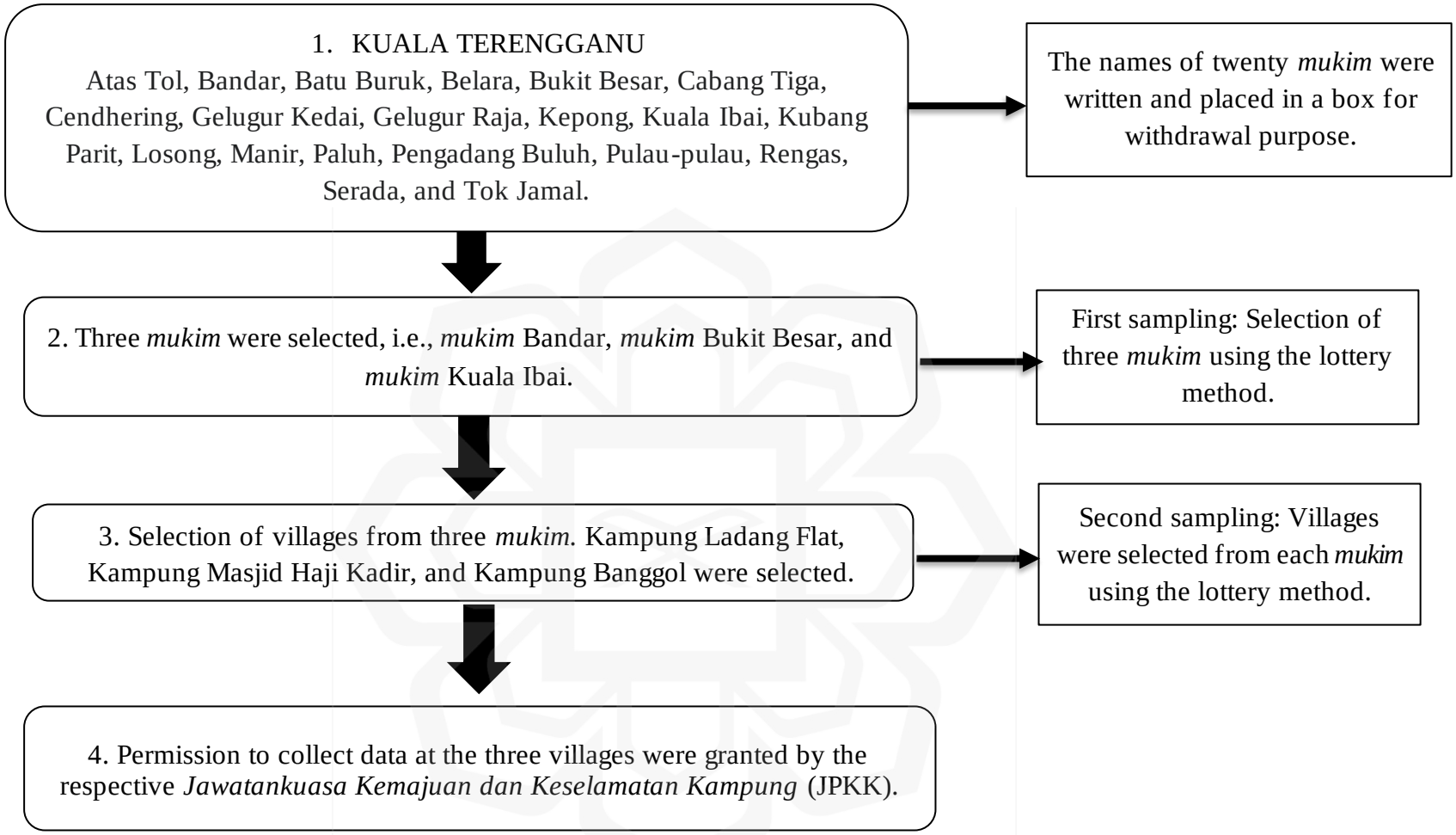


Figure 3.1 Flow Chart of the Sampling Method

3.3.2.2 Sample

Determining the appropriate sample size is important to ensure a sufficient number of subjects, to conduct an accurate and reliable assessment, and to identify significant predictors in the population under study (Chow et al., 2018). Factors to consider when determining the required sample size include the variables of interest, the required confidence level, and the desired level of precision. The sample size was calculated based on a formula for calculating sample size for a prevalence study. The formula was expressed as follows:

$$n = \frac{Z^2 P (1- P),}{d^2}$$

where

n = sample size,

Z = Z statistic for a level of confidence,

P = expected prevalence,

d = precision = 0.05.

In this study, the prevalence rate was 19.3% (based on a study by Aznan et al., 2019). The Z value for 95% confidence interval (CI) is 1.96, while d was set at 5%. The calculation is as follows:

$$n = \frac{Z^2 P (1- P),}{d^2}$$

$$n = \frac{1.96^2 (0.193) (1- 0.193),}{0.05^2}$$

$$n = \frac{(3.8416) (0.193) (0.807),}{0.0025}$$

$$n = 239.$$

The total sample required for this study is 263, which included a 10% attrition rate. Based on a previous study, the attrition rate was 10% (El-Gilany et al., 2018; Rajapakshe et al., 2019; Mirkena et al., 2018).

3.3.2.3 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria were set to ensure homogeneity of participants, reduce confounding factors, and minimise ethical concerns (Polit & Beck, 2018).

The inclusion criteria for this study were as follows:

i. Aged 60 and above;

ii. Malaysian citizens; and

iii. Had lived in the Kuala Terengganu district for at least 3 months or more. This duration is considered acceptable for coping with the changes in living environment faced by the elderly who relocated to a new environment, e.g., children's home, because they have lost their spouse or due to disability (Komatsu et al., 2007).

The exclusion criteria were:

i. Elderly people residing in nursing homes;

ii. Elderly people suffering from aphasia, deafness, and articulation disorders due to speech and communication difficulties; and

iii. Known case of Alzheimer's disease, dementia, or a psychotic disorder.

3.3.3 Study Instrument

In this study, several instruments were used to achieve the research objectives. For the dependent variable, the researcher used the Geriatric Depression Scale (GDS). The independent variables include sociodemographic data, health status, the Elderly Cognitive

Assessment Questionnaire (ECAQ), the University of California Los Angeles (UCLA) Loneliness Scale, the Multidimensional Scale of Perceived Social Support (MSPSS), the Modified Barthel's Index (MBI), the Lawton-Brody Instrumental Activities of Daily Living (IADL) Scale, the Pittsburgh Sleep Quality (PSQI), and the Duke University Religion Index (DUREL).

3.3.3.1 Sociodemographic Data

Sociodemographic information included age, gender, race, education level, marital status, monthly household income, occupational status, living arrangement, smoking status, and alcohol consumption.

Age was categorised into three groups: 60 – 64, 65 – 74, and ≥75 years. Educational level was divided into primary, secondary, diploma, degree, and other. Marital status was divided into single, married, divorced, and widowed/divorced. Occupational statuses were unemployed, retired, and employed. Monthly household income was categorised as less than RM1000, RM1000-RM1999, RM2000-RM3999, RM4000-RM5999, RM6000-RM7999, RM8000-RM9999, and RM10,000 and above. The arrangement included living alone with nuclear family, children, and significant others (see Appendix IV).

3.3.3.2 Health-Related Variables

The assessment of health-related variables included past medical history and current illnesses based on self-reporting by the participant at the time of the interview or verified against documentation available from the participant (see Appendix IV).

3.3.3.3 Geriatric Depression Scale (GDS)

GDS was used to measure the level of depression symptoms among the older people in the community and is often used for research purposes or in geriatric departments in Ministry of Health (MOH) healthcare facilities (Clinical Practice Guidelines: Management of

Dementia, 2021). The instrument contains 15 items in the Malay language version. Each participant was asked to answer "yes" or "no" for each question about how they felt during the past week. The total score ranged from 0 to 15. A score of more than 5 indicates "probable" depression and further assessment is recommended, while a score of more than 10 almost always indicates depression (Sheikh & Yesavage, 1986). In addition, the GDS score of 6 to 7 was categorised as mild, 8 to 9 as moderate, and 10 to 15 as severe depression symptoms, while subjects with a GDS score of 0 to 5 were classified as normal (Leong et al., 2020).

The Geriatric Depression Scale (GDS) used was based on the Malay language version by Teh and Hasanah (2004). They found that the translated GDS was a highly reliable and valid screening tool for the Malay elderly in Malaysia. They also showed that the Malay version of the GDS detected all clinically significant depression with a cut-off point of 7/8, sensitivity of 100%, and specificity of 92% among the Malay elderly in Malaysia. Internal consistency (Cronbach's alpha = 0.84) and reliability (Spearman's correlation coefficient = 0.843) was high (Teh & Hasanah, 2004) (see Appendix V).

3.3.3.4 Elderly Cognitive Assessment Quality (ECAQ)

The Elderly Cognitive Assessment Quality (ECAQ) was derived from the Mini-Mental State Examination (MMSE) and the Geriatric Mental State (GMS) to assess cognitive impairment in older people. The ECAQ was developed specifically to assess the cognitive level of older people in developing countries with diverse cultures and relative illiteracy. It has been validated in Singapore and used as a routine assessment for older people (Kua & Ko, 1992). There are 10 items grouped into three categories to test memory (three items), orientation (six items), and memory recall (one item). One mark is awarded for each correct response. Participants with a score of five points or less indicate cognitive impairment with probable dementia. The ECAQ is available in Chinese and Malay and is widely used in clinical settings. The sensitivity is 85.3% and the specificity is 91.5%, with a Cronbach's alpha of 0.73 (Kua & Ko, 1992) (see Appendix VI).

3.3.3.5 The University of California Los Angeles (UCLA) Loneliness Scale

The UCLA Loneliness Scale is originally used to assess loneliness and social isolation. The scale is commonly used to measure loneliness in study participants, including older people (Russell et al., 1980). The 20-item scale was found to be too complex and lengthy (Hays & Dimatteo, 1987). The short UCLA Loneliness Scale (UCLA-8) consists of eight items selected according to the results of an exploratory factor analysis. The scale uses a 4-point Likert scale with a value between “never” and "always”. Two items are reverse coded before analysis. The total UCLA-8 score ranges from 8 to 32 points. Scores on the 8-item scale were categorised according to the degree of loneliness. Scores of 8 to 16 points were considered normal or not lonely. Participants who scored between 17 and 20 points had mild loneliness. Those scoring 21 to 24 indicated moderate loneliness and 24 to 32 indicated severe loneliness. The psychometric evaluation was based on the Malay language version of the UCLA-8. The internal consistency, reliability, and convergent validity of the scale were measured. The Cronbach’s alpha of the instrument was 0.82 at the initial test period and remained high (Cronbach’s alpha = 0.85) at the retest period (Swami, 2009) (see Appendix VII). This instrument has been widely used in Malaysia to measure loneliness among older people dwelling in communities (Hussein et al., 2021; Md Nor & Ghazali, 2016; Teh et al., 2014).

3.3.3.6 Multidimensional Scale of Perceived Social Support (MSPSS)

The Multidimensional Scale of Perceived Social Support (MSPSS) is a brief measure of an individual’s perceived social support. This scale was developed by Zimet et al. (1988). This instrument contains 12 items and has a 7-point Likert scale (1 = *Very Strongly Disagree* to 7 = *Very Strongly Agree*). It was developed to measure the adequacy of social support from three different resources, namely family, friends, and significant others. In addition, four items for each of the three domains measure the adequacy of perceived social support from family (Fm), friends (Fr), and significant others (SO). The total score is calculated by adding the result of all items. The possible range is between 12 and 84 points. High scores indicate satisfaction with social support, while low scores indicate poor quality of perceived

social support. Note that a score of 12 to 35 points indicates low perceived social support. On the other hand, participants who scored between 36 and 60 points had a medium level of social support and 61 to 84 points had a very high level of social support.

This instrument had good reliability and validity as shown by Hazwan et al. (2018). Cronbach's alpha was 0.77 and 0.76 for the Family-Significant Others and Friends subscales, respectively. The Malay version of the MSPSS showed strong construct validity and reliability in measuring social support among older people living in communities in Selangor and could be used among older people in Malaysia. (see Appendix VIII).

3.3.3.7 Barthel Modified Index and Lawton-Brody Instrumental Activities of Daily Living Scale

The Modified Barthel Index (MBI) was used to assess the degree of functional independence in performing basic physical tasks without any type of assistance, including physical or verbal assistance and major or minor assistance (Noran et al., 2010). The 10-item domains relate to personal care and mobility such as bowel control, bladder control, grooming, toilet use, feeding, transfers, walking, dressing, climbing stairs and bathing, with scores ranging from 0 to 3 and a maximum total score of 20 points. It can be collected by observing the participant or a representative close to the participant, as it is what the participant does during the interview and not what they could do.

Participants with a score of 20 had no functional disability in ADL, and a score of 15 to 19 had mild functional disability. Participants who scored between 14 and below were considered to have moderate to low functional disability in ADL. Sakinah et al. (2020) translated and validated the Malay version of the Comprehensive Geriatric Assessment Questionnaire for Older Adult Patients in Malaysia. For the ADL-Barthel index, the result of Bartlett's test of sphericity was significant ($p < .001$) and the Kaiser-Meyer-Olkin (KMO) measure was acceptable (0.85). A two-factor solution was generated that explained 74.0% of the observed variance. In this, eight items were grouped under the first factor, the content of which was more related to the patient's self-care. In addition, two items were grouped under the second factor, with content more related to the patient's physiological

needs. All factor loadings were above 0.40 and ranged from 0.64 to 0.90 (see Appendix I). Moreover, this instrument has been used worldwide, including in Malaysia (Aznan et al., 2019; Noran et al., 2010; Rashid & Tahir, 2015; Vanoh et al., 2016).

In the present study, the Lawton-Brody Instrumental Activities of Daily Living Scale (IADL) measures the functional status in instrumental activities of older people. The rationale is that normal aging-related changes, acute illness or worsening chronic illness may contribute to a decline in the ability to perform tasks necessary for independent living in the community (Graf, 2008). Participants were asked to describe how well they perform tasks that require the use of tools, such as food preparation, shopping, and cleaning. The total score was given according to greater functional ability or independence. The IADL subscale of the OARS17 assesses the patient's level of independence in seven instrumental activities. The questionnaire uses three scoring levels (0 = fully dependent; 1 = requiring some help; 2 = fully independent) for a total score of 0–14 points.

When participants were scored, 10 to 14 points indicated good instrumental functional status and 5 to 9 points indicated moderate instrumental functional status. One participant scoring 0 to 4 points indicated severe instrumental functional disability status. The Malay version of the IADL scale was translated and the result of Bartlett's test of sphericity was significant ($p < .001$) and the KMO measure was acceptable (0.76). A two-factor solution was generated that explained 67.7% of the observed variance. Five items were grouped under the first factor, while two items related to domestic chores were grouped under the second factor. All factor loadings were above 0.40 and ranged from 0.52 to 0.87 (Sakinah et al., 2020) (see Appendix X). The Malay version of the IADL scale showed strong construct validity and reliability in providing comprehensive geriatric assessments of elderly patients in Malaysia.

3.3.3.8 Pittsburgh Sleep Quality

The Pittsburgh Sleep Quality Index (PSQI) is an effective instrument for measuring the quality and patterns of sleep in older people. It distinguishes between poor and good sleep by measuring seven domains, namely subjective sleep quality, sleep latency, sleep duration,

habitual sleep efficiency, sleep disturbance, use of sleep medication, and daytime dysfunction in the past month (Smyth, 2000). Good sleep quality is important for maintaining physical functioning, psychological well-being, and quality of life. The purpose of this instrument is to measure the normal changes of aging that affect quality. It is also used to determine if other disease conditions and medications that older people take affect their sleep patterns, and finally, to determine the risk factor for depression among community-dwelling older people (Farah et al., 2019). This instrument aimed to measure the quality of sleep among community-dwelling older people. The PSQI translated into Malay (PSQI-M) consists of the same items as the original instrument. It includes 19 items that form seven subscales such as sleep quality (1 item), sleep latency (2 items), sleep duration (1 item), sleep efficiency (3 items), sleep disturbance (9 items), sleep medication (1 item), and daily dysfunction (2 items). The PSQI was scored following the original scoring system (Farah et al., 2019). In scoring the PSQI, seven component scores are derived and each component has a score ranging from 0 to 3 points. The scores of the seven components are then summed to obtain a PSQI global score ranging from 0 to 21 points. Participants with a global score of more than 5 points are classified as poor sleepers, while participants with a score of 5 points or less are classified as good sleepers. The original PSQI has internal consistency and a reliability coefficient (Cronbach's alpha) of 0.83 for its seven components (Smyth, 2000). The PSQI-M was tested for internal consistency, reliability, and convergent validity in a sample of older Malaysian individuals without sleep disorders. The PSQI-M version was found to have acceptable internal consistency with Cronbach's alpha of 0.74 (Farah et al., 2019) (see Appendix XI).

3.3.3.9 Religiosity

The Duke University Religion Index (DUREL) was used to measure religious involvement in daily life. Five items were categorised into organisational, non-organisational, and intrinsic religiosity. Organisational Religious Activity (ORA) is measured by the frequency of mosque attendance and participation in religious activities such as prayer groups, scripture study, religious classes, etc. A 6-point Likert scale was used, with 6 points for attending more than once a week and 1 point for never participating in religious activities.

Non-Organisational Religious Activity (NORA) measured the frequency of private religious activities such as praying, scripture study, watching religious programmes on TV or listening to religious radio. A 5-point Likert scale was used, with 5 points for more than once a day and 1 point for rarely or never engaging in private religious activity.

Three sentences were used to assess Intrinsic Religiosity (IR), that is, the degree of personal religious commitment or motivation towards their religion (Koenig & Büssing, 2010). Each sentence is worth 1 point (if never) to 5 points (if absolutely). The sum of the points ranged from 3 to 15 points. Participants who scored 3 to 11 points indicated low intrinsic religiosity, while scores between 12 and 15 points indicated high intrinsic religiosity. The Malay version of the DUREL (DUREl-M) was assessed for its psychometric properties and was found to have good reliability (0.70), test-retest reliability (0.68; Spearman's rho, $p < 0.01$), and fair internal consistency (Cronbach's alpha = 0.45) (Nurasikin et al., 2010) (see Appendix XII).

3.3.4 Reliability and Validity of Study Instruments

Several procedures were carried out to ensure the validity and reliability of the instruments used in the quantitative section. Reliability refers to the stability and consistency of an instrument, while validity refers to the meaningful individual scores of an instrument that enable the researcher to draw good conclusions from the population sample under study (Chua, 2016). Validity and reliability have an overlapping function in assessing the quality of the instruments used in a stable, consistent, and meaningful way.

3.3.4.1 Reliability of Study Instruments

The reliability of study instruments was measured using internal consistency. The pilot study was conducted to identify potential problems with the survey items and/or data collection protocol before the study was conducted. Participants who met the inclusion and exclusion criteria were approached and briefly explained how the study was conducted. There were no major problems at this stage as most participants had met the inclusion

criteria. The questionnaire took about 45 minutes to one hour to complete. In addition, minor changes were made to the Modified Barthel's Index (MBI) questionnaire, e.g., 'kateter' was changed to 'tiub kencing' as the phrase was well understood by the participants. These participants were excluded from the main study.

3.3.4.2 Validity of Study Instruments

A total of ten study instruments were selected for this study, including sociodemographic data and health status, the Geriatric Depression Scale (GDS) (see Appendix V), the Elderly Cognitive Assessment Questionnaire (ECAQ) (see Appendix VI), The University of California Los Angeles (UCLA) Loneliness Scale (see Appendix VII), Multidimensional Scale of Perceived Social Support (MSPSS) (see Appendix VIII), Modified Barthel Index (MBI) (see Appendix IX), Lawton-Brody Instrumental Activities of Daily Living Scale (IADL) (see Appendix X), Pittsburgh Sleep Quality Index (PSQI) (see Appendix K), and Duke University Religion Index (DUREL) (see Appendix XI). All of these study instruments are widely used in Malaysia. In addition, each of the instruments showed good validity. The Malay version of the instruments have been used in populations of older people (Farah et al., 2019; Hazwan et al., 2020; Kua & Ko, 1992; Nurasikin et al., 2010; Sakinah et al., 2020; Swami, 2009; Teh & Hasanah, 2004). The next section explains the details of each study instrument used in this study.

3.4 ETHICAL CONSIDERATIONS

Ethical approval was granted by the Kulliyyah of Nursing Postgraduate & Research Committee (KNPGRC) (see Appendix XIII) and the International Islamic University of Malaysia (IIUM) Research Ethic Committee IREC 2022-003 (see Appendix XIV). The request letter to conduct this study was sent to the village leader, JPKK (see Appendix XV), informing them of the process of data collection, the purpose of the study, and the duration of data collection. They were also given copies of the university's ethical approval and the questionnaire form. Permission was granted by the village leader (see Appendix XVI).

A brief description of the purpose and nature of the study was prepared in advance. Participants may feel uncomfortable due to the sensitivity of some of the questions. As such, participants were briefed about the study before consent was obtained. Written consent was obtained to prove that they agreed to participate in this study. The consent form was prepared in the Malay language (see Appendix XVIII). The participant also has the right to refuse to participate in this study whenever they wish. Meanwhile, participants who have a legally authorised person such as their children, grandchildren or relatives as their caregiver were also informed about the purpose of this study before obtaining their consent (see Appendix XIX). The caregiver also has the right to refuse to participate in this study whenever they wish. They were also assured of their right to privacy and that their participation would remain confidential and anonymous. In addition, the data was stored securely on the researcher's personal computer. Only code numbers were used during data analysis and all results were reported as grouped data.

3.5 PROCESS OF GAINING ACCESS

In this study, the process of gaining access began by contacting the village leader to obtain permission to conduct research in his village. After a brief explanation of the study, the village leader verbally agreed that the researcher could conduct research in the village. Then, the official letter from the university was sent to the village leader (see Appendix XV) and an appointment was made for a meeting for further discussion. On the day of the meeting, the details of the study were explained to them, including the purpose of the study, the total number of participants needed, the requirements of the study such as a list of names and addresses, the duration of data collection in each village, and the data collection procedure. The inclusion and exclusion criteria for the participants were also explained to them.

The researcher also explained the guidelines or standard operating procedures for COVID -19 as the country was still in the pandemic phase. After discussion, the officials agreed and an official approval letter was issued (see Appendix XVI). At the same time, a JPKK committee called 'muslimat' was appointed to support the researcher throughout the

data collection process, especially during the home visits. This process was used in three study locations, namely Kampung Banggol, Kampung Masjid Haji Kadir, and Kampung Ladang Flat.

3.6 DATA COLLECTION PROCEDURE

The village leader had announced in the mosque that they would receive a guest, a researcher from IIUM, in their house within a certain period of time to conduct research related to elderly people aged 60 and above. The presence of the researcher in the village was communicated to the village head. The researcher must complete a risk assessment form, wear a face shield and mask, wear a white coat and name tag, and be accompanied by an enumerator and a 'muslimat' Three enumerators were appointed by the researcher for data collection. They were trained by the researcher on the study instruments, information sheets and consent forms used in the study to minimise bias during data collection. A lecture and a practical session with the enumerators explained the instruments and demonstrated the interview techniques. At the end of the session, a return demonstration was conducted to ensure that the enumerators understood the data collection process.

The recruitment of participants involved shortlisting names with full residential addresses and guidance from a 'muslimat'. A 'muslimat' was appointed as a gatekeeper and accompanied the researcher during data collection. The interview was conducted in the participant's home and lasted on average half an hour. During the explanation, the researcher simultaneously observed or asked the participants about the exclusion criteria such as aphasia, deafness, articulation disorders due to speech and communication difficulties and known cases of dementia or psychotic disorders. The condition of the participants was also clarified by the 'muslimat' as she is the person in charge of the village and knows the participant well. Most participants were willing to participate and cooperate in the study on the day the researcher approached them and did not need to make an appointment on other days.

After the participant who met the inclusion and exclusion criteria agreed to participate, the researcher asked permission to enter the house to conduct the interview. Both researcher and participant applied hand sanitiser, had their temperatures taken, wore masks, and completed the COVID-19 Health Risk Assessment. Informed consent was obtained from the participant before the interview began. For participants with jobs, the researcher had given consent for them as evidence of permission. If a participant was incapacitated or illiterate, the participant will place his/her fingerprint on the consent form. Most of the participants listed met the inclusion criterion. The face-to-face interview using the questionnaire took 30 to 45 minutes to complete. To maintain anonymity, the participant's identification number was written on one set of questionnaires. During the interview, several guidelines were followed (e.g., SOP for Data Collection during COVID-19, 2020), such as:

- Avoid touching another person's face, especially the eyes, nose, and mouth.
- Always keep at least 1 metre away from other people.
- Avoid physical contact with other people, including greetings such as shaking hands, kissing cheeks, hugging, etc.
- Avoid touching anything in or around the household/interview site. After the interview, the hand sanitiser should be used by the interviewee and the researcher. Wipe down all devices with wet tissue before returning them in zip lock bags. The location and report of each interaction is documented especially when an interviewee shows signs of fever, cough or shortness of breath (SOPs for Data Collection during COVID-19, 2020).

Finally, the participant received a small token of appreciation for their participation. This procedure was applied in all selected villages and repeated until the number of samples was sufficient. Figure 3.2 shows the flow chart of the detailed data collection process, starting from the arrival at the selected house to the end.

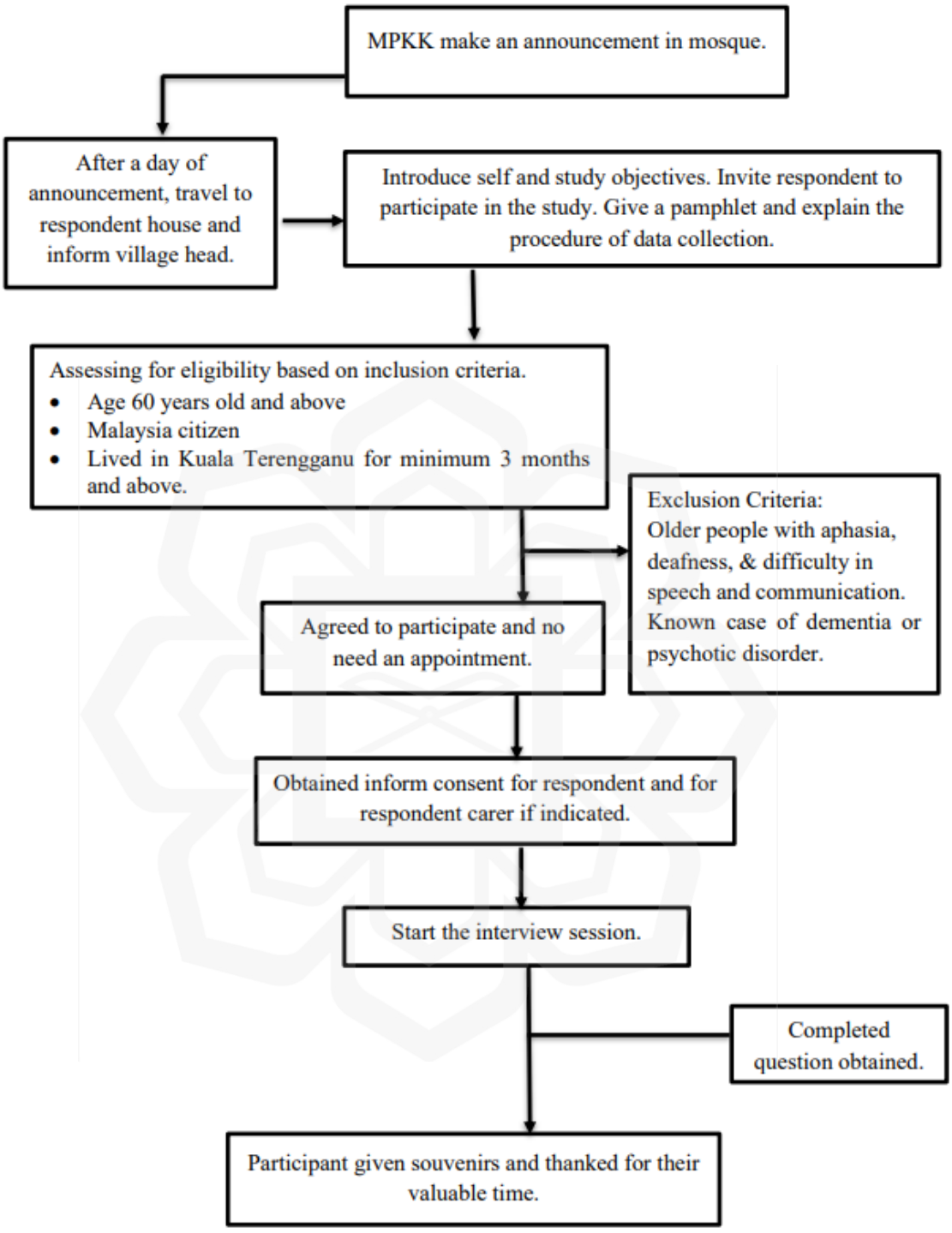


Figure 3.2 Flow Chart of the Data Collection Process

Overall, there were no major problems with data collection. The recruitment process went smoothly as the village leader cooperated well by providing a list of names of elderly people with full address as requested by the researcher. The guidance of the 'muslimat' also helped the researcher to reach out to the participants. Moreover, most of the selected participants met the inclusion criteria and none had the problem as stated in the exclusion criteria. The participants welcomed the researcher into their homes and were willing to participate as participants without having to make an appointment. However, during the second month of data collection, the researcher became infected with COVID -19. Fortunately, the researcher only had mild symptoms such as low-grade fever, fatigue, sore throat, and muscle aches as the researcher had received the third dose of the vaccine from Pfizer. Due to compliance with SOP during data collection, five participants came forward one day before the researcher's diagnosis was confirmed. Nevertheless, they were considered low risk by the Ministry of Health (MOH) staff because they wore masks during the interview. For safety, five of them were informed of the researcher's diagnosis and were asked to do a COVID -19 rapid self-test. The results were negative.

3.7 DURATION OF THE STUDY

This study was conducted during the ongoing COVID -19 pandemic in Malaysia. In March 2020, the Malaysian government imposed a nationwide Movement Control Order (MCO), which was extended until May 2020. The government relaxed the lockdown restrictions gradually, starting with the Conditional Movement Control Order (CMCO) on 4 May 2020, allowing most business sectors to reopen under strict Standard Operating Procedures (SOPs), followed by the Recovery Movement Control Order (RMCO) on 10 June 2020. The government had planned to end the RMCO on 31 August 2020, but the measures were extended until the end of the year due to the continuous detection of imported cases. However, the restrictions were reintroduced in several states in mid-April as infection cases rose again. The MCO was tightened to a total lockdown from 1 June and extended indefinitely due to the severe and ongoing spread of the Delta variant to Malaysia. Following high vaccination rates in the adult population against COVID -19 and a decline in severe cases since September 2021, a four-phase National Recovery Plan (NRP) was

introduced. A fifth wave, triggered by the Omicron variant, resulted in record daily cases in February and March 2022, but is characterised by a lower number of hospitalisations and deaths as the population received a full dose of vaccine. In the NRP phase, research activities were allowed with the given SOP. Terengganu entered the fourth phase on 25 October 2021, ending movement restrictions in Malaysia.

Data collection was conducted from 1 March 2022 to 30 June 2022, still in the fourth phase of the NRP in compliance with SOP. Data collection started in Kampung Ladang Flat, followed by Kampung Masjid Haji Kadir and Kampung Banggol.

3.8 DATA ANALYSIS

IBM SPSS (Statistical Package for the Social Sciences) statistic version 25.0 was used to import all the data collected and perform a series of statistical analyses. The significance level chosen for this study was $p = 0.05$, which means that the risk of type 1 error was 5%. A statistician was also consulted to confirm that appropriate statistical analysis techniques had been chosen.

3.8.1 Creating Codes for Study Variables

When creating a variable code, a numeric code is assigned to represent non-numeric categories. For example, for gender, a '1' was coded for males and a '2' for females. The researcher created a codebook to facilitate data entry in SPSS. The codebook consisted of variable names, labels, and columns of coding instructions where the codes were listed as in Table 3.1.

Table 3.1 The Codebook of Study Variables

Variable name	**Label**	**Coding instruction**
Gender	Gender	1 = Male 2 = Female
Marital status	Marital status	0 = Married 1 = Single
Education level	Education level	0 = Secondary & tertiary 1 = Primary 2 = None
Occupation	Occupation	1 = Retired 2 = Unemployed 3 = Employed
Income	Family income	1 = Less than RM1000 2 = RM1000 - RM1999 3 = RM2000 - RM3900 4 = RM4000 - RM5900
Family structure	Family structure	0 = Living with children 1 = Nuclear family 2 = Living with relative 3 = Living alone
Smoking	Smoking	0 = Non-smoking 1 = Smoking

Variable name	Label	Coding instruction
Alcohol	Alcohol intake	0 = No 1 = Yes
Hypertension	Hypertension	0 = No 1 = Yes
Diabetes mellitus	Diabetes mellitus	0 = No 1 = Yes
Hyperlipidaemia	Hyperlipidaemia	0 = No 1 = Yes
Thyroid	Thyroid	0 = No 1 = Yes
Anaemia	Anaemia	0 = No 1 = Yes
Heart disease	Heart disease	0 = No 1 = Yes
Asthma	Asthma	0 = Yes 1 = No
Upper track gastro	Upper track gastro	0 = No 1 = Yes
Lower track gastro	Lower track gastro	0 = No 1 = Yes

Variable name	Label	Coding instruction
Hepatitis	Hepatitis	0 = No 1 = Yes
Renal failure	Renal Failure	0 = Yes 1 = No
Arthritis	Arthritis	0 = Yes 1 = No
Gout	Gout	0 = Yes 1 = No
Stroke	Stroke	0 = Yes 1 = No
Seizure	Seizure	0 = Yes 1 = No
None	None	1 = No
Cognitive level	Cognitive level	0 = Normal cognition 1 = Impaired cognition
GDS_Score	Depression level	0 = No Depression 1 = Depression
Score_UCLA	Loneliness	0 = No loneliness 1 = Lonely

Variable name	Label	Coding instruction
Score_MSPSS	Social support	0 = Good social support 1 = Lack social support
Score_Barthel	Activities of daily living	0 = Good ADL 1 = Impaired in ADL
Score _IADL	Instrumental activities of daily living	0 = Good IADL 1 = Impaired in IADL
Score PSSQI-M	PSQI score	0 = Good sleeper 1 = Poor sleeper
Score_Durell-M	Religiosity	0 = Good religiosity 1 = Poor religiosity

3.8.2 Data Cleaning

Data cleaning looked for entry errors, missing responses, and incorrect entries that could be easily uncovered through descriptive analysis using SPSS software. For example, data entry errors and missing data were looked for by examining frequencies for the categorical data and descriptive analysis (mean, standard, minimum, and maximum) for the continuous data. Once the data entry error was detected, the researcher replaced the values with the correct ones. However, there were no data entry errors, no missing responses, and no incorrect entries. This process is important before proceeding with the selected statistical test.

3.8.3 Statistical Test

This section explains the selection of appropriate statistical methods used in this study based on the objectives of the study. In this study, descriptive statistics, Pearson's chi-square and binary logistic regression were selected and explained below.

3.8.3.1 Descriptive Statistics

Descriptive statistics were used to describe the basic distribution of variables in this study, including demographic characteristics such as age, gender, marital status, education level, financial status, family structure, smoking, alcohol intake, and health status. The results were reported as frequencies and percentages for the categorical variables, while the mean standard deviation (SD) was reported for the different continuous variables. Furthermore, the results were presented in the form of tables.

3.8.3.2 Pearson's Chi-Square Test

Pearson's chi-square test was applied to test two categorical variables. The purpose of this test was to determine the association between depression symptoms and demographic characteristics, cognitive impairment, loneliness, perceived social support, functional status on ADL, functional status on IADL, sleep quality, and religiosity among older people dwelling in communities. In this analysis, it is assumed that the lowest expected frequency should be 5 or more in at least 80% of the cells (Mchugh, 2013). Fisher's exact test was performed when the assumption was not met. The result was presented in the form of frequencies and the corresponding percentage and significance level (p values) were presented in a table.

3.8.3.3 Binary Logistic Regression

Binary logistic regression analysis was applied to identify the significant risk factor for the binary outcome variables (depression versus no depression) based on the best fitting,

parsimonious, and statistically significant model to describe the relationship between the risk factors, an independent variable associated with the outcome, and a dependent variable (Sarkar, 2010). Logistic regression is a multivariate analysis to develop a model from a binary dependent variable, while linear regression is for a continuous dependent variable (Shipe et al., 2019). Therefore, binary regression was chosen because the prediction model can be developed using logistic regression, including the identification and selection of classifying variables and the assessment of model performance, which is able to estimate the coefficients (e.g., log odds or hazard ratios) for each predictor included in the final model and adjust them in relation to the other predictors in the model. The coefficients can predict the outcome of the risk estimation.

Prior to analysis, the data were explored and cleaned. The dependent variables were the degree of depression symptoms, a dichotomous variable (0 = No, 1 = Yes). The independent variables were demographic characteristics, cognitive impairment, loneliness, perceived social support, functional status on ADL, functional status on IADL, sleep quality, and religiosity.

First, simple logistic regression was performed to look for important independent variables with a *p*-value of less than 0.05. Then a variable selection method was applied to build the preliminary model. In the current study, the enter-elimination method was used to determine the best-fitting model. It ensured that the model contained more significant independent variables than the forward and backward selection methods.

In addition, multicollinearity and interaction terms were assessed in this analysis. The multicollinearity was assessed to check which variables were highly correlated based on the standard error of the regression coefficient and the correlation matrix (Hatim, 2017; Norsa'adah, 2011; Wuensch, 2011). On the other hand, the interaction term was used to test the interactions between variables that were biologically meaningful in this model. When the values of the standard error and the correlation are small and the interaction term is not significant ($p > 0.05$), a preliminary final model is obtained (Wuensch, 2011). In the present study, the standard error value (0.47 – 0.78) and the correlation values (0.001 – -0.053) were relatively small. Moreover, the interaction term between two independent

variables showed no significant interaction effect in the model. Therefore, these independent variables could be included in the model.

Several assumptions were also tested to assess the model's goodness of fit, including a Hosmer–Lemeshow test, a classification table, and an area under the Receiver Operating Characteristic (ROC) curve. The Hosmer–Lemeshow test compares the discrepancy between the observed probability and the expected probability of occurrence in subgroups of the model population, usually grouped into ten deciles (Norsa'adah, 2011). If the discrepancy is small and the *p*-value of the Hosmer–Lemeshow test is more than 0.05, this indicates a good model fit (Hatim, 2017; Norsa'adah, 2011). In the present study, the *p*-value of the Hosmer–Lemeshow test showed no significant difference between the observed probability and the expected probability of occurrence ($p = 0.479$). Therefore, this model was a good fit.

In addition, the classification table was reviewed to assess the predictive accuracy of the logistic regression model. Hatim (2017) states that the predictive accuracy is good when the classification table percentage is more than 70% and the model fits well. The classification table of the present study was 90.4%, which indicated that the model was a good fit and could produce similar classification accuracy for each case.

In addition, the area under the ROC was used to test the model's goodness of fit. The ROC curve can predict the likelihood that one of the outcomes of the independent variables has a higher probability and thus dominates the model (Sarkar, 2010). According to Hatim (2017), the recommended value of the ROC curve is at least 0.7. The value of the ROC curve for the current study was 0.937 (95% CI [0.90, 0.97]), which indicated that the model could accurately discriminate 94% of the cases.

The result of this analysis and the final results of the model are presented with the regression coefficient (b), the adjusted odds ratio (aOR) (at a 95% CI), and the significance level (*p*-value) in Chapter 4.

3.9 SUMMARY

This chapter describes the details of the research methods, including the study design, study setting, and sample size. The inclusion criteria for participants and the process of data collection were explained in detail. It also described the study instruments, ethical considerations, and data analysis.

CHAPTER FOUR

RESULT

4.1 INTRODUCTION

This chapter provides some details on the response rate of the data, the demographic characteristics of the participants, and the results of the study based on the research objectives. The result is presented in the form of tables and figures. The data was collected and analysed using SPSS version 25. The first part is the analysis of descriptive statistics used to describe in detail the categorical variables such as gender, age, marital status, educational level, family income, family structure, smoking, alcohol intake, and health status. The means and standard deviations are presented for continuous variables such as Organisational Religious Activity (ORA). In addition, the prevalence of depression symptoms among Malays older people in community-dwelling in are described. In the second part, the results of Pearson's chi-square analysis, correlation test, and binary logistic regression analysis are presented. This is to determine whether depression symptoms in the elderly are related to socio-demographic variables, health status, cognitive level, loneliness, social support, functional status, sleep quality, and religiosity.

4.2 RESPONSE RATE

Response rate is defined as the total number of completed interviews divided by the total number of participants contacted (or the number of all possible interviews) (Morton et al., 2012). This ratio is important to ensure the representativeness of the sample to the target population and to measure the quality of the survey data and useful findings (Saldivar, 2012). The very high response rate for one of several surveys conducted as part of a larger study provided an ideal circumstance for examining the relationship between response rate and non-response bias (Meterko et al., 2015). Therefore, the response rate of the study is important for the validity of the study. In this study, the researcher found 240 participants who agreed to participate in the study and sign the consent form, which was a good response

rate. Therefore, it was acceptable to proceed with the planned statistical analysis (Saldivar, 2012).

4.3 SOCIODEMOGRAPHIC CHARACTERISTICS, PRESENT ILLNESS OF THE PARTICIPANT, AND FACTOR VARIABLES

A total of 240 older people in community-dwelling took part in this study. The mean age of all participants was 71.0 ± 7.1 years. Most participants were between 60 and 69 years old (*n* = 106; 44%). Meanwhile, only a few participants were over 80 years old (*n* = 34; 14%). About 42% (*n* = 100) of the participants were in the age range of 70 – 79 years. The number of female participants (*n* = 149) was slightly higher than that of males (*n* = 91). Meanwhile, most participants reported to be married (*n* = 137; 57%), compared to being single (*n* = 7; 3%), widowed (*n* = 84; 35%), and divorced (*n* = 12; 5%).

Most participants reported living with their children (*n* = 112; 47%) or nuclear family (*n* = 101; 42%). 22 (9%) participants lived alone and five (2%) participants reported living with relatives. In addition, 145 (60%) participants received primary school education. 52 (22%) participants completed secondary school and the others had no formal education (*n* = 43; 18%). Most participants were non-smokers (*n* = 223; 93%) and all participants were non-alcoholics (100%).

Socioeconomic profiles included participants' employment status and monthly income. Approximately 25 (10%) participants were employed, while the majority were either retired (*n* = 89; 37%) or unemployed (*n* = 126; 53%). In terms of monthly income, 149 (62%) participants had an income of less than RM1000 per month and 71 (29.5%) participants had an income between RM1000 and RM1999.

Table 4.1 Sociodemographic Profile of the Participants

Profiles	**Frequency (*N* = 240)**	**Percentage (%)**	**Mean Age**
Demographic Status			
*Age (years)			71.0 ± 7.1
60 – 69	106	44	
70 – 79	100	42	
80 above	34	14	
Gender			
Male	91	38	
Female	149	62	
Marital Status			
Married	137	57	
Single	103	3	
Widow/er	84	35	
Divorced	12	5	
Family Structure			
Living alone	22	9	
Nuclear family	101	42	
Living with children	112	47	
Living with relative	5	2	
Educational Level			
No formal education	43	18	
Primary	145	60	
Secondary and above	52	22	

Profiles	Frequency (*N* = 240)	Percentage (%)	Profiles
Smoking			
Smoker	17	7	
Non-smoker	223	93	
Alcohol Intake			
Yes	0	0	
No	240	100	
Employment			
Retired	89	37	
Unemployed	126	53	
Employed	25	10	
Monthly Income			
< RM1000	149	62	
RM1000 – RM1999	71	29.5	
RM2000 – RM3999	18	7.5	
> RM4000	2	1	

The values are described as *n* (%)

* The value is described as mean ± SD

Table 4.2 shows the health profile of the participants, including various illnesses frequently reported by older people. The data was presented as frequency and percentage depending on how many illnesses the participants had. Hypertension, diabetes mellitus, and hyperlipidaemia were three health problems most frequently reported by participants. About 163 (68%) of the participants suffered from hypertension, 109 (45%) participants were diagnosed with diabetes mellitus, and 79 (33%) participants reported hyperlipidaemia.

Table 4.2 Type of Illnesses of the Participants

Type of illnesses	**Frequency (*N* = 240)**	**Percentage (%)**
Hypertension		
Yes	163	68
No	77	32
Diabetes mellitus		
Yes	109	45
No	131	55
Hyperlipidaemia		
Yes	79	33
No	161	67
Thyroid		
Yes	7	3
No	233	97
Anaemia		
Yes	7	3
No	233	97
Heart disease		
Yes	33	13
No	208	87
Asthma		
Yes	18	8
No	222	92

Illnesses	Frequency (*N* = 240)	Percentage (%)
Upper & lower tract gastro		
Yes	27	11
No	222	89
Hepatitis		
Yes	14	6
No	226	94
Renal		
Yes	30	12
No	211	88
Arthritis		
Yes	31	13
No	209	87
Gout		
Yes	24	10
No	216	90
Stroke		
Yes	19	8
No	221	92
Epilepsy		
Yes	14	6
No	226	94

The values are described as *n* (%)

Table 4.3 shows the older people's life-related factors that could be associated with depression symptoms. Participants were administered a series of questionnaires to identify the extent of each variable. For example, there were 79 (33%) participants who reported loneliness, while 161 (67%) participants were not lonely. The majority of participants reported having poor sleep quality (n = 225; 94%).

Most participants reported good cognitive levels (n = 212; 89%) and had received good support (n = 148; 61%) from people around them. Similarly, they reported being able to perform Activities of Daily Living (ADL) themselves, at least at a moderate level. In addition to good ADL scores, most reported being able to perform activities related to religion and believed they have good religiosity (n = 222; 93%).

Table 4.3 Older People's Life-Related Factors

Variables	**Frequency (N = 240)**	**Percentage (%)**
Cognition		
Good	212	89
Poor	28	11
Loneliness		
Yes	79	33
No	161	67
Support		
Good	148	61
Moderate	83	35
Poor	9	4

Variables	Frequency (*N* = 240)	Percentage (%)
Activities of daily living (ADL)		
Good	106	44
Moderate	122	51
Poor	12	5
Instrumental ADL		
Good	183	77
Moderate	44	18
Poor	13	5
Sleep		
Good	14	6
Poor	225	94
Religiosity		
Good	222	93
Poor	18	7

The values are described as *n* (%)

4.4 PREVALENCE OF DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE IN KUALA TERENGGANU

Table 4.4 shows the classification of depression symptoms from normal to severe as assessed by the Geriatric Depression Scale (GDS). The overall prevalence of depression symptoms among participants was 24.6%. Of the participants who reported depression symptoms, 14.2% had mild symptoms. 8.3% and 2.1% had moderate and severe symptoms, respectively.

Table 4.4 The Prevalence of Depression Symptoms among Malay Community-Dwelling Older People in Kuala Terengganu

Classification of Depression Level	**Frequency (*N* = 240)**	**Percentage (%)**
Normal	181	75.4%
Mild depression	34	14.2%
Moderate depression	20	8.3%
Severe depression	5	2.1%

The values are described as *n* (%)

4.5 ASSOCIATION BETWEEN DEPRESSION SYMPTOMS WITH SOCIODEMOGRAPHIC DATA, TYPE OF ILLNESSES, AND OLDER PEOPLE'S LIFE RELATED FACTORS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE

Table 4.5 shows a summary of the association between symptoms of depression and sociodemographic factors, type of illnesses, and elderly life-related factors such as cognitive level, loneliness level, perceived social support, functional status, sleep quality, and religiosity. In this study, marital status was defined as married. The unmarried category included single, divorced, and widowed. Interestingly, the variables marital status ($p <$ .001) and living arrangement ($p < 0.022$) were significantly associated with depressive symptoms. In contrast, gender ($p < 0.177$), age ($p < 0.103$), occupation ($p < 0.065$), education level ($p < 0.064$), financial status ($p < 0.237$), and smoking ($p < 0.631$) showed no association with depressive symptoms among the Malay elderly living in communities in Kuala Terengganu.

Furthermore, it is interesting to note that only in older people with asthma was a significant association found with depressive symptoms, as summarised in Table 4.6.

Table 4.5 Association between Symptoms of Depression and Sociodemographic Profiles among Malay Community-Dwelling Older People

Variables	Depression				*p*-value
	Yes		No		
	n	%	*n*	%	
Gender					0.177
Male	18	7.5	73	30.5	
Female	41	17	108	45	
Age group					0.103
60-69	26	11	80	33	
70-79	20	8	80	33	
80 above	13	6	21	9	
Marital status					**0.001*** **
Married	23	10	114	47	
Unmarried	36	15	67	28	
Education level					0.064
No formal education	15	6	24	10	
Primary	35	15	106	44	
Secondary & tertiary	9	4	49	21	
Occupation					0.065
Retired	20	8	69	29	
Unemployed	37	15	89	37	
Employed	2	1	23	10	

Variables	Depression				*p*-value
	Yes		No		
	n	%	*n*	%	
Financial status					0.237
Less than RM1000	43	17.9	106	44.1	
RM1000-RM1900	13	5.4	58	24.1	
RM2000-RM3900	3	1.2	15	6.2	
RM4000-RM5999	0	0	2	0.8	
Living status					**0.022***
Living alone	6	2.5	16	6.6	
Nuclear family	15	6.2	86	35.8	
Living with children	37	15.4	75	31.2	
Living with relative	1	0.4	4	1.6	
Smoking					0.631
Smoking	5	2	12	5	
Non-smoking	54	22.5	169	70.4	

The association between variables was analysed using chi-square.

* $p < 0.05$ is a significant value

** $p < 0.01$ is a significant value

*** $p < .001$ is a significant value

Table 4.6 Associations between Symptoms of Depression and Illnesses

Variables	Depression				*p*-value
	Yes		No		
	n	%	*n*	%	
Illnesses					
Hypertension					0.071
Yes	45	18.8	119	49.5	
No	14	5.9	62	25.8	
Diabetes mellitus					0.335
Yes	30	12.5	79	32.9	
No	29	12	102	42.6	
Hyperlipidaemia					0.156
Yes	25	10.4	54	22.6	
No	34	14.1	127	52.9	
Hyper/Hypothyroidism					0.521
Yes	1	0.4	6	2.5	
No	58	24.1	175	72.9	
Anaemia					0.804
Yes	2	1	5	2	
No	57	24	176	73	
Heart disease					0.617
Yes	9	3.7	23	9.5	
No	50	20.8	158	65.4	
Asthma					**0.042***
Yes	8	3.3	10	4.1	
No	51	21.2	171	70.8	

Variables	Depression				*p*-value
	Yes		No		
	n	%	*n*	%	
Upper lower tract gastro					0.292
Yes	4	2	21	9	
No	55	23	160	66	
Hepatitis					0.550
Yes	2	1	12	5	
No	57	24	169	70	
Renal					0.390
Yes	9	4	20	8	
No	50	21	161	67	
Arthritis					0.865
Yes	8	3	23	10	
No	51	21	158	56	
Gout					0.960
Yes	6	2.5	18	7.5	
No	53	22	163	68	
Stroke					0.196
Yes	7	3	12	5	
No	52	22	169	70	
Epilepsy					0.118
Yes	1	0.4	13	5.4	
No	58	24.2	168	70	

The association between variables was analysed using chi-square.

* $p < 0.05$ is a significant value

Table 4.7 shows the relationship between symptoms of depression and cognitive level, level of loneliness, social support, functional status for ADL, IADL, sleep quality, and religiosity among Malay community-dwelling older people. Table 4.7 shows that cognitive impairment ($p < 0.005$), loneliness ($p < 0.589$), social support ($p < .000$), functional status for ADL ($p < .000$), IADL ($p < .000$), and religiosity ($p < .001$) were significantly associated with depressive symptoms. However, sleep quality ($p < 0.550$) was not related to depressive symptoms.

Table 4.7 Association Between Symptoms of Depression with Cognitive Level, Level of Loneliness, Social Support, Functional Status for ADL, Instrumental Activity Daily Living (IADL), Sleep Quality, and Religiosity

Variables	**Depression**				***p*-value**
	Yes		**No**		
	n	**%**	***n***	**%**	
Level of cognition					**0.005*** **
Normal cognition	40	17	153	63	
Cognitive impairment	19	8	28	12	
Loneliness					**0.001*** **
Not lonely	11	5	150	62	
Lonely	48	20	31	13	
Social support					**0.001*** **
Good social support	21	9	127	53	
Lack of social support	38	16	54	22	

Variables	Depression				*p*-value
	Yes		No		
	n	%	*n*	%	
Activities of daily living					**0.001*** **
Good ADL	20	8	139	58	
Impaired in ADL	39	16	42	18	
Instrumental activities of daily living					**0.001*** **
Good IADL	25	10	158	66	
Impaired IADL	34	14	23	10	
Sleep quality					0.550
Good sleeper	2	0.8	12	5	
Poor sleeper	57	23.7	168	70	
Religiosity					**0.001*** **
Good intrinsic religiosity	48	20	174	72	
Poor intrinsic religiosity	11	5	7	3	

The association between variables was analysed using chi-square.

* $p < 0.05$ is a significant value

** $p < 0.01$ is a significant value

*** $p < .001$ is a significant value

Further data analysis was conducted using binary logistic regression to identify factors associated with symptoms of depression among community-dwelling older people. The Odds Ratio (OR) and the adjusted Odds Ratio (aOR) were determined.

Table 4.8 below shows the factors associated with symptoms of depression among community-dwelling Malay elderly people. Marital status, living arrangement, asthma, cognitive impairment, loneliness, lack of social support, impaired ADL, impaired IADL, and low religiosity were closely examined in simple logistic regression analyses using the enter method. The result showed that all these variables were significant factors associated with depressive symptoms in older people.

Table 4.8 Factors Associated with Symptoms of Depression Among Malay Community-Dwelling Older People According to Simple Binary Logistic Regression

Variables	**B**	**Crude OR**	**95% CI**	**Wald**	***df***	***p***
Marital status						
Married	ref	-	-	-	-	-
Single	0.980	2.663	1.46, 4.87	10.10	1	**0.001*** **
Living arrangement						
Living with children	ref	-	-	-	-	-
Nuclear family	-1.040	0.354	0.18, 0.694	9.11	1	> **0.003*** **
Living with relative	-0.680	0.507	0.055, 4.69	0.358	1	0.550
Living alone	-0.707	0.760	0.26, 2.10	0.279	1	0.597

Variables	B	Crude OR	95% CI	Wald	*df*	*p*
Asthma						
No	ref	-	-	-	-	-
Yes	0.987	2.682	1.01,7.15	3.887	1	**0.05***
Cognitive impairment						
Normal cognition	ref	-	-	-	-	-
Cognition impaired	-0.950	0.386	0.39, 0.19	7.59	1	**0.006*****
Loneliness						
Not lonely	ref	-	-	-	-	-
Lonely	3.050	21.11	9.87, 45.18	61.74	1	**0.001*****
Social support						
Good social support	ref	-	-	-	-	-
Poor social support	-1.450	4.256	2.29, 7.92	20.90	1	**0.001*****
Functional status (ADL)						
Good ADL	-	-	-	-	-	-
Impaired ADL	1.865	6.454	3.40, 12.24	32.60	1	**0.001*****

Variables	B	Crude OR	95% CI	Wald	*df*	*p*
Functional status (IADL)						
Good IADL	ref	-	-	-	-	-
Impaired IADL	2.235	9.343	4.75, 18.38	41.88	1	**0.001*** **
Religiosity						
Good in religiosity	ref	-	-	-	-	-
Poor in religiosity	-1.740	5.696	2.09, 15.49	11.63	1	**0.001*** **

The reference category is no depression.

* $p < 0.05$ is a significant value for OR readings

** $p < 0.01$ is a significant value for OR readings

*** $p < .001$ is a significant value for OR readings

Multiple binary logistic regression was performed on this data using the enter, forward, and backward methods. A comparison was made between these three methods. The enter elimination method was used to determine the best fitting model as it ensured that more significant independent variables were retained in the model compared to the forward and backward selection methods. The overall logistic regression model showed that depression was significantly independently associated with six factors, namely marital status, chronic illnesses such as asthma, loneliness, social support, impaired ADL, and IADL, as shown in Table 4.9.

Regarding marital status, the elderly with single, widowed, and divorced status were 4.4 times more likely to have symptoms of depression compared to those who were married

(aOR = 4.4; 95% CI [1.22, 15.96]; $p < 0.02$), and the elderly with chronic illnesses such as asthma were 14.1 times more likely to have symptoms of depression (aOR = 14.1; 95% CI [2.83, 70.5]; $p < .001$). In addition, the elderly with loneliness were 21.1 times more likely to be depressed than those who were not lonely (aOR = 21.1; 95% CI [9.87,45.18]; $p < .001$). In addition, those with low social support are 3.1 times more likely to have depression compared to those with high support (aOR = 3.1; 95% CI [1.18 , 7.93]; $p < .001$). In addition, people with poor self-organisation skills were 3.4 times more likely to have depression than those with good ADL (aOR = 3.4; 95% CI [1.22, 9.39]; $p < 0.01$). Meanwhile, older people who were impaired in IADL were 6.1 times more depressed than older people who had good IADL (aOR: 6.1; 95% CI [1.95, 19.0]; $p < 0.002$).

Table 4.9 Factors Associated with Symptoms of Depression Among Malay Community-Dwelling Older People using Multiple Binary Logistic Regression (N = 240)

Variables	**B**	**AOR**	**95% CI**	**Wald**	***df***	**Sig**
Marital status						
Married	-	-	-	-	-	-
Single	1.486	4.4	1.22, 15.96	5.149	1	**0.02***
Asthma						
No	-	-	-	-	-	-
Yes	2.649	14.1	2.83, 70.5	10.438	1	**0.001*****
Loneliness						
Not lonely	-	-	-	-	-	-
Lonely	3.050	21.1	9.87, 45.18	61.74	1	**0.001*****
Social support						
Good social support	-	-	-	-	-	-
Poor social support	1.117	3.1	1.18, 7.93	5.270		**0.001*****

Variables	B	AOR	95% CI	Wald	*df*	Sig
Functional status (ADL)						
Good ADL	-	-	-	-	-	-
Impaired ADL	1.220	3.4	1.22, 9.39	5.493	1	**0.01****
Functional status (IADL)						
Good IADL	-	-	-	-	-	-
Impaired IADL	1.806	6.1	1.95, 19.0	9.660	1	**0.002*****

*Enter Multiple Logistic Regression model was applied.

Multicollinearity and interaction terms were checked and not found.

Hosmer-Lemeshow test (p=0.479), classification table (overall correctly classified percentage =90.4%) and area under the ROC curve (93.7%) were applied to check the model fit.

The reference category is no depression.

* $p < 0.05$ is a significant value for OR readings

** $p < 0.01$ is a significant value for OR readings

*** $p < .001$ is a significant value for OR readings

4.6 SUMMARY

From the analysis of this study, older people with the status of single, widowed or divorced, chronic illnesses, especially asthma, were more likely to suffer from depression. In addition, most older people who experienced loneliness, as revealed by the UCLA-8 score, and who perceived low social support, as revealed by the MSPSS score, exhibited symptoms of depression. In addition, among the Malay elderly dwelling in communities, symptoms of depression were also found among those who were poor at self -organisation

in terms of ADL and IADL. These findings are discussed in more detail in the following chapter.

CHAPTER FIVE

DISCUSSION

5.1 INTRODUCTION

Depression symptoms are common in the elderly population and may not be recognised because the symptoms mimic normal features of normal ageing (Anand et al., 2019). The prevalence and associated factors of depression symptoms have been reported in community-dwelling older people and the prevalence is widespread, including in Malaysia. The primary objective of the current study is to measure the prevalence of depression symptoms among Malay older people in community-dwelling. The secondary objective is to determine the factors associated with depression symptoms among community-dwelling older people in Kuala Terengganu.

This chapter contains an interpretation of the results of the study. The first section looks at the demographic characteristics of the participants, followed by the prevalence of depression symptoms among Malay community-dwelling older people and the association of depression symptoms among Malay older people living in the community.

5.2 PREVALENCE OF DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE IN KUALA TERENGGANU

The prevalence of depression symptoms among Malay community-dwelling older people in this study was 24.6%, which is higher compared to an earlier study in Malaysia. A previous community-based study in Malaysia found that the prevalence of depression symptoms among the urban elderly was 19.2% (Rashid & Tahir, 2015). In addition, a study by Aznan et al. (2019) found that 19.3% of Malay descent. A study done by Vanoh et al. (2016) reported that 16.5% of community-dwelling older people had symptoms of depression. Nevertheless, some studies in Asia show a similar rate to the current study, including Vietnam 26.4% (Vu et al., 2019), 27.8% in Sri Lanka (Rajapakshe, 2018), 25.92% in China (Dai et al., 2019), and 23% in India (Konda, 2018).

In addition, study participants felt insecure as they fear exposure to the COVID-19 virus. Even after the peak of the pandemic has passed, community-dwelling older people were still afraid to leave their homes and struggled to re-establish their former social connections, relationships, and usual activities. As a result, they lose their usual relationships with their children, relatives, and friends. These findings support the increase in the prevalence of Malay older people at risk of depression but are not as conclusive.

Numerous studies have been conducted around the world reporting a prevalence of depression symptoms in community-dwelling older people. However, differences in the prevalence of depression symptoms are largely attributed to differences in study methodology, culture, and socioeconomic situation. For example, the systematic review and meta-analysis of studies from 2001 to 2015 reported that about 43% of older people in Iran had depression symptoms (Sarokhani et al., 2018). In India, the systematic review and meta-analysis of studies from 1997 to 2016 found the prevalence of depression in older Indians to be 34.4% (Pilania et al., 2019). In comparison, the study in China found that about 44.2% of older people with empty nests and 26.3% of those without empty nests had depression symptoms (Zhang et al., 2020). The prevalence of the current study shows an increasing pattern that almost matches the Asian range between 7.8% and 34.8% of depression symptoms among community-dwelling older people (Tengku Amatullah Madeehah et al., 2019). Therefore, awareness and knowledge of depression symptoms among community-dwelling older people could help reduce the prevalence of depression symptoms in this population.

5.3 THE ASSOCIATION OF DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY-DWELLING OLDER PEOPLE

5.3.1 The Association between Depression Symptoms with Sociodemographic Data, Types of Illnesses, and Elderly Life-Related Factors among Malay Community-Dwelling Older People

This study found that there was no significant gender difference in the number of depression symptoms in this population. Furthermore, the result of the chi-square test showed no significant difference in the prevalence of depression symptoms between men

(7.5%) and women (17%). Some previous studies came to similar results as the current study, which found no statistically significant differences between women and men. No significant difference was also found in the elderly age group (Aznan et al., 2019; Cong et al., 2015; Dao et al., 2018; Hamzah et al., 2018; Kugbey et al., 2018; Li et al., 2015; Shao et al., 2017). Gender and age do not contribute to depression symptoms.

In addition, marital status and living arrangement showed significant associations with depression symptoms among Malay community-dwelling older people with $p = .001$ and $p = 0.022$, respectively. Older people with single, widowed, and divorced status were a risk group for depression symptoms compared to older people who had a living partner. This finding was similar to several other studies (El-Gilany et al., 2018; Fatima et al., 2019; Güzel & Kara, 2020; Konda, 2018; Manandhar et al., 2019; Rajapakshe, 2018; Simkhada et al., 2018). This situation could be explained by the grieving process over the loss of a spouse, which can affect psychosocial health at all stages of life. Moreover, older people are particularly vulnerable to this grief, as their dependence and emotional attachment to their spouse increases with age (Fatima et al., 2019). In addition, the loss of a spouse can contribute to feelings of loneliness and a lack of social support (Anil et al., 2016).

Furthermore, living arrangements were found to be significantly associated with depression symptoms ($p = 0.022$) (Kavithai et al., 2018). However, in our study, these factors were not associated with depression. In this study, older people who lived with children had a higher risk of depression symptoms than older people who lived with a spouse or alone. This could be due to low satisfaction with family relationships, which can affect basic human needs such as belongingness and acceptance in older people living with their children, contributing to depression symptoms (Rajapakshe et al., 2019; Simkhada et al., 2018). Moreover, in the current study, sociodemographic factors such as educational level, occupational status, and financial status were not significantly associated with depression symptoms. This result was similar to Hamzah et al. (2018), suggesting that older people were satisfied with their living costs. Smoking was not significantly associated with depression symptoms in this study. However, non-smokers had higher mean scores on the Geriatric Depression Scale (GDS) than smokers ($p = 0.02$) because smoking temporarily reduces feelings of stress (Güzel, 2020).

In addition, asthma (p = 0.042), cognitive impairment, poor sleep quality, and religiosity were significantly associated with depression symptoms, based on the chi-square. However, these factors were not associated with depression in multiple binary logistics, where this type of statistical test forms a best-fitting equation or function using the Maximum Likelihood (ML) method and maximises the likelihood of classifying the observed data in the appropriate category given the regression coefficients. Moreover, the coefficient 'b' measures the partial contribution of each independent variable to the variations in the dependent variable (Choi, 2021). In order to achieve the correct goal in predicting the outcome category, a model was built that included all predictor variables useful for predicting the response variables (sociodemographic profile, presence of illnesses, and factor variables). Therefore, multiple binary logistics was chosen to predict the factors associated with depression symptoms among Malay community-dwelling older people.

As a result, the overall logistic regression model showed that depression was significantly independently associated with six factors, namely marital status, chronic illness such as asthma, loneliness, social support, impaired ADL, and IADL.

Regarding marital status, older people with single, widowed, or divorced status were 4.4 times more likely to have depression symptoms compared to married individuals (aOR = 4.4; 95% CI [1.22, 15.96]; $p < 0.02$). Meanwhile, older people who perceived low social support, as assessed by the MSPSS score, were 3.1 times more likely to have depression symptoms compared to those with high social support (aOR = 3.1; 95% CI [1.18, 7.93]; $p < .001$) because they had experienced negative life events such as the loss of their spouse and a close friend. Older people who lose a spouse, is widowed or divorced automatically lose support in the form of emotional and social support. Even if they had a child, the sense of shared emotional support is very different between spouses and children. This finding is similar to recent studies (Konda, 2018; Thilak et al., 2016) that found a fourfold association between depression and living single or as a widow/widower.

Depression symptoms among community-dwelling older people in Asia are more affected by a lack of family support (Tengku Amatullah Madeehah et al., 2019). Typically,

older people rely on their children and family members to provide care in old age (Dao et al., 2018). In most studies, living with children was a protective factor, but due to the overload of daily tasks, the increase in the cost of living, and expenses for the elderly, they may become burdened and internal conflicts may arise, upsetting the elderly due to the lack of family support (Dao et al., 2018; Shao et al., 2017).

Apart from this, the reduced presence of close friends and significant others could lead to a lack of opportunities to interact with each other to share feelings and support each other, leading to depression symptoms, which is a similar outcome (Ashe & Routray, 2019; Bincy et al., 2021; Khaltar et al., 2017; Manandhar et al., 2019; Rashid & Tahir, 2015). Social support is also defined as the availability of other people who share enjoyable and relaxing activities with one and ensure that one can relax for a while (Yildirim & Tanrýverdi, 2020). Positive social interaction can provide a sense of belonging and connection as it reduces the risk of depression symptoms. Restricting social networking and social distancing to reduce COVID -19 exposure may result in loss of opportunities to participate in informal social interactions. This includes participation in prayer groups, Al-Quran classes, religious classes, or group gatherings. Furthermore, a study by Li et al. (2015) found a strong negative association between perceived social support and depression symptoms in older people. This means that older people with higher perceived social support are less depressed than those with lower perceived social support. A lack of this support can create feelings of insecurity and increase their vulnerability to depression (Simkhada et al., 2018).

Lack of social engagement and support will lead to isolation and loneliness. Older people will inevitably face the dilemma of a shrinking social network, loss of social value, and lower social status, making it more difficult for older people to access social support (Zhao & Wu, 2022). In addition, a study by Shao et al. (2017) found that depression symptoms were significantly associated with community activities. These include, for example, interaction with relatives or neighbours and relationships with spouses. Thus, a lack of social engagement leads to social isolation and increased loneliness associated with depression. This study showed that older people who were lonely had almost 21 times the risk of becoming depressed compared to those who were not lonely (aOR = 21.1; 95% CI

[9.87, 45.18]; $p < .001$). The evidence was supported by Li et al. (2015) who found that loneliness had the strongest association with depression in older people in the model. It shows that older people who experience higher levels of loneliness are more likely to experience depression, as well as other countries in Asia (Ashe & Routray, 2019; Simkhada et al., 2018; Song et al., 2019). As people age, their functionality in daily life decreases, which can lead to feeling lonely because they are no longer able to carry out daily routines. This is supported by a study that found that the lack of a significant relationship between functional status and loneliness in the current study may be due to the perceived health variable playing a mediating role in the relationship between functional status and loneliness (Losada et al., 2012). The conclusion is that a prolonged period of loss of daily functioning leads to loneliness and could be a risk for depression symptoms.

In addition, Tanjanai et al. (2017) noted that the highest prevalence of depression symptoms (48.0%) was found among older people who spent their time at home rather than with their relatives and friends. The lowest prevalence of depression symptoms (26.4%) was observed among those who spent most of their time with their friends and relatives. Older people who visited friends and relatives were less than 60% less likely to experience depression compared to those who stayed at home alone. Even though the height of the COVID-19 pandemic was over, community-dwelling older people in this study reported feeling unsafe as they were still afraid of exposure to the COVID-19 virus. As a result, they found it difficult to resume their usual contacts with family and society, which eventually contributed to loneliness. This feeling of loneliness was significantly associated with depression symptoms in this study. Therefore, the study has a practical significance, that is loneliness should be considered in the treatment of depression in community-dwelling older people. Feelings of loneliness can contribute significantly to explaining mental health in older people (Zou et al., 2019).

Apart from this, asthma is classified as a chronic illness and is associated with almost four times the risk of depression symptoms in the older people. It is significantly associated with depression symptoms in several studies (Dai et al., 2019; Güzel & Kara, 2020; Park et al., 2016; Yadav et al., 2020). The presence of chronic illness in older people impairs Activities of Daily Living (ADL) (Rashid & Tahir, 2015). Several studies found

that impaired ADL is associated with depression symptoms in older people (Aznan et al., 2019; Kavithai et al., 2018; Simkhada et al., 2018; Tanjanai et al., 2017). In the other two studies by Disu et al. (2019) and Shao et al. (2017), it was found that older people with limited ADL showed depression symptoms. This could be due to the fact that ageing leads to general physical frailty, chronic diseases, and disabilities that may further affect activity levels in ADL and instrumental ADL (IADL). Consequently, inability to leave the house due to physical immobility and physical health problems were associated factors for depression symptoms compared to older people who were able to leave the house (Manandhar et al., 2019; Simkhada et al., 2018). In a study by Konda (2018), chronic illness was also associated with depression symptoms, as well as experiencing pain, discomfort, and limited ADL. A similar finding was noted by Vu et al. (2019), who found difficulties with mobility and ADL due to pain and discomfort.

This study shows that people with impaired ADL are 3.39 times more likely to develop depression symptoms than older people who are considered independent. It was similar to a previous study that found that functional disability was a significant risk for depression symptoms (Aznan et al., 2019). The ability to perform daily tasks decreases with advancing age. This is due to declining energy, fatigue, loss of interest in daily activities, and poor concentration on tasks as a result of the ageing process. Inability to complete daily tasks is more likely to be associated with negative emotions for community-dwelling older people, which is consistent with another study (Shao et al., 2017). Negative emotions inevitably lead to the dilemma of older people feeling uncomfortable towards their children due to their dependence on family members, which can place a burden on the caregiver (Simkhada et al., 2018). In addition, ADL impairment also has a negative impact, i.e., older people are unable to leave the house due to reduced mobility and loss of autonomy in the family, leading to depression symptoms (Aznan et al., 2019; Manandhar et al., 2019; Simkhada et al., 2018).

The IADL scale measures older people's functionality in performing activities related to IADL to assess the ability to perform tasks required for independent living in the community. A longitudinal study conducted by Kiyoshige et al. (2019) in Japan found that depression symptoms were significantly associated with IADL decline in older people aged

70 years. The findings are consistent with the current study, which found that people with impaired IADL status are 6.09 times at higher risk of depression symptoms than normal older people. The presence of chronic illnesses such as asthma limits functionality in performing activities related to IADL. Similarly, Vanoh et al. (2016) found that impaired IADL status was a risk for depression symptoms. Furthermore, this could be due to depression, which is associated with decreased energy, fatigue, loss of interest, and poor concentration and is common in older people with depression symptoms (Hamzah et al., 2018).

5.4 SUMMARY

This chapter discussed the main findings of the study. In this study, the prevalence of depression symptoms among Malay community-dwelling older people was slightly higher compared to previous studies in Malaysia. This finding was similar to previous studies in Asia, including Vietnam, Sri Lanka, China, and India (Konda, 2018). Furthermore, this study found that several variables were associated with depression symptoms among Malay community-dwelling older people, including marital status (single, widowed or divorced) and presence of chronic illnesses, particularly asthma. In addition, most older people who experienced loneliness and perceived low social support were found to have symptoms of depression. Malay community-dwelling older people with poor ability to organise themselves in terms of ADL and IADL were also likely to develop depression symptoms.

CHAPTER SIX

CONCLUSION

6.1 INTRODUCTION

The chapter begins with the contribution of this study, followed by the strengths and limitations of the study and recommendations for future studies. The chapter also highlights the implications of the study's findings for nursing, healthcare professionals, and health policy. Finally, the chapter concludes with a summary of the main findings of this study.

6.2 CONTRIBUTION OF THE STUDY

The finding of this study makes an important contribution to the current body of knowledge. The prevalence of depression symptoms among older people dwelling in the community has been studied worldwide. Previous research has shown the prevalence of depression symptoms among community-dwelling older people (Pilania et al., 2019). However, there was little empirical research on the prevalence of depression symptoms among Malay community-dwelling older people in Malaysia. There was also limited research on the factors associated with symptoms of depression among older people dwelling in communities. Thus, the result of the present study fills this important gap by determining the prevalence of depression symptoms among Malay community-dwelling older people in Kuala Terengganu on the east coast of Malaysia. In addition, this study explored the factors associated with depression symptoms in Malay community-dwelling older people, which were integrated into the theoretical framework (biopsychosocial and spiritual) From this, the researcher could conclude that the assessment of older people in this study had a multidimensional protective factor that contributed to mental health problems.

The findings revealed that the prevalence of depression symptoms among Malay community-dwelling older people was slightly higher in this study than in a previous study in Malaysia. This group is considered vulnerable to psychiatric disorders if the symptoms of depression are left untreated. Therefore, awareness of these issues should be raised,

especially among family members and healthcare professionals, to prevent negative long-term consequences such as loss of function and suicidal ideation, which may eventually develop into clinical depression (Anand et al., 2019).

Furthermore, the findings of the present study enhance the understanding of factors associated with depression symptoms among Malay community-dwelling older people in Kuala Terengganu. This study assessed the associated factor as part of the theoretical framework, biopsychosocial and spiritual, which consists of demographic factors, health-related problems, cognitive impairment, level of loneliness, lack of social support, physical mobility, sleep disturbance, and spiritual factor. The overall logistic regression model showed that depression was significantly independently associated with six factors, namely marital status, chronic illnesses such as asthma, loneliness, social support, impaired ADL, and IADL. Thus, this finding explains the factor associated with depression symptoms among Malay community-dwelling older people and improves the understanding of depression, especially for the elderly, family members, and healthcare professionals to identify patients, particularly in terms of mental health. By understanding the physiology of the disease and the factors that contribute to its development, health professionals can incorporate this knowledge into psychotherapeutic counselling (Maheshwari et al., 2021).

Furthermore, the results of this study can serve as a reference for the development of an appropriate prevention programme for older people with depression symptoms. Important results were obtained that highlight the factors that need to be considered in the development of effective programmes to reduce depression symptoms in older people. These factors can therefore be taken into account when developing such a programme in the community, such as the healthy lifestyle programme “Cakna Sihat” or “Jom Sihat” organised by the Ministry of Health. In addition, biopsychological theory is a good framework for developing prevention programmes, especially for behaviour change (Roudsari et al., 2018). The combination of the biological, psychological, social, and spiritual factors in the assessment of this tool can encourage the patient to adopt health-promoting behaviours, such as techniques to overcome loneliness in daily life, in order to reduce the development of depression.

6.3 STRENGTHS OF THE STUDY

The findings of the current study add to the knowledge and understanding of depression symptoms among Malay community-dwelling older people. The strengths of this study are addressed below.

In the present study, a cross-sectional study design was chosen to determine the factors associated with depression symptoms among Malay community-dwelling older people in Kuala Terengganu, Malaysia. This study design was most appropriate to obtain the prevalence rate and a snapshot of the population at a particular point in time (Chua, 2016; Polit & Beck, 2018). This is because the outcome obtained can be defined by the demographic and symptomatic characteristics of the study group at baseline and sometimes proves to be a cross-sectional association of interest. In addition, this study measured several factors associated with depression symptoms in older people, guided by a biopsychosocial and spiritual framework to fill the gaps in previous research. Therefore, the results can be used as a reference and preliminary data for further intervention studies to improve the prevention of depression symptoms in older people.

Furthermore, this study had a high response rate (91%), which was sufficient to determine the prevalence of the variables of interest and to adequately represent other older Malay people with depression symptoms in the east coast of Peninsular Malaysia. In short, the larger the sample, the greater the chance of obtaining accurate and reliable data. In addition, the use of trained enumerators for data collection and careful face-to-face interviews ensured that there was hardly any missing data. The support of the *Jawatankuasa Kemajuan dan Keselamatan Kampung* (JPKK) was reflected in the fact that they provided a 'muslimat' (local female representative) who accompanied the researcher during the survey and ensured acceptance in the community.

In addition, this study used a validated instrument in Malay language that was widely used in research or health facilities of the Ministry of Health Malaysia to assess depression symptoms, cognitive ability, loneliness, social support, functional status in ADL and IADL, sleep patterns, and religiosity in older people. Each of the instruments used in this study had acceptable psychometric properties and reliability. Moreover, the validity of

these instruments was tested in the group of older people. Thus, these standardised and well-established instruments contributed greatly to the quality of the raw data and consequently enabled the achievement of high-quality results in this study. In addition, data collection was conducted by a trained enumerator to avoid bias in data collection.

6.4 LIMITATIONS OF THE STUDY

This study had some limitations that future researchers can overcome to expand the knowledge and applicability of the findings. This study likely had recall bias, which may be either unintentional or intentional. Recall bias may unintentionally occur when participants had to recall events that occurred in the past (Sedgwick, 2015). For example, in this study, participants were asked to recall any difficulties in sleeping that occurred in the last six months. Recall bias is intentional when the patient conceals the truth about what happened in the last six months (Sedgwick, 2015). This type of bias was suspected in this study because some of the questions in the instruments included socially unacceptable or embarrassing items, such as low financial status and marital status (divorced or unmarried).

In addition, data collection was conducted from 1 March 2022 to 30 June 2022, which was phase four of the National Recovery Plan (NRP). Overall, there were no major problems in recruiting participants during the data collection, but there was a barrier between the interviewer and the participant during the interview session. According to the COVID -19 Standard Operating Procedures (SOPs), the interviewer has to wear a mask and maintain a distance of one metre between the interviewer and the participant. Therefore, the enumerators faced some difficulties in obtaining consent from the participants as the voice was not clear when explaining the study. However, the enumerators overcame these obstacles by raising the tone of voice.

6.5 RECOMMENDATIONS FOR FUTURE STUDY

There are some areas of improvement for the findings of this study that can be considered for future research. The study found that there was a strong association between depression

symptoms and loneliness, low social support, and impaired ADL and IADL. These findings are important in order to take appropriate prevention and intervention measures to reduce depression. A future study should therefore develop a module-based training programme for informal or formal caregivers that addresses all multidimensional factors. Thus, these people could be referred to interventions in this module aimed at reducing loneliness, lack of social support, and poor physical functioning. This includes participation in an alternative initiative to create opportunities for social interaction, such as prescription gardening, prescription art, low-impact exercise, and aerobic chair (Brandão et al., 2021). In addition, the finding revealed that social support was a significantly associated factor for depression symptoms and that religiosity was a protective factor in this study. These factors are therefore considered important risk factors for older people with depression. Depression prevention programmes with elements of religious activities therefore attract older people to participate in social activities in the community (Jumadi et al., 2018; Yamazaki et al., 2012). These factors in combination should be considered to ensure the effectiveness of the programme and the achievement of its objective.

6.6 IMPLICATION OF THE STUDY FINDINGS

The findings of the current study add to the knowledge and understanding of depression symptoms among Malay community-dwelling older people. Furthermore, these factors were presented based on the theory of biopsychosocial and spiritual factors. Therefore, this study has highlighted several implications for nursing, healthcare professionals, and health policy.

6.6.1 Implication for Nursing

The results of the present study provide important information and guidance for nursing practice in the development of depression symptom assessment and for the design of framework or possible prevention programmes for older people suffering from depression symptoms.

The current findings also serve as a preliminary guide for the development of prevention programmes to reduce depression symptoms among Malay community-dwelling older people. Understanding the biological, psychological, sociological, and spiritual factors that contribute to depression symptoms in older Malays can help nurses make careful decisions about the prevention strategies to be used. Based on the findings of the present study, prevention programmes should use several techniques. For example, patients should learn to cope with feelings of loneliness and encourage activities that involve the community, such as participation in religious activities (prayer group, Bible study group, and religious education), which have been shown to be effective in helping patients to change their negative thoughts into positive ones and thus reduce the occurrence of depression symptoms. In addition, prevention programmes can reinforce the importance of social support for patients. This is because social support is important as it acts like a buffer against depression symptoms (Forsman et al., 2018). Such programmes could, for example, involve family members to prevent depression symptoms and teach these family members how to better support the patient to reduce feelings of uncertainty (Disu et al., 2019; Rajapakshe et al., 2019; Simkhada et al., 2018).

6.6.2 Implication for Healthcare Professionals

In addition, the findings have several implications for healthcare professionals. This study showed that depression symptoms ranged from mild to extremely severe among elderly Malays dwelling within the community. Most of them visited outpatient clinics for routine check-ups. Thus, the findings of this study could raise awareness among healthcare professionals, especially physicians, about the need for further psychiatric assessments when patients show clinical signs or symptoms of depression.

6.6.3 Implication for Health Policy

The final results of this study showed that depression symptoms were found in Malay community-dwelling older people. Therefore, the results are important in determining the severity of depression in this group. In addition, the results of the study provide the

necessary information and form a basis for public policy as well as regulatory decisions to improve health services, especially for the older people. In addition, health policy should make healthcare professionals aware of the importance of early detection of depression in older people. A multidimensional, holistic assessment of an older person first considers health and well-being and leads to the formulation of a plan to address the issues of concern to the older person and their families and caregivers (Turner et al., 2019). This could be done by proposing the assessment of depression symptoms as one of the standard components of care for older people coming to health clinics for routine follow-up of chronic illness. In this way, the onset of depression symptoms could be detected earlier and preventive measures could be initiated to prevent symptoms from worsening. In addition, early detection and prevention of depression could be key to reducing the societal burden of depression and could prove cost-effective. In addition, digital depression prevention programmes are proposed to reduce depression in community-dwelling older people, e.g., digital well-being for older people, i.e., the development of an application consisting of a digital programme for older people. The details of the digital programme consist of a self-guided well-being programme that draws on various theoretical approaches to improve well-being, including Cognitive Behavioural Therapy (CBT), mindfulness-based stress reduction, positive psychology, acceptance and commitment therapy, and behavioural activation (Boucher et al., 2022). This goal could be achieved through a combination of prevention strategies that include components of behaviour change strategies, risk prevention interventions, and risk factor identification. Digital programmes should be formulated in collaboration with healthcare experts such as physicians, geriatricians, psychologists, counsellors and nurses to ensure their effectiveness (Andrews et al., 2019). Such programmes could enable older people to better cope with conflicting life situations that might otherwise lead to depression.

6.7 SUMMARY

A cross-sectional study was conducted to investigate the prevalence of depression symptoms and associated factors among Malay community-dwelling older people in Kuala Terengganu, Malaysia. Factors influencing depression were identified based on a

theoretical framework (biopsychosocial and spiritual) to examine factors associated with depression among Malay community-dwelling older people. Using the logistic regression model, the current study showed that depression was significantly independently associated with six factors, namely marital status, chronic illnesses such as asthma, loneliness, social support, impaired ADL, and IADL. Thus, this result explains the factor associated with depression symptoms among elderly Malays dwelling within the community and improves the understanding of depression, especially for the elderly, family members, and healthcare professionals to identify patients, particularly in the area of mental health.

Furthermore, the results confirmed the findings for the development of an appropriate prevention programme for older people with depression symptoms. Important findings highlight the factors that need to be considered in developing effective programmes to reduce depression symptoms in older people. In addition, the study's findings have several implications for nursing, healthcare professionals, and health policy, and provide some recommendations for further study. More importantly, this study has shown that depression symptoms can occur in older people. Therefore, early detection and prevention measures need to be initiated to reduce the risk of psychiatric illness. Collaboration between healthcare experts such as nurses, physicians, psychiatrists, and counsellors can help to improve care for patients at risk of depression, especially in older people.

REFERENCES

Almeida, O. P., Hankey, G. J., Yeap, B. B., Golledge, J., & Flicker, L. (2016). *Depression as a risk factor for cognitive impairment in later life : the Health In Men cohort study*. 416–424. https://doi.org/10.1002/gps.4347

Ashe, S., & Routray, D. (2019). Prevalence, associated risk factors of depression and mental health needs among geriatric population of an urban slum, Cuttack, Odisha. *International Journal of Geriatric Psychiatry*, *34*(12), 1799–1807. https://doi.org/10.1002/gps.5195

Aznan, M., CM, M., Suriati, N., & Zubir, M. (2019). Prevalence of Depressive Symptoms among Elderly and Its Predictors : A Cross Sectional Study in Community Felda. *Journal of Family Medicine Forecast*, *2*(2), 1–6.

Bae, S. M. (2020). Factors associated with depressive symptoms among elderly Koreans: the role of health status, work ability, financial problems, living alone, and family relationships. *Psychogeriatrics*, *20*(3), 304–309. https://doi.org/10.1111/psyg.12499

Bhamani, M. A., Khan, M. M., Karim, M. S., & Mir, M. U. (2015). Depression and its association with functional status and physical activity in the elderly in Karachi, Pakistan. *Asian Journal of Psychiatry*, *14*(2014), 46–51. https://doi.org/10.1016/j.ajp.2014.12.004

Bincy, K., Logaraj, M., & Ramraj, B. (2021). Depression and its associated factors among the older adults in rural, Tamilnadu, India. *Clinical Epidemiology and Global Health*, *10*(December 2020), 100677. https://doi.org/10.1016/j.cegh.2020.100677

Charoensakulchai, S., Usawachoke, S., Kongbangpor, W., & Thanavirun. (2019). Prevalence and associated factors influencing depression in older adults living in rural Thailand: A cross-sectional study. *Geriatrics and Gerontology International*, *19*(12), 1248–1253. https://doi.org/10.1111/ggi.13804

Charoensakulchai, S., Usawachoke, S., Kongbangpor, W., Thanavirun, P., Mitsiriswat, A., Pinijnai, O., Kaensingh, S., Chaiyakham, N., Chamnanmont, C., Ninnakala, N., Hiri-o-tappa, P., Ponginsee, V., Atichatpongsuk, V., Asawathepmetha, E., Thongprayoon, C., Mao, M. A., Cheungpasitporn, W., Varothai, N., & Kaewput, W. (2019). *EPIDEMIOLOGY , CLINICAL PRACTICE AND HEALTH Prevalence and associated factors in fl uencing depression in older adults living in rural Thailand : A cross-sectional study*. 1–6. https://doi.org/10.1111/ggi.13804

Cong, L., Dou, P., Chen, D., & Cai, L. (2015). Depression and Associated Factors in the Elderly Cadres in Fuzhou , China : A Community-based Study *. *International Journal of Gerontology*, *9*(1), 29–33. https://doi.org/10.1016/j.ijge.2015.02.001

Dai, H. lei, Yu, Z. bin, You, L. qing, Fan, M. hua, Zhu, H. wei, Jiang, D. jie, Wu, M. yin, Lin, S. juan, Zhang, X. cong, & Chen, K. (2019). Association between social health status and depressive symptoms among community-dwelling elderly adults in Zhejiang Province, China. *Journal of Zhejiang University: Science B*, *20*(11), 910–919. https://doi.org/10.1631/jzus.B1900207

Dao, A. T. M., Nguyen, V. T., Nguyen, H. V., & Nguyen, L. T. K. (2018). Factors Associated with Depression among the Elderly Living in Urban Vietnam. *BioMed Research International*, *2018*. https://doi.org/10.1155/2018/2370284

Disu, T. R., Anne, N. J., Griffiths, M. D., & Mamun, M. A. (2019). Risk factors of geriatric depression among elderly Bangladeshi people: A pilot interview study. *Asian Journal of Psychiatry*, *44*(July), 163–169. https://doi.org/10.1016/j.ajp.2019.07.050

DOSM. (2016). Department of Statistics Malaysia Press Release Population Projection (Revised), Malaysia , 2010-2040. *The Office of Chief Statistician Malaysia, Department of Statistics, Malaysia*, *November*, Email : mkho@stats.gov.my.

El-Gilany, A. H., Elkhawaga, G. O., & Sarraf, B. B. (2018). Depression and its associated factors among elderly: A community-based study in Egypt. *Archives of Gerontology and Geriatrics*, *77*(April), 103–107. https://doi.org/10.1016/j.archger.2018.04.011

Fatima, M., Sehar, A., Ali, M., Iqbal, A., & Shaukat, F. (2019). Incidence of Depression Among Community Dwelling Healthy Elderly and the Predisposing Socio-environmental Factors. *Cureus*, *11*(3), 3–8. https://doi.org/10.7759/cureus.4292

Foong, H. F., Hamid, T. A., Ibrahim, R., & Haron, S. A. (2018). Moderating effect of intrinsic religiosity on the relationship between depression and cognitive function among community-dwelling older adults. *Aging and Mental Health*, *22*(4), 483–488. https://doi.org/10.1080/13607863.2016.1274376

Giang, L. T., Nguyen, T. T., & Thi Tran, N. T. (2019). Factors associated with depression among older people in Vietnam. *Journal of Population and Social Studies*, *27*(2), 181–194. https://doi.org/10.25133/JPSSv27n2.0012

Güzel, A., & Kara, F. (2020). Determining the prevalence of depression among older adults living in Burdur, Turkey, and their associated factors. *Psychogeriatrics*, *20*(4), 370–376. https://doi.org/10.1111/psyg.12515

Hamzah, N. A. R., Asyura Adznam, S. N., Taib, M. N. M., Mun, C. Y., & Zuriati, ibrahim, S. A. (2018). Contributions of socio-demographic and psychosocial characteristics, functional status and physical activity level on prevalence of depressive symptoms among rural elderly in Johor state. *Malaysian Journal of Nutrition*, *24*(2), 175–183.

Han, K. M., Ko, Y. H., Yoon, H. K., Han, C., Ham, B. J., & Kim, Y. K. (2018). Relationship of depression, chronic disease, self-rated health, and gender with health care utilization among community-living elderly. *Journal of Affective Disorders*, *241*, 402–410. https://doi.org/10.1016/j.jad.2018.08.044

He, G., Xie, J., Zhou, J., Qin, Z. Z. C., & Ding, S. (2016). *Depression in left-behind elderly in rural China : Prevalence and associated factors*. *October 2011*, 638–643. https://doi.org/10.1111/ggi.12518

Igbokwe, C. C., Ejeh, V. J., Agbaje, O. S., Umoke, P. I. C., Iweama, C. N., & Ozoemena, E. L. (2020). Prevalence of loneliness and association with depressive and anxiety symptoms among retirees in Northcentral Nigeria: A cross-sectional study. *BMC Geriatrics*, *20*(1), 1–10. https://doi.org/10.1186/s12877-020-01561-4

Katerndahl, D. A. (2008). Impact of Spiritual Symptoms Services and Life Satisfaction. *Annals Of Family Medicine*, 412–420. https://doi.org/10.1370/afm.886.INTRODUCTION

Kathari, B., A M, A., & Gowda M R, N. (2020). Prevalence of cognitive impairment and depression among elderly population in urban Chitradurga. *Journal of Preventive Medicine and Holistic Health*, *6*(1), 22–26. https://doi.org/10.18231/j.jpmhh.2020.005

Kavithai, P., R., A., S., B., & M., P. (2018). A cross sectional study on screening for depression among elderly in rural areas of Puducherry, India. *International Journal of Research in Medical Sciences*, *7*(1), 46. https://doi.org/10.18203/2320-6012.ijrms20185361

Khaltar, A., Priyadarshani, N. G. W., Delpitiya, N. Y., Jayasinghe, C., Jayasinghe, A., Arai, A., & Tamashiro, H. (2017). Depression among older people in Sri Lanka: With special reference to ethnicity. *Geriatrics and Gerontology International*, *17*(12), 2414–2420. https://doi.org/10.1111/ggi.13090

Kiyoshige, E., Kabayama, M., Gondo, Y., Masui, Y., Inagaki, H., Ogawa, M., Nakagawa, T., Yasumoto, S., Akasaka, H., Sugimoto, K., Ikebe, K., Arai, Y., Ishizaki, T., Rakugi, H., & Kamide, K. (2019). *Age group differences in association between IADL decline and depressive symptoms in community-dwelling elderly*. 1–8.

Konda, P. R. (2018). Geriatric Depression and its Correlates among South Indian Urbans. *Journal of Depression and Anxiety*, *07*(04). https://doi.org/10.4172/2167-1044.1000314

Kua, E. H., & Ko, S. M. (1992). A questionnaire to screen for cognitive impairment among elderly people in developing countries. *Acta Psychiatrica Scandinavica*, *85*(2), 119–122. https://doi.org/10.1111/j.1600-0447.1992.tb01454.x

Kugbey, N., Nortu, T. A., Akpalu, B., Ayanore, M. A., & Zotor, F. B. (2018). Prevalence of geriatric depression in a community sample in Ghana: Analysis of associated risk and protective factors. *Archives of Gerontology and Geriatrics*, *78*, 171–176. https://doi.org/10.1016/j.archger.2018.06.014

Li, J., Theng, Y., & Foo, S. (2015). *Depression and Psychosocial Risk Factors among Community-Dwelling Older Adults in Singapore*. 409–422. https://doi.org/10.1007/s10823-015-9272-y

Manandhar, K., Risal, A., Shrestha, O., Manandhar, N., Kunwar, D., & Koju, R. (2019). *Prevalence of geriatric depression in the Kavre district , Nepal : Findings from a cross sectional community survey*. 1–9.

Mirkena, Y., Reta, M. M., Haile, K., Nassir, Z., & Sisay, M. M. (2018). *Prevalence of depression and associated factors among older adults at ambo town , Oromia region , Ethiopia*. 1–7.

Mohebbi, M., Nelson, M. R., Berk, M., Agustini, B., Woods, R. L., Mcneil, J. J., Murray, A. M., Reid, C. M., Kirpach, B., Wolfe, R., & Lockery, J. E. (2019). *Prevalence of depressive symptoms and its associated factors among healthy community - dwelling older adults living in Australia and the United States*. *April*, 1208–1216. https://doi.org/10.1002/gps.5119

Oxford University. (2016). *Oxford School Dictionary (Oxford Dictionary)*. Oxford University Press.

Park, J. Il, Park, T. W., Yang, J. C., & Chung, S. K. (2016). Factors associated with depression among elderly Koreans: The role of chronic illness, subjective health status, and cognitive impairment. *Psychogeriatrics*, *16*(1), 62–69. https://doi.org/10.1111/psyg.12160

Pilania, M., Yadav, V., Bairwa, M., Behera, P., Gupta, S. D., Khurana, H., Mohan, V., Baniya, G., & Poongothai, S. (2019). Prevalence of depression among the elderly (60 years and above) population in India, 1997-2016: A systematic review and meta-analysis. *BMC Public Health*, *19*(1), 1–18. https://doi.org/10.1186/s12889-019-7136-z

Rajapakshe, O. B. W. (2018). *Prevalence and correlates of depression among older urban community-dwelling adults in Sri Lanka*. 1–10. https://doi.org/10.1111/psyg.12389

Rajapakshe, O. B. W., Sivayogan, S., & Kulatunga, P. M. (2019). Prevalence and correlates of depression among older urban community-dwelling adults in Sri Lanka. *Psychogeriatrics*, *19*(3), 202–211. https://doi.org/10.1111/psyg.12389

Rashid, A., & Tahir, I. (2015). *The Prevalence and Predictors of Severe Depression Among the Elderly in Malaysia*. 69–85. https://doi.org/10.1007/s10823-014-9248-3

Salari, N., Mohammadi, M., Vaisi-raygani, A., Abdi, A., Shohaimi, S., Khaledipaveh, B., Daneshkhah, A., & Jalali, R. (2021). *The prevalence of severe depression in Iranian older adult : a meta-analysis and meta-regression*. *2020*, 1–8.

Salari, N., Mohammadi, M., Vaisi-Raygani, A., Abdi, A., Shohaimi, S., Khaledipaveh, B., Daneshkhah, A., & Jalali, R. (2020). The prevalence of severe depression in Iranian older adult: A meta-analysis and meta-regression. *BMC Geriatrics*, *20*(1), 1–8. https://doi.org/10.1186/s12877-020-1444-0

Santini, Z. I., Jose, P. E., York Cornwell, E., Koyanagi, A., Nielsen, L., Hinrichsen, C., Meilstrup, C., Madsen, K. R., & Koushede, V. (2020). Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *The Lancet Public Health*, *5*(1), e62–e70. https://doi.org/10.1016/S2468-2667(19)30230-0

Sarokhani, D., Parvareh, M., Dehkordi, A. H., Sayehmiri, K., & Moghimbeigi, A. (2018). Prevalence of depression among Iranian elderly: Systematic review and meta-analysis. *Iranian Journal of Psychiatry*, *13*(1), 55–64.

Shao, P., Xu, Y., & Pan, C. W. (2017). Factors associated with and prevalence of depressive features amongst older adults in an urban city in eastern China. *South African Journal of Psychiatry*, *23*(1), 1–7. https://doi.org/10.4102/sajpsychiatry.v23i0.1064

Simkhada, R., Wasti, S. P., GC, V. S., & Lee, A. C. K. (2018). Prevalence of depressive symptoms and its associated factors in older adults: a cross-sectional study in Kathmandu, Nepal. *Aging and Mental Health*, *22*(6), 802–807. https://doi.org/10.1080/13607863.2017.1310803

Song, D., Yu, D. S. F., Li, P. W. C., & Sun, Q. (2019). Identifying the factors related to depressive symptoms amongst community-dwelling older adults with mild cognitive impairment. *International Journal of Environmental Research and Public Health*, *16*(18). https://doi.org/10.3390/ijerph16183449

Steultjens, E. M. J., Dekker, J., Bouter, L. M., Jellema, S., Bakker, E. B., & van den Ende, C. H. M. (2004). Occupational therapy for community dwelling elderly people: A systematic review. *Age and Ageing*, *33*(5), 453–460. https://doi.org/10.1093/ageing/afh174

Tanjanai, P. T., Moradinazar, M., & Najafi, F. (2017). Prevalence of depression and related social and physical factors amongst the Iranian elderly population in 2012. *Geriatrics and Gerontology International*, *17*(1), 126–131. https://doi.org/10.1111/ggi.12680

Tengku Aizan, H., Azzida, D., & Mooi, C. S. (2019). The role of social network, social support, religiosity and depression among elderly Malaysians who had experienced major life events. *Medical Journal of Malaysia*, *74*(3), 198–204.

Tengku Amatullah Madeehah, T. M., Raudah, M. Y., Farizah, H., Noran, N. Hairi, ., & Choo, W. Y. (2019). Social support and depression among community dwelling older adults in Asia: A systematic review. *BMJ Open*, *9*(7). https://doi.org/10.1136/bmjopen-2018-026667

Thilak S. A.1, Sarada A. K.1*, S. A. N. (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. https://doi.org/10.18203/2394-6040.ijcmph20162184

Vanoh, D., Shahar, S., Yahya, H. M., & Hamid, T. A. (2016). Prevalence and determinants of depressive disorders among community-dwelling older adults: Findings from the towards useful aging study. *International Journal of Gerontology*, *10*(2), 81–85. https://doi.org/10.1016/j.ijge.2016.02.001

Venes, D. (2017). *23 Taber's Cyclopedic Medical Dictionary* (Donald Venes (ed.); 23th ed.). F.A. Davis Company.

Vu, H. T. T., Lin, V., Pham, T., Pham, T. Le, Nguyen, A. T., Nguyen, H. T., Nguyen, T. X., Nguyen, T. N., Nguyen, H. T. T., Nguyen, T. T. H., Nguyen, L. H., Nguyen, Q. N., Nguyen, H. L. T., Tran, T. H., Tran, B. X., Latkin, C. A., Ho, C. S. H., & Ho, R. C. M. (2019). Determining risk for depression among older people residing in Vietnamese rural settings. *International Journal of Environmental Research and Public Health*, *16*(15), 1–10. https://doi.org/10.3390/ijerph16152654

Winahyu, K. M., & Sari, A. R. (2017). *The Relationship between Religiosity and Depression of Older Adults in Tangerang*. *October*.

Yadav, U. N., Thapa, T. B., Mistry, S. K., Pokhrel, R., & Harris, M. F. (2020). *Socio-demographic characteristics , lifestyle factors , multi-morbid conditions and depressive symptoms among Nepalese older adults*. 1–9.

Zhang, H. H., Jiang, Y. Y., Rao, W. W., Zhang, Q. E., Qin, M. Z., Ng, C. H., Ungvari, G. S., & Xiang, Y. T. (2020). Prevalence of Depression Among Empty-Nest Elderly in China: A Meta-Analysis of Observational Studies. *Frontiers in Psychiatry*, *11*(July), 1–10. https://doi.org/10.3389/fpsyt.2020.00608

APPENDICES

APPENDIX I: JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTIC CROSS-SECTIONAL STUDIES

JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTICAL CROSS SECTIONAL STUDIES

Reviewer_____Date_____

Author_____Year_____ Record Number_____

		Yes	No	Unclear	Not applicable
1.	Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2.	Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3.	Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4.	Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5.	Were confounding factors identified?	☐	☐	☐	☐
6.	Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7.	Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8.	Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____

APPENDIX II: JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTIC CROSS-SECTIONAL STUDIES

Health Evidence™
Helping public health use best evidence in practice since 2005

Quality Assessment Tool – Review Articles

Instructions for completion:
Please refer to the attached dictionary for definition of terms and instructions for completing each section. For each criteria, score by placing a check mark in the appropriate box.

First Author: _____
Year: _____
Journal: _____
Reviewer: _____

CRITERIA	YES	NO
Q1. Did the authors have a clearly focused question [population, intervention (strategy), and outcome(s)]?		
Q2. Were appropriate inclusion criteria used to select primary studies?		
Q3. Did the authors describe a search strategy that was comprehensive? *Circle all strategies used:* ▪ health databases ▪ psychological databases ▪ social science databases ▪ educational databases ▪ other ▪ handsearching ▪ key informants ▪ reference lists ▪ unpublished		
Q4. Did search strategy cover an adequate number of years?		
Q5. Did the authors describe the level of evidence in the primary studies included in the review? ▪ Level I → RCTs only ▪ Level II → non-randomized, cohort, case-control ▪ Level III → uncontrolled studies		
Q6. Did the review assess the methodological quality of the primary studies, including: *(Minimum requirement: **4/7** of the following)* ▪ Research design ▪ Study sample ▪ Participation rates ▪ Sources of bias (confounders, respondent bias) ▪ Data collection (measurement of independent/dependent variables) ▪ Follow-up/attrition rates ▪ Data analysis		
Q7. Are the results of the review transparent?		
Q8. Was it appropriate to combine the findings of results across studies?		
Q9. Were appropriate methods used for combining or comparing results across studies?		
Q10. Do the data support the author's interpretation?		
TOTAL SCORE:		

Quality Assessment Rating: **Strong** (total score 8 – 10) **Moderate** (total score 5 – 7) **Weak** (total score 4 or less)

APPENDIX III: SUMMARY OF INCLUDED STUDIES

Summary of Finding Table of included Studies (a) Cross-sectional studies (b) Cohort Study (c) Systemic Review

List of Characteristics of 49 Studies

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Park et al., 2016	Korea	Community	Cross-sectional study	Socio-demographic (BMI), sleep, Korean Instrumental Activities of Daily Living, chronic illness, subjective health status, Mini-Mental Status Examination (MMSE)-Korean version, Geriatric	10674 participants	The prevalence of older people's depression is 30.3%	Multiple chronic illnesses and bad subjective health status.

				Depression Scale (GDS).			
Almeida et al., 2016	Australia	Community	cohort study	MMSE scores Health questionnaire. GDS.	(4568/534) participants	NA	Older age group, country of birth, education, smoking history, and prevalence of hypertension, diabetes, coronary heart disease, and stroke associated with cognitive. But for, significant depression symptoms were not associated with incident cognitive impairment.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Winahyu & Sari, 2017	Tangerang, Indonesia	Primary health	Cross-sectional study	Socio-demography, GDS, and Muslim Religious Personality Inventory (MRPI).	87 participants	NA	The results indicated that older adults who perceived higher religiosity were perceived as having lower depression.
Foong et al., 2018	Malaysia	Community	Cross-sectional study	Socio-demography, GDS, Revised Intrinsic/Extrinsic Religious Orientation Scale, Montreal Cognitive Assessment (MoCA).	2322 participants	NA	Cognitive impairment had significant negative depression, Intrinsic religiosity was found to reduce the effect of depression on

							cognition in later life.
Dao et al., 2018	Hanoi, Vietnam	Urban community	Cross-sectional study	Zung Self-rating Depression Scale (SDS).	299 participants	The prevalence of older people with depression is 66.89%.	Older age group, inactive physical activities, number of medicine intake, and three domains of quality of life (physical health, psychological health, and environmental health) and depression.
Han et al., 2018	Korea	community	Cross-sectional study	Centre for Epidemiologic Studies Depression (CES-D-11).	5,223 participants	NA	Female sex and had a chronic disease.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Dai et al., 2019	Zhejiang Province, China.	community	Cross-sectional study	Social Health Scale for Older People (SHSE), GDS.	3757 participants	The prevalence of older people with depression is 25.92%.	Female sex, older age group, inactive physical activity, hypertension, diabetes, coronary heart disease, and lower social health status.
Tengku Amatullah Madeehah et al., 2019	Malaysia	Community	Systematic Review	GDS, EURO-D, DSMIV, Centre for Epidemiologic Studies Depression (CES-D-11), Beck	24 studies	NA	The findings emphasized the association between good social support and decreased depression among older adults.

				Depression Index (BDI). Living status, structural social support, Lubben Social support, DUKE social support, Social Support Rating Scales (SSRS), Medical Outcome social support (MOSS), Multidimensional social support (MPSS), Social Support Network.			

Kiyoshige et al., 2019	Japan	Community	Longitu-dinal Study	Socio-demographic, GDS-5, The Tokyo Metropolitan Institute of Gerontology (TMIG) index of competence	559 = 70s 519 = 80s	The prevalence of older people's depression are 70s=28.9% 80s=38.3%	Decline IADL in 3 years for the 70s age group. IADL decline was significantly associated with depression symptoms in the 70s age group but not in the 80s.
Bae, 2020	Korea	Urban Community	Cross-sectional study	Socio-demographic Center for Epidemiologic Studies-Depression (CES-D) scale	7188 participants	The prevalence of older people's depression is 28.7%	Perceived health status, low satisfaction with family relationships, living alone, financial problems, workability, gender, age 66-75 years old, female

							sex, married, and poor practice of religion.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Song et al., 2019	Hangzhou, China	Community	Cross-sectional study	Montreal Cognitive Assessment (Chinese version, GDS, Sociodemographic, Medical Outcomes Study Social Support Survey (Chinese version, International Physical Activity Questionnaires short version (Chinese	527 participants	The prevalence of older people with depression is 31.8%.	Poor perceived positive social interaction, small social network, low level of physical activity, poor functional status, subjective memory complaint, and poor health perception were correlated with depression symptoms.

				version), Disease-related factors, Functional Activities Questionnaire (Chinese version, FAQ-C), Quantified by the Charlson Comorbidity Index.			
Vu et al., 2019	Vietnam	Rural Community	Cross-sectional study	Geriatric Depression Scale-4, EuroQol-5 dimensions-5 Levels, Socio-demographic.	523 participants	The prevalence of older people's depression is 26.4%	Being female, living in a near-poor household, being in pain, or experiencing discomfort are all factors strongly correlated to a

							high risk for depression.
Giang et al., 2019	Vietnam	Urban and rural Community	Cross-sectional study	Vietnam Aging Survey (VNAS) consist of individual characteristic, household-related characteristic, and community-related characteristic.	2,798 participants	The prevalence of older people's depression is 39.62%	Older people living in both areas, who experienced domestic violence, who did not have enough finance for daily living, and who lived alone were more likely to be depressed.
Tengku Aizan et al., 2019	Malaysia	Community	Cross sectional study	Socio-demographic, Lubben Social Network-6 (LSNS-6), Medical Outcome Study	594 participants	NA	The older age group, low income, and poor social network were significantly associated with a high risk of

				Social Support Survey (MOS-SSS, Religiosity Intrinsic-Extrinsic Scale, GDS.			depression among older people who had experienced major life events.
Yadav et al., 2020	Nepal, India	Rural Community	Cross-sectional study	Socio-demographic and lifestyle factors Chronic disease history, Depression symptoms.	794 participants	The prevalence of older people's depression is 55.8%	Female sex, Buddhism, Dalits, unemployed, low family income, smokers, and having chronic multi-morbid conditions.
Igbokwe et al., 2020	Nigeria	Community	Cross-sectional study	Socio-demographics, The University of California, Los Angeles Loneliness	1104 participants	The prevalence of older people's depression is 52.0%	Females who had secondary education and higher education, loneliness, and anxious,

				Scale (UCLA), DASS 21-depression and anxiety subscales.			depressed retirees are at risk of being depressed.
Santini et al., 2020	America	Community	Longitudinal Study	Socio-demographics, Center for Epidemiological Studies-Depression Minus Loneliness (CES-D-ML) scales, Hospital Anxiety and Depression Scale (HADS-A), The social	3005 participants	NA	The social disconnectedness predicted higher amounts of perceived isolation, which in turn predicted higher amounts of depression and anxiety symptoms. In the reverse direction, depression and anxiety symptoms predicted higher

				disconnectedness scale, the Perceived Isolation Scale			amounts of perceived isolation, which in turn predicted higher amounts of social disconnectedness.
Rashid & Tahir, 2015	Malaysia	Urban Community	Cross-sectional study	Physical examination, Sociodemographic data Geriatric Depression Scale (15 items), Social Support Scale (OSS-3) (3 items), Older People Cognitive	2005 participants	The prevalence of older people's depression is 19.2 %	As older age, Indians, married, level of education was primary school, and unemployed had severe depression.

				Assessment Questionnaire (ECAQ), Modified Barthel's Index (MBI), Sleep quality, and body mass index.			
Li et al., 2015	Singapore	community	Cross-sectional study	Sociodemographic data, GDS, Resilience Appraisal Scale, Duke Social Support Index (DSSI), The University of California Los Angeles (UCLA)	162 participants	The prevalence of older people's depression is 32.9 %	Loneliness, poor social support, and poor emotional regulation component of resilience is significantly associated with depression in older adults.

				Loneliness Scale.			
Cong et al., 2015	Fuzhou, China.	community	Cross-sectional study	Socio-demography, GDS-30.	1910 participants	The prevalence of older people's depression is 10.5%,	Lack of social engagement, low family support, chronic disease, and disturbed sleep are significantly associated with depression.
Bhamani et al., 2015	Karachi, Pakistan	Community	Cross-sectional study	Sociodemographic, Activities of Daily Living (ADL) scale, GDS.	950 participants	NA	Subjects spending more than 310 minutes (>5.2 hours) per week in physical activity were 60% less likely to be depressed compared to those

							who spent less than 120 minutes (<2 hours) per week. A strong association between depression and time spent in physical activities as well as ADL.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
He, et al., 2016	Hunan, China	Rural community	Cross-sectional study	Sociodemographic data, GDS.	509 participants	The prevalence of older people's depression is 36.94%	Females, older group age, multiple chronic diseases, lower financial support, carried out less physical activity, a few numbers of children's visits, living alone, below primary school education
Thilak et al., 2016	Kannur, India	Rural community	Cross-sectional study	Sociodemographic data, GDS.	205 participants	The prevalence of depression was 72.4%	Female and older age group, illiteracy, unmarried or divorced or separated from

							spouse or widow, living single or with children (after the death of a spouse), financially dependent, having a comorbidity.
(Vanoh et al., 2016)	Malaysia	Community	Cross-sectional study	Sociodemographic data, GDS, Medical Outcome Study Social Support (MOSS) survey, MMSE, The Rey Auditory Verbal Learning Test was conducted to assess verbal memory, The Digit Span Test,	2264 participants	The prevalence of depression was 16.5%	Females in the age group of 66 to 75 years are less educated and have a neurotic disorder, a lower score of instrumental ADL, poor fitness level, hypertension, and osteoarthritis.

				Body mass index, Dietary pattern was assessed using an open-ended question, Lifestyle questionnaire was adapted from the Victoria Longitudinal Study Activity Lifestyle Questionnaire, Eysenck Personality Questionnaire (EPQ), “three-item loneliness scale”, Perceived Stress Scale, MBI, Lowton-			

				Brody IADL Scale.			
Taheri Tanjanai et al., 2017	Iran	Community	Cross sectional study	Sociodemographic data, GDS, ADL seven-question questionnaire, Questions regarding leisure time and social activities.	1350 participants	The prevalence of depression was 33.6%	Female sex, age group of 66 to 75 years old, unsatisfied with income, unemployed, did not pension, poor relationship with the financial provider, leisure time, inability to perform daily activities, and lack of meeting, friends, and relatives were factors determining depression.

							Smoking has been found to significantly lead to depression.
Shao et al., 2017	Suzhou, China	Urban Community	Cross-sectional study	Zung's SDS, Health behaviours assessed, chronic illnesses, daily living (BADL) scale, and Instrument Activities of Daily Living (IADL) question about involvement in the community.	4077 participants	The prevalence of depression was 47.4%	Older age group, low income, low education, labour agriculture, widow, living alone, physically inactive and without hobby and never take supplement diet, lack of social interaction, cold relationship with spouse, limited performing activity daily living

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Khaltar et al., 2017	Kandy, Sri Lanka	Community	Cross-sectional study	Sociodemographic data, GDS.	788 participants	The prevalence of depression was 31.8%	Low economic status, perceived social support, and more than self-reported diseases were significantly associated with depression in all ethnic groups.
Mirkena et al., 2018	Ethiopia, African	community	Cross-sectional study	Sociodemographic data, GDS.	800 participants	The prevalence of depression was 41.8%	Female sex, living with children, and retirement were associated with depression among older adults.

Simkhada et al., 2018	Nepal, India	Community	Cross-sectional study	Sociodemographic data, GDS, and social support constructed questionnaire.	303 participants	The prevalence of depression was 60.6%	Illiteracy, physical immobility, the presence of physical health problems, not having any time spent with family members, and not being considered in family decision-making were significantly associated with depression in older adults.
El-Gilany et al., 2018	Egypt	Urban and Rural community	Cross-sectional study	Socio-economic data, Athens Insomnia Scale (AIS), The Religious	487 participants	The prevalence of depression was 44.4%.	Urban residence, insomnia, being a woman, life stressors, disturbed marital

				Commitment Inventory (RCI), GDS.			life, dependent old adults, and absence of religiosity are the main independent predictors of depression among older people.
Nur Aqlili Riana et al., 2018	Kota Tinggi, Johor	Community	Cross-sectional study	Socio-demographic, Lawton-Brody IADL Scale, The Short Physical Performance Battery (SPPB) Questionnaire, Hodkinson Abbreviated Mental Test	269 participants	The prevalence of depression was 3.7%.	Old age group and low Monthly income, Low physical performance.

				(HAMT), Rapid Assessment of Physical Activity (RAPA), GDS.			
Kugbey et al., 2018	Ghana, Africa	Community	Cross-sectional study	Sociodemographic, GDS, Brief COPE.	262 participants	The prevalence of depression was 37.8%	Female sex, older age group, unmarried, non-Christian, living alone, had a chronic illness, no formal education was associated with depression. Adaptive coping strategies and less maladaptive coping strategies were associated with less depression.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Rajapakshe, 2018	Colombo, Sri Lanka	Urban Community	Cross-sectional study	Socio-demographic, Health dimension variables, Functional Social Support Questionnaire, GDS Sinhalese version.	1283 participants	The prevalence of depression was 13.9%	Female sex, being 60–64 years old, being unmarried, separated, divorced, or widowed, income ≤20 000 Sri Lankan rupees, and perceived financial burden was associated with depression. Smoking, alcohol use, presence of chronic disease, limitation in performing one or more instrumental activities of daily

							living, unsatisfactory partner relationships, lack of social support, experiencing abuse, and experiencing major life events were significantly related to depression.
Kavithai et al., 2018	Puduch erry, India	Rural Community	Cross-sectional study	Socio-demographic, Hindi Mental State Examination Scale, GDS-15.	360 participants	The prevalence of depression was 41.4%	Female sex, illiterate, unemployed, widow/single, having sleep problems, dependency in activities of daily living, and

							cognitive impairment.
Reddy Konda, 2018	Telangana, India	Urban Community	Cross-sectional stud	Socio-demographic MMSE, GDS, Pittsburgh Sleep Quality Index, ADLs), BMI, and Blood Pressure Measurement.	106 participants	The prevalence of depression was 23%	Living single, poor self-rated health, bedridden, and osteoarthritis.
Sarokhani et al., 2018	Iran	Community	Systematic Review	Beck questionnaire, GDS questionnaire, Kessler questionnaire.	26 studies	The prevalence of depression was 43%, and they suffered from mild depression.	NA
Manandhar et al, 2019	Nepal, India	Urban and Rural	Cross-sectional study	Sociodemographic,	460 participants	The prevalence of depression was 56.0%	Living in urban, illiterate, not to be given enough time

		Community		GDS.			by their families, and verbal and/or physical abuse by their families. Had limited mobility and had chronic physical illnesses typical of older people.
Charoen-sakulchai et al., 2019	Thai-land	Community	Cross-sectional study	Sociodemographic, Shai Mini-Mental State Examination (T-MMSE), Geriatric Depression Screening Scale,	584 participants	The prevalence of geriatric depression was 18.5%	Female sex, illiteracy, current smoker, and imbalanced family type (low attachment, low cooperation, and poor alignment between each member.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Mohebbi, Nelson, et al., 2019	Australia & United States	Community	Cross-Sectional study	Socio-demographic, Centre for Epidemiological Studies-Depression (CES-D-10).	19 114 participants	Prevalence of geriatric depression was 9.8%	Female sex, individuals with less than 12 years of education, those living alone or in residential care, ethnic minorities, current smokers, and former alcohol users.
Ashe & Routray, 2019	Odisha, India	Urban community	Cross-sectional study	Socio-demographic data, Geriatric Depression Scale, Lawton's Instrumental Activities of Daily Living, and	354 participants	Mild depression: 80% Severe risk: 45%	Female sex, low SES, presence of diabetes and/or hypertension, death of a family member or close relative, conflicts

				Katz Index of Independence in Life.			in the family, and chronic illness of family members.
Aznan et al., 2019	Kuantan, Pahang	Community	Cross-sectional study	GDS, ECAQ, MBI.	259 participants	The prevalence of depression was 19.3%	Older people without formal education have two risks of developing depression, female, physical inactivity, cognitive impairment, and poor ADL.

Disu et al., 2019	Bangladeshi	Community	Cross-sectional study	Sociodemographic, Psychosocial factors, Physical health-related factors, lifestyle, and dietary factors (constructed question), GDS.	168 participants	The prevalence of depression was 36.9%	Living in a rural area, having no history of chronic disease, having a history of previous personal and/or family depression, not engaging in daily life activities, not exercising regularly, having no hobbies, having a poor diet, and not engaging in religious practices regularly.

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Fatima et al., 2019	Karachi, Pakistan	Community	Cross-sectional study	Socio-demographic, GDS.	367 participants	The prevalence of depression was 37%	Female sex, not living with a spouse (separated/spouse died/single), being financially dependent, being employed, and living alone (not in a joint or nuclear family).
Pilania et al., 2019	India	Community	Systematic review and meta-analysis	CES-D, GDS, PHQ, HDRS, MDIPCv2.2, BDI, Goldberg Bridges Scale.	56 studies	The prevalence of depression was estimated at 34.4%	Female sex living in the rural area

STUDY	AREA	SETTING	METHOD	TOOLS	SAMPLE SIZE	PREVALENCE	RISK FACTOR
Kathari et al., 2020	Karnataka India	Community	Cross-sectional study	Sociodemographic, MMSE, GDS.	280 participants	The prevalence of depression was 33.6%	Older age group, male sex, single/widowed status, and older people belonging to lower socioeconomic status, joint family, and illiteracy.
Zhang et al., 2020	China	Community	Meta-Analysis	GDS, GMS, Patient Health Questionnaire (PHQ-9), HAMD, and HAD.	46 studies	The prevalence of depression was 38.6%	Male sex, living alone.

Güzel & Kara, 2020	Burdur, Turkey	Community	Cross-sectional study	Socio-demographic, GDS, and the Older People's Quality of Life Scale of the World Health Organization.	770 participant	The prevalence of depression was (51.8%).	Aged group of 75 and 84 years and above, female sex, widowed, illiterates, those with lower-middle levels of monthly income (perceived), had never worked/ quit their jobs, non-smokers, had a chronic illness, and older people who had perceived their health as poor.
Salari et al., 2020	Iran	Community	Meta-analysis	GDS.	13 studies	The prevalence of depression was 43%.	NA

Bincy et al., 2021	India	Rural Community	Cross-sectional study	Socio-demographic, GDS, Visual impairment (Snellen's chart), Hearing impairment (whispering test), Gait disturbances (Time Up and Go [TUG Test]), MMSE.	7200 participants	The prevalence of depression was 67.5%	Older adults above 80 years, female sex, widow, living with children, lack of family support, and physically dependent, had diabetes mellitus and a history of falls were associated with depression.

APPENDIX IV: SOCIODEMOGRAPHIC DATA

ID: _____

BAHAGIAN A:

Bahagian ini mengandungi data demografi. Sila tandakan (√) pada kotak yang disediakan.

1. Umur :_____

2. Jantina

Lelaki	
Perempuan	

3. Status perkahwinan

Bujang	
Berkahwin	
Bercerai	
Balu	

4. Tahap Pendidikan

Tiada	
Sekolah rendah	
SPM	
Sijil	
Diploma	
Ijazah	
Lain-lain: Sila nyatakan	

5. Pekerjaan

Bersara:	
Tidak bekerja:	
Berkerja:	
Sila Nyatakan:	

6. Pendapatan Keluarga

Kurang dari Rm 1000	
RM1000 – RM 1,999	
RM 2000 – RM3,999	
RM4000 – RM 5,999	
RM 6000 – RM7,999	
RM 8000 -RM 9,999	
RM 10,000 dan ke atas	

7. Struktur Keluarga

Tinggal sendiri	
Keluarga Nuklear (suami isteri)	
Tinggal Bersama anak-anak/cucu	
Tinggal Bersama saudara rapat	

8. Merokok

Ya	
Tidak	
Jika Ya: Berapa kali sehari anda merokok	

9. Pengambilan Alkohol

Ya		
Tidak		
	Sekali sebulan atau kurang	

Jika Ya: Berapa kerapkah anda mengambil alkohol	2 – 4 kali sebulan	
	2 – 3 kali sebulan	
	4 kali seminggu	

10. Status masalah kesihatan

Darah tinggi	
Kencing manis	
Hyperlipidemia	
Penyakit thyroid	
Anemia	
Jantung (koronari arteri)	
Asthma	
Trek gastro-usus atas	
Trek gastro-usus bawah	
Hepatitis	
Sakit buah pinggang	
Genitourinari	
Arthritis	
Gout	
Sawan	
Penyakit mental	
Penyakit Kulit	
Saraf	
Lain-lain sila nyatakan:	

APPENDIX V: SKALA DEPRESI (GERIATRIC DEPRESSION SCALE)

BIL	SOALAN	JAWAPAN	
	Adakah anda berpuas hati dengan kehidupan anda sekarang	ya	**TIDAK**
	Adakah anda telah menghentikan banyak aktiviti yang anda minat	**YA**	tidak
	Adakah anda berasa kehidupan anda kosong	**YA**	tidak
	Adakan anda sering berasa bosan	**YA**	tidak
	Adakah anda merasa bersemangat	ya	**TIDAK**
	Adakah anda takut sesuatu yang buruk akan berlaku ke atas diri anda	**YA**	tidak
	Adakah anda sentiasa merasa gembira	ya	**TIDAK**
	Adakah anda merasa tidak upaya	**YA**	tidak
	Adakah lebih suka duduk di rumah dari keluar menjalankan aktiviti-aktiviti baru	**YA**	tidak
.	Adakah anda menghadapi banyak masalah dengan daya ingatan anda berbanding perkara lain	**YA**	tidak
.	Adakah anda fikir tentang betapa seronok dapat hidup hingga sekarang	ya	**TIDAK**
.	Adakah anda berasa yang keadaan diri anda sekarang seperti tidak berharga	**YA**	tidak
.	Adakah anda rasa bertenaga	ya	**TIDAK**
.	Adakah anda berasa yang situasi sekarang tiada harapan lagi	**YA**	tidak

.	Adakah anda Berpendapat kebanyakan orang lain lebih daripada anda	**YA**	tidak
Jumlah			

Teh & Hasanah, C. (2004). *Validation of Malay version of geriatric depression scale among older adult inpatients*.

https://priory.com/psych/MalayGDS.htm

For scoring, grant **1 point** for each of the following **answer in capital** (a score of more 5 suggest depression)

APPENDIX VI: SKALA KOGNITIF (OLDER PEOPLE COGNITIVE ASSESSMENT QUESTIONNAIRE (ECAQ)

No	ECAQ	Satu Markah Untuk Jawapan yang Betul
MEMORI		
1	Saya mahu anda ingatkan nombor ini. Tolong ulang selepas saya sebutkan (contoh 3517) Saya akan memeriksa anda lagi dalam masa 10 minit	
2	Berapakah umur anda?	
3	Bilakah harijadi anda? (Atau dalam tahun berapa anda dilahirkan)	
ORIENTASI-INFORMASI		
4	Apakah hari ini?	
5	Apakah tarikh hari ini?	
6	Apakah bulan ini?	
7	Apakah tahun ini?	
8	Apakah nama tempat ini (contoh Klinik, Hospital)	
9	Apakah pekerjaan dia (contoh doktor, jururarawat)	
MEMORI- INGATAN SEMULA		
10	Dapatkah anda ingat nombor tadi semula	
	JUMLAH	

0 – 4: Mungkin Kes	5 – 6; borderline	7 dan lebih; Normal

Kua, E. H., & Ko, S. M. (1992). A questionnaire to screen for cognitive impairment among older people in developing countries. *Acta Psychiatrica Scandinavica, 85*(2), 119-122. https://doi.org/10.1111/j.16000447.1992.tb01454.x

APPENDIX VII: SKALA KENSUNYIAN (THE UNIVERSITY OF CALIFORNIA LOS ANGELES (UCLA)

Sila jawab semua soalan dengan menandakan tanda yang jelas pada ruangan yang telah disediakan

Item	Tidak pernah	Jarang	Kadang-kala	Selalu
1. Saya kekurangan teman persahabatan.	1	2	3	4
2.Tidak ada sesiapa yang dapat saya mengharapkan.	1	2	3	4
3. Saya seorang yang peramah.	1	2	3	4
4. Saya berasa terkecuali.	1	2	3	4
5. Saya berasa tersisih dari orang lain.	1	2	3	4
6. Saya dapat mencari persahabatan apabila saya menginginkannya.	1	2	3	4
7. Saya tidak gembira kerana sangat menyendiri.	1	2	3	4
8. Orang berada di sekeliling saya tetapi bukan dengan saya.	1	2	3	4

Swami, V. (2009). Psychometric analysis of the Malay version of the UCLA Loneliness Scale (ULS-8) and a comparison of loneliness among sojourning and non-sojourning Malaysian students. *International Journal of Culture and Mental Health*, *2*(1), 38–50. https://doi.org/10.1080/17542860802560397

APPENDIX VIII: SKALA MULTIDIMENTIONAL SOKONGAN SOSIAL

Sila baca kenyataan-kenyataan berikut. Bulatkan nombor mengikut skala di bawah

1	2	3	4	5	6	7
Tersangat tidak stuju	Sangat tidak setuju	Tidak setuju	Berkecuali	Setuju	Sangat setuju	Tersangat setuju

Ada seseorang yang istimewa bersama saya bila saya dalam keadaan yang memerlukan.	1	2	3	4	5	6	7
Ada seseorang yang istimewa untuk saya berkongsi kegembiraan dan kesedihan	1	2	3	4	5	6	7
Keluarga saya cuba sedaya-upaya untuk menolong saya.	1	2	3	4	5	6	7
Saya mendapat pertolongan dan sokongan emosi yang saya perlukan daripada keluarga	1	2	3	4	5	6	7
Saya mempunyai seseorang yang istimewa yang benar-benar membuat saya selesa.	1	2	3	4	5	6	7
Kawan-kawan saya cuba sedaya-upaya untuk menolong saya.	1	2	3	4	5	6	7
Saya boleh berharap kepada kawan-kawan saya apabila sesuatu hal yang tidak baik berlaku.	1	2	3	4	5	6	7
Saya boleh bercerita tentang masalah saya dengan keluarga.	1	2	3	4	5	6	7
Saya mempunyai kawan-kawan yang saya boleh berkongsi kegembiraan dan kesedihan.	1	2	3	4	5	6	7

. Ada seseorang yang istimewa dalam hidup saya yang mengambil berat tentang perasaan saya.	1	2	3	4	5	6	7
. Keluarga saya bersedia untuk menolong saya membuat keputusan.	1	2	3	4	5	6	7
. Saya boleh bercerita tentang masalah saya dengan kawan- kawan saya.	1	2	3	4	5	6	7

Ng, C.G., Amer Siddiq, A.N., Aida, S.A.,Zainal, N.Z., Koh, O.H., 2010. Validation of the Malay version of the Multidimensional Scale of Perceived Social Support (MSPSS-M) among a group of medical students in the Faculty of Medicine, University Malaya.

Asian Journal of Psychiatry 3, 3-6. 2 Zimet, G.D., Dahlem, N.W., Zimet, S.G., Farley, G.K., 1988. The Multidimensional Scale of Perceived Social Support. Journal of Personality Assessment 52, 30-41.

APPENDIX IX: STATUS FUNGSIAN, AKTIVITI HIDUP HARIAN (ADL – BARTHEL INDEX)

Nota: Sila pilih penyataan yang paling sesuai dengan tahap kemampuan penyakit untuk setiap 10 perkara berikut. Catatkan fungsi pesakit yang sebenar, dan bukan potensinya. Informasi boleh diperolehi daripada pesakit, penjaga pesakit yang mengetahui kebolehannya, atau daripada pemerhatian.		
1	Mengawal pembuangan air besar (minggu sebelumnya) □ Tidak boleh dikawal (atau perlu diberi suntikan urus-urus) □ Kadang-kadang (Tidak lebih daripada sekali seminggu) □ Boleh dikawal	□
2	Mengawal pembuangan air kecil (minggu sebelumnya) □ Tidak boleh dikawal, atau perlu kemasukan kateter (tidak dapat menguruskan kateter) □ Kadang-kadang (Tidak lebih daripada sekali sehari) □ Boleh dikawal, termasuk pesakit yang dapat menguruskan katetemya sendiri	□
3	Kekemasan diri (24 – 48 jam sebelumnya) – kebersihan diri: menggosok gigi, memakai gigi palsu, bersisir, bercukur, cuci muka □ Perlukan bantuan □ Berdikari untuk kekemasan muka/rambut/gigi/bercukur (peralatan disiap- sediakan)	□

4	Penggunaan tandas – Masuk tandas, menanggalkan pakaian, membersihkan diri, memakai pakaian dan keluar dari tandas □ Bergantung kepada orang lain □ Perlukan bantuan, tetapi mampu melakukan sesetengah sendiri (boleh membersihkan diri dan melakukan beberapa langkah yang disebut atas) □ Berdikari (membetulkan pakaian dan membersihkan diri sebentar-bentar)	□
5	Mengambil makanan – boleh makan makanan biasa (bukan sahaja diet lembut). Makanan boleh dimasak dan dilayan oleh orang lain, tetapi tidak termasuk mencarik makanan □ Tidak mampu □ Perlukan bantuan untuk memotong lauk, menyapu mentega dan lain-lain □ Berdikari (makanan diletakkan dalam lingkungan capaian)	□
6	Pemindahan – berpindah dari tempat tidur ke kerusi dan sebaliknya □ Tidak mampu – tiada keseimbangan duduk (tidak dapat duduk); perlukan 2 orang bantu mengangkat □ Perlukan bantuan utama (perlukan seorang yang kuat/mahir, atau 2 orang biasa bantu mengangkat); boleh duduk □ Perlukan bantuan kecil (dibantu oleh seorang dengan senang, atau perlukan pengawasan demi keselamatan) □ Berdikari	□
7	Mobiliti – Pergerakan di dalam rumah atau wad, ruangan dalam. Boleh menggunakan alat bantuan. Sekiranya menggunakan kerusi roda, perlu kawalkan kerusi roda dengan sendiri (termasuk korner/pintu) □ Tidak mampu bergerak □ Penggunaan kerusi roda (perlu bantuan termasuk korner dan lain-lain)	□

	□ Perlukan bantuan orang lain (seorang; verbal atau fizikal) □ Berdikari (boleh gunakan alat bantuan seperti tongkat jalan)	
8	Kemampuan berpakaian – mampu memilih dan memakai pakaian sendiri (adaptasi pakaian diterima) □ Bergantung kepada orang lain □ Perlukan bantuan, tetapi mampu melakukan sesetengah sendiri □ Berdikari (termasuk butang, zip, tali kasut dan sebagainya)	□
9	Kemampuan naik turun tangga □ Tidak mampu □ Perlukan bantuan (verbal, fizikal, alat bantuan) □ Berdikari	□
10	Mandi – masuk dan keluar bilik air tanpa pemerhatian, mampu membersihkan badan sendiri □ Bergantung kepada orang lain □ Berdikari	□
Jumlah Skor		

Skor:

Jumlahkan skor pesakit untuk setiap soalan. Jumlah julat skor adalah antara 0 – 20. Skor semakin tinggi bermaksud keupayaan fungsian semakin baik.

	Skor
Mempunyai status fungsian yang baik	20
Ketidakupayaan fungsian yang ringan	15 – 19
Ketidakupayaan fungsian yang sederhana hingga teruk	≤ 14

Rujukan:

- Collin C, Wade DT, Davies S & Horne V (1988). The Barthel ADL Index: a reliability study. *Int Disabil Stud*, 10(2): 61 – 63.
- Mahoney FI & Barthel DW (1965). Functional evaluation: the Barthel Index. *Md State Med J*, 14: 61 – 65.
- Wade DT & Collin C (1988). The Barthel Index: a standard measure of physical

APPENDIX X: AKTIVITI HIDUP HARIAN INSTRUMENTAL (IADL – OARS)

NOTA: Pastikan anda membaca semua pilihan jawaban dari 1 hingga 7 kepada responden.		
1	Bolehkah anda menggunakan telefon? □ Tidak menjawab □ Adakah anda tidak mampu untuk menggunakan telefon? □ Dengan sedikit bantuan (boleh menjawab panggilan atau membuat panggilan kecemasan, tetapi perlukan telefon yang khas atau bantuan untuk mendapatkan nombor dan mendail) □ Tanpa bantuan (termasuk mendapatkan nombor telefon dan mendail)	□□
2	Bolehkah anda pergi ke tempat yang tidak dapat sampai dengan berjalan kaki? □ Tidak menjawab □ Adakah anda tidak mampu berjalan jauh kecuali menaiki kenderaaan khas seperti ambulans dalam keadaan kecemasan? □ Dengan sedikit bantuan (perlu dibantu atau ditemani oleh seseorang) □ Tanpa bantuan (boleh memandu sendiri, atau berjalan jauh sendiri dengan menaiki kenderaan awam seperti bas atau teksi)	□
3	Bolehkah anda keluar untuk membeli barang keperluan harian atau pakaian (sekiranya anda ada kemudahan pengangkutan) □ Tidak menjawab □ Adakah anda tidak mampu untuk pergi membeli-belah?	□

	□ Dengan sedikit bantuan (perlu ditemani seseorang apabila keluar membeli-belah) □ Tanpa bantuan (boleh membeli-belah untuk barangan keperluan sendiri)	
4	Bolehkah anda menyediakan makanan sendiri? □ Tidak menjawab □ Adakah anda tidak mampu untuk menyediakan makanan? □ Dengan sedikit bantuan (boleh menyediakan beberapa perkara ringan tetapi tidak mampu untuk memasak sendiri) □ Tanpa bantuan (merancang dan memasak makanan sendiri)	□
5	Bolehkah anda melakukan kerja-kerja rumah? □ Tidak menjawab □ Adakah anda tidak mampu untuk melakukan kerja rumah? □ Dengan sedikit bantuan (boleh melakukan kerja-kerja ringan tetapi perlukan bantuan bagi kerja berat □ Tanpa bantuan (boleh membersihkan lantai dan lain-lain)	□
6	Bolehkah anda mengambil ubat sendiri? □ Tidak menjawab □ Adakah anda tidak mampu untuk memakan ubat sendiri □ Dengan sedikit bantuan (boleh memakan ubat jika orang lain menyediakannya atau diingatkan masa pengambilan ubat) □ Tanpa bantuan (boleh mengambil ubat mengikut dos yang betul pada masa yang betul)	□

7	Bolehkah anda menguruskan wang sendiri? □ Tidak menjawab □ Adakah anda tidak mampu untuk menguruskan wang? □ Dengan sedikit bantuan (boleh menguruskan wang untuk membeli keperluan harian, tetapi perlu bantuan untuk menguruskan buku cek dan membayar bil) □ Tanpa bantuan (membuka cek, pembayaran bil dan lain-lain)	□
Jumlah skor		

Skor:

Jumlahkan skor pesakit untuk setiap soalan. Jumlah julat skor adalah antara 0 – 14. Skor semakin tinggi bermaksud keupayaan fungsian semakin baik.

	Skor
Mempunyai status fungsian yang baik	≥ 10
Ketidakupayaan fungsian sederhana	5 – 9
Ketidakupayaan fungsian teruk	0 – 4

Rujukan:

- Fillenbaum GG, Duke University Center for the Study of Aging and Human Development (1988). Multidimensional functional assessment of older adults: the Duke Older Americans Resources and Services procedures. Hillsdale, NJ: L Erlbaum Associates.
- Sakinah H (2006). *Pembentukan Alat Penyaringan Risiko Malpemakanan Hospital (MRST-H) Untuk MengenalpastiMalpemakanan Di Kalangan Pesakit Warga Tua.* PhD Thesis. Universiti Kebangsaan Malaysia.

APPENDIX XI: SKALA KUALITI TIDUR PITTSBURGH (PITTSBURGH SLEEP QUALITY INDEX MALAY VERSION, PSQI-M)

ARAHAN: Soalan-soalan berikut adalah mengenai tabiat tidur anda pada kebiasaannya dalam tempoh sebulan (30 hari) yang lalu. Jawapan anda harus menggambarkan keadaan yang paling tepat bagi kebanyakan waktu siang dan malam anda dalam sebulan yang lalu.

Sila jawab semua soalan.

Dalam sebulan yang lalu,	
Pada pukul berapa biasanya anda masuk tidur?	minit
Berapa lamakah masa diambil untuk anda lelap pada setiap malam	minit
Pukul berapakah kebiasaannya anda bangun di waktu pagi?	
Berapa jumlah jam tidur sebenar yang anda biasa perolehi pada waktu malam? (Ini mungkin berbeza dengan jumlah jam yang anda luangkan di atas katil)	jam

Dalam sebulan yang lalu, berapa kerapkah anda mengalami masalah tidur kerana anda...	Tidak pernah dalam sebulan lalu	Kurang daripada sekali seminggu	Satu atau dua kali seminggu	Tiga kali atau lebih seminggu
Tidak boleh lelap dalam tempoh masa 30 minit				
Terjaga di tengah malam atau awal pagi				

Perlu bangun tidur untuk ke tandas				
Tidak boleh bernafas dengan selesa				
Batuk atau berdengkur dengan kuat				
Berasa sangat sejuk				
Berasa sangat panas				
Mengalami mimpi buruk				
Mengalami kesakitan				
Nyatakan sebab lain dan berapa kerap anda mengalami masalah tidur kerana sebab ini: Sebab: _____				
Dalam sebulan yang lalu, berapa kerapkah anda mengambil ubat (ubat yang dinasihati oleh doktormatau ubat yang dibeli sendiri tanpa preskripsi) untuk membantu anda tidur?				
Dalam sebulan yang lalu, berapa kerapkah anda mengalami masalah untuk berjaga semasa memandu kenderaan, makan, atau Ketika melibatkan diri dengan aktiviti sosial?				
Sila Tandakan (/) pada kotak yang disediakan				

Dalam sebulan yang lalu, adakah menjadi suatu masalah untuk anda kekal bersemangat dalam menyelesaikan kerja?	Tiada masalah langsung	Sedikit bermasalah	Agak bermasalah	Masalah Besar
Dalam sebulan yang lalu, bagaimanakah anda nilai kualiti tidur anda secara keseluruhan?	Sangat baik	Agak Baik	Agak teruk	Sangat teruk

Citation: Farah et al. 2019. Self-Reported Sleep Quality Using the Malay Version of the Pittsburgh Sleep Quality Index (PSQI-M) In Malaysian Adults. Int. J. Environ. Res. Public Health 16, 4750.

APPENDIX XII: INDEKS AGAMA DUKE (DUREL)

Arahan : Sila tandakan jawapan pilihan anda yang sesuai.

1. Berapa kerapkah anda menghadiri aktiviti keagamaan di masjid, gereja, kuil, tokong atau perjumpaan agama?

1	2	3	4	5	6
Tidak Pernah	Sekali Setahun atau kurang dari itu	Beberapa kali setahun	Beberapa kali setahun	Seminggu sekali	Lebih dari sekali dalam seminggu

2. Berapa kerapkah anda meluangkan masa untuk aktiviti keagamaan secara bersendirian seperti sembahyang, bermeditasi atau membaca kitab seperti Al-Quran bible?

1	2	3	4	5	6
Jarang-jarang/ Tidak Pernah	Beberapa kali sebulan	Sekali seminggu	Dua kali atau lebih dalam seminggu	Setiap hari	Lebih dari sekali dalam sehari

Bahagian berikutnya mengandungi 3 kenyataan tentang kepercayaan agama atau amalan. Sila tandakan jawapan bagi kenyataan yang tepat bagi anda.

3. Saya dapat merasakan kehadiran Maha Pencipta (Tuhan) dalam hidup saya.

1	2	3	4	5
Tidak benar sama sekali	Lebih cenderung kepada tidak benar	Tidak pasti	Lebih cenderung kepada benar	Amat benar sekali

4. Kepercayaan terhadap agama saya menjadi pedoman kepada kehidupan saya secara menyeluruh.

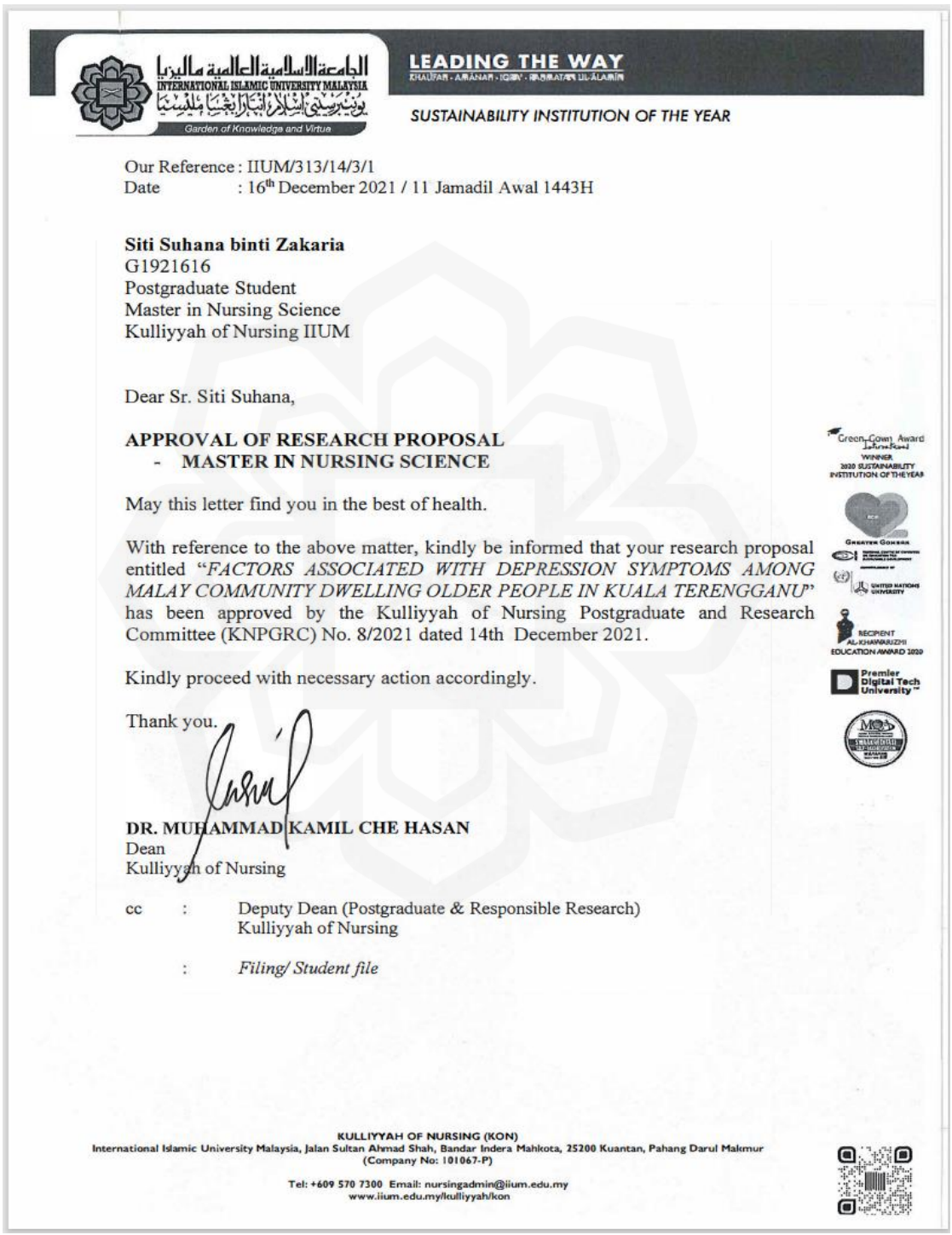
1	2	3	4	5
Tidak benar sama sekali	Lebih cenderung kepada tidak benar	Tidak pasti	Lebih cenderung kepada benar	Amat benar sekali

5. Saya telah sedaya upaya menerapkan elemen keagamaan saya dalam menangani segala urusan kehidupan say

1	2	3	4	5
Tidak benar sama sekali	Lebih cenderung kepada tidak benar	Tidak pasti	Lebih cenderung kepada benar	Amat benar sekali

Nurasikin, M. S., Aini, A., Syarinaz, A. A., & Ng, C. (2010). Validity and Reliability of the Malay Version of Duke University Religion Index (DUREL-M) Among A Group of Nursing Student. *Malaysian Journal of Psychiatry*,*19*(2), 68–72.

APPENDIX XIII: ETHICAL APPROVAL FROM KULLIYYAH OF NURSING



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
Garden of Knowledge and Virtue

LEADING THE WAY
KHALIFAH - AMANAH - IQRA' - RAHMATAN LIL-ALAMIN

SUSTAINABILITY INSTITUTION OF THE YEAR

Our Reference : IIUM/313/14/3/1
Date : 16th December 2021 / 11 Jamadil Awal 1443H

Siti Suhana binti Zakaria
G1921616
Postgraduate Student
Master in Nursing Science
Kulliyyah of Nursing IIUM

Dear Sr. Siti Suhana,

APPROVAL OF RESEARCH PROPOSAL
- MASTER IN NURSING SCIENCE

May this letter find you in the best of health.

With reference to the above matter, kindly be informed that your research proposal entitled "*FACTORS ASSOCIATED WITH DEPRESSION SYMPTOMS AMONG MALAY COMMUNITY DWELLING OLDER PEOPLE IN KUALA TERENGGANU*" has been approved by the Kulliyyah of Nursing Postgraduate and Research Committee (KNPGRC) No. 8/2021 dated 14th December 2021.

Kindly proceed with necessary action accordingly.

Thank you.

DR. MUHAMMAD KAMIL CHE HASAN
Dean
Kulliyyah of Nursing

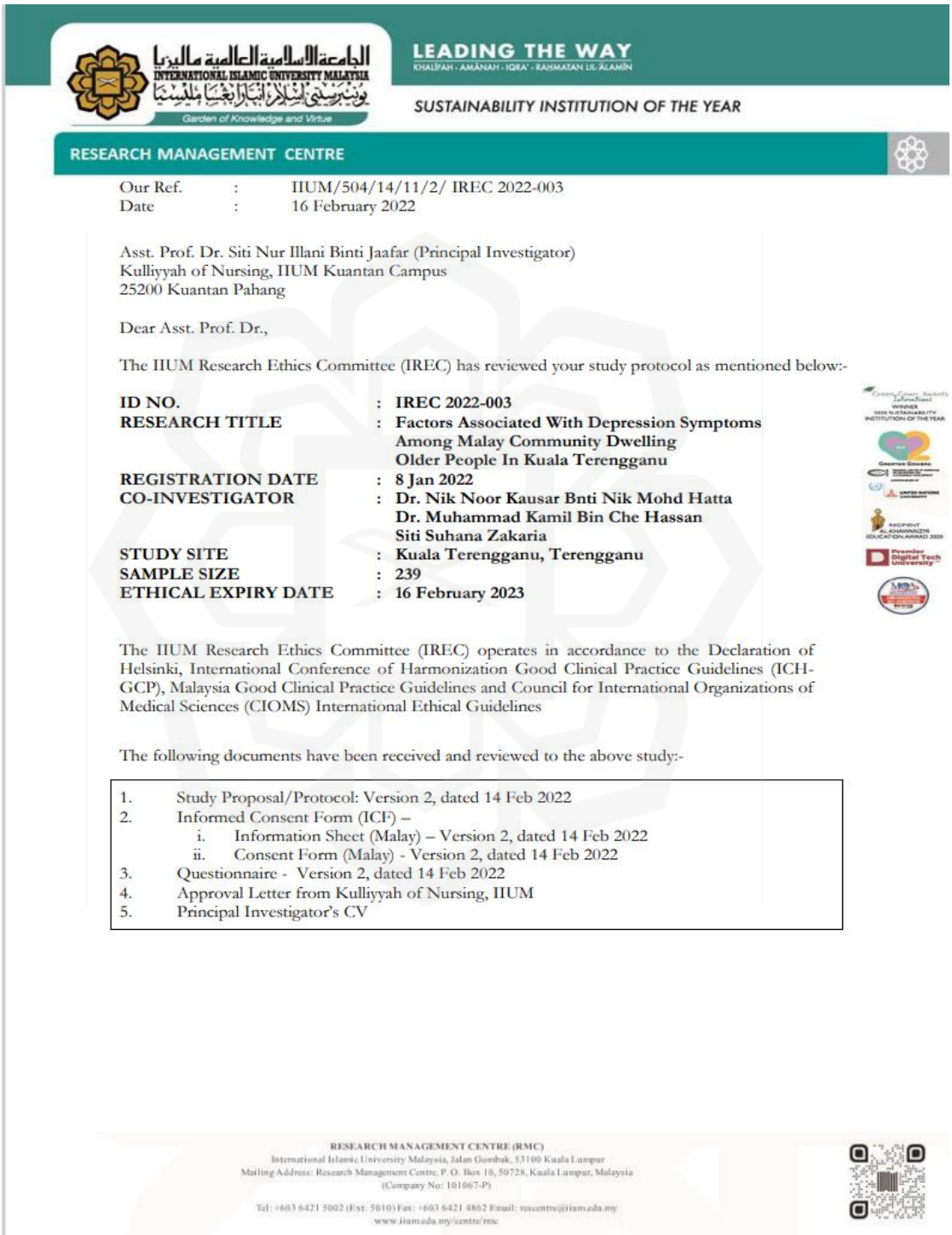
cc : Deputy Dean (Postgraduate & Responsible Research)
Kulliyyah of Nursing

: *Filing/ Student file*

KULLIYYAH OF NURSING (KON)
International Islamic University Malaysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang Darul Makmur
(Company No: 101067-P)

Tel: +609 570 7300 Email: nursingadmin@iium.edu.my
www.iium.edu.my/kulliyyah/kon

APPENDIX XIV: ETHICAL APPROVAL FROM IIUM RESEARCH ETHICS COMMITTEES



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
Garden of Knowledge and Virtue

LEADING THE WAY
KHALIFAH - AMANAH - IQRA' - RAHMATAN LIL 'ALAMIN

SUSTAINABILITY INSTITUTION OF THE YEAR

RESEARCH MANAGEMENT CENTRE

Our Ref. : IIUM/504/14/11/2/ IREC 2022-003
Date : 16 February 2022

Asst. Prof. Dr. Siti Nur Illani Binti Jaafar (Principal Investigator)
Kulliyyah of Nursing, IIUM Kuantan Campus
25200 Kuantan Pahang

Dear Asst. Prof. Dr.,

The IIUM Research Ethics Committee (IREC) has reviewed your study protocol as mentioned below:-

ID NO.	:	**IREC 2022-003**
RESEARCH TITLE	:	**Factors Associated With Depression Symptoms Among Malay Community Dwelling Older People In Kuala Terengganu**
REGISTRATION DATE	:	**8 Jan 2022**
CO-INVESTIGATOR	:	**Dr. Nik Noor Kausar Bnti Nik Mohd Hatta** **Dr. Muhammad Kamil Bin Che Hassan** **Siti Suhana Zakaria**
STUDY SITE	:	**Kuala Terengganu, Terengganu**
SAMPLE SIZE	:	**239**
ETHICAL EXPIRY DATE	:	**16 February 2023**

The IIUM Research Ethics Committee (IREC) operates in accordance to the Declaration of Helsinki, International Conference of Harmonization Good Clinical Practice Guidelines (ICH-GCP), Malaysia Good Clinical Practice Guidelines and Council for International Organizations of Medical Sciences (CIOMS) International Ethical Guidelines

The following documents have been received and reviewed to the above study:-

1. Study Proposal/Protocol: Version 2, dated 14 Feb 2022
2. Informed Consent Form (ICF) –
   i. Information Sheet (Malay) – Version 2, dated 14 Feb 2022
   ii. Consent Form (Malay) - Version 2, dated 14 Feb 2022
3. Questionnaire - Version 2, dated 14 Feb 2022
4. Approval Letter from Kulliyyah of Nursing, IIUM
5. Principal Investigator's CV

RESEARCH MANAGEMENT CENTRE (RMC)
International Islamic University Malaysia, Jalan Gombak, 53100 Kuala Lumpur
Mailing Address: Research Management Centre, P. O. Box 10, 50728, Kuala Lumpur, Malaysia
(Company No: 101067-P)

Tel: +603 6421 5002 (Ext: 5010) Fax: +603 6421 4862 Email: rmcentre@iium.edu.my
www.iium.edu.my/centre/rmc

Decision by IIUM Research Ethics Committee (IREC):

(√) Approved
( ) Disapproved **Date of Approval: 16 February 2022**

The investigator(s) are required to:

a) submit the 'Continuing Review Form' 30 days before **EXPIRY DATE** to renew Ethical Approval.
b) notify IREC of any change in protocol and obtaining further ethical approval as appropriate.
c) report any adverse incident during the course of a study to IREC even if the incident is not directly related to the study.
d) report to the IREC within 72 hours for all internal SAEs (occurring in IIUM PI site).
e) report in a prompt manner if the information impacts the continued ethical acceptability of the trial for external SAEs (occurring in participants at other sites).
f) provide information of minor protocol deviation in Progress Report or End Report whichever necessary.
g) report any major protocol deviation occurs within 5 working days.
h) submit Progress Report Form before the end of six (6) month given by IREC (not applicable for undergraduate study)
i) complete and submit the End of Project Report Form to the IREC Secretariat's Office.
j) All records and data subjects are **CONFIDENTIAL** and used only for the purposes of this study and all issues and procedures on data confidentiality must be observed.

Thank you.

Yours sincerely,

PROF. DR. NASSER MUHAMMAD AMJAD
Chairman,
IIUM Research Ethics Committee (IREC)

Copy : File –IREC 2022-003

DISCLAIMER: The approval letter only covers the ethical aspect of your study only. Any other permission/approval to use any facilities, data or human resource should fall under applicant's responsibility.

APPENDIX XV: PERMISSION LETTER TO CONDUCT DATA COLLECTION

الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
Garden of Knowledge and Virtue

LEADING THE WAY | SUSTAINABILITY INSTITUTION OF THE YEAR
KHALIFAH · AMANAH · IQRA' · RAHMATAN LIL-ALAMIN

ABDULHAMID ABUSULAYMAN
KULLIYYAH OF ISLAMIC REVEALED KNOWLEDGE AND HUMAN SCIENCES

Encik Shaharuddin Bin Ismail
Penghulu Mukim Bukit Besar,
4595 Kampung Gelong Bilal
Jalan Pasir Panjang,
21100 Kuala Terengganu,
Terengganu Darul Iman.

2 MAC 2022

YBhg. Tuan,

MEMOHON KEBENARAN BAGI MENJALANKAN KAJIAN BERKAITAN MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN WARGA EMAS DI KOMUNITI

Perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan bahawa penyelidik daripada Kulliyyah Kejururawatan, Universiti Islam Antarabangsa Malaysia (UIAM) akan mengadakan kajian di kalangan warga emas yang tinggal di Kampung Pasir Panjang, Kuala Terengganu. Tujuan kajian ini dijalankan kerana penyeilidik ingin memperolehi data berkaitan kadar depresi yang dialami dan faktor yang mempengaruhinya. Kajian ini adalah di bawah peruntukan geran penyelidikan International Islamic University Malaysia IRF19-03100031.

3. Sehubungan itu, besarlah harapan kami agar pihak Tuan dapat memberi kebenaran untuk menjalankan kajian ini di kawasan jagaan pihak Tuan. Sokongan dan pertimbangan Tuan amatlah diharapkan bagi melancarkan kajian ini.

Sekian, kerjasama dan jasa baik pihak Tuan amatlah dihargai dan didahului dengan ucapan ribuan terima kasih.

'BERKHIDMAT UNTUK NEGARA'

Saya yang menjalankan amanah,

Dr. SITI NUR ILLIANI JAAFAR
Ketua Projek IRF19-03100031: Factors Associted with Depression Symptoms Among Malay Community Dwelling Older People in Kuala Terengganu
s.k: - fail

International Islamic University Malaysia
PO Box 10
50728 Kuala Lumpur, Malaysia
Telephone: (+603) 6421 5051 |Fax: (+603) 6421 4870

Encik Zanrus Bin Omar
Pengerusi,
Majlis Pengurusan Komuniti Kampung (MPKK),
936B Ladang Sekolah,
20000 Kuala Terengganu,
Terengganu Darul Iman.

2 MAC 2022

YBhg. Tuan,

MEMOHON KEBENARAN BAGI MENJALANKAN KAJIAN BERKAITAN MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN WARGA EMAS DI KOMUNITI

Perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan bahawa penyelidik daripada Kulliyyah Kejururawatan, Universiti Islam Antarabangsa (UIA) akan mengadakan kajian di kalangan warga emas yang tinggal di Pangsapuri Ladang, Kuala Terengganu. Tujuan kajian ini dijalankan kerana penyeilidik ingin memperolehi data berkaitan kadar depresi yang dialami dan faktor yang mempengaruhinya. Kajian ini adalah di bawah peruntukan geran penyelidikan International Islamic University Malaysia IRF19-03100031.

3. Sehubungan itu, besarlah harapan kami agar pihak Tuan dapat memberi kebenaran untuk menjalankan kajian ini di kawasan jagaan pihak Tuan. Sokongan dan pertimbangan Tuan amatlah diharapkan bagi melancarkan kajian ini.

Sekian, kerjasama dan jasa baik pihak Tuan amatlah dihargai dan didahului dengan ucapan ribuan terima kasih.

'BERKHIDMAT UNTUK NEGARA'

Saya yang menjalankan amanah,

Dr. SITI NUR ILLIANI JAAFAR
Ketua Projek IRF19-03100031: Factors Associted with Depression Symptoms Among Malay Community Dwelling Older People in Kuala Terengganu
s.k: - fail

International Islamic University Malaysia
PO Box 10
50728 Kuala Lumpur, Malaysia
Telephone: (+603) 6421 5051 |Fax: (+603) 6421 4870

الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
Garden of Knowledge and Virtue

LEADING THE WAY
KHALĪFAH · AMĀNAH · IQRA' · RAHMATAN LIL-ĀLAMĪN | SUSTAINABILITY INSTITUTION OF THE YEAR

ABDULHAMID ABUSULAYMAN
KULLIYYAH OF ISLAMIC REVEALED KNOWLEDGE AND HUMAN SCIENCES

Encik Mt Said Bin Embong,
Pengerusi,
Majlis Pengurusan Komuniti Kampung (MPKK),
Kampung Banggol Kuala Ibai 20400,
Kuala Terengganu,
Terengganu Darul Iman.

2 MAC 2022

YBhg. Tuan,

MEMOHON KEBENARAN BAGI MENJALANKAN KAJIAN BERKAITAN MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN WARGA EMAS DI KOMUNITI

Perkara diatas adalah dirujuk.

2. Sukacita dimaklumkan bahawa penyelidik daripada Kulliyyah Kejururawatan, Universiti Islam Antarabangsa Malaysia (UIAM) akan mengadakan kajian di kalangan warga emas yang tinggal di kampung Banggol Kuala Ibai, Kuala Terengganu. Tujuan kajian ini dijalankan kerana penyeilidik ingin memperolehi data berkaitan kadar depresi yang dialami dan faktor yang mempengaruhinya. Kajian ini adalah di bawah peruntukan geran penyelidikan International Islamic University Malaysia IRF19-03100031.

3. Sehubungan itu, besarlah harapan kami agar pihak Tuan dapat memberi kebenaran untuk menjalankan kajian ini di kawasan jagaan pihak Tuan. Sokongan dan pertimbangan Tuan amatlah diharapkan bagi melancarkan kajian ini.

Sekian, kerjasama dan jasa baik pihak Tuan amatlah dihargai dan didahului dengan ucapan ribuan terima kasih.

'BERKHIDMAT UNTUK NEGARA'

Saya yang menjalankan amanah,

Dr. SITI NUR ILLIANI JAAFAR
Ketua Projek IRF19-03100031: Factors Associted with Depression Symptoms Among Malay Community Dwelling Older People in Kuala Terengganu
s.k: - fail

International Islamic University Malaysia
PO Box 10
50728 Kuala Lumpur, Malaysia
Telephone: (+603) 6421 5051 | Fax: (+603) 6421 4870

APPENDIX XVI: APPROVAL LETTER FROM VILLAGE LEADER TO CONDUCT DATA COLLECTION

جاوتنكواس ڤمباڠونن دان كسلامتن كامڤوڠ لادڠ فلت

JAWATANKUASA PEMBANGUNAN DAN KESELAMATAN KAMPUNG LADANG FLAT
NO.936-B KAMPUNG LADANG SEKOLAH,
20000 KUALA TERENGGANU,
TERENGGANU DARUL IMAN.

Tel: Pengerusi- 018-7634966
Tim.Pengerusi- 019-9447997
Setiausaha - 010-9190997

Ruj. Kami: JPKK/LF/JLD(083)
Tarikh: 05 Mac 2022
Bersamaan:2 Sya'aban 1443H

DR.SITI NUR ILLIANI JAAFAR
International Islamic University Malaysia,
PO Box 10,
50728 Kuala Lumpur.

DR.

MAKLUMBALAS KEBENARAN BAGI MENJALANKAN KAJIAN BERKAITAN MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN WARGA EMAS DI KOMUNITI

Dengan Segala Hormatnya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa pihak kami ingin mengucapkan penghargaan terima kasih atas permohonan bagi menjalankan kajian di komuniti ladang flat pada surat yang bertarikh **2 Mac 2022**.

3. Untuk makluman dr,pihak kami **bersetuju** untuk meluluskan permohonan daripada pihak Dr dan pihak kami **tiada halangan** untuk pihak Dr untuk menjalankan kajian di komuniti pangsapuri ladang gemilang fasa 1 dan pangsapuri ladang gemilang fasa 2. Walaubagaimanapun, pihak Dr hendaklah memenuhi syarat-syarat sebagaimana berikut:-

i Memaklumkan tempoh kajian yang dijalankan dan maklumat terperinci yang diperlukan.
ii Mematuhi SOP yang telah ditetapkan oleh MKN dan KKM sepanjang kajian yang dijalankan.
iii Perlu mengisi nama di pondok pengawal keselamatan Pangsapuri Ladang Gemilang.

4. Semoga perkara ini dalam makluman dan segala kerjasama dari pihak Dr amatlah kami hargai.

Sekian, terima kasih.

"TERENGGANU MAJU, BERKAT, SEJAHTERA"
"PRIHATIN RAKYAT : DARURAT MEMERANGI COVID-19"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

ZAMRUS BIN OMAR
PENGERUSI
JAWATANKUASA PEMBANGUNAN DAN
KESELAMATAN KAMPUNG (JPKK)
LADANG FLAT
KUALA TERENGGANU, TERENGGANU

(ZAMRUS BIN OMAR)
Pengerusi JPKK Ladang Flat,
Dun Ladang, Parlimen Kuala Terengganu.

s.k :-
i Pejabat DUN Ladang
ii Pejabat Parlimen Kuala Terengganu
iii Pmint Urus

جاوتنكواس ڤمباڠونن دان كسلامتن كامڤوڠ

JAWATANKUASA PEMBANGUNAN DAN KESELAMATAN KAMPUNG
KAMPUNG BANGGOL, KUALA IBAI
20400, KUALA TERENGGANU, TERENGGANU

Pengerusi: 0139108502
Setiausaha: 0199356673

Ruj.Kami: JPKK/KB/JLD (053)
Tarikh : 19 Mac 2022
Bersamaan 16 Sya'aban 1443H

DR SITI NUR ILLANI JAAFAR
International Islamic University Malaysia
PO Box Kuala Lumpur.

Dr,

MAKLUMBALAS KEBENARAN BAGI MENJALANKAN KAJIAN BERKAITAB MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN WARGA EMAS DI KOMUNITI

Dengan Segala Hormatnya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa pihak kami ingin mengucapkan perhargaan terima kasih atas permohonan bagi menjalankan kajian di komuniti Kampung Banggol pada surat bertarikh **2 Mac 2022**.

3. Untuk makluman Dr, pihak kami **bersetuju** untuk meluluskan permohonan daripada pihak Dr dan pihak kami **tiada halangan** untuk pihak Dr untuk menjalankan kajian di komuniti kami. Walaubagaimanapun, pihak Dr hendaklah memenuhi syarat-syarat sebagaimana berikut:

I. **Memaklumkan tempoh kajian yang dijalankan dan maklumat terperinci yang diperlukan.**
II. **Mematuhi SOP yang telah ditetapkan oleh MKN dan KKM sepanjang kajian yang dijalankan.**
III. **Perlu memaklumkan waktu kehadiran di dalam komuniti kepada Pengerusi Kg Banggol.**

4. Semoga perkara ini di dalam makluman Dr dan segala Kerjasama dari pihak Dr, kami hargai dan kami dahului dengan ucapan ribuan terima kasih

Sekian, terima kasih

"TERENGGANU MAJU, BERKAT,SEJAHTERA"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan Amanah,

.....
(Mt. Said Bin Embong)
Pengerusi JPKK Kampung Banggol
Kuala Terengganu.

MAT SAID BIN EMBONG
PENGERUSI
JAWATANKUASA PEMBANGUNAN DAN KESELAMATAN KAMPUNG (JPKK)
KAMPUNG BANGGOL KUALA IBAI,
KUALA TERENGGANU, TERENGGANU
21/22-11-P036-00372

جاوتنکواس قناعون دان کسلامتن کامفوغ

JAWATANKUASA PEMBANGUNAN DAN KESELAMATAN KAMPUNG
KAMPUNG MASJID HAJI KADIR, MUKIM BUKIT BESAR
21100, KUALA TERENGGANU, TERENGGANU
No. Siri : 21/22-11-P036-00064

Pengerusi :019-9143544
Setiausaha :019-2852439

Ruj. Kami : JPKK MHK P01-020/22

DR. SITI NUR ILLIANI JAAFAR
International Islamic University Malaysia
PO Box 10
50728 Kuala Lumpur

Tarikh : 10 Mac 2022

DR,

MAKLUMBALAS KEBENARAN BAGI MENJALANKAN KAJIAN BERKAITAN MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN WARGA EMAS DI KOMUNITI.

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan bahawa pihak JPKK Kampung Masjid Haji Kadir ingin merakamkan ucapan terima kasih di atas permohonan untuk menjalankan kajian di dalam komuniti kami dalam surat yang bertarikh 2 Mac 2022.

3. Melalui surat ini juga kami ingin memaklumkan bahawa permohonan dari pihak DR. amat kami alu-alukan dan kami bersetuju untuk meluluskan permohonan tersebut. Namun kami memerlukan maklumat dan butiran lebih lanjut dari pihak DR. Antaranya seperti berikut :

I. Memaklumkan tempoh kajian yang dijalankan dan maklumat terperinci yang diperlukan
II. Mematuhi SOP yang telah ditetapkan oleh MKN dan KKM sepanjang kajian dijalankan
III. Memaklumkan waktu kehadiran di dalam komuniti kepada Pengerusi JPKK Kg Masjid Haji Kadir

4. Semoga perkara ini di dalam makluman DR dan segala kerjasama dari pihak DR. kami hargai dan kami dahului dengan ucapan ribuan terima kasih.

Sekian, terima kasih.

"TERENGGANU MAJU , BERKAT ,SEJAHTERA"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

.....
(Mohd Jamil bin Ngah)
Pengerusi JPKK
Kampung Masjid Haji Kadir,
Kuala Terengganu

MOHD JAMIL BIN NGAH
PENGERUSI
JAWATANKUASA PEMBANGUNAN DAN KESELAMATAN KAMPUNG (JPKK)
MASJID HAJI KADIR
KUALA TERENGGANU, TERENGGANU
21/22-11-P036-00064

TERENGGANU MAJU, BERKAT, SEJAHTERA

APPENDIX XVII: RISALAH MAKLUMAT PESERTA

TAJUK KAJIAN:

MENGUKUR TAHAP DEPRESI DAN FAKTOR MEMPENGARUHINYA DI KALANGAN

WARGA EMAS DI KOMUTI

Kepada Tuan/Puan,

Bersama-sama ini disertakan satu set borang soal selidik untuk mengumpulkan maklumat tentang tahap tekanan yang dialami oleh warga emas yang tinggal di komuniti dan faktor berkaitan tahap tekanan tersebut

Bilangan penduduk dunia pada tahun-tahun kebelakangan ini kebanyakannya meningkatkan bilangan warga emas. Di Malaysia, warga emas berumur 60 tahun ke atas dianggarkan berjumlah 1.4 juta dan dijangka meningkat kepada 3.3 juta pada tahun 2020. Ekoran peningkatan kadar statistik penduduk warga emas ini, akan muncul kepelbagaian factor untuk menyumbang kepada tahap tekanan hidup.

Sehubungan dengan itu, kajian ini akan mengenalpasti tahap tekanan yang dialami dan faktor berkaitan dengan tahap tekanan dikalangan warga emas yang tinggal di komuniti. Tujuan kajian ini dilakukan bagi mengesan faktor risiko untuk warga emas bagi mengurangkan insiden penyakit tekanan.

Anda telah terpilih sebagai peserta dalam kajian ini. Anda berhak menolak untuk tidak menyertai dalam kajian ini. Jika anda bersetuju, anda akan diberikan borang keizinan yang melayakkan anda menjadi peserta dalam kajian ini.

Borang soal selidik ini mengandungi dua bahagian iaitu **Bahagian A,B,C,D,E,F,G H dan I**. Pengisian borang soal selidik ini akan mengambil masa sehingga 45 minit dan segala maklumat yang telah diberikan adalah sulit dan identiti peserta tidak akan didedahkan. Sekiranya terdapat sebarang keciciran maklumat, pihak kami boleh menghubungi peserta tersebut.

Sebarang pertanyaan dan penerangan tentang kajian ini boleh didapati terus daripada.penyelidik secara langsung semasa kajian dilakukan. Terima kasih atas kerjasama anda.

(_____)

Tandatangan Penyelidik.

KEIZINAN UNTUK MENYERTAI KAJIAN.

APPENDIX XVIII: BORANG PERSETUJUAN/KEIZINAN PESERTA

KEIZINAN UNTUK MENYERTAI KAJIAN

Saya telah di beri penerangan terhadap saya berkenaan maklumat di atas dalam bahasa yang saya fahami. Isi kandungan dan maksud maklumat tersebut telah diterangkan sepenuhnya kepada saya.

Saya telah mempunyai masa dan peluang untuk mengemukakan sebarang soalan mengenai kajian dan borang ini dan semua soalan saya telah dijawab. Saya telah membaca atau telah diterangkan kepada saya semua helaian borang keizinan ini dan semua risiko telah diterangkan.

Saya sukarela bersetuju untuk mengambil bahagian dalam kajian ini. Dengan menandatangani borang keizinan ini, saya mengesahkan segala maklumat yang saya berikan adalah benar dalam pengetahuan saya.

_____

Tandatangan Peserta

APPENDIX XIX: BORANG PERSETUJUAN/KEIZINAN WARIS PESERTA

KEIZINAN PENJAGA UNTUK MENYERTAI KAJIAN. (JIKA BERKAITAN)

Saya telah di beri penerangan terhadap saya berkenaan maklumat di atas dalam bahasa yang saya fahami. Isi kandungan dan maksud maklumat tersebut telah diterangkan sepenuhnya kepada saya.

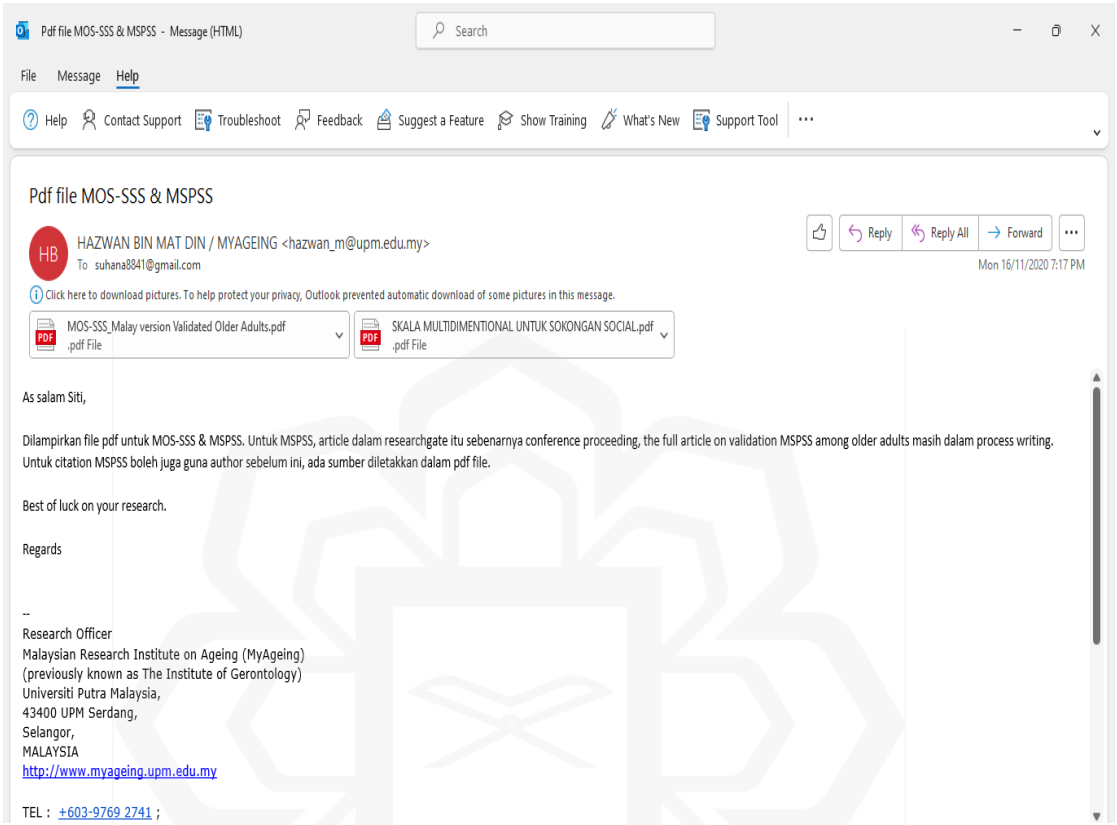
Saya telah mempunyai masa dan peluang untuk mengemukakan sebarang soalan mengenai kajian dan borang ini dan semua soalan saya telah dijawab. Saya telah membaca atau telah diterangkan kepada saya semua helaian borang keizinan ini dan semua risiko telah diterangkan.

Saya bersetuju untuk membenarkan ibu atau bapa saya mengambil bahagian dalam kajian ini. Dengan menandatangani borang keizinan ini, saya mengesahkan segala maklumat yang saya berikan adalah benar dalam pengetahuan saya.

_____

Tandatangan Penjaga

APPENDIX XX: THE CONSENT FOR PERMISSION TO USE QUESTIONNAIRE



Pdf file MOS-SSS & MSPSS - Message (HTML)

Search

File Message Help

Help Contact Support Troubleshoot Feedback Suggest a Feature Show Training What's New Support Tool ...

Pdf file MOS-SSS & MSPSS

HB HAZWAN BIN MAT DIN / MYAGEING <hazwan_m@upm.edu.my>
To suhana8841@gmail.com

Reply Reply All Forward ...
Mon 16/11/2020 7:17 PM

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

MOS-SSS_Malay version Validated Older Adults.pdf .pdf File

SKALA MULTIDIMENTIONAL UNTUK SOKONGAN SOCIAL.pdf .pdf File

As salam Siti,

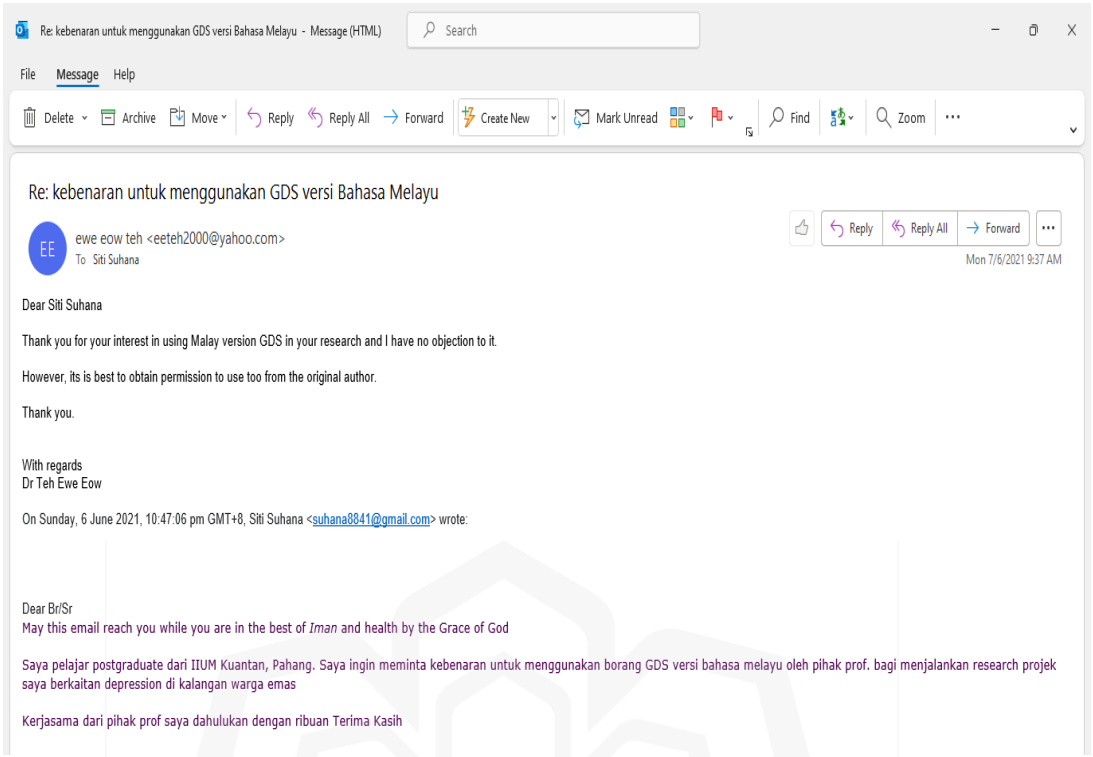
Dilampirkan file pdf untuk MOS-SSS & MSPSS. Untuk MSPSS, article dalam researchgate itu sebenarnya conference proceeding, the full article on validation MSPSS among older adults masih dalam process writing. Untuk citation MSPSS boleh juga guna author sebelum ini, ada sumber diletakkan dalam pdf file.

Best of luck on your research.

Regards

--
Research Officer
Malaysian Research Institute on Ageing (MyAgeing)
(previously known as The Institute of Gerontology)
Universiti Putra Malaysia,
43400 UPM Serdang,
Selangor,
MALAYSIA
http://www.myageing.upm.edu.my

TEL : +603-9769 2741 ;



Re: kebenaran untuk menggunakan GDS versi Bahasa Melayu - Message (HTML)

Search

File Message Help

Delete Archive Move Reply Reply All Forward Create New Mark Unread Find Zoom

Re: kebenaran untuk menggunakan GDS versi Bahasa Melayu

EE ewe eow teh <eeteh2000@yahoo.com>
To Siti Suhana

Reply Reply All Forward

Mon 7/6/2021 9:37 AM

Dear Siti Suhana

Thank you for your interest in using Malay version GDS in your research and I have no objection to it.

However, its is best to obtain permission to use too from the original author.

Thank you.

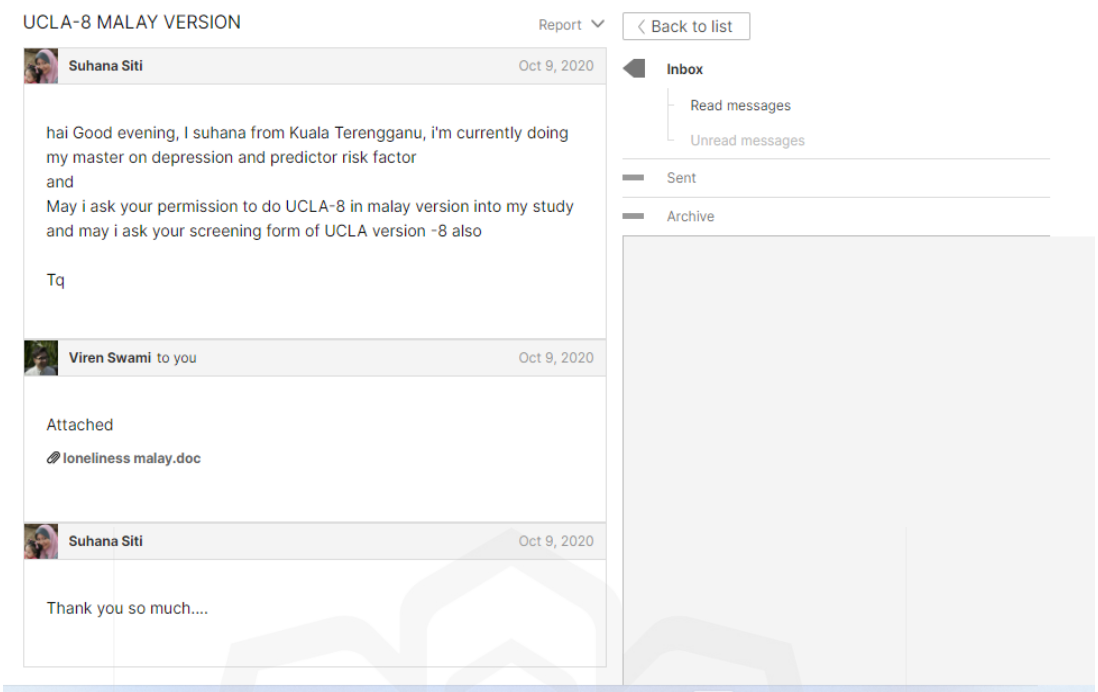
With regards
Dr Teh Ewe Eow

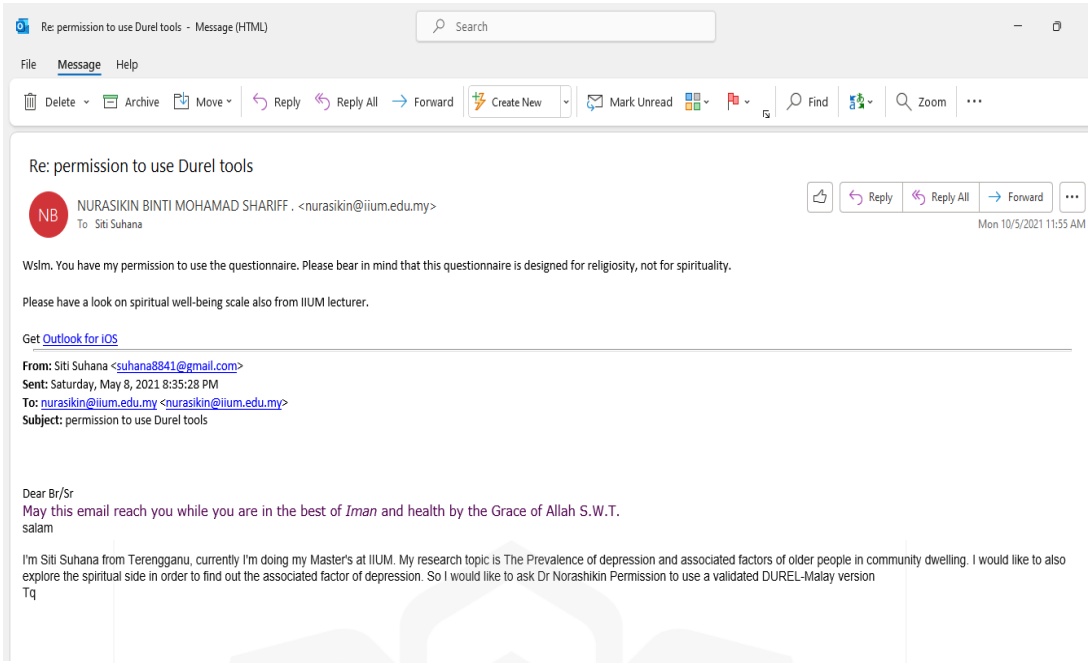
On Sunday, 6 June 2021, 10:47:06 pm GMT+8, Siti Suhana <suhana8841@gmail.com> wrote:

Dear Br/Sr
May this email reach you while you are in the best of *Iman* and health by the Grace of God

Saya pelajar postgraduate dari IIUM Kuantan, Pahang. Saya ingin meminta kebenaran untuk menggunakan borang GDS versi bahasa melayu oleh pihak prof. bagi menjalankan research projek saya berkaitan depression di kalangan warga emas

Kerjasama dari pihak prof saya dahulukan dengan ribuan Terima Kasih


UCLA-8 MALAY VERSION
Report
Back to list
Suhana Siti
Oct 9, 2020
hai Good evening, I suhana from Kuala Terengganu, i'm currently doing my master on depression and predictor risk factor
and
May i ask your permission to do UCLA-8 in malay version into my study and may i ask your screening form of UCLA version -8 also
Tq
Viren Swami to you
Oct 9, 2020
Attached
loneliness malay.doc
Suhana Siti
Oct 9, 2020
Thank you so much....
Inbox
Read messages
Unread messages
Sent
Archive



Re: permission to use Durel tools - Message (HTML)

Search

File Message Help

Delete Archive Move Reply Reply All Forward Create New Mark Unread Find Zoom

Re: permission to use Durel tools

NB NURASIKIN BINTI MOHAMAD SHARIFF . <nurasikin@iium.edu.my>
To Siti Suhana

Reply Reply All Forward

Mon 10/5/2021 11:55 AM

Wslm. You have my permission to use the questionnaire. Please bear in mind that this questionnaire is designed for religiosity, not for spirituality.

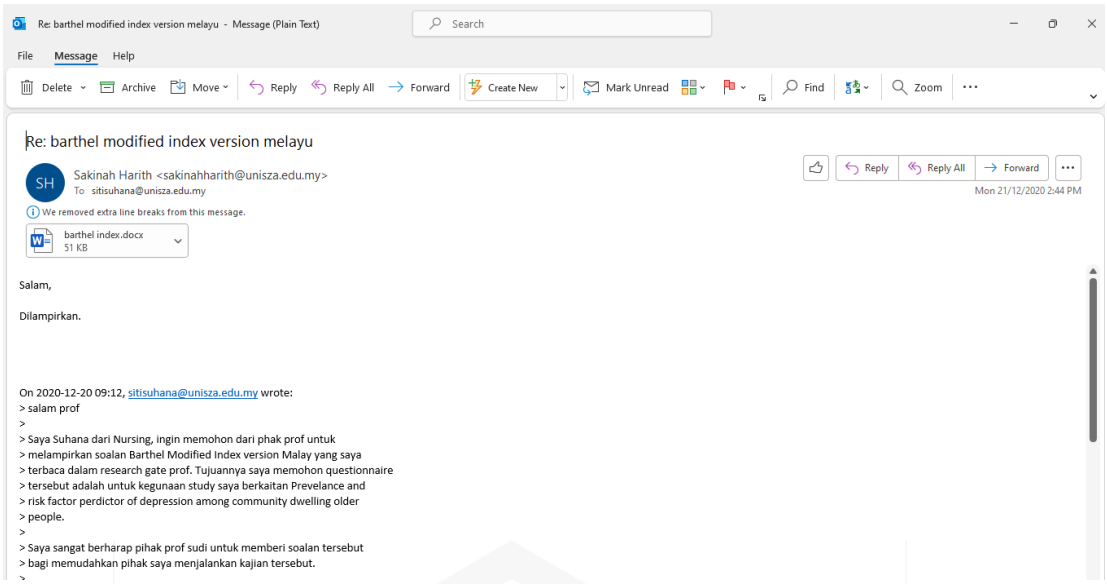
Please have a look on spiritual well-being scale also from IIUM lecturer.

Get Outlook for iOS

From: Siti Suhana <suhana8841@gmail.com>
Sent: Saturday, May 8, 2021 8:35:28 PM
To: nurasikin@iium.edu.my <nurasikin@iium.edu.my>
Subject: permission to use Durel tools

Dear Br/Sr
May this email reach you while you are in the best of *Iman* and health by the Grace of Allah S.W.T.
salam

I'm Siti Suhana from Terengganu, currently I'm doing my Master's at IIUM. My research topic is The Prevalence of depression and associated factors of older people in community dwelling. I would like to also explore the spiritual side in order to find out the associated factor of depression. So I would like to ask Dr Norashikin Permission to use a validated DUREL-Malay version
Tq



Re: barthel modified index version melayu - Message (Plain Text)

Search

File Message Help

Delete Archive Move Reply Reply All Forward Create New Mark Unread Find Zoom

Re: barthel modified index version melayu

SH Sakinah Harith <sakinahharith@unisza.edu.my>
To sitisuhana@unisza.edu.my

Reply Reply All Forward

Mon 21/12/2020 2:44 PM

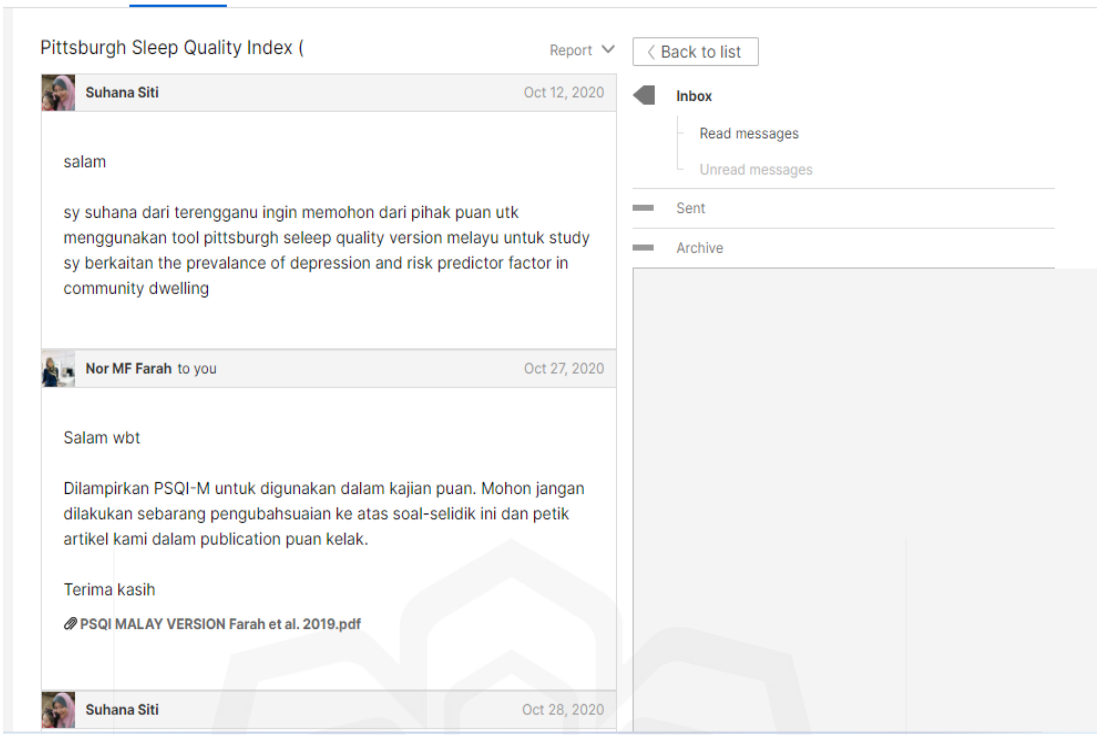
We removed extra line breaks from this message.

barthel index.docx
51 KB

Salam,

Dilampirkan.

On 2020-12-20 09:12, sitisuhana@unisza.edu.my wrote:
> salam prof
>
> Saya Suhana dari Nursing, ingin memohon dari phak prof untuk
> melampirkan soalan Barthel Modified Index version Malay yang saya
> terbaca dalam research gate prof. Tujuannya saya memohon questionnaire
> tersebut adalah untuk kegunaan study saya berkaitan Prevelance and
> risk factor perdictor of depression among community dwelling older
> people.
>
> Saya sangat berharap pihak prof sudi untuk memberi soalan tersebut
> bagi memudahkan pihak saya menjalankan kajian tersebut.
>


Pittsburgh Sleep Quality Index (
Report
Back to list
Suhana Siti
Oct 12, 2020
salam
sy suhana dari terengganu ingin memohon dari pihak puan utk menggunakan tool pittsburgh seleep quality version melayu untuk study sy berkaitan the prevalance of depression and risk predictor factor in community dwelling
Nor MF Farah to you
Oct 27, 2020
Salam wbt
Dilampirkan PSQI-M untuk digunakan dalam kajian puan. Mohon jangan dilakukan sebarang pengubahsuaian ke atas soal-selidik ini dan petik artikel kami dalam publication puan kelak.
Terima kasih
PSQI MALAY VERSION Farah et al. 2019.pdf
Suhana Siti
Oct 28, 2020
Inbox
Read messages
Unread messages
Sent
Archive