IJPHCS
Open Access: e-Journal

International Journal of Public Health and Clinical Sciences
e-ISSN : 2289-7577.

THE RELATIONSHIP BETWEEN MENTAL HEALTH LITERACY AND DEPRESSION AMONG OLDER ADULTS IN SELANGOR

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ABSTRACT

Background: Depression is prevalent among the older adults but often misdiagnosed. Improving mental health literacy could enhance early detection and treatment, increasing awareness, and improving outcomes for the disorder. This research aim to measure the prevalence of depression, its determinants and relationship with mental health literacy among older adults in Selangor.

Material and Methods: A state-wide cross sectional study was conducted involving the Selangor state residents from June 2022 until June 2023 using the state health mobile application (Selangkah) which is accessible in all apps stores. A validated questionnaire to screen users' levels of depression using the validated Geriatric Depression Scale-15 and Mental Health Literacy Scale (MHLS) was used to measure the literacy level.

Results : More than 918 elderly completed the study with the prevalence of depression among Selangor older adults was 30.0%. The mean mental health literacy score was 99, indicating a moderate level of mental health literacy. The risk factor for depression were higher education level, widowed/divorced while mental health literacy was the protective factor. The predictors for higher mental health literacy score were female and those with lower depression score.

Conclusion: The results revealed a high prevalence of depression due to higher mental health literacy level. Mental health literacy enhanced the understanding, early screening, and this improving early access to early support and treatment which can improve older adults well-being. The study advocates for improving mental health literacy initiatives through

collaboration between the Selangor State Government and universities to address the findings and support the mental well-being of the older adults.

Keywords: Mental health, geriatric, depression, mental health literacy, digital health

1.0 Introduction

Mental health disorders have become one of the major contributors to disease burden worldwide, accounting to 14% of the total disease burden globally (1). This condition is alarming since its prevalence is estimated to be increasing each year, carrying remarkable morbidity to the patients. This concern does not exclude Asia, the largest continent in the world, from carrying a huge burden of mental disorders as well (2). Malaysia itself reported a high prevalence of mental health problems which are estimated to affect almost 30% of Malaysian adults (3). The World Health Organization (WHO) identifies major depression as the leading cause for disability globally and ranks it fourth in terms of the overall disease burden (4). Depression is often presented as having a depressed mood, loss of interest or pleasure, a decline in one's energy, feelings of guilt or low self-worth, sleep or appetite disturbances, and poor concentration – thus affecting both the physical and social aspects of health (5). Depression is a significant form of mental health disorder in the elderly, that contributes 5.7% of total years lost due to disability (YLD) in those aged 60 and above (6).

Population aging is a phenomenon where older individuals become a larger share of the total population. Typically, it commences between the ages of 60 and 65. United Nations (UN) studies indicate that the global population aged 65 and over is growing faster than all other age groups. According to the most recent estimates by the Department of Statistic Malaysia (DOSM), the aging population increased from 5% in 2010 to 6.8% in 2020, indicating that Malaysia is experiencing population aging. Successful public health programs, and advancements in medical care might have contributed to the increase in the aging population. Health deteriorates with age, thus as the population ages, the physical, mental, and social facets of their well-being will inevitably begin to decline (5). Moreover, many of them fail to recognise depressive symptoms (7). It has been noted that in many cultures and civilizations, declining mental health—such as dementia or depression—is accepted as a natural part of aging, which makes it difficult for them to receive prompt treatment that can improve their quality of life. More often than not, elderlies who suffer from depression are not receiving a proper diagnosis, particularly those in rural communities where symptoms are sometimes obscured by taboos, superstitions, ignorance, and myths. Furthermore, mental disorder carries a great deal of stigma, which deprives sufferers of their dignity and leaves them feeling alone and helpless (8).

One of the primary causes of disability in the elderly that has been associated with a higher risk of morbidity and mortality is depression (9). Even though aging is not a sole factor in developing depression, the loss of family members, particularly the spouse, being away from their children, having long-standing physical illnesses, concurrent use of multiple medications, and losing cognitive function have all made the elderly more susceptible to depression (9-10). With the increase in aging population, it is essential for the medical care systems to better adapt to cater to their needs. In particular, there is a noticeable lack of psychotherapy provided to elderly patients suffering from mental disorders. If proper mental health intervention is not received, the elderly may experience adverse consequences such as impaired quality of life, increased mortality, and poor health outcomes (11).

Depression is the most prevalent mental disorder – followed by dementia, among the elderlies. However, despite the availability of treatment alternatives, it is often overlooked, misdiagnosed and consequently not treated in accordance with the appropriate guidelines (12). To correct the previously described issues regarding diagnosing and treating mental disorders in the elderly, mental health literacy (MHL) might aid in detecting and treating symptoms at an earlier stage. Jorm et al. (13) clearly defined MHL as "knowledge and beliefs which aid in the recognition, management or prevention of mental health problems". A lack of knowledge has been recognised as a significant barrier to effective help-seeking behaviour (HSB) (14). Studies in Asia also reported poor MHL hindering the patients from seeking help (1). Compared to their younger counterparts, the elderlies are observed to have lower levels of MHL as they know less about mental health issues, are less adept in identifying and labelling mental disorders, and harbour unfavourable opinions on receiving mental health treatment (15). Therefore, mental health literacy (MHL) is crucial for early diagnosis and treatment of mental health conditions, contributing to favourable prognosis.

It was also observed that patients were more likely to seek medical attention when they were experiencing physical pain, although that would not be the case when concerning their mental health issues (16). This ultimately causes elderly people to delay getting the help they need, which results in symptoms going untreated for a longer period, worsening health outcomes, and an increase in the need for healthcare services (17). Getting earlier help and access to appropriate support will benefit these individuals, while providing better outcomes from healthcare systems. Mental health problems are a rising global issue yet the number of people seeking help is astonishingly low. Several factors were identified contributing to poor help-seeking behaviour, including the role of religious cultures and stigmatization on mental health issues. Malkin et al. (15) highlighted some of the subjective factors that contributed to such poor MHL in the elderly such as stigma, and a lack of perceived needs. Objective barriers were also highlighted in the same study, whereby it includes lack of accessibility and availability of services, and low rates of getting referrals from general practitioners. Wuttke et al. (12) also highlighted financial deprivation as the strongest predictor for poor health literacy. Sociodemographic predictors include age, gender, social status, education level, and the presence of one or more chronic diseases (18). The objective of the study was to measure the prevalence of depression, its determinants and its relationship with mental health literacy among the older adults population in Selangor.

2.0 Materials and Methods

A state-wide cross sectional study was conducted involving the Selangor state residents, which is located in Peninsular Malaysia. The study was conducted from June 2022 until June 2023. Using a universal sampling strategy, the research tools were incorporated in the state health mobile application (Selangkah) which is accessible in all apps stores. The mobile application is used by the Selangor state for various health programs including the mental health program.

2.1 Data collection method

In the Selangkah mobile application, there were various state health programs for the state residents including the mental health program. In the mental health program section, there was resident background information and validated questionnaires included for them to participate.

Consent was taken prior to sign up. The participant sociodemographic characteristics taken were age , gender, ethnicity (Malay/Non Malay), religion (Muslim/ Christian / Hinduism / Buddhist / others), highest education status attain (no formal education, up to secondary school, college and university), and marital status (married, widowed and single).

2.2 Outcome measure GDS

A validated questionnaire to screen users' levels of depression using the validated GDS-15 in both English and Malay versions. GDS-15 is a self-rating scale developed to screen depression in elderly population. It is the short version of the original version of GDS which consists of 30 items (GDS-30). These items seek information representing lowered affect, decreased activity levels, irritability, withdrawal, distressing thoughts, and negative judgments about the past, present and future with yes or no response for all items. All items were summed and higher scores indicate higher depression level. The total scores for GDS-15 ranged from 0 to 15, respectively. The Malay version has shown to have good internal consistency of 0.89 Cronbach's alpha (19). The GDS levels were categorized into normal (0-4), mild (5-8), moderate (9-11) and severe (12-15). The GDS were then recategorized into normal and depression.

2.3 Outcome measure MHLS

A validated Malay version of the Mental Health Literacy Scale (MHLS) was used to measure the literacy level. It is a self-rating scale with 35 items to measure respondents' understanding of mental health , with The first 15 items are scored on a 1-4 scale with items 10, 12 & 15 being reversed scored. Items 16-35 are scored on a 1-5 scale with items 20-28 being reverse scored. The total score is produced by summing all items (Max score=160; Min score=35). The questionnaire has been translated into the Malay version and has shown to have Cronbach's alpha of 0.76 (20).

2.4 Analysis approach

Sample size calculation was derived using the G* power software version 3.1 based on the multiple linear regression. The parameters included were a two-tail hypothesis with alpha at 0.05 and 80% power with 8 predictors in the model to detect a small Cohen's f^2 of 0.02, the required sample size was 759. Anticipating 50% incomplete data, the minimum sample size required was 1518. Data was analysed using IBM SPSS Version 29.0. Data was downloaded from the Selangkah mobile application and was cleaned. Only respondents with complete data for all the variables were analysed. We described the respondents according to the sociodemographic characteristics using mean with standard deviation and frequency with percentages. We then measure the prevalence of older adults depression level and health literacy level and are presented with its 95% confidence interval. We then examine the factor associated with depression and mental health literacy among the older adults using multivariate logistic and linear regression respectively. All variables were included, with evidence of multicollinearity and interaction were checked. We then presented the coefficient in the regression model with its 95% confidence interval. The *p* value of 0.05 was taken and adjusted using Bonferroni correction.

Ethics

The study was registered and ethical approval was obtained from the International Islamic University Malaysia Ethics Committee (IREC 2023-072). The study was funded by the Selangor state government under the sponsored research grant (SPG23-073-0073).

3.0 Result

Table 1 describes the characteristics of the participants. A total of 5189 participants responded to the screening. A total of 918 completed all the basic sociodemographic characteristics and both MHLS and GDS questionnaires. The majority were female (82.3%), Malay (87.8%) and Muslim (86.6%). The education level is majority up to secondary school (46.1%). The mean age was 58.7 years old with the range age between 53 to 68 years old. With regards to marital status, 53.8% were married and the rest either single (25.6%), widowed or divorced (20.6%). The prevalence of depression was 30.0% (95% CI : 27.0%, 33.0%) with severe depression at 6.6%. The mean mental health literacy score was 99 (95% CI: 98.1, 99.8). Table 2 describes the predictors for depression while Table 3 describes the predictors for the Mental Health Literacy score. The risk factors for depression were higher education level and marital status while mental health literacy was a protective factor. Surprisingly those who are single were less likely to have depression compared to married people. Table 3 describes the predictors for mental health literacy score were male and depression score. Higher depression score is significantly associated with lower mental health literacy scale.

Table 1. Characteristics of the participants. (n=918)

Characteristics	n (%)	Mean (Min, Max)
Age (Years)		58.7 (53, 68)
Gender		
Male	162 (17.7)	
Female	756 (82.3)	
Ethnicity		
Malay	806 (87.8)	
Chinese	41 (4.5)	
Indian	45 (4.9)	
Others	26 (2.8)	
Religion		
Muslim	795 (86.6)	
Hindu	45 (4.9)	
Buddha	67 (7.3)	
Others	11 (1.2)	
Highest education level		
No formal education	66 (7.2)	
Up to secondary school	489 (48.9)	
Up to college/university	363 (43.9)	

Marital status		
Married	494 (53.8)	
Widowed/Divorced	189 (20.6)	
Single	235 (25.6)	
Depression		
Normal	643 (70.0)	
Mild	147 (16.0)	
Moderate	67 (7.3)	
Severe	61 (6.6)	
Mental health literacy score (Mean, SD)		99 (13.5)

Table 2. Factors associated with depression.

	Univariate logistic regression		Multivariate logistic regression	
Factor	Crude OR (95% CI)	*p* value	Adj OR (95% CI)	*p* value
Gender				
Female	Reference		Reference	
Male	1.81 (1.49,2.20)	<.001	1.60 (0.97, 2.63)	.06
Ethnicity				
Malay	Reference		Reference	
Non-Malay	1.51 (1.19,1.93)	<.001	0.99 (0.55, 1.80)	.98
Highest education level				
No formal edu	Reference		Reference	
Up to sec school	2.71 (1.91,3.83)	<.001	2.75 (1.25, 6.05)	.012*
Up to college/uni	1.41 (0.99,2.00)	.052	2.22 (0.92, 5.34)	.075
Marital status				
Married	Reference		Reference	
Widowed/Divorced	2.47 (1.76, 3.46)	<.001	3.18 (1.35, 7.52)	.008*
Single	0.718 (0.53, 0.98)	.034	0.39 (0.17, 0.92)	.032*
Mental health literacy	0.97 (0.96, 0.98)	<.001	0.97 (0.96, 0.98)	<.001*

* *p* value significant at <0.05

Table 3. Factors associated with mental health literacy.

	Univariate linear regression		Multivariate linear regression	
Factor	Crude β (95% CI)	*p* value	Adj β (95% CI)	*p* value
Gender				
Female	Reference		Reference	
Male	-9.73 (-14.61,-4.84)	<.001	-7.47 (-12.26, -2.68)	.002*
Ethnicity				
Malay	Reference		Reference	
Non-Malay	-1.72 (-7.49, 4.04)	.557	-0.34 (-5.84, 5.15)	.902
Highest education level				
No formal edu	Reference		Reference	
Up to sec school	-11.65 (-18.16,-5.15)	<.001	-4.34 (-11.93, 3.26)	.263
Up to college/uni	-8.42 (-15.21, -1.63)	.015	-3.30 (-11.30, 4.71)	.419

Marital status				
Married	Reference		Reference	
Widow/Divorce	-10.47 (-17.19,-3.75)	.002	-4.21 (-12.16, 3.74)	.298
Single	-1.99 (-8.04, 4.07)	.520	0.16 (-7.0, 7.32)	.964
Depression score	-1.37 (-1.70, -1.05)	<.001	-1.43 (-1.90, -0.96)	<.001*

* *p* value significant at <0.05

4.0 Discussion

Depression in the elderly may also stem from biosocial causes. Research points to several factors associated with depression including inadequate social support, residing in rural areas, chronic disease burdens, tobacco use, and excessive alcohol consumption (21). Those battling depression have an escalated risk of physical disability, passing away, and suicidal tendencies (23). Factors like income loss, the sense of lost autonomy, relocation, and health complications serve as social contributors to emotional distress among the elderly. Generally, anything that undermines an individual's feelings of self-worth and societal standing may lay the groundwork for depression in senior citizens. Moreover, medical conditions, ongoing health issues, and prolonged medication intake are significant contributors to depressive states (22). Additional contributors to the risk of depression in older adults are female gender, social withdrawal, being widowed or divorced, lower economic status, uncontrollable pain, sleep disturbances, as well as physical, functional, and cognitive decline (22).

The comprehensive review and quantitative analysis by Abdoli et al (24) examined the occurrence of severe depressive episodes in an elder population, drawing from 20 different studies comprising 18,953 individuals. The analysis revealed that 13.3% of older adults globally suffer from major depression, with a confidence interval ranging from 8.4% to 20.3%. Consistent with research by Luppa et al (25), it was observed that the prevalence of depression escalates with advancing age — noting a surge to 20–25% among those 85–89 years old and a sharp increase to 30–50% for individuals over 90. Major epidemiological investigations suggest that roughly 5% of those aged 65 or above are impacted by depression (26). Within the United States, studies identified a depression rate of 22%, while research conducted in Nigeria found a strikingly high prevalence at 49.5% (27-28). Furthermore, community-level research highlights that in Japan, the occurrence of depression among the elderly stands at 33.5%, whereas in the United Kingdom this figure is at 17.6%, and in the United States, it fluctuates between 14.6% and 17.2% (29).

Findings indicate a consistent pattern of gender disparities in mental health afflictions (30). The current investigation revealed that major depression occurs in 11.9% (95% CI: 7.6−18.6) of older females compared to 9.7% (95% CI: 5.2−17.3) of their male counterparts. This is in line with previous research suggesting a higher susceptibility to depression among senior women (25). Research from Brazil in 2019 also highlighted a striking difference, with 75.7% of major depression cases affecting women, against 24.3% for men (31). Additionally, figures from China show a major depression prevalence of 2.61% in women as opposed to a mere 0.56% in men (32). Certain sociodemographic profiles among the elderly population can contribute to the risk of depression. Some common factors include advanced age, female gender, low socioeconomic status, living alone, limited social support, chronic health conditions, functional limitations, cognitive decline, and a history of depression or mental health issues. These

sociodemographic profiles can increase the vulnerability to depression due to various reasons, such as reduced social interaction, financial stress, physical health challenges, and changes in life circumstances.

In this study, the prevalence of depression was 30.0% with severe depression at 6.6%. The predictors for depression were higher education level and widowed or divorce while mental health literacy was the protective factor. Those who are single were less likely to have depression compared to married people. The results consistent with research conducted by Mirkena et al. (33), which involved 800 participants from Oromia, Ethiopia. This study discovered that 41.8% of the elderly population suffered from depression, a particularly high rate among retired individuals and older women who showed a significant link to depression. Furthermore, many highlighted that a lack of social support is connected to higher depression rates. This suggests that strong social support is crucial for lowering the risk of depression in the elderly.

The GDS-15 may also fail to capture some aspects of depression or other mental health conditions, as it primarily focuses on depressive symptoms. Other factors, such as physical health problems or medication side effects, may contribute to similar symptoms in older adults, leading to false-positive results (34). Mental Health Literacy (MHL) refers to knowledge and attitudes regarding mental health that aid in recognition, management and prevention of mental health issues.[13] According to Jorm et al.(13), MHL consists of seven attributes: the ability to recognise specific disorders; knowing how to seek mental health information; knowledge of risk factors and causes; knowledge of self-treatments; knowledge of professional help available; and attitudes that promote recognition and appropriate help-seeking. Consequently, Mental Health Literacy (MHL) establishes the crucial groundwork for enhancing mental wellness, safeguarding against mental health issues, and facilitating care. This unified framework concentrates on advancing mental health and the outcomes of mental health care, rather than solely promoting wellbeing (35). This is consistent with our finding that mental health literacy is protective factor for depression.

Sociodemographic profiles such as education, socioeconomic status, age, gender, cultural background, and geographic location can impact mental health literacy. Higher education levels, higher socioeconomic status, younger age, female gender, exposure to diverse cultures, and access to mental health resources are generally associated with higher levels of mental health literacy. However, in this research, the predictors for higher mental health literacy score were female and lower depression score. The mean mental health literacy score was 99 (13.5). A study by Eronen et al. (36) recorded the mean health literacy score for elderly Finns was 35.05 (SD 6.32). Participants who rated their financial situation and self-rated health as very good had the highest health literacy scores (38.85, SD 5.09 and 39.22, SD 6.77, respectively). Better health literacy was associated with better cognitive status, fewer depressive symptoms and chronic conditions, higher life-space mobility and better physical performance. They were more aware and thus better screening and treated early.

Mental health literacy plays a significant role in addressing mental health concerns among the elderly population. With the increasing number of older adults worldwide, it is crucial to enhance mental health literacy to provide appropriate support and interventions for this vulnerable group. Enhancing mental health literacy can empower older adults to recognize and understand the symptoms and impact of mental health disorders. By educating them about mental health conditions, the associated risk factors, and available treatment options, older

adults can gain insights into their own psychological well-being. This knowledge can help them differentiate between everyday mood fluctuations and symptoms that require professional attention, leading to early intervention and improved mental health outcomes (37).

Another aspect of mental health literacy among the elderly is the importance of destigmatizing mental health issues. Negative stereotypes surrounding mental health can prevent older adults from seeking help, fearing judgment or social isolation. By raising awareness and promoting accurate information about mental health, we can promote a more inclusive and supportive environment that encourages open conversations about emotional well-being (38). However, several barriers exist that hinder mental health literacy among the elderly. Limited access to mental health services, particularly in rural areas, can impede their ability to seek timely help. Ageism, both within healthcare systems and society at large, may lead to the underdiagnosis or undertreatment of mental health disorders in this population. Additionally, cognitive decline or memory loss associated with aging can make it challenging for older adults to retain and recall mental health information (39).

To overcome these barriers and improve mental health literacy among the elderly, several strategies can be implemented. Healthcare professionals and caregivers can play a crucial role in assessing and promoting mental health literacy. They can provide educational materials, conduct workshops or support groups, and utilize simplified language to facilitate understanding (40). Additionally, community organizations and non-governmental organizations can collaborate to create awareness campaigns tailored specifically for older adults. These campaigns can focus on addressing common misconceptions, sharing personal stories of recovery, and providing information on available mental health resources. Utilizing technology, such as mobile applications or online platforms, can also be effective in disseminating mental health information to older adults who may have limited mobility or access to traditional educational materials.

This research carries several limitations. Self-reported questionnaires have several disadvantages. One major drawback is the potential for response bias, as participants may provide socially desirable responses, leading to inaccurate or distorted information. Recall bias is another issue, as participants may have difficulty accurately remembering past events or experiences. Misinterpretation of questions can occur, resulting in participants providing inaccurate or irrelevant answers. The lack of immediate clarification or probing from researchers limits the depth and accuracy of data. Additionally, self-reported questionnaires rely on participants' literacy and comprehension skills, creating challenges for individuals with low literacy levels or language barriers. These limitations highlight the need for careful design, clear instructions, and consideration of potential biases when using self-reported questionnaires. The study was also cross sectional in nature thus the causality can’t be established, perhaps those with lower depression score have higher mental literacy score were because they received early intervention and treatment due to early screening.

5.0 Conclusion and recommendation

In conclusion, the study was able to measure the depression and mental health literacy level among the elderly population in Selangor state and their determinants. Mental health literacy leads to early recognition of depression among the older adults are vital aspects for promoting

their overall well-being. By enhancing their understanding of mental health conditions, promoting early intervention, reducing stigma, and improving access to appropriate support and treatment, we can positively impact the well-being of older adults. It is imperative that we prioritize mental health literacy initiatives and work towards creating a society that fosters understanding, compassion, and support for the mental well-being of our elderly population. This can be achieved by continuous collaboration between the Selangor State Government and University to better enhance the current ongoing program to overcome the issues obtained from this study.

Acknowledgement

The study was funded by the Selangor state government under the sponsored research grant (SPG23-073-0073).

Declaration

These authors declare that there is no conflict of interest in any form. There is no conflict of interest with the funder, no influence in the design, data collection, data analysis or manuscript writing.

Authors contribution

Author 1: Literature review, discussion, conclusion, Author 2: Methodology and result, Author 3: Discussion, and Author 4 & 5: Discussion, referencing and proof reading.

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