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ASSOCIATED FACTORS OF LONELINESS AMONG COMMUNITY DWELLING OLDER PEOPLE AT EAST COAST, MALAYSIA

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Abstract

Loneliness is an unpleasant emotional feeling which may experience to older people due to an increased number of chronic illnesses, declines in physical function, the death of spouse or significant others, or retirement. The aim of this study is to determine the prevalence and the associated factors of loneliness among community-dwelling older people. A cross- sectional, door to door survey was conducted at four districts in Kuala Terengganu. A total of 240 community dwelling older people aged 60 years old and above were participated in this study. Several tools were used such as Geriatric Depression Scale, Elderly Cognitive Assessment Questionnaire (ECAQ), The University of California Los Angeles (UCLA) Loneliness Scale, Multidimensional Scale of Perceived Social Support (MSPSS), Barthel Modified Index, Lawton –Brody Instrumental Activities of Daily Living Scale, and The Duke University Religion Index (DUREL). Descriptive statistic was applied to measure prevalence and logistic regression to determine the association of depression with background variables.The prevalence of loneliness among older people in community dwelling was 33%. Other than that, the multiple logistic regression model revealed that the older people with depression symptoms (aOR=20.97; CI=9.80; 44.89), cognitive impairment (aOR =2.31 ; CI =1.03; 5.17) and older people were not received any formal education (aOR =11.46; CI =3.51; 37.37) and primary education level (aOR =7.12; CI =2.43; 20.84), impaired functional status (aOR =2.18 ; CI =1.14; 4.18), lack of social support (aOR =1.98 ; CI =1.06; 53.68), and low of religiosity practice (aOR =4.06; CI =1.27; 12.99) were associated with loneliness among older people in community dwelling. Therefore, screening the elderly at primary care is needed for early detection of depressive symptoms and initiation of community-based intervention in psychological aspects is needed to address the issue.

Keywords: Aging, Community-dwelling, Loneliness, Older people, Factors.

INTRODUCTION

Loneliness is defined as a perception of being alone and isolated resulted from deficient of social interaction and emotional isolation which is the lack of person to whom one feel attached (Bandari et al, 2019). This perception commonly associated with old age due to co-morbid, living alone, lack of close family ties, retirement, and an inability to participate in community activities (Barreto et al, 2021; Pengpid & Peltzer, 2021; Bolmsjö, Tengland & Rämgård 2019; Deepashini et al, 2020). The prevalence of loneliness among older people at Northern and Eastern European countries was 6.5% and 18.7% respectively (Surkalim et al, 2022), as compared to 9% at South Africa (Phaswana-Mafuya & Peltzer, 2017). Moreover, at Asian countries,

the highest prevalence found at Indonesia (64%) (Susanty et al, 2022), followed by Malaysia (53.4%) (Teh et al, 2014), India (37.6%) (Anil et al, 2016) and Taiwan (10.5%) (Huang et al, 2021).

Previous study found that loneliness increases with age, women, and had various health condition such as hypertension, diabetes, stroke and high cholesterol (Pengpid & Peltzer, 2021; Deepashini et al, 2020). Another study showed that physical disabilities, use of medications regularly, and lack of hobbies were associated with increased feelings of loneliness among the elderly (Anil et al, 2016). In terms of social characteristics, the older people who living alone, single partner and low socioeconomic was significant to had loneliness. Older people who living alone was reported to had higher level of loneliness due to the rapid outmigration of young adult, therefore, it is reported that the lower percentage of rural older persons living with their children and increasing number of older people are loneliness which also known as emptiness elderly (Schwartz, 2021). This situation may minimize family or social networks, and the breaking down of traditional family support systems for the elderly. Furthermore, the changes in the family dynamics where parents are left at home alone because of children leaving home or the loss of a spouse or retirement may cause older people to lose opportunities for informal social interactions which is they may feel more sensitive to rejection, criticism and loneliness and lead to depression (Rashid & Tahir, 2015).

Apart of changes at family support system, there was another part between social connection and loneliness in older people. Being unemployment and retirement were associated with loneliness because retirement has the potential to interrupt social networks and reduce the possibility to obtain employment opportunity due to old-aged and health factors (Igbokwe et al, 2020). Hence, decreased social participation or limited engaging in social activities was associated to increased loneliness among older people and strained support network (Zhao & Wu, 2022; Czaja et al, 2021). Besides, unemployment could reduce their savings and may contribute to the long-term financial challenges such as to cover the daily expanses and healthcare cost inability to meet daily expanses and which was associated with more loneliness (Zhao & Wu, 2022).

The relationship between loneliness and depression is intriguing. Loneliness has been widely perceived as a problem of old age due to retirement, the death of a spouse, and the outmigration of their children, as a result of older people being left behind and lead to depression (Zhao & Wu, 2022; Igbokwe et al, 2020). There is a study done by Igbokwe et al, (2020) to examine the relationship between loneliness, depression, and anxiety among retiree found that lonely retirees are 1.19 times (aOR 1.1.9; 95% CI: 0.84, 1.69, $p<0.03$) more likely to be depressed compared to retirees that are not lonely. This finding was supported by Mirkena et al, (2018) that found that retired older people were 4 times more likely to have depression compared to older working individuals (aOR = 3.94; 95% CI: 2.11, 7.35, $p<0.001$). This might be because the retired person may not have sufficient chance to meet with others to share ideas and feelings (Igbokwe et al, 2020). Other than that, they might feel isolated and lonely. In contrast, a several studies were found the older people who lived alone were likely to experience less loneliness as compared to those living with their families (Susanty et al, 2022; Mohebbi et al, 2019; Fatima et al, 2019; Kugbey et al, 2018). A potential reason could be the family members may not be attuned to the emotions need by the older people and less attentive to their needs.

A recent studies showed that the older people who had regularly attended to religious services is associated with higher levels of social integration, social support and associated with lower levels of loneliness (Chen, Kim & VanderWeele, 2020; Giebel et al, 2022). Older people engaging with religious attendance able to give and receive various types of social support, to engage in exchanges about the activities, other matters with their friends and engagement with social networking (Prasad, 2017). Loneliness negatively affects the quality-of-life health of older people. Aging changes in biologically that occur in advanced aged, which is increased health problems, decreasing functional and dependence in daily life. Moreover, some of characteristic in sociodemographic also associated to affect in quality of life and loneliness. Therefore, the aim of this study was to measure the prevalence of loneliness and to determine the associated factor among community dwelling older people at East Coast, Malaysia.

METHOD

A cross-sectional, door-to-door survey was conducted at a selected district in Kuala Terengganu, with a multi-layered stratification sampling method. The study duration was from December 2021 to July 2022. A total of 240 community-dwelling with aged more than 60 years old were agreed to participate in this study. An interview-based approach was applied using a validated questionnaire and consisted of several sections, namely sociodemographic, health status, cognitive factor, social support, functional factor and religious practice. Sociodemographic characteristics included age, gender, marital status, education level, living arrangement status, and monthly income. Furthermore, information on health status was obtained by asking participants whether they were suffering from several common chronic diseases.

The short UCLA Loneliness Scale (UCLA-8) which had reliability of 0.85 was used for assessing level of loneliness (Swami, 2009). Multidimensional Scale of Perceived Social Support (MSPSS) is a brief measure of social support perceived by individual. In term of reliability, MSPSS-M showed strong reliability with Cronbach's Alpha of *0.77 and 0.76* for Family-Significant Others and Friend subscale, respectively Hazwan et al, (2020).

Furthermore, information on health status was obtained by asking respondent whether were suffering from several common chronic disease. The Modified Barthel's Index (MBI) was used to measure the level of disability based on the Activities of Daily Living (ADL). (Sakinah et al, 2020). The IADL was used to assess patients' level of independence on seven instrumental activities. The Malay version was used for the both tools and have a good validity and realibity (Sakinah et al, 2020). Besides, the Malay version of Duke University Religion Index (DUREL) was used to measure the religious involvement in daily life with reliability 0.70 (Nurasikin et al, 2010).

A 15-item geriatric depression scale (GDS) with a reliability of 0.68 was used to assess the level of depressive symptoms among older people (Teh & Hasanah, 2004). A score of >5 indicated a high risk of suffering from depression symptoms. Meanwhile the cognitive status was assessed using Elderly Cognitive Assessment Questionnaires (ECAQ). It was validated in Singapore and use as routine screening among older people. Participant with score of 5 or less indicates cognitive impairment with "probable" dementia. The sensitivity is 85.3% and specificity 91.5% with Cronbach alpha 0.73 (Kua & Ko, 1992).

Statistical Package for the Social Sciences (SPSS) for windows, version 25.0, was utilized for data entry and analysis. Other than that, frequencies and percentages were calculated for demographic data and dependence status. Categorical data were summarized in actual numbers and percentages. The single logistic regression test was applied to determine significant value. The variables with a *p*-value of <0.05 at the multiple logistic regression were introduced into the multivariable model.

This study was approved by the International Islamic University of Malaysia (IIUM) Ethics Committee (reference number: IIUM/504/14/2/IREC 2022-003) and Mukim Officer. In addition, all participants were briefed about the study and asked to give permission with written informed consent before starting the interview. The confidentiality of the participant was assured.

The inclusion criteria for this study were 60 years and above, a Malaysian citizen, and living in the Kuala Terengganu district for a minimum period of 3 months. Meanwhile, the exclusion criteria were older people who reside in nursing homes or respite care and suffering from aphasia, deafness, and articulation disorders due to speech and communication difficulties. Also, the older people who known cases of dementia or psychotic disorder were excluded.

FINDINGS

A total of 240 participants agreed to participate in this study, giving a response rate of 100%. Table 1 shows the baseline profile of the participants, the age of the participant ranged from 60 to 105 years. Female participants accounted for a higher percentage (62%, n = 149) compared to male participants (38%, n = 91). Most of them were married (57%, n = 137), followed by widows (35%, n = 84), divorced (5%, n = 12) and single (3%, n = 7). Most participants received formal education (60%, n = 145) and at least attended primary school. Most of them were not working (53%, 126), living with their children (47%, n = 112), and their financial status was less than RM1000 (62%, n = 149). Most of the participants had been diagnosed with hypertension (68 %, n = 164), diabetes mellitus (45%, n = 109), hyperlipidaemia (33%, n=79) and non-smoker (93%, n=223). All the participants were Muslim and non-alcoholic (100%).

Table 2 presents the level of loneliness among Malay community-dwelling older people in Kuala Terengganu. The classification of loneliness level from normal to severe is graded by the UCLA Loneliness Scale (UCLA-8) score. The total prevalence of loneliness among participants was 33%. Among the participants reporting loneliness, 23% had mild symptoms, and 7% and 3%, respectively, had moderate and severe symptoms.

Table 3 portrayed variables that showed statistical significance (*p*-value <0.05) in single logistic regression and found that the elderly with age of 80 years and above who felt lonely (OR = 2.60; CI = 1.17; 5.80). The older people with the status of single, divorced, and widow (OR = 1.86; CI = 1.07; 3.21) had feeling of loneliness. Moreover, the loneliness was associated with the older people who were not received any formal education and primary level with result (OR = 0.60; CI = 3.51; 37.36) and (aOR = 0.55; CI = 2.43; 20.84) respectively. Also, the older people who are retired were significantly has loneliness (OR =1.94; CI =1.06; 3.53)

Furthermore, the older people who had cognitive impairment (OR =2.92; CI =1.52; 5.62), depressive symptoms (OR = 21.1; CI = 9.87;45.18) and poor of social support (OR =2.52; CI =1.45; 4.38) were found significantly with loneliness. In addition,

impaired in daily functional status in activity daily living (ADL) (OR =3.26; CI =1.85; 5.79) also were statistically significant with loneliness among older people. Furthermore, the older people with low score of religiosities (OR = 4.59; CI =1.66; 12.76) were significantly found to felt loneliness.

Table 4 demonstrates significant risk factors associated with level of loneliness among older people in community dwelling after controlling for confounders with forward elimination using a multiple logistic regression analysis model. This eliminates the variable that improved the model and repeats this process until no further improvement is possible to get the final set of independent risk factor variables for depression. Thus, in this study, the multivariate model revealed that the older people were received no any of formal education primary level for their education with result (aOR=11.46; CI =3.51; 37.37) and (aOR =7.12; CI =2.43; 20.84) respectively. Other than that, older people with depression symptoms (aOR=20.97; CI =9.80;44.89) and cognitive impairment were found significantly to have loneliness (aOR =2.31 CI =1.03;5.17). Moreover, the impaired functional status (aOR =2.18; CI =1.14;4.18), lack of social support (aOR =1.98; CI =1.06;3.68) and low on religiosity (aOR =4.06; CI =1.27;12.99) were found significant to experience loneliness among older people.

Table 1: Demographic Characteristics of The Participants (N= 240)

Characteristic	Frequency (n)	Percentage (%)
Gender		
Male	91	38
Female	149	62
Age group		
60-69	106	44
70-79	100	42
80 above	34	14
Marital status		
Married	137	57
Single	7	3
Widow(er)	84	35
Divorced	12	5
Education level		
No formal education	43	18
Primary	145	60
Secondary	36	15
Tertiary	16	7
Occupation		
Retired	89	37
Unemployed	126	53
Employed	25	10
Financial Status		
Less than RM1000	149	62
RM1000 - RM1900	71	29.5
RM2000 – Rm3900	18	7.5
RM 4000 - 5999	2	1
Living Status		
Living Alone	22	9
Nuclear Family	101	42
Living with Children	112	47
Living with Relative	5	2
Smoking		
Smoking	17	7

Table 2: The

Non-Smoking	223	93
Alcohol Intake		
Yes	None	None
No	240	100
Health Status		
Hypertension		
Yes	164	68
No	76	32
Diabetes Mellitus		
Yes	109	45
No	131	55
Hyperlipidemia		
Yes	79	33
No	161	67

Prevalence of Loneliness among Older People in Community-Dwelling

Classification	Frequency (n)	Percentage (%)
Normal	161	67
Mild loneliness	56	23
Moderate loneliness	16	7
Severe loneliness	7	3

Table 3: Factor Associated with Loneliness among Older People in Community-Dwelling using Simple Logistic Regression (N=240)

Variables	B	Crude OR	95% CI	Wald	df	*p*-value
Age						
70-79	0.50	1.65	0.91; 2.99	5.44	1	0.10
80 above	0.96	2.60	1.17; 5.80	1.29	1	**0.02**
Marital status						
Single	-0.62	1.86	1.07; 3.21	4.99	1	**0.03**
Educational level						
No formal education	2.44	11.45	3.51; 37.36	16.33	1	**>0.001**
Primary	1.96	7.12	2.43; 20.84	12.83	1	**>0.001**
Occupational						
Retired	0.66	1.94	1.06; 3.53	4.66	1	**0.03**
Unemployed	0.36	1.43	0.54; 3.77	0.55	1	0.46
Cognitive Impairment						
Cognitive Impaired	-1.07	2.92	1.52; 5.62	10.36	1	**0.001**
Depression symptoms						
Depress	-3.05	21.1	9.87; 45.18	61.74	1	**0.001**
Social Support						
Poor Social Support	-0.92	2.52	1.45; 4.38	10.69	1	**0.001**
Functional Status (ADL)						
Impaired ADL	1.18	3.26	1.85; 5.79	16.67	1	**0.001**
Functional Status (IADL)						
Impaired IADL	1.41	4.09	2.19; 7.63	19.67	1	**0.001**
Religiosity						
Low on religiosity	1.53	4.59	1.66; 12.76	8.64	1	**0.003**

CI = Confidence Interval

Table 4: Factor Associated with Loneliness among Elderly in Community-Dwelling using Multiple Logistic Regression (N=240)

Variables	B	AOR	95% CI	Wald	df	*p*-value

Educational level						
No formal education	2.438	11.46	3.51; 37.37	16.33	1	**0.001**
Primary	1.963	7.12	2.43; 20.84	12.83	1	**0.001**
Depression Symptoms						
Depress	-2.987	20.97	9.80; 44.89	61.45	1	**0.001**
Cognitive						
Cognitive Impaired	0.837	2.31	1.03; 5.17	4.14	1	**0.04**
Functional Status (ADL)						
ADL Impaired	0.779	2.18	1.14; 4.18	5.52	1	**0.01**
Social Support						
Lack of Social Support	0.640	1.98	1.06; 3.68	4.65	1	**0.031**
Religiosity						
Low on religiosity	-18.66	4.06	1.27; 12.99	5.59	1	**0.01**

Forward Multiple Logistic Regression model was applied.

DISCUSSION

This study aimed to identify the prevalence of loneliness and its associated factors among the older people at one of the districts at Terengganu. The prevalence of loneliness among older people in community dwelling was 33% as compared to the older people who admitted to the hospital (Nik Norliati Fitri & Suriati, 2016) and living at the rural area (Teh et al, 2014) which found 43% and 53% respectively. However, there was not a big discrepancy with the existing study as can conclude that the older people may experience loneliness despite the study settings were different.

Moreover, the multivariate model revealed that the older people were received no formal (aOR = 11.46; CI =3.51; 37.37) and primary (aOR = 7.12; CI =2.43; 20.84) education reported loneliness as compared to the older people who had secondary and tertiary level of education. Similarly with the community-based study at Europe which found the low educational level may increase the sense of loneliness (Fierloos et al, 2021). It could be due to the older people with a lower educational level might have less of social relations and tends to withdraw from the community, hence make them less opportunity to participate in any social activities.

Herein this study found that the older people with depression symptoms were 20.9-fold of loneliness compared to older people with no depression symptoms (aOR=20.97; CI=9.80; 44.89). The evidence was supported by Li et al. (2015), who reported that loneliness has the strongest association between older people with depression in the model, demonstrating that the older people who feel a higher degree of loneliness tend to become more depressed as well as other countries in Asia (Ashe & Routray, 2019; Song et al, 2019; Simkhada et al, 2018). Depression and loneliness are believed to be strong related due to physiological of depression symptom as result from prolong sadness and loneliness (Anand et al, 2019).

In addition, the older people with poor cognitive impairment are 2.3 more lonely compared to those who had good cognitive impairment (aOR=2.31; CI=1.03;5.17). It is significantly associated with loneliness in several studies. For example, a Canadian Longitudinal Study of Aging (CLSA) conducting study on the effect of loneliness on cognitive functioning among healthy individual in mid-and late adulthood revealed that the older people showed that perceived of loneliness at follow up predicted to lower level of time to recall and execute in the future (Kyröläinen & Kuperman, 2021). Also the another study done by Lara et al, (2019) had a similar finding which is loneliness is related to lower scores in the composite cognitive score, immediate and delayed

recall, verbal fluency and backward digit span and with a more rapid decline from baseline to follow-up in the composite cognition score and backward digit span. Furthermore, social isolation was found in association with lower scores in composite cognitive score, verbal fluency and forward digit span but not with a faster rate of decline at three-year follow-up Loneliness and social isolation may represent a risk factor for cognitive decline due to biological effect of ageing and additional of factor social isolation can lead to loneliness and unhealthy behaviours such as poor physical activity or unhealthy diet may result to underlying neuropathy leading to dementia (Lara et al, 2019).

Apart from that, the older people who is suffering from impaired functional status were 2.1-fold of loneliness compared to older people with good functional status in ADL (aOR=2.18; CI=1.14;4.18). Basic daily activity was also decline with biological effect of ageing and combine cognitive impairment and depression symptom (Deepashini et al, 2020). As a result the older people with these condition was limited to involved in daily activity and an inability to move out from home due to limited mobility (Manandhar et al, 2019). Overtime, the elderly with impaired daily function will tend to have negative emotions such as social isolation (Shao et al, 2017).

Lack of social support were factors associated with loneliness due to experiences of adverse life events such as losing their spouse and close friend. As a result, they lack companionship and family support (Siti Zuhaida et al, 2021). Other than that, the reduced presence of a family member, a close friend and significant other might cause a lack of opportunity to interact with each other to share their feeling and think supportive interaction, leading to loneliness (Nik Norliati Fitri & Suriati, 2016). In the current study the older people who receive poor of social support were 1.98 folded to have a loneliness (aOR =1.98; CI =1.06; 3.68).

Furthermore, in this study also reported that the older people with less involving religiosity activity either individual or group activities were more significantly with loneliness (aOR=4.06; CI=1.27;12.99). Similarly with previous study by Prasad (2017) reported that the older people with high on loneliness has a lower score on religiosity activity significantly had a loneliness. It is suggested that the older people who less engage with the religious activity may feelings self-guilty to themselves due to lack of involving in religious teachings or activities. Whereas, the older people who had regularly attended to religious teachings and activities is associated with higher levels of social integration, social support and associated with lower levels of loneliness (Dunbar, 2021; Taylor, 2020). Older people engaging with religious attendance able to give and receive various types of social support, to engage in exchanges about the worship activities and other matters with their friends. These value and belief able to combat loneliness from occur among older people in community dwelling.

The strengths of this study include a high response rate (100%) sufficient to detect the prevalence of the variables of interest and a strong methodology and use of trained enumerators for data collection. Also, the researcher was using a multidimensional of variables to explore the associated factor of loneliness among older people in community-dwelling. Unfortunately, the cross-sectional study design is unable to evaluate the causation. Nevertheless, these data can be used as a benchmark and preliminary data in establishment of intervention strategies to prevent loneliness. Thus, the finding may help to build evidence-based data for strengthening health promotion

activities and help the community to design nursing program for older people to combat loneliness.

CONCLUSION

The prevalence of loneliness in this study was moderate compared to previous study in Malaysia. The older people who are receive no formal education and primary level education, suffering from depression symptom, cognitive impairment, impaired in ADL, lack of social support and low practicing in religiosity might contribute to development of loneliness. This study is important to healthcare institutions in Malaysia that aim to understand and develop ways to reduce loneliness among the growing population of older people to prevent further clinical symptoms of depression. Because loneliness may lead to isolation and despair, possibly leading to depression and even worst a suicidal death if untreated.

A Conflict of Interest

The authors declared no potential conflict of interests with respect to the research, authorship, and/or publication of this paper.

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