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Evaluating the role of residence affecting the mental health among elderly populations in Malaysia: A cross-sectional study

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Abstract:

BACKGROUND: According to the perception of majority of people, especially the elderly, it is believed that elderly people who are sent to old-age homes are more prone to have depression compared to those who are living with the community. This study was aimed to assess the significance of the place of residence in relation to the presence of depression among the elderly.

MATERIALS AND METHODS: A cross-sectional descriptive study was conducted between March and August 2020 to assess the depression among the elderly population residing in the Muar district, of Malaysia. A random table was generated of 250 house numbers in Muar where there is at least one geriatric person was living and a random sampling method was used for data collection. A questionnaire was distributed to a sample size of 250 old folks of Muar: those residing in old-age homes ($n = 125$) and those residing in their own houses ($n = 125$). A standard sociodemographic and geriatric depression scale interview was employed for data collection. All details were keyed into the SPSS version 22 software Standard Gradpack 23, and simple description and inferential statistics such as mean, median mode, percentages, and Chi-square tests were performed to compare the effects of different residences toward the mental health of the elderly.

RESULTS: The total mean age of the elderly in both the places was 73.06 ± 9.116 years. Female respondents of this research accounted for 52.8%. In terms of religion, Islam had the highest number of respondents of 46.8%, followed by Buddhist (33.6%), Christian (10.8%), and Hindu (8.8%). The percentage of elderly having more than three children was 45.2%. The marital status and employment status of the elderly in Muar area are mostly widowed (40.8%) and retired (50%). They are predominately literate (81.6%) and most have a monthly income less than RM 2000 (90.8%). We found that the prevalence rate of depression was 70.4% in the elderly residing in old-age homes and 24.8% in the elderly living in the community. Females had a higher prevalence of depression than males (60.2% vs. 39.8%) among the elderly in old-age homes, whereas males had a higher prevalence in the community than females (51.6% vs. 48.4%). Logistic regression analysis revealed the place of residence ($P < 0.01$) and employment status ($P = 0.011$) as the predictors of depression.

CONCLUSION: Results of this study revealed that the high prevalence rate of depression among the elderly is in old-age homes compared to elderly living in the community.

Keywords:

Community health, depression, elderly, geriatric assessment, homes for the aged

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Introduction

Globally, the world's population is aging rapidly. The World Health Organization states that people 60 years of age and above are considered elderly.^[1] Increasing proportion of elderly within a population is referred to as population aging. Between 2015 and 2050, the proportion of the world's elderly is estimated to almost double from about 12% to 22%.^[1] In anticipation of this shift in population demographics, this process is exposing the old people to a higher risk of developing mental disorders, neurological disorders, or substance use problems.^[2]

Mental health and well-being of the elderly are the main things to be considered during the process compared to any other time of life. In Asian countries, the prevalence of geriatric depressive disorders is in the range of 12%–34%, for example, in countries such as Sri Lanka, Indonesia, Japan, Vietnam, India, and Malaysia, whereby the percentages were found to be 27.8%, 33.8%, 30.3%, 17.2%, 12.7%, and 27.8%, respectively.^[3] Depression is the most common psychiatric disorder in the elderly; however, it is commonly misdiagnosed and undertreated. The untreated elderly patients have significant clinical and social implications, as these disorders decrease an individual's quality of life and increase dependence on others.^[4] Some of the elderly think that the depressive symptoms are part of aging instead of a treatable condition; thus, this is one of the reasons for the misdiagnosis and undertreatment of depressive disorders in the elderly.^[5] One of the implications is the increase in health-care cost and mortality which is a serious public health problem worldwide related to the geriatric depressive disorder.^[6]

According to the perception of majority of people, especially the elderly, it is believed that elderly people who are sent to the old-age home (a multi-residence housing facility intended for the elderly) are more prone to depression compared to those who are living with the community.^[6]

In relation to that, elderly people who are sent to the old-age home hold on to the stigma that they are not appreciated and are neglected by their children.^[7]

Along with the perception, the stigma is well proved by most of the journals in which research is published on the effects of different places of residence on the level of depression among the elderly. A study in one of the journals reported that the prevalence of depression was high among inmates of old-age homes (80%) compared to those living in the community (52%).^[8] However, very little is known about the prevalence of depression among the inmates of old-age homes

compared to those living in the community in Malaysia where sending old persons to the old-age homes is quite common due to increase in nuclear family and rapid urbanization.

Meanwhile, the number of elderlies being sent to old-age home is increasing with time. Hence, this study was undertaken, involving a total number of 250 respondents of the age 60 years and above, to justify and compare the depression level among elderly residing in old-age homes and those living in the community.

By assessing the sociodemographic among them, the independent variables can be determined which can be the predictors that will lead to assessment of depression in people living in old-age homes and those living in the community.

Thus, the study will help in taking necessary actions and implementing corrective measures for the betterment of the targeted community so that the level of depression among them can be reduced.

The objectives of the study were (1) to determine the association of the depression level among elderly people in the community and old-folks home in Johor, (2) to measure the prevalence of depression among elderly people, and (3) to know the main predictors that will lead to depression.

Materials and Methods

Study design and setting

A cross-sectional descriptive study was conducted from March to August 2020 to assess the depression among the elderly population residing in the Muar district, of Malaysia. This study design was chosen so that we as observers could reach out to as many respondents as possible needed for our research in a short period of time. Also, it enables respondents to answer many questions rapidly, and in addition, it simplifies the analysis and interpretation of data. Last but not the least, it has a low cost and is effective.

Sample size

Our total geriatric population was 700, with 95% confidence interval and 5% margin of error our sample size came around 249 using the formula $N = Z^2P(1 - P)/d^2$; however, we took 250 as our final sample size.

Study participants and sampling

A random table was generated of 250 house numbers in Muar where there is at least one geriatric person was living and a random sampling method was used for data collection.

Data collection

The principal investigator visited house to house for the data collection by using a questionnaire – Geriatric Depression Scale (GDS). The individuals who were above 60 years of age, not seriously ill or bedridden, not completely dependent, not under the treatment of any serious physical and mental disorders and who were able to give informed written consent were included for this research. We excluded <60 years individuals, seriously ill, undertaking treatment for mental illness, and bedridden persons in our study. A questionnaire was distributed to a sample size of 250 old folks of Muar: those residing in old-age homes ($n = 125$) and those residing in their own houses ($n = 125$).

We selected the population of elderly in Muar because it is an area within our reach.

The study tool was a self-designed, pre-texted semi-structured questionnaire consisting of questions related to sociodemographic factors such as residence, age, monthly income, marital status, level of education, and family status.

Advantages of this questionnaire, if sample sizes are large enough, are that it enables to differentiate between different subgroups and helps in determining whether the target audience are reached or not. Our selected research design used the GDS, which is a short 15-item questionnaire (1986) translated to the local language to figure out the feelings of the old folks by getting them to answer yes or no. Of the 15 questions, 10 positive answers and 5 negative answers show the occurrence of depression. Scores from 0–4 was categorized as normal, 5–8 was categorized as mild depression, 9–11 was categorized as moderate depression, and 12–15 was categorized as severe depression.^[9-11]

One of the advantages of using this tool is that it can be easily used by physically ill and mild/moderately demented patients who have short attention span or those who get easily fatigued. Also, it takes only 5–7 min to complete.

According to the content validity index (CVI), a rating of three or four indicates that the content is valid and consistent with the conceptual framework (Lynn 1996). All the items were valid with the CVIs ranging from 0.8 (4/5) to 1.0 (5/5) and were retained.

All respondents rated each parameter at 3 or 4 on a Likert scale of strongly agree 1, agree 2, and somehow agree 3 to disagree 4. Ninety-six percent of the respondents indicated that they understood the questions and found them easy to answer and 93% of them indicated that the appearance and layout would be acceptable to the intended target audience.

Cronbach's alpha was computed and revealed a value of 0.887 which indicated a high correlation between the items and the questionnaire and was consistently reliable.

All the data received were kept in a personal laptop. All details were keyed into the Statistical Package for the Social Sciences, version 21.0 Armonk, New York, USA 2012, and the measures were interpreted and processed to determine the results. Simple description and inferential statistics such as mean, median mode, percentages, and Chi-square tests were performed to compare the effects of different residences toward the mental health of the elderly.

Ethical consideration

For conducting this study, ethical clearance was obtained from the Institute Ethical Committee (INT/IEC/2020/293) of Asia Metropolitan University, Johor, Malaysia.

Results

The community impression of old-age homes has not changed since it was introduced. The community believes that sending elderly people to old-age homes can cause severe depression among the elderly. Thus, the main objective of this study was to study the significance of the place of residence in relation to the presence of depression among the elderly. This study is devoted to the aid of the elderly, considering that mental health plays an important role in the well-being and quality of life of the elderly.

Table 1 shows the frequency and percentage of the sociodemographic characteristics of the respondents. The total number of elderlies from an old-age home and community was 250, 125 from each place. The total mean age of the elderly in both the places was 73.06 years (standard deviation [SD] 9.116), where respondents were mostly from the age group of 60–80 years.

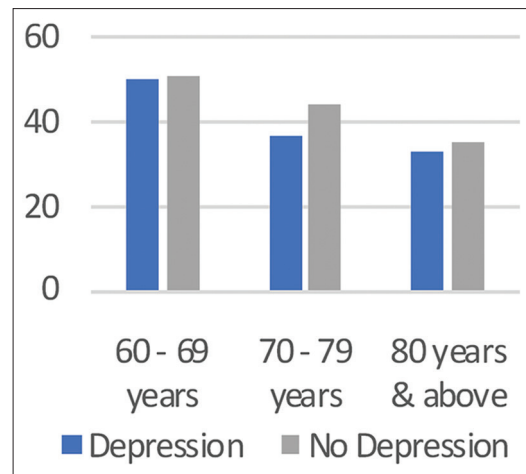
Figure 1 shows the frequency of depression level among the elderly based on their age. The attrition of the elderly in the community was mostly cooperative with less difficulty. However, the attrition of the elderly participants has its stumbling blocks and hardships. This is since most of the elderly participants in old-age homes are bedridden and have difficulty in speaking and understanding the questions, but these issues can be overcome with some effort. The duration of recruitment of the data collection was about 5 min for the elderly living in the community and 10–15 min for the elderly in old-age homes. Female respondents of this research accounted for 52.8% of the results and the rest

Table 1: Frequency and percentage of sociodemographic characteristics of respondents

Variables	Categories	Frequency (%)
Age (years)	Mean age±SD	73.06±9.116
	60-69	101 (40.4)
	70-79	81 (32.4)
	>80	68 (27.2)
Gender	Male	118 (47.2)
	Female	132 (52.8)
Religion	Islam	117 (46.8)
	Buddhist	84 (33.6)
	Hindu	22 (8.8)
	Christian	27 (10.8)
	Others	0
Race	Malay	113 (45.2)
	Chinese	103 (41.2)
	Indian	34 (13.6)
Residence	Community	125 (50)
	Old-age home	125 (50)
Number children	<3	137 (54.8)
	>3	113 (45.2)
Marital status	Single	26 (10.4)
	Married	96 (38.4)
	Widowed	102 (40.8)
	Divorced	26 (10.4)
Employment status	Employed	21 (8.4)
	Unemployed	104 (41.6)
	Retired	125 (50)
Level of education	Literate	204 (81.6)
	Illiterate	46 (18.4)
Monthly income	Mean income	
	<RM 2000	227 (90.8)
	RM 2000-5000	11 (4.4)
	>RM	12 (4.8)

SD=Standard deviation

were males (47.2%). In terms of religion, Islam had the highest number of respondents of 46.8%, followed by Buddhist (33.6%), Christian (10.8%), and Hindu (8.8%). The respondents were Malay (45.2%), Chinese (41.2%), and Indians (13.6%). The difference in the number of children these elderly people have varied by a narrow margin; the percentage of elderly having three or fewer children was 54.8%, and the percentage of elderly having more than three children was 45.2%. The marital status and employment status of the elderly in Muar area are mostly widowed (40.8%) and retired (50%). They are predominately literate (81.6%) and most have a monthly income less than RM 2000 (90.8%). We used the Chi-square test to compare the sociodemographic characteristics such as education, marital status, religion, and others between the two groups, i.e., the elderly people in the community and old-folks home. However, no statistically significant difference was observed in any of the sociodemographic variables between the two groups.

**Figure 1:** Frequency of depression level among the elderly based on age

The prevalence rate of depression among elderly people was higher in elderly who lived in old-age homes (70.4%) compared to elderly who lived in the community (24.8%), as shown in Figures 2 and 3.

In terms of gender distribution, the prevalence of depression among the elderly people in the community was found to be high among males which accounted for 51.6% compared to female elderly, which was 48.4%. In relation to that, the prevalence of depression in the elderly in old-age homes was high in female (60.2%), rather than in male elderly (39.8%), as shown in Table 1.

In terms of gender distribution, the prevalence of depression among the elderly people in the community was found to be high among males which accounted for 51.6% compared to female elderly, which was 48.4%. In relation to that, the prevalence of depression in the elderly in old-age homes was high in female (60.2%), rather than in male elderly (39.8%), as shown in Table 1.

Discussion

The salient interpretations of the present study are discussed here. The aim of the study was to assess the significance of the place of residence in relation to the presence of depression among elderly people in the community and an old-folks home in Muar, Johor. The study was conducted more specifically to measure the prevalence of depression among elderly people in these two places, to know the sociodemographic factors that lead to depression, and the prevalence of depression among the elderly people based on their gender and place of residence. In the study, the prevalence rate of depression was higher in the elderly who lived in old-age homes (70.4%) compared to the elderly who lived on their own (24.8%). Therefore, this supports our hypothesis, justifying that elderly residing in old-age homes are more depressed compared to the elderly

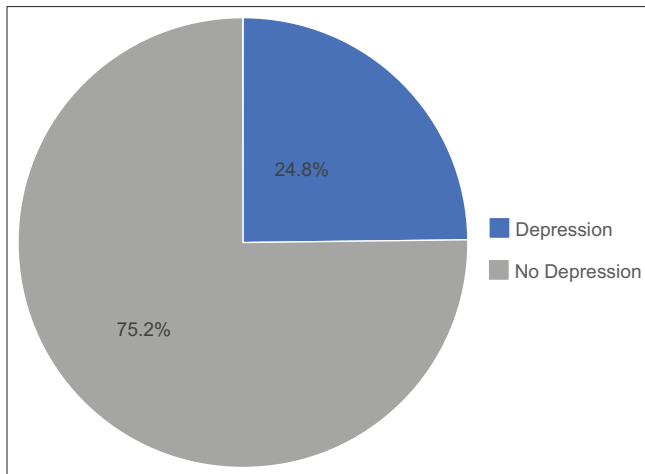


Figure 2: Prevalence rate of depression among elderly people living in the community

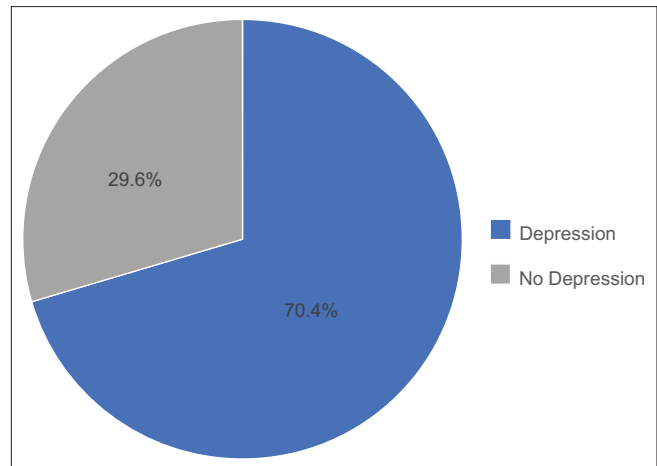


Figure 3: Prevalence rate of depression among elderly people living in an old-age home

residing in the community, proving that the place of residence is highly significant in relation to the presence of depression in the elderly.

Overall, the findings of the study were like the study conducted by Rashid *et al.*^[9] The study shows that 52.73% of elderly living in old-age homes have depression compared to 25.45% of elderly living in the community, which is not very different from our findings that show 70.4% of elderly living in old-age homes have depression compared to 24.8% of elderly living in the community. However, in a similar study by Lyness *et al.*,^[12] it was proven that there was no significant difference ($P = 0.686 > 0.05$ level of significance [l.o.s.]) observed between the two groups regarding the level of depression. This difference could be due to the location where the research was done. Our study was done in a humble location in Johor, Muar, whereas the study by Sagare *et al.*^[12] was conducted in India.

The prevalence of depression among the elderly people by their gender and place of residence was proven nonsignificant ($P = 0.241$). Even though this matches the study done by Ghimire *et al.*,^[8] the percentages of each gender in old-age homes vary, whereby the elderly males living in the old-age home in Muar, Johor (39.8%), are more depressed than the elderly males living in the old-age home in Kathmandu, Nepal (6.9%). This may be because the elderly living in old-folks home reportedly mentioned that they used to be active in their youth time living in their own houses with their children; however, once they were placed in the old-age homes, their passion to continue the activities and interests significantly decreased, causing them to be depressed.^[13]

On comparing the association between sociodemographic factors and depression among the elderly residing in community and old-age homes, with a few studies, we

have discovered that the factors found to be significantly associated with depression among the elderly were place of residence and employment status. Meanwhile, the nonsignificant factors were age, gender, religion, race, number of children, marital status, educational level, and finally, monthly income. The mean age of the elderly among the respondents was 73.06 (SD; 9.116).

Once the age group was categorized into 60–69, 70–79, and 80 and above, it was found that elderly aged 60–69 were more depressed comprising 20%, which is almost similar (27.5%) to a study done by Marx *et al.*^[14] This points out that early-phase elderhood seems to be a challenge for them to handle depression as they are still adapting and are not ready to face the fear that comes along with further aging such as fear of memory loss and fear of death.^[15] These findings were completely in contrast to a study conducted by Qiu *et al.*^[7] where the depression level among the elderly aged above 80 was the highest compared to the elderly aged below 80, yet statistically no significant difference was seen in both the studies in relation to age groups and depression.^[7]

The depression level among the elderly females (52.8%) is more than the elderly males (47.2%) in Muar; this is in accordance with a study by Mohd. Sidik *et al.*^[17] where it was found that elderly females were thrice more depressed than elderly men. This could be explained by the fact that a widower often remarries, but widows tend to maintain their widowhood.^[17] Loss of income and changes in living environment were also experienced by elderly women once they are widowed.^[18] The situation is even worse in elderly women residing in developing countries as they are financially dependent on their spouses and they usually come from the lower socioeconomic group.^[19] Marriage has been shown to be a protective factor against depression in the elderly.^[20]

Our study shows that there is no significant difference between religion ($P = 0.967$) and race ($P = 0.480$) in relation to depression. Findings of the present study show that the Chinese have the highest depression rate (24%) among other races. This study is supported by a research that found that the Chinese were more likely to be depressed compared to the Malays.^[21] Even though the statistics show that the number of Malays residing in Muar outnumbered the Chinese, the depression rate among the Malay elderly is lower (18.8%). This might be because Malays in Malaysia are mostly Islamic where in their religion it is stated that the Holy Qur'an forbids Muslims from sending their older adults to geriatric care facilities. Islam mandates that older people in the community, particularly parents, should be treated with respect.^[22] Consequently, sending older adults to old-age homes may represent unfulfilled spiritual and cultural obligations, which, in turn, may elicit feelings of despair.^[23] On top of that, our findings are backed up by the recent study conducted by A. Mustaqim where he found that depression was more frequently present among the non-Malays, compared to the Malays.^[24]

The number of children affects the size of a family. Hence, a study shows that the bigger the size of the family, the depression rate of the elderly in that family decreases.^[8] Furthermore, in countries like India and Nepal, it is very common that the depression rate in joint families is lower as the children, siblings of the elderly, and cousins all live under one roof making it less lonely for the elderly in their homes.^[25] Our study in Muar also shows that elderly who have <3 children (27.6%) are more depressed, justifying that the smaller the family size, the more depressed the elderly in that family will be. Having family members who care for their elderly has been found to be a protective factor against depression.^[26]

Employment enhances one's self-confidence and self-esteem, empowers people to have control over their future, and makes an individual feel like a valuable member of a community.^[27] Based on our study, a total of 5.2% of the elderly are employed, 22.8% unemployed, and 20% are retired. It can be observed that those who are retired and unemployed are significantly depressed. Although retirees have pension money^[28] as an income, it is apparent that when the elderly are not actively working, they fall into depression.^[13] In the study conducted by Rashid *et al.*,^[29] the elderly who were unemployed were at a higher risk of having depression. The present study found a significant association between depression and employment status with $P = 0.011$. This also matches with the recent study conducted in a rural community in Malaysia where the prevalence of depression was significantly higher among the elderly who are unemployed compared to those still employed.^[24]

In Muar, the elderly are generally less well-off financially compared to the rest of the adult population as a result of their inability to earn, and those with low income have been shown to have depressive symptoms.^[30] The elderly depend on their pension saving, investments, or even money from their children to meet their financial needs, which include seeking health care;^[31] thus, when these are not met, it results in depression. A variation in the amount of income received, categorically, <RM 2000, RM 2000 to RM5000, and > RM 5000, also affects their mental health by 43.6%, 2%, and 2.4%, respectively, in our study. This shows that people with an income of less than RM 2000 are highly depressed, however, not significantly. In the present study, the mean of the monthly income is higher (RM 574.44) than the mean monthly income of two other studies among the elderly in Malaysia where the mean monthly income was RM 300 and RM 150.^[20] Similarly, other studies conducted in clinical settings in Malaysia have shown that the elderly who were satisfied with their income were less likely to be depressed.^[16]

In the previous study, the elderly with no formal education were eight times more likely to be depressed compared to those with formal education.^[16] However, our study shows that the literate elderly is more depressed (37.6%) than the illiterate (10.4%) this is the novelty of our study findings. This may be because majority of the literate elderly mostly obtained primary education. Hence, even though they may be literate, education that they received was not sufficient enough to allow them to be aware of the fact that the mental illness that they face causes them to think that it is a part of the process of aging, thus making them fall into the vicious cycle of depression.^[15]

Limitation and recommendation

Short study duration and small sample size were major limitations. In addition, it was conducted in a single district so that findings cannot be generalized for that, and a country level survey. For future recommendations, providing education and training on important issues, such as the aging process, risk factors impacting depressive symptoms, and mental health in the aging population will be helpful to tackle depression among the elderly, in addition, emphasize the importance of prioritizing the evaluation of mental health in the elderly residing in old-age homes who do not get frequently visited, as well as recommend to increase the institutional support services, such as mental health counseling to them.

Conclusion

Depression is more common among the elderly residing in old-age homes than those living in the community.

Depression is more prevalent among elders with no employment and those who stay in old-age homes. It is also more prevalent among elderly women than in men. Addressing these issues may contribute to improve the quality of life for the elderly and decrease the depression level among them.

Future research in which the DASS-21 is compared against a standard diagnostic instrument for common mental health disorders would be helpful in confirming its validity for use among the respondents. Revision of items or even substitution of new items specific to these constructs among the elderly should be considered in such research.^[32] The implications of this study are noted as recommendations for health professionals serving the elderly population. More specifically, the researchers recommend providing education and training on important issues, such as the aging process, risk factors impacting depressive symptoms, and mental health in the aging population. In addition, they emphasize the importance of prioritizing the evaluation of mental health in the elderly residing in nursing homes who do not get visited, as well as increasing institutional support services.^[33] The social support of local communities and the support of the families of the elderly living in their homes appear to be of paramount importance.^[32] We recommend the use of a total DASS-21 score to represent symptoms of general distress when applied among the targeted respondents.^[34-36]

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Conflicts of interest

There are no conflicts of interest.

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