Prevalence and Factors Associated With Cognitive Impairment Among Older People Living In Old Folk Homes, Malaysia

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ABSTRACT

Introduction: Cognitive impairment is common among older people living in old folk homes due to several factors including the aging process and moving to unfamiliar places. The present study aimed to explore the prevalence rates and factors associated with cognitive impairment in older people living in old folk homes RACF. **Methods**: A cross-sectional study was conducted on 167 older people aged 60 years and over living in two old folk homes in Malaysia. A questionnaire consists of three parts; sociodemographic background, University of California, Los Angeles (UCLA) Loneliness Scale, and Elderly Cognitive Assessment Questionnaire (ECAQ) was used for data collection. **Results**: It was found that 49.1% of older people in this study found having cognitive impairment. There was a significant relationship between age ($p = 0.02$) and marital status ($p = 0.02$) with cognitive impairment. This study also found that there was a strong negative correlation between loneliness and cognitive impairment ($r = -0.78$, $p = 0.001$). **Conclusion**: The prevalence of cognitive impairment is considered high among older people living in old folk homes. Age, marital status, and loneliness were found associated with cognitive impairment among older people living in old folk homes. Future studies should emphasize these factors to reduce the risks of cognitive impairment among older people living in old folk homes.

Keywords: Cognitive impairment, Old folk home, Older people

INTRODUCTION

With the increasing age, older people experience a lot of changes either in physical or psychological abilities. One of the common age-related changes in older people is psychological changes such as reduced cognitive abilities or cognitive impairment. Cognitive impairment is defined as 'a change in cognitive abilities that are distinct from aging but do not represent dementia'(1). It was reported that increasing age (2–4), female (2), being single (2,4), lack of formal education (2–4), high blood pressure and diabetes (2,3) were significantly associated with cognitive impairment among older people. A living arrangement such as living in an old folk home was also found to be associated with cognitive impairment (5).

The prevalence rates of cognitive impairment in older people living in old folk homes were considered high. A study in Brazil found that the prevalence rate of cognitive impairment among older people living in old folk homes was 27.6% (6). Another study found that 65.2% of older people living in RACFs in Poland having a cognitive impairment (7). The prevalence rate of cognitive impairment was also reported higher in old folk homes (42.4%) than in the communities (5.3%) (8). The high prevalence rates might be due to the relocation of older people from their homes to old folk homes voluntarily as a result of having a cognitive impairment (8) or being involuntarily moved to old folk homes that can increase the likelihood to develop cognitive impairment (9).

There are limited studies on the factors associated with cognitive impairment among older people living in old folk homes in Malaysia. The available evidence was from previous studies conducted in developed countries (9). It was reported older age

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was found significantly correlated with cognitive impairment among older people living in old folk homes in China(8). To date, there was a limited study on the association between gender and marital status with cognitive impairment among older people living in old folk homes. Previous studies involving older people living in the community found that there was an association between marital status and cognitive impairment (10,11). A study involved older people living in the community showed that married persons were less to suffer from dementia than those who are divorced, separated, or single persons (10,11). Sharing one's life with a spouse may result in stimulating brain activity and the growth of neurons. This could cause a lower rate of cognitive decline for married persons (10). A previous study found that there was a significant association between gender and cognitive impairment (12). Severe loneliness was found strongly linked to poorer cognitive function in older people (13). Little is known about cognitive impairment and it is not clear what factors are associated with cognitive impairment among older people living in old folk homes in Malaysia. Therefore, the present study aimed to determine the risk factors associated with cognitive impairment in older people living in old folk homes in Malaysia.

MATERIAL AND METHODS

A cross-sectional design was conducted from March 2019 to April 2019 on 167 older people aged 60 years old and over from the two old folk homes in Malaysia. The participants were selected by convenience sampling. Firstly, the researcher provided the potential participants at old folk homes with the participant information sheet and consent form. The questionnaire is self-administered by the participants who can answer the questions by themselves. The researcher assisted the participants who were illiterate or needs assistance to complete the questionnaire. The inclusion criteria for this study were those who have sufficient command of Malay or English language. Those with a diagnosis of psychiatric disorders such as Alzheimer's disease and schizophrenia were excluded from this study due to ensure data validity. The duration of data collection for each participant was between 10 to 15 minutes.

The questionnaires consist of three parts which are Part A, Part B, and Part C. Part A: Sociodemographic background comprises of age, gender, race, marital status, and health status. Part B contains University of California, Los Angeles (UCLA) Loneliness Scale that measures loneliness (14). The scale consists of 20 statements related to loneliness. The statement was rated as either, "Never", "Rarely", "Sometimes" or "Often". Each item has its own score; never = 1, rarely = 2, sometimes = 3 and often = 4. The total score of the scale is 20 to 80 points with no identified cut-off score; however, increasing scores show increased levels of loneliness. The reliability of UCLA loneliness scale was found strong, = 0.89 – 0.94 (14). Part C consists of Elderly Cognitive Assessment Questionnaire (ECAQ) that was adapted from Mini-Mental State Examination and Geriatric Mental State Schedule (15) to measure cognitive level among older people. The ECAQ scale contains 10 items grouped under three categories: memory (3 items), orientation (6 items), and memory recall (1 item). Each item has a weightage of one mark for a correct response. The score 0 to 4 indicates cognitive impairment with probable dementia, 5 to 6 indicates borderline case and more than 7 indicates normal cognitive levels (15). The Cronbach alpha of the ECAQ scale was 0.73 indicate the reliability of the scale is acceptable (15). A pilot study was conducted for UCLA and ECAQ scale and it was found a high internal consistency for both scales with Cronbach's alpha of 0.81 and 0.86 respectively.

Data analysis was performed by using IBM Statistical Social Science (SPSS) version 20.0. For descriptive analysis, the data were presented as frequency and percentage. For inferential analysis, One-way ANOVA was performed to determine the association between sociodemographic background and cognitive impairment. The differences between means were examined with the Bonferroni post hoc test. The Independent t-test was used for the association between gender and cognitive impairment. Pearson's correlation test was performed to measure the correlation between loneliness and cognitive impairment. Ethical clearance was granted from the International Islamic University Malaysia Ethics Committee (IREC) (IIUM/313/C/20/4/10) and the Social Welfare Department (JKMM 100/12/5/2: 2019/077).

RESULTS

Socio-demographic background

Table 1 shows the sociodemographic background of the participants involved in this study. The highest age group belongs to the young-old age group (60-65) with a percentage of 50.3 %. The proportion of female participants (53.3%) was a bit higher than the male participants. Most of the participants were Malays (62.9%). For marital status, the majority of participants were single

(32.3%), followed by divorce (29.3%), widow or widower (25.7%), and married (12.6%). It was also found that the majority of the participants are at least having one illness (41.9%).

Table 1: Sociodemographic background

		Frequency (n=167)	Percentage (%)
Age	60-65 66-70 71 and over	84 60 23	50.3 35.9 13.8
Gender	Male Female	78 89	46.7 53.3
Race	Malay	105	62.9
	Chinese	28	16.8
	Indian	34	20.4
Marital status	Married	21	12.6
	Single	54	32.3
	Divorced	49	29.3
	Widow/ widower	43	25.7
Health status	None One illness More than one illness	50 70 47	29.9 41.9 28.1

Loneliness in older people

It was found that the total mean scores of loneliness in this study were 61.22 ± 12.83.

Cognitive impairment in older people

The total mean scores of cognitive impairments in older people were 4.1 ± 2.67. The result indicates 49.1% (n = 82) older people experience probable case of cognitive impairment, 29.3% (n = 49) achieve borderline marks of cognitive scale score, and 21.6% (N=36) experience normal cognitive level.

Association between sociodemographic background and cognitive impairment

Table 2 shows the association between sociodemographic background and cognitive impairment. It was found that age [F (3,163) = 3.55, p=0.02] and marital status [F (3,163) = 3.55, p=0.02] were significantly associated with cognitive impairment. Post hoc test found that only the age group of 66 to 70 years old was significantly different from those in the age group of 71 years old and over (p = 0.02). Post-hoc test for marital status found that only a single group was significantly different from those in the married group (p = 0.04). Conversely, it was found that there were no significant associations between gender [t (165) = 0.34, p=0.9], race [F (2,164) = 3.0, p= 0.05], having illness [F (2,164) = 0.73, p=0.49] and cognitive impairment.

Table 2: The association between sociodemographic background and cognitive impairment

Variables		Mean (SD)	*P*-value
Age	60 to 65 years old	4.06 (2.55)	0.02*
	66 to 70 years old	3.67 (2.35)	
	71 years old and over	5.39 (2.82)	
Gender	Male	4.13 (2.55)	0.9
	Female	4.08 (2.6)	
Race	Malay	4.45 (2.61)	0.05
	Chinese	3.82 (2.33)	
	Indian	3.26 (2.45)	
Marital status	Single	3.33 (2.39)	0.02*
	Married	5.10 (2.51)	
	Divorce	4.02 (2.62)	
	Widow/ widower	4.67(2.53)	
Having a health problem	None	4.30 (2.58)	0.49
	1 illness	4.21 (2.56)	
	2+ illness	3.72 (2.58)	

*statistically significant, p<0.05

Association between loneliness and cognitive impairment in older people

It was found that there was a strong negative correlation between cognitive impairment and loneliness in older people [r= -0.78, n= 167, p=0.001].

DISCUSSION

Generally, it was found that 49.1% of participants in this study reported cognitive impairment. The finding is within the range of 27.6% to 62.5% based on previous studies (6–8). The high prevalence rate of cognitive impairment in this study was not surprising as previous studies have shown that older people are prone to develop cognitive impairment. The aging process causes the older people to experience a decline in cognitive function. For older people living in the old folk homes, they may have a similar routine every day which means their activities less stimulate their cognitive function and can lead to cognitive decline (6).

The finding showed that age was correlated with cognitive impairment. The result was congruent with previous studies posited that there was an

association between older age and cognitive impairment (8,16). Most of the participants in this study were from the young-old group in which below than 70-year-old (86.2%). This is because according to Malaysian statistics, life expectancy is in 77 years for women and 72 for men (17). The study also showed that those in the older age group (more than 70-year-old) were more likely to get cognitive impairment than those in the younger age group (60 to 65-year-old). This indicates that there is a decrease in cognitive function with increasing age.

Similarly, it was found that there was an association between marital status and cognitive impairment, which consistent with previous studies (10,11). This study further found that those who were in the single group reported more cognitive impairment than those who were married in which similar with previous studies (10,11). Other sociodemographic factors such as gender, race, and health status were found no significant association with cognitive impairment. The findings were not consistent with previous study (12) due to the different geographical locations and characteristics of the study participants. Despite chronic diseases such as hypertension and diabetes mellitus type II were reported to be associated factors for the development of cognitive impairment (18), it was found that there was no significant association between chronic disease and cognitive impairment.

The results also showed that there was a significant correlation between loneliness and cognitive impairment. It was found that an increase in loneliness indicates a decrease in cognitive level in older people and vice versa. The finding was similar to another study that showed there was an association between loneliness and cognitive impairment (19). There was a bidirectional relationship between loneliness and cognitive impairment. Cognitive impairment can reduce the ability of an individual to maintain a friendship or participate in social activities, thereby increasing the risk of loneliness. On the contrary, loneliness can cause older people to adopt unhealthy lifestyle behaviours, such as lack of physical activity, smoking habits and lack of sleep, all of which are found to be related to cognitive impairment (20).

There were several limitations to this study. First, there might be a response bias since some of the participants required assistance from the researcher to fill-up the questionnaires. Second, the study was conducted in old folk homes. Thus, the study findings cannot be generalised to the whole population. Nevertheless, it is worthwhile to note that the aims of the study focused on older people living in old folk homes since a lack of published studies involved older people living in old folk homes.

CONCLUSION

The prevalence of cognitive impairment is considered high among older people living in old folk homes. Increasing age, being single, and loneliness were found associated with cognitive impairment. Future studies may target these factors to manage the risk of cognitive impairment among older people living in old folk homes.

CONFLICT OF INTEREST

The authors declare no conflict of interest in this study.

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