

ORIGINAL ARTICLE

PREVALENCE OF COGNITIVE IMPAIRMENT AMONG THE MEMBERS OF THE NATIONAL COUNCIL OF SENIOR CITIZENS' MALAYSIA IN DAY CARE CENTRES WITHIN THE KLANG VALLEY

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ABSTRACT

Cognitive Impairment is common in late life and may be due to the normal process of ageing, or associated with physical or mental disorder which contributes to a decrease in quality of life, neuropsychiatric symptoms, increased disability and increased healthcare cost. The aim of this study is to determine the prevalence of cognitive impairment among the elderly members in NACSCOM in Day Care Centres within the Klang Valley and its associated socio-demographic factors such as age, gender and educational level. This cross-sectional study was conducted on 101 members of NACSCOM in Day Care Centres of Damansara, Subang Jaya and Setapak using assisted questionnaires as the research tool. The questionnaire comprising of a total of 10 questions based on Elderly Cognitive Assessment Questionnaires (ECAQ), consisted of three parts, memory, orientation and recall. One correctly answered question earned the respondent one mark. The total score for ECAQ is 10 where respondents with scores of 5 and below were identified as having cognitive impairment. Data collected was analyzed using Chi-square test (SPSS version 18). The prevalence of cognitive impairment among the elderly members of NACSCOM in Day Care Centres within the Klang Valley was 4.0%. This study also showed that there was no statistically significant association between cognitive impairment and sociodemographic factors such as age, gender and education. Prevalence of cognitive impairment among the members of NACSCOM in Day Care Centres within the Klang Valley was found to be low. This could be attributed to the fact that members actively participated in activities organized by NACSCOM. The study also did not find any statistically significant association between cognitive impairment and age, gender and education.

Key words: Cognitive impairment, ECAQ, NACSCOM.

INTRODUCTION

An older or elderly person is one who is 60 years old and above¹. In Malaysia, based on the 2000 Census, 6.2% of population were aged 60 years old and above. However, the demographic aging is still occurring and thus, by the year 2020, Malaysia will have 9.5% of populations aged 60 and above².

Cognition is the process of thinking, learning and remembering. Cognitive impairment is not uncommon in late life and may be due to the normal process of ageing, or associated with physical or mental disorder³. It involves problems with memory, language, thinking and judgment, which occurs frequently among the elderly⁴. It is a major public health burden, as it has adverse psychosocial and economic consequences for the affected person and their families, and is an increased risk factor for the increase of home health care use, hospitalization, nursing home entry and even mortality⁵.

Many research have been done all over the world about the cognitive impairment among the elderly but the data represented the elderly in the western countries and may not be applicable to Malaysia as we differ in terms of socio demographic factors. The number of studies on cognitive impairment among elderly in Malaysia is still limited except for one done by Sherina et al in 2004. The purpose of this study is to determine the prevalence of cognitive impairment among the members of the National Senior Citizen Council of Malaysia (NASCCOM). The organization was selected as it is the National Non-Governmental Organisation (NGO) looking into issues and welfare of the Elderly in Malaysia. It comprises of 44 senior citizen associations with a total of about 18,000 members as at October 2008⁶. The main function is providing home for homeless people mainly for Klang valley region in their two old folk homes in Setapak and Kota Damansara. Besides, they also provide day care centers in Subang Jaya, Kota Damansara and Setapak.

The findings gathered from this research is expected to enlighten and improve the awareness of community to provide the services to the elderly that would help in caring for their physical and medical needs, as well as improve their quality of life.

Objective

The objective of this paper is mainly to determine the prevalence of cognitive impairment among the members of the National Senior Citizen Council of Malaysia at Day Care Centres within the Klang Valley. Other important objectives deemed necessary were to determine the socio-demographic factors of the National Senior Citizen Council members of Malaysia at Day Care Centres within the Klang Valley. We also determined the prevalence of cognitive impairment among the members of the National Senior Citizen Council of Malaysia at Day Care Centres within the Klang Valley and the association between cognitive impairment and age, gender and educational level.

MATERIALS AND METHODS

This cross-sectional study was part of the second year Medical Students Project at the Faculty of Medicine and Health Sciences, University Putra Malaysia. It was carried out from 9th May to 27th May 2011 in the three Day Care Centres of NACSCOM in Damansara, Subang Jaya, and Setapak.

Study Population: Respondents aged 60 years old and above in Day Care Centres of NACSCOM in Damansara, Subang Jaya, and Setapak.

Sampling population: Respondents aged 60 years old and above and a member of NACSCOM who was able to speak Malay and English were included as respondents. Respondents aged 60 years old and above who has disabilities and underlying disease such as, Diabetes Mellitus or Cerebro-vascular Accident which interferes with hearing, speech and language were excluded.

Sampling method: Convenience sampling method was applied in this study. The sample size was calculated as follows. The estimated prevalence cognitive impairment among elderly was at 36.4 % (0.36)⁷. Thus making the total sample size of $n = 88$. Estimating 15% of the drop out, the sample size would be increase to 101.

Data were collected by researchers through interviews using a questionnaire. The questions were asked based on the Elderly Cognitive Assessments Questionnaires (ECAQ) and information on social demographic status. Malay and English was the language used in the questionnaire and during the interview depending on the respondents preference.

The Elderly Cognitive Assessment Questionnaire (ECAQ) was used to screen for cognitive impairment among the elderly respondents. The ECAQ consisted of 10 questions grouped under 3 categories: memory, orientation and memory-recall. Each correct answer earns respondents one mark. Respondents with scores of 5 and below were identified as having cognitive impairment. The questionnaire was established with reference to the questionnaire from Kua Ee Heok Journal (Dementia In Elderly Malays - Preliminary Findings Of A Community Survey). The questionnaires were pretested among the elderly before they were used in the field, to ascertain that the content and language were appropriate for the study population.

Ethical clearance: The study was conducted after ethical clearance from the Ethical Committee of Faculty of Medicine and Health Sciences (FMHS), UPM was obtained. Consent was also sought from the National Council of Senior Citizens of Malaysia and all respondents prior to conducting the research.

Data analysis: Data was analyzed using Statistical Package for Social Sciences (SPSS) version 18.0. Chi-square test was used in this study and association between factors was considered to be statistically significant at $p < 0.05$.

RESULTS

Distribution of respondents by socio-demographic characteristic

The study found that a majority of the respondents (53.4%) were in the range of 60 to 65 years old, female (57.4%), Chinese (96.0%) and Buddhist (62.4%). A majority of the respondents were married (71.3%) and had secondary school education level (58.4%), were not employed (82.8%), 78.9% of the respondents were living with their family and a majority of the respondents had no medical illness (52.5%).

Table 1. Distribution of respondents by socio-demographic characteristic (n=101)

Socio-demographic characteristic	n	(%)
Age (years)		
60-65	54	(53.4)
66-70	18	(17.8)
71-75	24	(23.8)
76-80	3	(3.0)
81 and above	2	(2.0)
Gender		
Male	43	(42.6)
Female	58	(57.4)
Race		
Malay	-	-
Chinese	97	(96.0)
Indian	4	(4.0)
Others	-	-
Religion		
Islam	-	-
Buddhism	63	(62.4)
Hindu	3	(3.0)
Christian	24	(23.8)
Others	11	(10.9)
Marital status		
Single	17	(16.8)
Married	72	(71.3)
Widow/Widower	11	(10.9)
Divorced	1	(1.0)
Educational Level		
None	9	(8.9)
Primary	19	(18.8)
Secondary	59	(58.4)
Tertiary	14	(13.9)
Employment		
Unemployed	83	(82.2)
Full-time employed	11	(10.9)
Part-time employed	7	(6.9)
Living Arrangement		
Alone	5	(5.0)
With family	77	(76.2)
Nursing Home	19	(18.8)
Medical Illness		
Have Illness	48	(47.5)
No Illness	53	(52.5)

Distribution of respondents and prevalence of cognitive impairment

The study showed that the prevalence of Cognitive Impairment among members of The National Council of Senior Citizen’s Organization Malaysia (NACSCOM) in Day Care Centres within the Klang Valley was 4.0% (Table 2).

Table 2. Distribution of respondents and prevalence of cognitive impairment (n=101)

Cognitive Impairment	n	(%)
Cognitive Impairment	4	(4.0)
No Cognitive Impairment	97	(96.0)
Total	101	(100.0)

The prevalence and association of cognitive impairment by age, gender and education

Table 3 provides an indication of the population prevalence of cognitive impairment based on demographic characteristics; age, gender and educational level. The prevalence of cognitive impairment is highest among respondents range 60-75 years old (3.0%) while in terms of gender, the greatest prevalence of cognitive impairment was seen in male compared to female respondents (3.0%). In addition, respondents who had education showed the greatest prevalence (4.0%) compared to the respondents with no education. The association between cognitive impairment between age, gender and education is also shown in Table 3. The result showed that there was no significant difference between cognitive impairment and age, gender and education as the p-value for age, gender and education was bigger than 0.05.

Table 3. The prevalence and association of cognitive impairment by age, gender and education

Demographic Factors	Cognitive impairment n(%)	No Cognitive impairment n (%)	Total n(%)	Fisher exact test p-value
Age				0.186
60-75	3(3.0)	93(92.0)	96 (95.0)	
76-89	1(1.0)	4(4.0)	5(5.0)	
Gender				0.309
Male	3(3.0)	40(40.0)	43(43.0)	
Female	1(1.0)	57(56.0)	58(57.0)	
Education				1.00
Have education	4(4.0)	88(89.0)	92(92.0)	
No education	0 (0.0)	9(8.0)	9(8.0)	

Note: ***significant at $p < 0.05$.

DISCUSSION

This study showed the prevalence of cognitive impairment among members of NACSCOM at Day Care Centres within the Klang Valley was 4.0%. This finding was lower than that by Jawad et al (2007) which found the prevalence of 36.5%⁷. In addition, another research in the rural area of Sepang by

Sherina et al in 2004 also showed a higher prevalence of cognitive impairment which was 22.4%³. Our prevalence of 4.0% with cognitive impairment was also less than a similar group in the UK studied by Knapp et al (2007) commissioned by the Alzheimer’s Society who found the prevalence of dementia was 66.9% in nursing homes and 52.2% in residential homes⁸. The difference in the

findings might be due to the small sample size in this study and also the fact that the UK study was on dementia while our study was on cognitive impairment in general. Another reason could be due to the fact that the respondents in our study were in Day Care Centres where there were many activities such as computer classes, dancing and singing sessions hence making our respondents socially active.

Based on our study, we found that there was no significant association between age and cognitive impairment. The prevalence of age associated with cognitive impairment was 3% in the 60-75 years old age group and 1% in 76-89 years old. These results were different if we were to compare with other studies conducted previously. Most of the studies had similar findings, where age was associated with cognitive impairment^{3,5,6,8}. The higher the age group, the chances to experience cognitive impairment were higher^{3,5,6,8}. Firstly, the difference in the results was due to the screening tools used⁹. Most researchers used Mini-Mental State Examination (MMSE) as the research tool instead of the Elderly Cognitive Assessment Questionnaire (ECAQ)^{3,5,8}. The ECAQ is a simplified version of MMSE, which consist of a total of 10 items developed by Kua and Ko, and had been validated in Singapore^{6,9,10}. Next, the reason for obtaining insignificant results would be due to our definition of elderly in our inclusion criteria. This was because some researchers only included elderly respondents as those above 65 years old⁵, meanwhile our definition of elderly was individual above 60 years old¹. Using the definition of age 60 years old and above, the study would have a wider frame of respondents compared to those who used 65 years old and above^{3,5}.

This study also showed that the prevalence of cognitive impairment with association of education was 4%. However, it was not statistically significant ($p > 0.05$). Other research showed education played a major role in the development of cognitive deficit^{11,12}. Another study in Shanghai, supported the fact that the elderly community with low education level showed a high probability of cognitive impairment¹³. The study by Yu-Hui Yao (2010) also indicated that education could offer protection towards cognitive impairment in the near future. A local study by Sherina et al (2004) also revealed that cognitive impairment was higher among the elderly with low education. The differences in the study findings may again be due to the small sample size.

Study limitations

There were a number of limitations in this study. Firstly the sample size was small. However this was unavoidable as we carried out the study at the three Day Care Centres within the Klang Valley run by NACSCOM and a convenience sampling method was used. The result was only representative of members of NACSCOM at the Day Care Centres within the Klang Valley.

Secondly, the questionnaire was an assisted questionnaire and researchers had to explain sections where respondents could not understand. This took a lot of time. Most of the respondents were Chinese and did not understand the language used (English and Malay). Moreover, the researchers had some difficulty in explaining to the respondents due to language barrier (only 1 of the four researchers was a Chinese).

Thirdly due to the fact that the majority of the members in NACSCOM at the Day Care Centres within the Klang Valley were Chinese, there was no diversity in terms of ethnicity. Due to this, no association could be done in relation to ethnicity. In addition, since the ECAQ consist of questions on date and day, used to assess cognitive impairment, this section may be answered correctly by all the respondents as the data collection was carried out on days that they have activities at the Day Care Centres, NACSCOM hence all of them would have remembered the day.

CONCLUSION

The prevalence of cognitive impairment among the members of NACSCOM at the Day Care Centres within the Klang Valley was found to be low. This could be attributed to the fact that members actively participated in activities organized by NACSCOM. The study also did not find any statistically significant association between cognitive impairment and age, gender and education.

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