EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE (SIM) ON KNOWLEDGE REGARDING ALZHEIMER'S DISEASE

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ABSTRACT

INTRODUCTION:

Alzheimer's disease is a progressive neurodegenerative disease that causes severe deterioration of functional and cognitive abilities. As the leading cause of dementia in adults, it affects one in every 10 people who are more than 65 years of age. There is a vital need for student nurses with knowledge of Alzheimer's disease to provide high quality care for the growing number of patients. The use of effective nursing interventions for the management of Alzheimer's disease can help student nurses promote independence and quality of life for Alzheimer's disease patients. Thus this study is under taken to assess the effectiveness of the self instructional module (SIM) on nursing management of client with Alzheimer's disease among 4th year B. Sc. (N) students.

MATERIALS AND METHODS:

A quantitative evaluative research approach with pre experimental one group pre test and post test research design & non probability purposive sampling technique was used to select the 60 samples of B.Sc. (N) 4th year students. Self administered structured knowledge questionnaire were used to collect the information from the study samples. The prepared tool was validated by the experts and the reliability was established. The study was conducted in R.V. College of Nursing and Vidyakirana Institute of Nursing Sciences, Bangalore. The data was analyzed by descriptive and inferential statistics using SPSS version 19.

RESULTS:

Findings of the study shown that, the overall mean percentage pre test level of knowledge of B.Sc. Nursing 4th year studentswas 62.08%, and the pre test knowledge score was 35(58.33%) respondents were having moderately adequate knowledge, 13(21.67%) had inadequate knowledge and 12(20%) were having adequate knowledge regarding nursing management of clients with Alzheimer's disease. In the post test overall mean percentage post test level of knowledge was 84.37%. The post test knowledge score was 54(90%) respondents were having adequate knowledge and 06(10%) had moderately adequate knowledge after the administration of SIM. The overall obtained $^"t^"$ value of knowledge 15.6 is highly significant at P< 0.01 level. The obtained chi-square value showed significant association between the pre test level of knowledge and certain socio demographical variables; gender ($\chi^2 = 5.12$, df =1, p<0.05) and sources of information ($\chi^2 = 4.82$, df=1, p<0.05). However, it did not show any significant association with other demographic variables of 4th Year B. Sc. (N) students.

CONCLUSION:

Findings of the study showed that majority of the student nurses were moderately adequate knowledge before administering the SIM. The SIM facilitated them to gain more knowledge regarding nursing management of client's with Alzheimer's disease which was evident in post test knowledge scores. Hence SIM was an effective strategy for providing information and to improve knowledge of students' nurses.

KEY WORDS: Self Instructional Module, SIM, Alzheimer's disease, nursing management.

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INTRODUCTION

Increase in life expectancy during the twenty first century has produced an aged population of an unprecedented size and longevity. People are discovering that a grant parent, elderly relative, or friend can no longer remember names or faces, recognize common object or talk in coherent sentence. This person may be suffering from Alzheimer's disease.[1Kaplan] and sadok Alzheimer's disease is an irreversible, progressive brain disease that slowly destroys memory and thinking skills, and eventually even the ability to carry out the simplest tasks. In most people with Alzheimer's, symptoms first appear after age 60.Alzheimer's disease is the most common cause of dementia among older people. Dementia is the loss of cognitive functioning thinking, remembering, and reasoning to such an extent that it interferes with a person's daily life and activities.[2]Alzheimer's disease is not a variant of normal aging. Mild cognitive impairment and Alzheimer's disease are illnesses of forgetfulness. Mild cognitive impairment involves forgetting recent events and does not preclude normal daily functioning; however 6% to 25% of persons with mild cognitive impairment progress to Alzheimer's disease each year. Alzheimer's disease is medically defined as memory impairment (not due to other physiological conditions, delirium) with aphasia, apraxia, agnosia, or disturbance in executive functioning causing significant impairment in social or occupational functioning. The onset of Alzheimer's disease is gradual. Deterioration is slow and varies from person to person; knowledge and skills are lost in reverse order of development.[3]Alzheimer's disease, also known simply as Alzheimer's, is a neurodegenerative disease, characterized by progressive cognitive deterioration together with declining activities of daily living and by neuropsychiatry symptoms or behavioral changes. The most striking early symptom is the loss of memory, which usually manifests as minor forgetfulness that becomes steadily more pronounced with the progression of the illness, with relative preservation of older memories. As the disorder progresses, cognitive impairment extends to the domains of language, skilled movements, recognition, and those functions closely related to the frontal and temporal lobes of the brain (such as decision-making and planning) as they become disconnected from the limbic system, reflecting extension of the underlying pathological process. This pathological process consists principally of neuronal loss or atrophy, principally in the temporoparietal cortex, but also in the frontal cortex, together with an inflammatory response to the deposition of amyloid plaques and neurofibrillary tangle.[4]Alzheimer's disease is a progressive neurodegenerative disease that causes severe deterioration of functional and cognitive abilities. As the leading cause of dementia in adults, it affects one in every 10 people who are more than 65 years of age. There is a vital need for student nurses with knowledge of Alzheimer's disease to provide high quality care for the growing number of patients. The use of effective nursing interventions for the management of Alzheimer's disease can help student nurses promote independence and quality of life for Alzheimer's disease patients. Nursing care must include interventions that focus on maintaining Alzheimer's disease patient's functional and cognitive abilities as well as on preventing further disability and decline. Student nurses can implement these measures in acute,   long- term, and home healthcare settings.[5]

Effective nursing interventions are vital to managing *patient* with Alzheimer's disease. Nurses play an important role in caring the patient in maintaining nutritional well-being, creating supportive environment, activity in daily living, maintaining physical and social activities, communication issues, and behavioural management.

MATERIAL AND METHODS

To assess the effectiveness of SIM on knowledge regarding nursing management of clients with Alzheimer's disease among B.Sc. Nursing 4th year students, the investigator has selected quantitative evaluative research approach with one group pre test post test research design& Structured Knowledge Questionnaire was used. The sample consisted of 60 subjects were selected by non probability purposive sampling technique. Preparation of the tool was done based on review of literature, content validation and establishment of reliability. The content validity was established by item analysis of the tool by experts in the field of psychiatric nursing. To ensure the validity of the tool, the tool was given to 08 experts in the field psychiatry and psychiatric nursing. Self instructional module was prepared based on the review of literature, after content validity and suggestions from the experts. The reliability of the tool was tested by using split half method. Statistical test coefficient of correlation was used to find out the reliability. The reliability Karl Pearson coefficient of correlation was r=0.89. The investigator conducted the pilot study in Hillside College of Nursing on 5th March 2012 to confirm the feasibility of conducting the main study. The study was conducted with 10 samples. The proposed study was conducted after the approval of research Committee of Hillside College of Nursing. The data for main study was collected from 19th March 2012 to 18th April 2012; the samples were 60 students of 4th year B. Sc. (N) were selected from R. V. College of Nursing and Vidyakirana Institute of Nursing Sciences, Bangalore. The obtained data was analyzed by using both descriptive and inferential statistics. The analysis was based on the objectives and hypothesis of the study. Frequency and percentage were used to analyze the baseline proforma. Frequency, percentage, mean, standard deviation, mean percentage score and paired't' test were used to analyze the effectiveness of self instructional module. Chi-square test was done to find out the association between the pre test levels of knowledge and selected demographic variables of B. Sc (N) 4th year students.

RESULTS

The analysis and interpretation of data collected to assess the

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effectiveness of Self Instructional Module on knowledge regarding nursing management of clients with Alzheimer's disease among B.Sc. Nursing 4th year students. Analysis of data was a process by which quantitative information is reduced, organized, summarized, evaluated, interpreted and communicated in a meaningful way.The results were computed by using descriptive and inferential statistics based on the objectives of the study. The objectives of this study were to assess the knowledge regarding nursing management of clients with Alzheimer's disease among B.Sc. Nursing 4th year students before and after administering the SIM, to evaluate the effectiveness of Self Instructional Module on knowledge regarding nursing management of clients with Alzheimer's disease among B.Sc. Nursing 4th year students, to find out the association between the pre test level of knowledge regarding nursing management of clients with Alzheimer's disease and selected demographic variables of B.Sc. (N) 4th year students. The data were presented under the subjects based on demographic variables, pre test and post test level of knowledge, Effectiveness of Self Instructional Module on knowledge regarding nursing management of clients with Alzheimer's disease, association between the pretest level of knowledge and selected demographic variables.

Distribution of subjects based on demographic variables

Majority of the students 33(55%) belonged to the age group of 21-25 years, whereas 27(45%) of them were in the age group of 26-30 years.High majority of the students were female 43 (71.67%). Subjects based on religion showed that majority of the respondents 38 (63.34%) were Christian, however 14 (23.33%)belonged to Hindu and 08 (13.33%) respondents belonged to Muslim religion.Subjects based on general education that all the samples 60 (100%) have 10+2 education. Subjects based on Place of residence that majority of the samples, 34 (56.66%) were from Kerala, at the same time 12 (20%) from Karnataka, 08 (13.34%) from Rajasthan and 06(10%)from Nepal and others. Subjects based on sources of information that all the samples 60 (100%) received information from class room lecture, some of them 05(8.33%) received information from other sources like family members/friends also.Subjects based on family history of Alzheimer's disease show that majority 55 (91.66%) did not have the history of Alzheimer's disease, in contrast, 5(8.34%) had family history of Alzheimer's disease.

Findings related to pre test and post test level of knowledge

Pre test and post test level of Knowledge revealed that, in pre test, out of 60 respondents, 58.33%had moderately adequate knowledge,21.67% had inadequate knowledge and 20% hadadequate knowledge regarding nursing management of clients with Alzheimer's disease. In the post test 90%had adequate knowledge and 10%hadmoderately adequate knowledge. This showed that in pre test, majority (58.33%) had moderately adequate knowledge. In the post test, most of

them (90%) had adequate knowledge. Aspect wise mean, standard deviation, mean percentage and mean difference in pre test and post test level of knowledge showed that the overall mean percentage of pre test level of knowledge of B.Sc. nursing 4th year studentswas62.08%, the mean was 21.73 with standard deviation of 3.57. In the post test the mean percentage was 84.37%, with mean 29.53, standard deviation 1.88. The overall mean percentage difference was 22.29. In the aspect wise, pre test mean percentage of general knowledge was 56.15% with mean and SD of 7.3±1.6 and the nursing management mean percentage was 65.22% with mean and SD of 14.35±3.2. In the post test, the mean percentage on general knowledge 84.61% with mean and SD 11 ±0.93,with mean percentage difference was 28.46%, whereas, the mean percentage score on nursing management is84.22% with mean and SD 18.53 ± 1.58. The mean percentage difference was 19%. Comparison between pre test and post test level of knowledgeshowed that the mean percentage of pre test level of knowledge was 62.08% with mean 21.73 and standard deviation of 3.57. In the post test the mean percentage of knowledge was 84.37 with mean 29.53 and SD of 1.88, whereas the mean enhancement of the knowledge score was 22.29.

Effectiveness of SIM on knowledge regarding nursing management of clients with Alzheimer's disease. Hypothesis testing

H[1]: There is a significant difference between pre test and post test mean score of knowledge regarding nursing management ofclients with Alzheimer's disease among B.Sc. Nursing 4th year students.

Table 1: Aspect wise paired "t" test showing significant difference between the pre test and post test level of knowledge. n=60

Aspects	Max. Score	Pre test		Post test		SE	Paired T test	P value	Inference
		Mean	SD	Mean	SD				
General information	13	7.3	1.6	11	0.93	0.22	16.45	<0.01	S**
Nursing management	22	14.35	3.2	18.53	1.58	0.45	9.28	<0.01	S**
Overall	35	21.73	3.57	29.53	1.88	0.50	15.6	<0.01	S**

Overall score =35, df 59, t_{tab} 2.3912 <t_{cal} 15.6
S**- Highly significant

Table 1 revealed that the overall paired't' calculated value was 15.6 with df 59, showed highly statistically significance at p<0.01 level. In the aspect of general information the paired 't' calculated value was 16.45 with df 59, and in the nursing

management 9.28, df=59, the calculated values were higher than the table value at 0.01 is 2.39 which is less than the calculated value and shows statistically highly significance at p<0.01 level.Hencethe stated research hypothesis H$_1$ was accepted.

Findings related to association between the pretest level of knowledge and selected demographic variables

To find out the association between pre test knowledge score and demographic variables, chi square value was computed. The significance level selected for testing the hypothesis was 0.05.

Hypothesis testing

H^2: There is a significant association between the pre test level of knowledge and selected demographic variables of B.Sc. Nursing 4th year students.

Table 2: Association between the pretest level of knowledge and agen=60

Characteristics	Respondents	Knowledge					χ^2 Value	P value
		≤Median 22		> Median 22				
	N	n(28)	%	n(32)	%			
Age in Years							0.69 NS, df=1	P>0.05
21-25	33	17	51.5	16	48.4			
26-30	27	11	40.7	16	59.2			

df =1, $^2_{cal}$0.69< $^2_{tab}$3.84   NS- Non significant

The above table of chi-square value ($^2_{cal}$ = 0.69, $^2_{tab}$=3.84, df=1, p>0.05) showed that there is no significant association between the pre test level of knowledge and age of the students.

DISCUSSION

Frequency and percentage distribution of sample showed that majority of the students belonged to the age group of 21-25 years i.e 55%, With regard to gender 71.67% were female, in relation to religion majority of the respondents were Christian i. e. 63.34%, with respect to general education 100% completed their 10+2 education, majority of the samples 56.66% were from Kerala, with regard to source of information all the samples (100%) got information from class room lecture; some of them (8.33%) got information from other sources like family members/friends also, in relation to the family history 91.66% did not have the history of Alzheimer's disease.The findings of the present study are similar to the findings of another study conducted in Italy. The study findings revealed that 70% nurses claimed to have knowledge about care of client's with Alzheimer's disease. Over two thirds 70% reported that classroom lecture were a primary source of their knowledge. Other common sources included family members (20%) and the internet (10%).[6]

The statistical analysis ofpresent study showed that, in pre

test, 35(58.33%) respondents had moderately adequate knowledge, 13(21.67%) had inadequate knowledge and 12(20%) had adequate knowledge regarding nursing management of clients with Alzheimer's disease. In the post test, 54(90%) respondents had adequate knowledge and 06(10%) had moderately adequate knowledge. The findings were supported by the similar study which was conducted among adult nurses working with Alzheimer's disease patients in general hospital wards at Coventry University Kitwood's in 2007to explore the knowledge, understanding and implications for care, of patients with Alzheimer's disease. The findings about nurse's knowledge and understanding of person centered care revealed that 56% had moderately adequate knowledge and 44% had inadequate knowledge and lacks in person centered care.[7]Thefindings are supported by a quasi experimental study which was conducted on effectiveness of SIM on knowledge regarding management of patients with Alzheimer's disease among 1st year P.C.B.SC.(N) students at Pune in 2010. The result revealed that the pretest mean knowledge score was 18.14 and post test mean knowledge score was 37.76. The difference in mean knowledge was statistically significant at 0.001 level ('t' 98=50.22; p<0.001).[8]

The findings of the present study showed that SIM was effective in improving the knowledge of student nurses regarding nursing management of client's with Alzheimer's disease. The mean percentage of pre test level of knowledge among B.Sc. Nursing 4th year studentswas 62.08%, the mean was 21.73 with standard deviation of 3.57.In the post test, the mean percentage level of knowledge of B.Sc. Nursing 4th year studentswas 84.37%, the mean 29.53 with the standard deviation of 1.88. The mean enhancement of the knowledge score was 22.29%. The calculated paired't' test value,15.6with df 59 issignificant at p<0.01 level. Hence the research hypothesis H$_1$ was accepted. It indicates that the self instructional module was highly effective in improving the knowledge of student nurses regarding nursing management of client's with Alzheimer's disease. Findings of the other studies supported the findings of the present study was conducted in 2004 at Mangalore regarding Outcome of Self Instructional Module for Nurses on care of patients with Alzheimer's disease. The pretest knowledge was assessed by the Alzheimer's disease knowledge scale. The 43% nurses were had inadequate knowledge, 37% had moderately adequate knowledge and 30% had adequate knowledge on care of the patient with Alzheimer's disease. The self instructional module was administered to the nurses. The post test knowledge was 78 % had adequate knowledge and 22% were had moderately adequate knowledge and no one had inadequate knowledge. The study concludes that self instructional module enhances the knowledge of nurses on care of patient with Alzheimer's disease.[9]The findings of the present study was supported by a Quasi experimental study which was conducted on effect of self instructional module on knowledge regarding Alzheimer's disease, in Rajaji Hospital

at Madurai in 2000. The purposive sampling technique was used to select 70 samples. Pre test and post test was given. The mean percentage difference between the pres test and post test was 48%. The paired "t" test value (t=23) shown that the self instructional module was effective.[10]The chi-square test has been used to associate the pre test level of knowledge and demographic variables of 4th Year B. Sc. (N) students. The obtained chi-square value showed significant association between the pre test level of knowledge and certain socio demographical variables; gender (χ^2=5.12, df =1, p<0.05) and source of information (χ^2=4.82, df=1, p<0.05). However, it did not show any significant association with other demographic variables of 4th Year B. Sc. (N) students. Hence the research hypothesis H[2]was accepted for the variables gender and source of information.

The findings of present study were supported by a descriptive survey study conducted at University of Toledo among occupational therapist to assess the knowledge and attitude towards Alzheimer's disease. A total of 304 valid questionnaires were obtained. The result showed that Participants' mean knowledge score was 55% and the mean attitude score was moderately positive attitudes at 5.5 on a scale of 1-7. It was found that participants who had higher knowledge scores also had more positive attitude scores. Gender (χ^2=3.92, df =1, p<0.05) and sources of information (χ^2=3.98, df =1, p<0.05) had a significant association with the level of knowledge and attitude. Thus the participants who had information of Alzheimer's disease in the past had more positive attitude scores and higher knowledge scores. In relation to gender the females have shown the more positive attitude and knowledge scores on Alzheimer's disease knowledge test. [11]Findings of present study were supported by a study which was conducted in 1994 at America on the knowledge of Alzheimer's disease among care givers as well as the possible consequences of this knowledge. The major purpose of this study was to determine the amount of knowledge care givers possessed. The second purpose was to explore possible correlation of knowledge of Alzheimer's disease. One hundred and one care givers participated in the study. Participants were given a 30 items test which consisted of 15 multiple choice items and 15 true/false items. The care givers answered an average of 46 percent of the items correctly, whereas female care givers answered more questions correctly compared to male care givers. It is also found that there was a significant association between the gender and the knowledge level of care givers,(χ^2_{cal} - 5.12,p=0.0237<0.05).[12]

CONCLUSION

Findings of the study showed that majority of the student nurses had moderately adequate knowledge before administering the SIM. The SIM facilitated them to gain more knowledge regarding nursing management of client's with Alzheimer's disease which was evident in post test knowledge scores. This study has implications for nursing

service, nursing education, nursing administration and nursing research.Hence SIM was an effective strategy for providing information and to improve knowledge of student nurses.

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