"A Study To Assess The Effectiveness Of Self-Instructional Module On Knowledge Regarding Dementia And Its Care Among Middle Aged Adults In Selected Community Areas At Dehradun, Uttarakhand."

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Abstract

Background and purpose: *Dementia is defined as a loss of the previous levels of cognitive, executive and memory function in a state of full alertness. It is a progressive brain dysfunction of daily activities and in most cases, leads to a need for long term care. The aim of the to assess the effectiveness of Self-Instructional module (SIM) on knowledge regarding Dementia and its care among middle aged adults in selected community areas at Dehradun.* ***Methodology-*** *Quantitative research approach with pre-experimental one group pretest post-test design was adapted for present study. Total 60 middle aged adults were selected through purposive sampling technique. Self-Instructional module (SIM) was administered after the assessment of pre-test knowledge on Dementia and its care. Post intervention knowledge was assessed after 7 days of administration of SIM through the same standard knowledge questionnaire (DKAS tool).* ***Result-****The study showed that in pre-test 42 (70%) adults were having inadequate knowledge and 18 (30%) were adequate knowledge, similarly in post-test 37 adults were having adequate knowledge and 23 (38.3%) were having good knowledge regarding dementia and its care. The pre-test mean score was 16.36 and after administration of SIM, the post-test mean score was 39.76 which was significantly higher than the pre-test with a mean difference of 6.82 as evident from 't' value of 26.56 for df 59, at <0.05 level of significance. The chi- square test revealed that there was a significant association between pre-test knowledge score of middle aged adults with their selected demographic variables (previous knowledge regarding dementia and educational status).* ***Conclusion-*** *The study concluded that the Self-Instructional module (SIM) was effective in enhancing the knowledge of middle aged adults. Findings stresses on the need for educational programs regarding dementia.*

Keywords: Knowledge, Effectiveness, Self-Instructional module (SIM), Dementia Knowledge Assessment Scale (DKAS)

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I.   Introduction

The ageing process is of course a biological reality which has its own dynamic, largely beyond human control. With the growing number of elderly persons in the world, the need for adequate health and social care will increase. Health and social service providers must develop policies and programs allowing the elderly to lead rich and independent lives as long as possible.

Dementia is the most feared and devastating disorder of late life. Current estimate reveals that there are about 18 million cases of dementia in the world and there will be about 34 million suffering from dementia. The overall prevalence of dementia ranges from 5 percent to 7 percent. Alzheimer's disease is the most common dementing disorder accounting for 80 percent of all cases of dementia. The number of people with dementia is steadily increasing. Alzheimer's Society believes that careful planning for the future is needed now to ensure that the right care and support is available as tomorrow's elderly people are today's adult and yesterday's children. Adulthood is a unique phase of human development. Adults are the important feature of every society and also a great resource of a nation. Alzheimer's disease can occur to any adult at any age. Alzheimer's disease is officially listed as the sixth-leading cause of death in the United States. Women are three times more likely to be affected than men.

World health organization estimates that 50 million people have dementia, with nearly 60% living in low and middle –income countries. Every year, there are nearly 10 million new cases of dementia (one new case

every 3.2 seconds).The total number of people with dementia is projected to reach 82 million in 2030 and 152 million in 2050. Much of the increase will be in developing countries. Already 62% of people with dementia live in developing countries, but by 2050 this will rise to 71%. The fastest growth in the elderly population is taking place in China, India, and their south Asian and western Pacific neighbors.

According to Dementia India Report 2010 by Alzheimer's and Related Disorders Society of India (ARDSI) there were around 3.7 million Indians with dementia in 2010 with the numbers projected to rise to 7.6 million by 2030 and 14.32 million by 2050. The ARDSI 2010 report estimated the total societal cost from dementia to be 147 billion INR in 2010 with the projected 3 fold increase by 2030.

Dementia is considered to be an expensive medical illness and the potential costs are huge as conditions associated with dementia are typically progressive and irreversible. The care of dementia patient is extremely time and cost intensive. Studies done in developed countries have shown estimates of about 600 billion dollars per year, based on insurance claims. There is dearth of information on economic costs and social burden of dementia in Indian population. It is difficult to estimate the accurate cost of dementia in countries like India as health care expenses are majorly borne by individual families and indirect cost such as decreased productivity of individual caregiver and loss of wage days of caregiver are difficult to quantify. The time spent on informal care of demented person is almost 10 times higher than formal care.

Prevention of dementia is the attempt to avoid developing dementia. Although no cure for dementia caused by age and genetics is available, there are many ways to decrease the risk of acquiring dementia in the first place, including both lifestyle changes and medication. Many different factors have been suggested to have an effect on the occurrence of dementia. These risk factors are common to most types of dementia, like Cardio vascular risk factor, physical fitness and diet. Risk factors can be considered as genetic, environmental and genotypic. The identification of these factors must be a priority in order to define the best approach for early prevention.

PROBLEM STATEMENT
"**A study to assess the effectiveness of self- instructional module on knowledge regarding dementia and its care among middle aged adults in selected community areas at Dehradun".**

II.   Objectives
1.   To assess the pre-test and post-test knowledge score regarding dementia and its care among middle aged adults in selected community areas at Dehradun.
2.   To compare the pre-test and post-test knowledge score regarding dementia and its care among middle aged adults in selected community areas at Dehradun.
3.   To determine the effectiveness of self-instructional module on knowledge regarding dementia and its care among middle aged adults in selected community areas at Dehradun.
4.   To find out the association between pre-test knowledge score regarding dementia and its care among middle aged adults with their selected demographic variables.

HYPOTHESIS
H_1: There is significant difference between the pre-test and post-test knowledge score regarding dementia and its care among middle aged adults.
H_2: There is significant association between pre-test knowledge score regarding dementia and its care with their selected demographic variables among middle aged adults.

III.   Material And Method
The quantitative research approach with pre-experimental research design (one group pretest) was carried out among 60 middle aged adults to find out the effectiveness of self-instructional module. In this study samples were given self-instructional module after pretest. Seven days after conducting pretest, followed by administration of self -instructional module, posttest was taken to assess the knowledge on dementia and its care. In this study a comparison between the pretest and posttest was done to find out the effectiveness of self-instructional module

Tool 1: Socio-demographic profile
It includes of 6 items - Age, gender, educational status, occupation, type of family and previous knowledge about dementia.

Tool 2: Dementia Knowledge Assessment Scale (DKAS) tool
Dementia Knowledge Assessment Scale (DKAS) tool was created in the Wicking Dementia Research and education Centre, Australia, the university of Tasmania in 2017. This questionnaire was established to determine the level of knowledge of dementia among community members including students and health care

professionals and to promote effective educational intervention as well as provide care and support. It consists of 25 items questionnaire about dementia and its care with a total score of 50 points. The DKAS is a reliable and valid measure of dementia knowledge for diverse population across four coherent domains: 1) causes and characteristic, 2) communication and behavior , 3) care considerations and 4) risk factors and health promotion. Each domain consists a set of 6 or 7 items (statements) that are answered from False, possibly false, possibly true, true or don't know. During its development stages, the internal consistency test result (Cronbach's alpha) was 0.85. The contents of the study were given to 5 experts of the field for validation. The experts were selected based on their experience and clinical expertise, in the field of nursing and psychiatry. The experts a criteria checklist and requested to give their opinion and suggestions regarding the relevancy, accuracy and appropriateness of the items.

The study was conducted after approval of research committee from the college. Permission was obtained from the concerned person of the community (Parsad).

IV. Results And Discussion

Table no. 1- depicts that 25 participants (41.6%) were in the age group of 56-60 years, age group of 40-45 years had 18 participants (30%), 10 participants (11.7%) were in the age group of 51 – 55 years and 7 participants (11.7%) in the age group of 46 – 50 years.

The data related to gender revealed that 32 samples (53.3%) were female while 28 samples (46.7%) were male. As per the data collected, 32 (53.3%) middle age adults were having secondary education, 14 (23.3%) were graduated and above, 10 (16.7%) were having primary education and only 4 (6.7%) adults had non-formal education.

The data accentuates that 31 (51.7%) adults were unemployed followed by 21 (35%) were employed whereas 8 (13.3%) were self-employed. The data projects that most 34 (56.7%) adults were from joint family while 26 (43.3%) adults belongs to Nuclear family.

The distribution of respondents according to previous knowledge regarding dementia revealed that 49 (81.7%) adults did not have any previous knowledge regarding dementia and only 11 (18.3%) adults had previous knowledge regarding dementia.

Tables 1:
Description of Socio-demographic variables of the subjects

S. No.	Demographic Variables	Frequency (F)	Percentage (%)
1.	**Age in years** 40 – 45 years 46 – 50 years 51 – 55 years 56 – 60 years	 18 7 10 25	 30% 11.7% 16.7% 41.6%
2.	**Gender** Male Female	 28 32	 46.7% 53.3%
3.	**Educational status** Non-formal Education Primary Education Secondary Education Graduation and above	 4 10 32 14	 6.7% 16.7% 53.3% 23.3%
4.	**Occupation** Employed Unemployed Self-employed	 21 31 8	 35% 51.7% 13.3%
5.	**Types of family** Nuclear family Joint family	 26 34	 43.3% 56.7%
6.	**Previous knowledge regarding Dementia** Yes No	 11 49	 18.3% 81.7%

Table 2: Findings related to Pre-test & post-test knowledge level regarding dementia and its care.

(N=60)

Knowledge level regarding dementia and its care.	Score	Pre-test		Post-test	
		f	**%**	**f**	**%**
Inadequate Knowledge	0 – 20	42	70%	0	0%
Adequate Knowledge	21 – 40	18	30%	37	61.7 %

df=59	Good Knowledge	41 - 50	0	0%	23	38.3 %

Table 2 Shows the pre-test & post-test knowledge level regarding dementia and its care. The highest frequency is 42 (70%) adults were having inadequate knowledge and 18 (30%) had adequate knowledge in pre-test, while in post-test 37 (61.7%) adults were having adequate knowledge and 23 (38.3%) were having good knowledge regarding dementia and it's care.
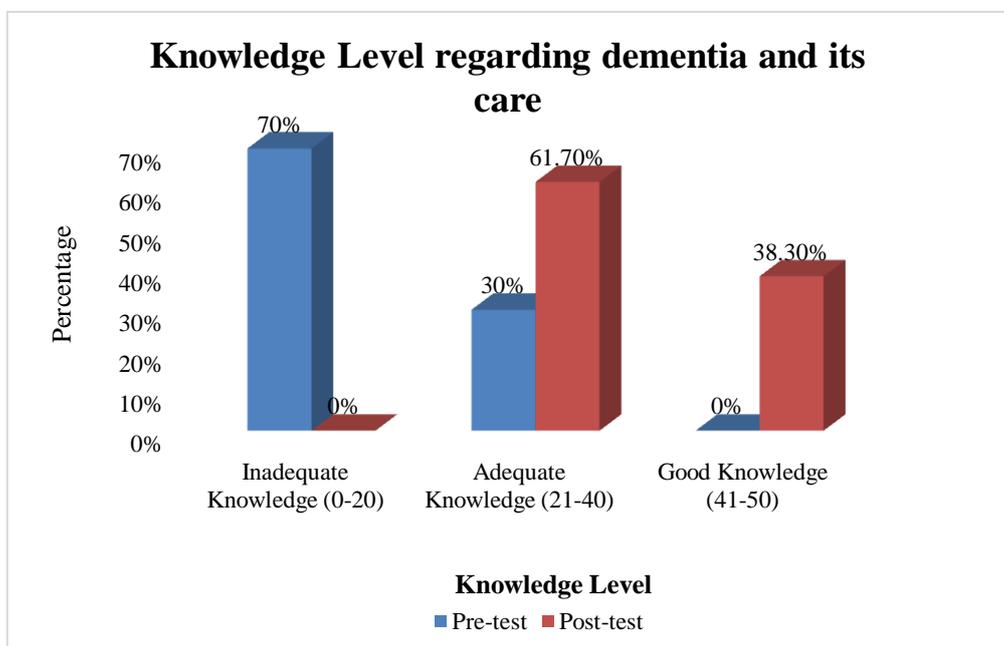

Figure 1: Findings related to Pre-test & post-test knowledge level regarding dementia and its care.

Table 3: Findings related to comparison between pre-test and post-test overall knowledge score regarding dementia and its care among middle age adults.

(N=60)

DKAS Subscales	Pre-test		Post-test		Enhancement	
	Mean %	SD	Mean %	SD	Mean %	SD
Subscale A	21.3%	2.05	85.9%	1.46	64.6%	2.56
Subscale B	26.5%	2.28	68.8%	0.98	42.3%	2.45
Subscale C	45.8%	2.89	86.3%	0.93	40.5%	2.89
Subscale D	39.2%	2.47	76.1%	1.71	36.9%	2.44
Overall score	**32.7%**	**7.12**	**79.5%**	**2.88**	**46.8%**	**6.82**

df=59   *Significant at 0.05 level.

Table 3 shows the comparison between pre-test and post-test knowledge score regarding dementia and its care among middle age adults. The mean percent and SD for Subscale A: Causes and Characteristics were 64.6% and 2.56 respectively, Subscale B: Communication and Behavior 42.3% and 2.45, Subscale C: Care Considerations 40.5% and 2.89, Subscale D: Risk Factors and Health Promotion 36.9% and 2.44. The overall mean percent was 46.8% and SD 6.82.

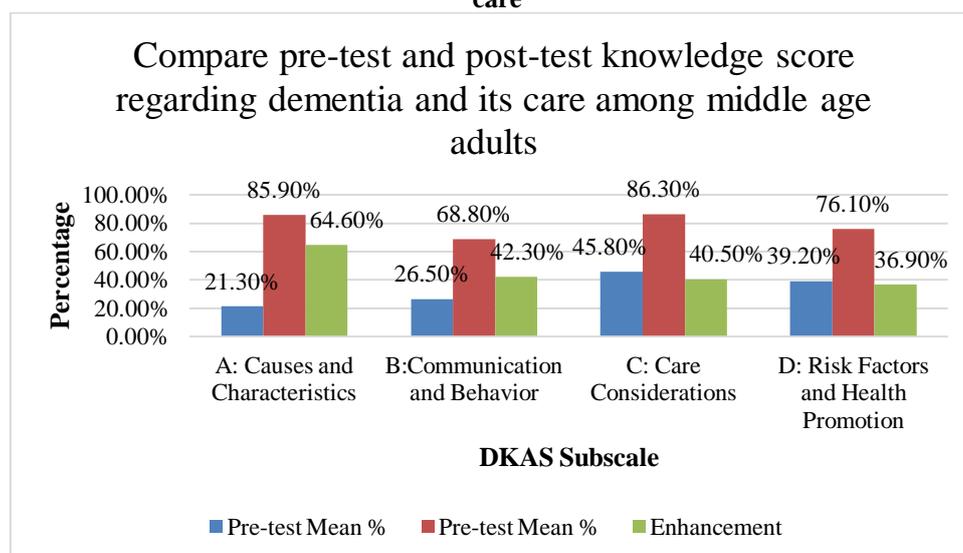**Figure 3: Findings related to compare pre-test and post-test knowledge score regarding dementia and its care**

Table 4: Findings related to effectiveness of self-instructional module on knowledge score regarding dementia and its care among middle age adults.

(N=60)

DKAS Subscales	Test	Mean	SD	Mean difference	t value	P value
A: Causes and Characteristics	Pre-test	2.98	2.05	9.05	27.306	0.000*
	Post-test	12.03	1.46			
B: Communication and Behavior	Pre-test	3.18	2.28	5.06	15.983	0.000*
	Post-test	8.25	0.98			
C: Care Considerations	Pre-test	5.5	2.89	4.85	12.988	0.000*
	Post-test	10.35	0.93			
D: Risk Factors and Health Promotion	Pre-test	4.7	2.47	4.43	14.045	0.000*
	Post-test	9.13	1.71			
Overall score	**Pre-test**	**16.36**	**7.12**	**23.40**	**26.567**	**0.000***
	Post-test	**39.76**	**2.88**			

df=59   *Significant at 0.05 level.

The table 4 reveals the effectiveness of self-instructional module on knowledge score regarding dementia and its care among middle age adults. The statistical paired 't' test value for Subscale A: Causes and Characteristics was 27.306, Subscale B: Communication and Behavior was 15.983, Subscale C: Care Considerations was 12.988, Subscale D: Risk Factors & Health Promotion was 14.045, the overall t-value was 26.567 which is greater than p value, implying that the difference in pre-test and post-test score was found statistically significant at 0.05 level.

Table 5 Association between pre-test knowledge score with the selected demographic variables.

(N=60)

Variable	Below median	Median & above	Chi-square value & df	P value	Inference
Age in year					
40 – 45 years	6	12	4.103 df=3	0.251	NS
46 – 50 years	3	4			
51 - 55 years	5	5			
56 – 60 years	16	9			
Total	**30**	**30**			

Variable	Below median	Median & above	Chi-square value & df	P value	Inference
Gender					
Male	11	17	2.411 df=1	0.121	NS
Female	19	13			
Total	**30**	**30**			
Education					
Non – formal education	4	0	15.471 df=3	0.001	S
Primary education	9	1			
Secondary education	14	18			
Graduation and above	3	11			
Total	**30**	**30**			
Occupation					
Employed	8	13	1.997 df=2	0.368	NS
Unemployed	18	13			
Self-employed	4	4			
Total	**30**	**30**			
Type of family					
Nuclear family	11	15	1.086 df=1	0.297	NS
Joint family	19	15			
Total	**30**	**30**			
Previous knowledge regarding dementia					
Yes	0	11	13.469 df=1	0.000	S
No	30	19			
Total	**30**	**30**			

*Significant at 0.05 level.   Median =17.5   S=Significant, NS = Not-Significant

The obtained chi-square value for Age ($\chi^2 = 4.103$, $p>0.05$), gender ($\chi^2 = 2.411$, $p>0.05$), occupation ($\chi^2 = 1.997$, $p>0.05$) and type of family ($\chi^2 = 1.086$, $p>0.05$). p value for these variables was more than the P value (0.05) which indicates that there was no significant association between pre-test knowledge score regarding dementia and its care among middle age adults with their selected demographic variables. Hence, the research hypothesis H_2 was rejected and null hypothesis was accepted.

The obtained chi-square value for Education ($\chi^2 = 15.471$, $p<0.05$) and previous knowledge regarding dementia ($\chi^2 = 13.469$, $p<0.05$) p value was less than 0.05 which indicates that there was a significant association between pre-test knowledge score regarding dementia and its care among middle age adults with their selected demographic variable. Hence, the research hypothesis H_2 was accepted and null hypothesis was rejected.

V.   Discussion
The discussion was done on the basis of the objective of the study
1. To assess the pre-test and post-test knowledge score regarding dementia and its care among middle aged adults in selected community areas at Dehradun.
The level of knowledge regarding dementia and its care among middle aged adults was done by using a standardized tool (Dementia Knowledge Assessment Scale) which was distributed among middle aged adults in Mothrowala, Dehradun (Uttarakhand). Along with descriptive analysis (frequency, percentage distribution, mean, median and standard deviation), inferential statistics (paired t-test) was used to measure the level of knowledge score regarding dementia and its care among middle aged adults. In this study the pre-test mean and S.D was 16.36±7.12 and post-test mean and S.D was 39.76±2.88. The post-test mean score was more than that of pre-test which implies that in post-test the knowledge score was enhanced among middle aged adults.
The present study was supported by findings of the descriptive study conducted by **Fahad Manee et al. (2019)** in order to examine the knowledge of dementia among Kuwait university students. 1350 students were selected by convenient sampling technique. Dementia Knowledge Assessment Scale (DKAS) was used to assess the knowledge of the students. The result indicated that total score of dementia knowledge among students was a mean of 15.09 out of 25 and S.D of 6.05. The study concluded that baseline knowledge of the students was moderate.[1]

2. To compare the pre-test and post-test knowledge score regarding dementia and its care among middle aged adults in selected community areas at Dehradun.

In present study, the data revealed that the pre-test mean percent was 32.7% whereas of post-test was 79.5% for knowledge score regarding dementia and its care among middle aged adults. The overall mean percent and SD were 46.8% and 6.82 respectively, which implies that the score obtained by participants in post-test was more than pre-test. The majority 42 (70%) of adults having inadequate knowledge and 18 (30%) were having adequate knowledge in pre-test whereas in post-test 37 adults were having adequate knowledge and 23 (38.3%) were having good knowledge regarding dementia and it's care

The present study coincided with the study of **Manjunath M.Sogalad** conducted in 2015 regarding effectiveness of Awareness Program on Dementia among the Elderly residing at Selected Old Age Home of Belgaum, Karnataka. The results showed thatin pre-test, majority (70%) of subjects had an average knowledge, 27% had poor knowledge and 3% had good knowledge and where as in post-test, 57% of subjects had average knowledge, 30% of subjects had an good knowledge and 13% of subjects had poor knowledge. Hence there was gain in knowledge.[2]

3. To determine the effectiveness of self-instructional module on knowledge regarding dementia and its care among middle aged adults in selected community areas at Dehradun.

The mean and S.D of dementia knowledge scores among middle aged adults were 16.36 ± 7.12 for pretest and that for post-test 39.76 ± 2.88. The post-test mean score was significantly higher than pre-test mean score with the enhancement of 46.8% .The statistical paired 't' test for overall knowledge score was 26.56 that is greater than p value, which implies that the difference between the mean of pre-test and post-test score was found statistically significant at 0.05 level.

This study was supported by **Nira Neupane et al. (2018)** which intended to assess the effectiveness of self-instructional module on knowledge regarding Alzheimer's dementia among adolescents at Bangalore. Finding of the study shows that the overall obtained 't' value of knowledge 21.06 is highly significant at $p<0.01$ level. Study revealed that majority of adolescents was having less knowledge before administering the SIM. Hence, SIM was an effective strategy for providing information and to improve knowledge of adolescents.[3]

4. To find out the association between pre-test knowledge score regarding dementia and its care among middle aged adults with their selected demographic variables.

In present study, Chi-square value revealed that there was significant association between pre-test knowledge score regarding dementia and its care among middle age adults with their selected demographic variables i.e educational status and previous knowledge regarding Dementia whereas no significant association with age, gender, type of family and occupation.

The present result was in conformity with the findings of the quantitative study conducted by **Hyun-Ju Seo et al.** in 2013 regarding the assessment of the public knowledge about dementia in South Korea. The 2189 samples with an age of 10 years or older living in Seoul were selected by convenient sampling technique. Results showed that the level of knowledge of dementia was negatively associated with increasing age and positively associated with higher education level. Study concluded that further educational programs are needed to improve knowledge about dementia.[4]

IMPLICATIONS

The present study emphasized on effectiveness of self -instructional module on Dementia and its care. The findings of the study have implications in different branches of nursing i.e. nursing practice, nursing education, nursing administration and nursing research.

Nursing Education

1)   The study proved that the self -instructional module regarding Dementia and its care was found effective in gaining knowledge about definition, causes, sign and symptoms, risk factors and diet.
2)   The study will be helpful for the students to realize their role in primary prevention of Dementia among high risk population.
3)   The health care providers are the key personnel in imparting knowledge to the clients. There is a need for in-service educational programme for the health care providers for preparing them to function effectively as a counsellor for clients.

Nursing Practice

Along with the changing scenario of health care delivery system, the emphasis is shifted from care oriented approach to preventive approach.
1)   This study stresses that there is a need of involvement of nursing staff in planning and conducting education programs to impart information regarding Dementia and its care.

2) The study reveals that there is a need of educational programs on Dementia and its care among middle aged adults.
3) Nurses working in the hospital setting will be able to find out the high risk population and provide comprehensive health education about the disease.
4) Good education with appropriate approaches will help the high risk personnel to attempt for lifestyle changes and prevention of Dementia.

Nursing Administration
• The main focus of nursing administration is to organize seminars and workshops and other educational programmes for staff nurses as a part of in-service education programme by which they can gain the knowledge on the lifestyle behaviours of population and can provide hospital or community based educational programme to the target population effectively.
• Appropriate teaching / learning material needs to be prepared and made available for Nurses.
• Helping in early identification of dementia in the elderly from other settings by providing proper tools and aids.
• Nursing administrators should take part in the health policy making and developing protocols and should concentrate on the proper selection, placement and effective utilization of the nurses in all areas by giving proper guidance.

Nursing Research
• Researchers should focus on the preventive interventions of Dementia to reduce the burden on economy of the country.
• The findings should be disseminated through conferences, seminars and publications in professional, national and international journals.
• Research can be conducted on diverse population at various settings.

VI.   Limitations
1) The study was limited to the particular area of Mothrowala (ward 85) though the generalization can be made to a large population.
2) The samples selected for the study were limited only to the middle aged adults.
3) The study was limited to only knowledge aspect however it could be conducted to evaluate the attitude and practice aspect.

VII.   Recommendations
The following recommendations were made since the study was carried out on small sample size. The results can be used only as a guide for studies.
• The study can be repeated by taking a large sample size in other parts of the country.
• A similar study can be done to know the attitude and behaviour of community regarding Dementia and other mental illness.
• An experimental study can be carried out to find the effectiveness of lifestyle practices on prevention of Dementia.
• A similar study can be done on assessment of knowledge and attitude of caregivers of Dementia patients.

VIII.   Conclusion
It was concluded that most of the middle aged adults were having poor knowledge about dementia and its care and Self-instructional module (SIM) was found as an effective intervention to improve the knowledge. Researcher draws that the demographic variables such as age, gender, occupation and type of family had no significant association with their knowledge score while previous knowledge about dementia and educational status had significant association with their knowledge score about Dementia and is care. This study also concluded that the prevention is the only treatment for Dementia.

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