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ASSESSMENT OF THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING ALZHEIMER'S DISEASE

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ABSTRACT

Alzheimer's disease is a progressive neurodegenerative disorder and the most common cause of dementia among older adults. Advancing age is the strongest risk factor, and the disease leads to progressive impairment in memory, judgment, functional ability, and independence. Although Alzheimer's disease is incurable, early awareness, risk reduction strategies, and timely education may help delay disease progression and improve quality of life. However, significant knowledge gaps persist among elderly individuals, particularly in hospital and community settings, and evidence regarding the effectiveness of educational interventions in Indian healthcare settings remains limited. This study was conducted to evaluate the effectiveness of a structured teaching programme in improving knowledge about Alzheimer's disease among elderly individuals. A pre-experimental one-group pre-test/post-test design was adopted. The study was conducted at R K Memorial Hospital, Jaipur, and included 60 elderly individuals selected through convenience sampling. Data were collected using a validated structured knowledge questionnaire on Alzheimer's disease. After the pre-test assessment, participants received a 45-minute structured teaching programme, and the post-test was administered on the seventh day using the same tool. Data were analysed using descriptive and inferential statistics, including paired t-test and chi-square test. The results showed a statistically significant improvement in knowledge following the intervention. The mean pre-test score of 15.15 increased to a mean post-test score of 22.96, with a paired t-value of 23.2, which was highly significant at $p < 0.01$

Keywords: Effectiveness; Structured Teaching Programme; Knowledge; Alzheimer's disease; Elderly individuals

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INTRODUCTION

the most common form of dementia, accounting for 60–80% of cases globally (WHO, 2021; ADI, 2021). It typically develops after the age of 65, with sporadic late-onset cases being the most frequent. AD disrupts neuronal communication, metabolism, and repair, leading to memory impairment, personality changes, and difficulties in performing activities of daily living. Mild cognitive impairment (MCI), often considered an early stage or precursor of AD, increases the risk of progression to dementia. Family history is a notable risk factor, with individuals having an affected parent or sibling being two to three times more likely to develop the disease.

Globally, an estimated 57.4 million people were living with dementia in 2019, with projections reaching 152.8 million by 2050 (WHO, 2021). In India, approximately 5.3 million individuals are affected, yet public awareness remains low, and AD is frequently misperceived as normal aging (Alzheimer's Disease International, 2021; ARDSI, 2020). Limited knowledge contributes to delayed diagnosis, reduced participation in preventive care, and late initiation of therapeutic interventions. Previous studies in India indicate significant gaps in awareness and understanding of dementia among the elderly population and their caregivers, highlighting the urgent need for structured educational interventions.

OBJECTIVES OF THE STUDY

The present study aimed to assess the knowledge of elderly individuals regarding Alzheimer's disease and to evaluate the impact of a structured teaching programme on enhancing this knowledge. Specifically, the study sought to determine the baseline (pre-test) knowledge of participants about Alzheimer's disease, followed by an assessment of their knowledge after exposure to the structured teaching programme (post-test). Additionally, the study aimed to evaluate the overall effectiveness of the teaching intervention in improving understanding of Alzheimer's disease among elderly individuals. Finally, the research examined the association between participants' pre-test knowledge levels and selected demographic variables, such as age, gender, and family history, to identify factors influencing knowledge and awareness.

HYPOTHESES

The following directional hypotheses will be tested at the 0.05 level of significance among elderly individuals in the selected hospitals in Jaipur:

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H_1: The mean post-test knowledge regarding Alzheimer's disease will be significantly higher than the mean pre-test knowledge among elderly individuals, indicating the effectiveness of the structured teaching programme.

H_2: There will be a significant association between pre-test knowledge regarding Alzheimer's disease and selected demographic variables of elderly individuals, with residential area expected to show a significant association, while other variables (age, gender, education, and family history) are not expected to be significantly associated

ASSUMPTIONS

1. Elderly individuals in the selected hospitals, Jaipur, may have inadequate knowledge regarding Alzheimer's disease.
2. Participants are willing to respond honestly and provide accurate information during data collection.
3. Knowledge regarding Alzheimer's disease may vary according to selected demographic characteristics of elderly individuals, such as age, gender, education, residential area, and family history.

METHODOLOGY

Research Design

A pre-experimental one-group pre-test/post-test research design was adopted for the study. This design enabled the assessment of participants' knowledge levels before and after the implementation of the Structured Teaching Programme. The difference between pre-test and post-test scores was used to determine the effectiveness of the intervention. Although this design facilitated practical implementation within a limited time frame, the absence of a control group remains a limitation, as it restricts comparison with individuals who did not receive the intervention.

Study Setting

The study was conducted at R. K. Yadav Memorial Hospital, Jaipur. The setting was purposively selected due to the availability of a sufficient number of elderly individuals who met the inclusion criteria and were accessible during the data collection period.

Sample

The sample consisted of 60 elderly individuals aged 60 years and above who were present at the study

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setting during the period of data collection. Participants were included if they were able to understand and communicate in Hindi or English and were willing to participate by providing informed consent. Elderly individuals with severe cognitive impairment, diagnosed dementia, or serious illness that hindered participation were excluded from the study.

Sampling Technique

A non-probability convenience sampling technique was used to select the study participants. This method was chosen to facilitate the inclusion of readily available elderly individuals who satisfied the eligibility criteria within the stipulated time frame of the study.

Tool Description

Data were collected using a structured knowledge questionnaire developed to assess knowledge regarding Alzheimer's disease. The tool consisted of 25 multiple-choice questions covering domains such as general awareness, risk factors, symptoms, prevention, and management of Alzheimer's disease. Each correct response was awarded one mark, with a maximum possible score of 25. The tool was validated by five experts in the fields of gerontology and nursing. Content validity was established through expert review, and Content Validity Ratio (CVR) and Content Validity Index (CVI) were calculated. The reliability of the tool was determined using Cronbach's alpha method, yielding a coefficient of 0.82, indicating good internal consistency.

Intervention: Structured Teaching Programme (STP)

The Structured Teaching Programme was administered individually to each participant and lasted approximately 45 minutes. The programme included a lecture on Alzheimer's disease, its risk factors, signs and symptoms, prevention, and management strategies. Demonstration of simple memory exercises and lifestyle modification strategies was also provided. Visual aids such as charts and pamphlets were used to enhance understanding and reinforce learning**.**

Data Collection Procedure

Data collection was carried out over a period of two weeks. Ethical clearance was obtained from the hospital ethics committee prior to the commencement of the study. Written informed consent was obtained from all participants. The pre-test was conducted using the structured knowledge questionnaire, followed immediately by the administration of the Structured Teaching Programme. A post-test using the same questionnaire was conducted seven days after the intervention to assess the effectiveness of the teaching programme in improving knowledge levels.

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RESULTS

Table–1: Frequency and percentage distribution of demographic variables of elderly peoples.

n=60

S.No	Demographic variables	Number	Percentage
1	Age (In Years)		
	a. 55—59	19	31.67
	b. 60—64	16	26.67
	c. 65—69	18	30.00
	d. 70—75	7	11.67
2	Gender		
	a. Male	37	61.67
	b. Female	23	38.33
3	Educational Status		
	a. Illiterate	0	0.00
	b. Primary	24	40.00
	c. Secondary	25	41.67
	d. Higher Secondary	10	16.67
	e. Graduate and above	1	1.67
4	Family history of Alzheimer's disease		
	a. Yes	6	10.00
	b. No	54	90.00
5	Residential area		
	a. Urban	35	58.33
	b. Rural	25	41.67
6	Habits		
	a. Smoking	22	36.67

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	b. Alcoholism	8	13.33
	c. Tobacco chewing	8	13.33
	d. None	22	36.67
7	Previous exposure to information on Alzheimer's disease		
	a. Yes	24	40.00
	b. No	36	60.00
8	If Yes, Specify the source of information		
	a. Television/ Radio	0	0.00
	b. Magazine / Newspaper	12	20.00
	c. Family member/ Friends	6	10.00
	d. Health Personnel	6	10.00

The demographic profile of the participants revealed that the majority belonged to the age group of 55–69 years (88.34%), while a smaller proportion (11.67%) were aged between 70 and 75 years. Male participants constituted 61.67% of the sample, whereas females accounted for 38.33%. All participants were educated, with 40% having completed primary education and 41.67% secondary education. A smaller proportion had attained pre-university college education (16.67%), and only 1.67% were graduates or had education above the graduate level. With regard to family history, only 10% of the participants reported having a family history of Alzheimer's disease. More than half of the participants (58.33%) resided in urban areas, while 41.67% belonged to rural areas. Analysis of personal habits showed that 36.67% of the participants were smokers, 13.33% consumed alcohol, and 13.33% used chewing tobacco, whereas 36.67% reported no such habits. Regarding prior exposure to information about Alzheimer's disease, 40% of the participants reported having received some information. The sources of information included newspapers or magazines (20%), friends or family members (10%), and health personnel (10%). Notably, none of the participants reported receiving information through television or radio, indicating limited use of electronic media as a source of awareness for Alzheimer's disease among the study population.

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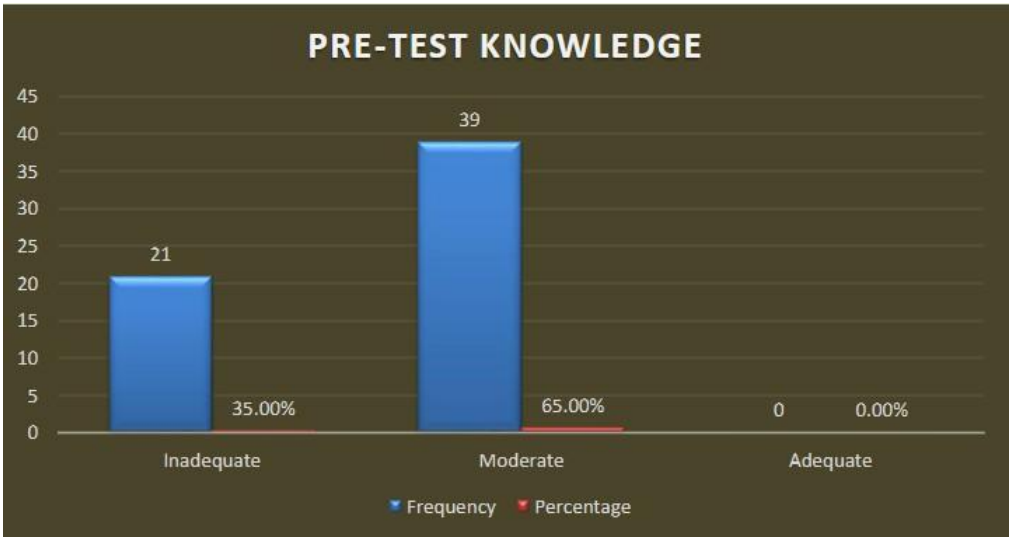
Table-2:- Frequency and percentage distribution of pre-test level of Knowledge among elderly peoples

Level of knowledge	Score	No. of Respondents	
		No.	%
Inadequate	< 50%	21	35
Moderate	50 - 75%	39	65
Adequate	> 75%	0	0

The frequency and percentage distribution of older adults based on their pre-test knowledge of Alzheimer's illness. Three categories were identified based on the knowledge levels: inadequate, moderate, and adequate. Over two thirds (65%) of the population had moderate knowledge, 35% had inadequate knowledge, and none had adequate knowledge.



Pre-test knowledge level of elderly peoples

Table-3:- Frequency and percentage distribution of post-test level of knowledge regarding Alzheimer's disease among elderly peoples.

n=60

Level of knowledge	Score	No of Respondents	
		No	%
Inadequate	< 50%	0	0
Moderate	50 - 75%	12	20.00

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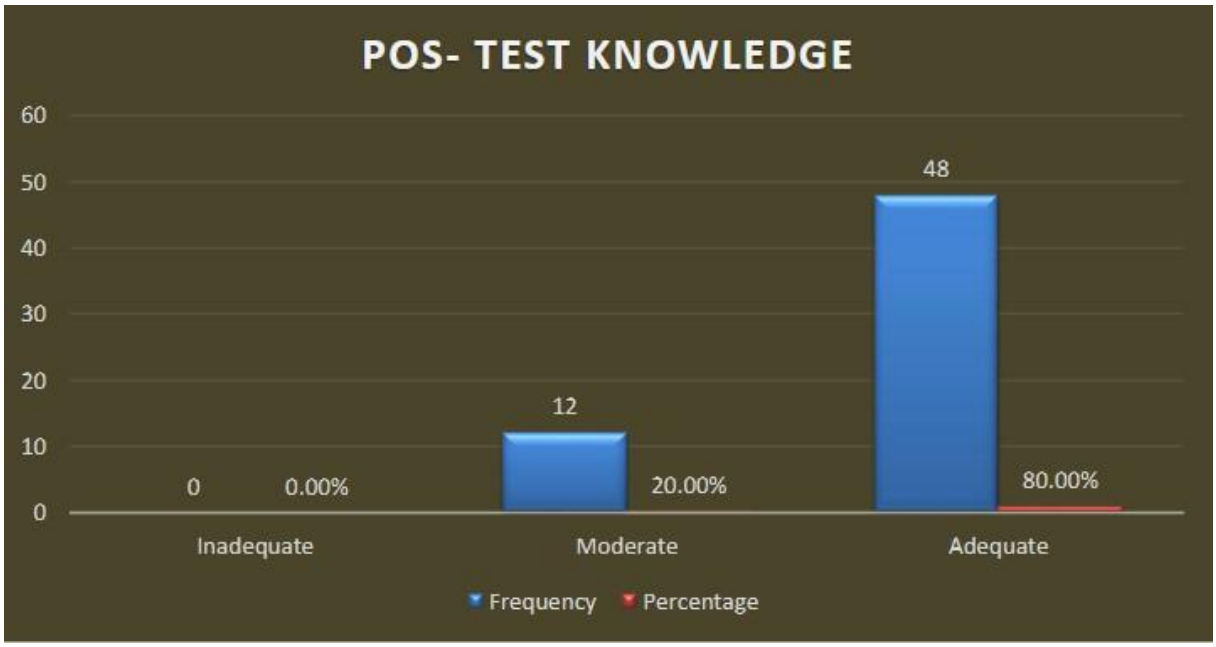
Adequate	> 75%	48	80.00

The frequency and percentage distribution of older adults based on their post-test level of Alzheimer's disease knowledge of the older peoples more than half of the peoples (80%) had reached adequate knowledge, 20.00% had attained fairly adequate and no one had deficient knowledge.



Post-test knowledge level of elderly peoples

Table-4: Comparison of pre-test and post-test level of knowledge among elderly peoples

n=60

Level of knowledge	Pre-test		Post-test	
	No	%	No	%
Inadequate (<50%)	21	35	0	0
Moderate (50-75%)	39	65	12	20.00
Adequate (>75%)	0	0	48	80.00

The comparison of pre- and post-test knowledge on Alzheimer's disease shows clear improvement. In the pre-test, 35% of elderly participants had inadequate knowledge and 65% had moderately adequate knowledge, with none achieving adequate knowledge. After the intervention, 80% demonstrated adequate knowledge and 20% had moderately adequate knowledge, while none remained in the inadequate category.

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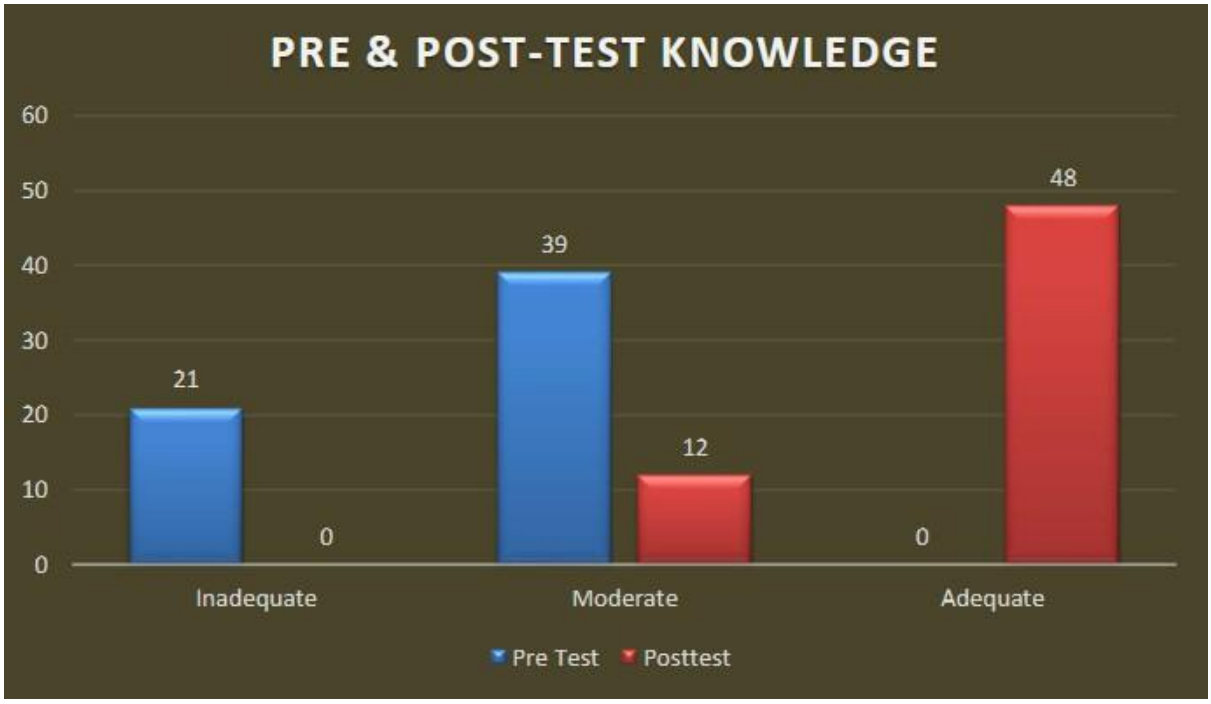

Comparison of pre-test and post-test knowledge

DISCUSSION

This study evaluated the effectiveness of a Structured Teaching Programme (STP) on knowledge regarding Alzheimer's disease among elderly individuals in selected hospitals in Jaipur. Findings showed a significant improvement in knowledge, with the mean post-test score (22.96) higher than the pre-test score (15.15), and a paired t-test of 23.2 ($p < 0.01$). Among demographic factors, only residential area was significantly associated with pre-test knowledge.

These results indicate that elderly individuals had limited baseline knowledge, and the STP effectively increased awareness and understanding of Alzheimer's disease. The findings align with previous studies highlighting the benefits of structured teaching interventions in improving knowledge among older adults (Beeber et al., 2018; Harden et al., 2020; Resnick et al., 2021). Unlike some studies reporting multiple demographic influences, this study found significance only for residential area, reflecting context-specific variations (Kotwal et al., 2021).

The study underscores the need for structured educational programs in hospital and community settings to support early recognition, timely medical consultation, and preventive behaviors. Limitations include the lack of a control group, small sample size, convenience sampling, and short follow-up (7 days), which may affect generalizability and assessment of long-term knowledge retention.

Future research should consider larger, randomized samples, long-term follow-up, and inclusion of community-dwelling elderly to evaluate attitudes, practices, and knowledge retention regarding Alzheimer's disease.

CONCLUSION

This study highlights a significant gap in knowledge regarding Alzheimer's disease among elderly individuals in selected hospitals in Jaipur. The Structured Teaching Programme (STP) was effective in significantly improving their knowledge, demonstrating the value of

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structured educational interventions. Among demographic factors, only residential area showed a significant association with pre-test knowledge, indicating the need to consider contextual factors when designing educational programs.

These findings have important implications for nursing practice and community health. Nurses can play a crucial role in delivering structured educational interventions to increase awareness of Alzheimer's disease, promote early recognition, and support preventive measures. Implementing such programs in hospital and community settings can enhance the overall health literacy of elderly populations and contribute to improved quality of care.

RECOMMENDATIONS

Based on the findings of the present study, the following recommendations are proposed:

1. The study can be replicated with a larger sample across different regions of the country to enhance generalizability.
2. Similar studies can focus on high-risk groups, such as elderly individuals with a family history of Alzheimer's disease, to support primary prevention efforts.
3. Future interventions could incorporate multimedia or digital teaching tools, such as videos, interactive modules, and mobile applications, to improve engagement and learning outcomes.
4. Long-term follow-up studies are recommended to assess retention of knowledge and the sustained impact of educational interventions.
5. Experimental studies can be designed to evaluate the effectiveness of lifestyle practices and structured educational programs on the prevention of Alzheimer's disease.

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