

# A Study to Evaluate the Effectiveness of Video Assisted Teaching (VAT) on Knowledge Regarding Stroke Rehabilitation among the Caregivers of Stroke Patients in Selected Hospitals, Hassan, Karnataka

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**Abstract:- Introduction:** Stroke rehabilitation is the process by which patients with disabling stroke undergo treatment to help them to return normal life as much as possible by regaining and relearning the skills of everyday living. Various aspects of rehabilitation teaches to improve the general condition, balance, strengthen extremities and activities of daily living and also educate family members to play a supporting role. **Methods:** A quasi-experimental pre-test and post-test with non-equivalent control group design was used to evaluate the effectiveness of VAT. The sample consists of 60 caregivers. 20 in control group and 40 in experimental group, who are available at the time of study. Non-probability convenient sampling technique was used at for the selection of samples. Teaching sessions were analyzed to determine which tasks showed statistically significant changes when analyzing data by both descriptive and inferential statistics. These data were compared with control caregivers who completed tasks at two separate time points but with no intervening treatment. **Result:** The results of major findings indicated that caregivers had inadequate knowledge on stroke rehabilitation. The mean post-test knowledge scores significantly higher than the mean pre-test knowledge scores that is 39.21% for patient and 75.31% for the patient i experimental group with paired ‘t’ = 14.115 at  $P < 0.05$  level of significance. This indicated that VAT was significantly effective in increasing the knowledge level of caregivers of stroke patients. **Discussion:** the study concluded that the VAT on stroke rehabilitation was an effective method for providing average to good knowledge and help caregivers to enhance their knowledge and practice skills in future on basis of findings, it is recommended that a similar study may be replicate by using a large number of respondents. It is also recommended that the other methods of teaching with frequent reinforcement to be implicated for improving the knowledge on stroke rehabilitation.

**Keywords:-** Stroke, Rehabilitation, Video Assisted Teaching (VAT), Evaluate, Effectiveness, Knowledge, Caregivers of stroke patients.

## I. OBJECTIVES OF THE STUDY

- To identify the knowledge of caregivers of stroke patients in experimental and control group regarding stroke rehabilitation.
- To determine the knowledge of caregivers of stroke patients in experimental and control group regarding stroke rehabilitation after the administration of Video Assisted Teaching (VAT).
- To evaluate the effectiveness of Video Assisted Teaching (VAT) by comparing post-test knowledge scores regarding stroke rehabilitation between experimental and control group among caregivers of stroke patients.
- To associate the pre-test knowledge scores with selected socio-demographic variables regarding stroke rehabilitation among the caregivers of stroke patients in experimental and control group.

## II. METHODOLOGY

Methodology of research organizes all the components of study in a way that is most likely to lead to valid answers to the problems to have been posted

### A. Research Approach

The selection of the research is a basic procedure for the conduction of research study. In view of the nature of the problem selected for the study and objectives to be accomplished, evaluative research approach was adopted.

### B. Research Design

The form research design refers to a plan of a scientific investigation. Research design incorporates the most important methodology decisions that researches makes in conducting a research study. It depicts the overall plan for organization of scientific investigation. It helps the

researches in selection of subjects, manipulation of the independent variable, observation of a type of statistical analysis to be used to interpret the data.

The research design selected for the present study was pre-test and post-test with non-equivalent control group design.

GROUP	PRETEST	INTERVENTION	POST TEST
Caregivers of stroke patients	Knowledge regarding stroke rehabilitation among the caregivers of stroke patients	Video Assisted Teaching (VAT)	Knowledge regarding stroke rehabilitation among the caregivers of stroke patients
	O <sub>1</sub>	X	O <sub>2</sub>

Table 1

#### ➤ Key

- O<sub>1</sub> = Assessment of pre-test scores
- X = Video assisted teaching on Stroke rehabilitation
- O<sub>2</sub> = Assessment of post-test scores

#### C. Variables Under Study

A concept which can take on different qualitative values is called a variable

#### D. Independent Variable

An independent variable is that stands alive and is not dependent on any other. In the study independent variable refers to the video assisted teaching on Stroke rehabilitation.

#### E. Dependent Variable

A dependent variable is the variable the researcher interested in understanding, explaining or predicting. Knowledge of caregivers of stroke patients regarding stroke rehabilitation is the dependent variable in this study.

#### F. Population

The entire set of individuals or objects having the some common characteristics. In the present study the population comprised of caregivers of stroke patients in selected hospitals, Hassan.

#### G. Sample and Sample Size

- Sample- Sample is a subset of a population selected to participate in a research study. It is a position of the population which represents the entire population (Polit & Hungler 1999) 41. In this study samples were caregivers of stroke patients in the selected hospitals.
- Sample size- 60 caregivers of stroke patients were selected and distributed to 40 for the experimental and 20 for the control group. The sample for the present study comprised of 60 caregivers of stroke patients in selected hospitals, Hassan.

#### H. Sampling Technique

Sampling refers to the process of selecting the portion of population to represent the entire population. Non-probability convenient sampling technique was adopted for the present study.

#### I. Selection and Development of Tool

The instrument selected in a research must be the vehicle that obtains the best data for drawing conclusions to the study. The tool act as an instrument to assess and collect the data from the respondents of the study.

Keeping in mind a self-administered questionnaire was selected and developed. The main purpose behind developing this tool was need of the hour to educate the caregivers of stroke patients. The tool was developed based on,

- Past clinical experience of the student investigator.
- Related review of literature (Books, Journals, Periodicals, and articles published and unpublished research studies) were reviewed and used to develop the tool.
- Based on the concept of the study.
- Based on the opinions of the subject experts.
- Based on the objectives of the study, the blue print was prepared under 3 main areas namely knowledge, comprehension and application. The prepared items were subjected to content validation, pre-testing and estimation of reliability.

### III. RESULTS

#### A. Presentation of Data

The analyzed data has been organized and presented in the following sections:

- Section 1: Description of socio demographic variables of the caregivers in the experimental and control group.
- Section 2: Analysis and interpretation of pre-test level of knowledge between the experimental and control group.
- Section 3: Analysis and interpretation of post-test level of knowledge between the experimental and control group.
- Section 4: Comparison between pre-test and post-test level of knowledge between the experimental and control group.
- Section 5: Association between pre-test mean levels of knowledge with socio demographic variables.

Description of socio demographic variables of the caregivers in the experimental and control group.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	Age in years				
	21-30	2	10	5	12.5
	31-40	2	10	7	17.5
	41-50	4	20	12	30
	51-60	12	60	16	40
	Total	20	100	40	100

Table 2:- Distribution of caregivers of stroke patients by age. (n=60)

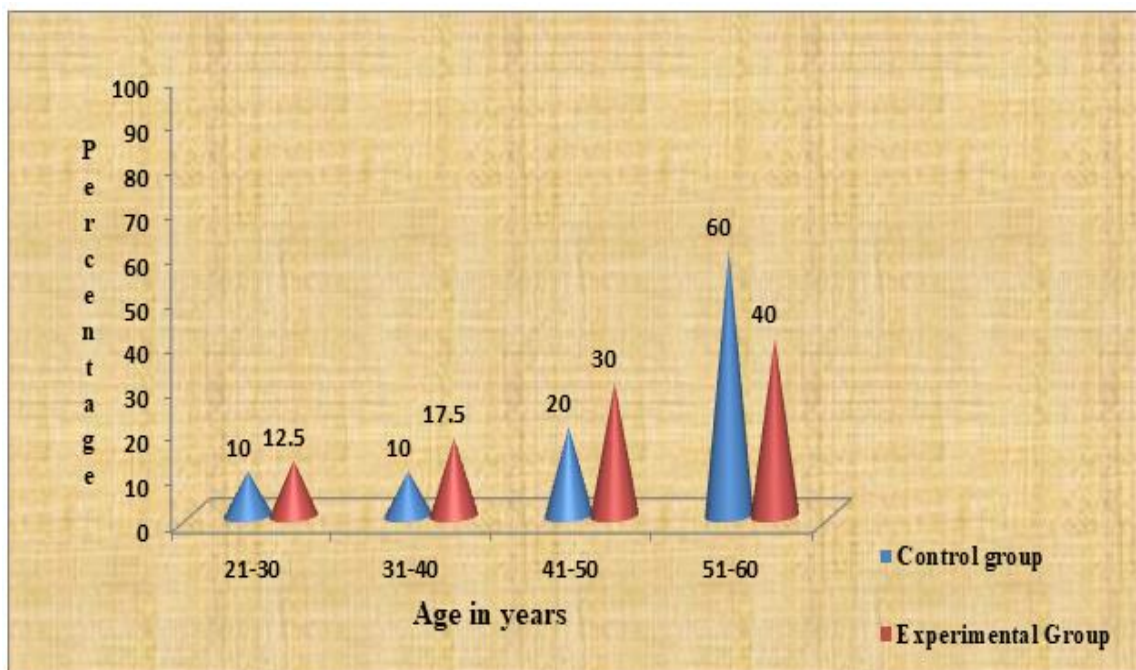


Fig 1:- Clustered cone diagram showing the distribution of caregivers by age in the experimental and control group

The findings shows 21-30 years, 10% in control group and 12.5% in experimental group, 31-40 years, 10% in control group and 17.5% in experimental group and 41-50 years, 20% in control group and 30% in experimental group and majority of the caregivers belongs to the age group of 51-60 years, 60% in control and 40% in experimental group.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
2.	Caregiver relationship to the patient				
	First degree	14	70	29	72.5
	Second degree	5	25	8	20
	Un related	1	5	3	7.5
	Total	20	100	40	100

Table 3:- Distribution of caregivers according to their relationship to the patient. (n=60)

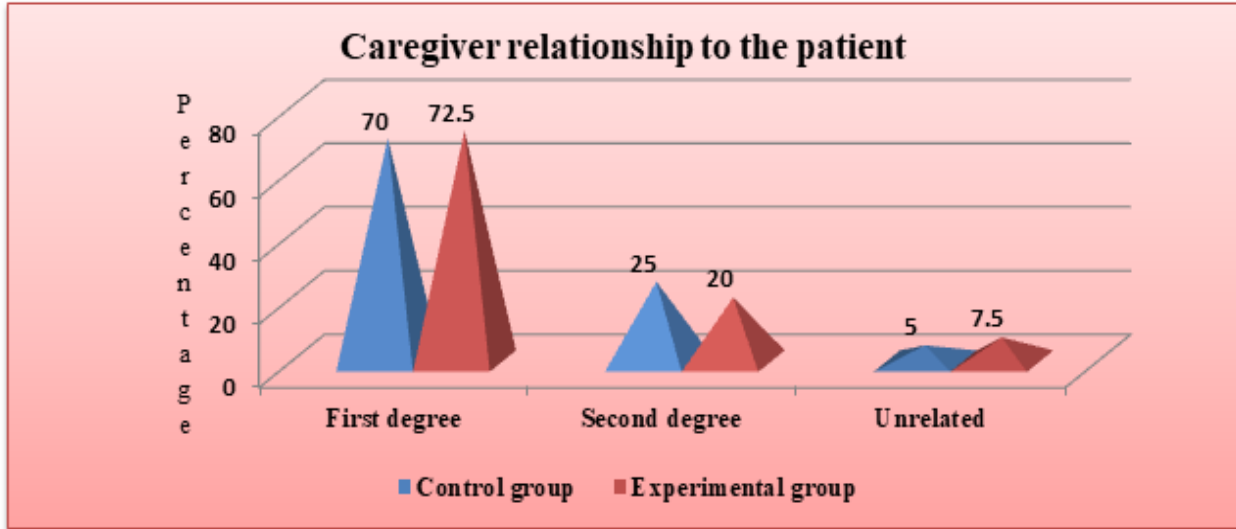


Fig 2:- Clustered pyramidal diagram showing the distribution of the relationship to the patient among caregivers in control and experimental group

The above table and diagram shows distribution of caregiver according to the relationship to the patient. The finding shows majority of the caregivers 70% in control group and 72.5% in experimental group belong to first degree, 25% in control group and 20% in experimental in group belongs to second degree and 5% in control group and 7.5% in experimental group belongs to unrelated.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
3.	<b>Religion</b>				
	Hindu	4	20	12	30
	Muslim	8	40	15	37.5
	Christian	5	25	11	27.5
	Any other	3	15	2	5
	Total	20	100	40	100

Table 4:- Distribution of caregivers according to their religion. (n=60)

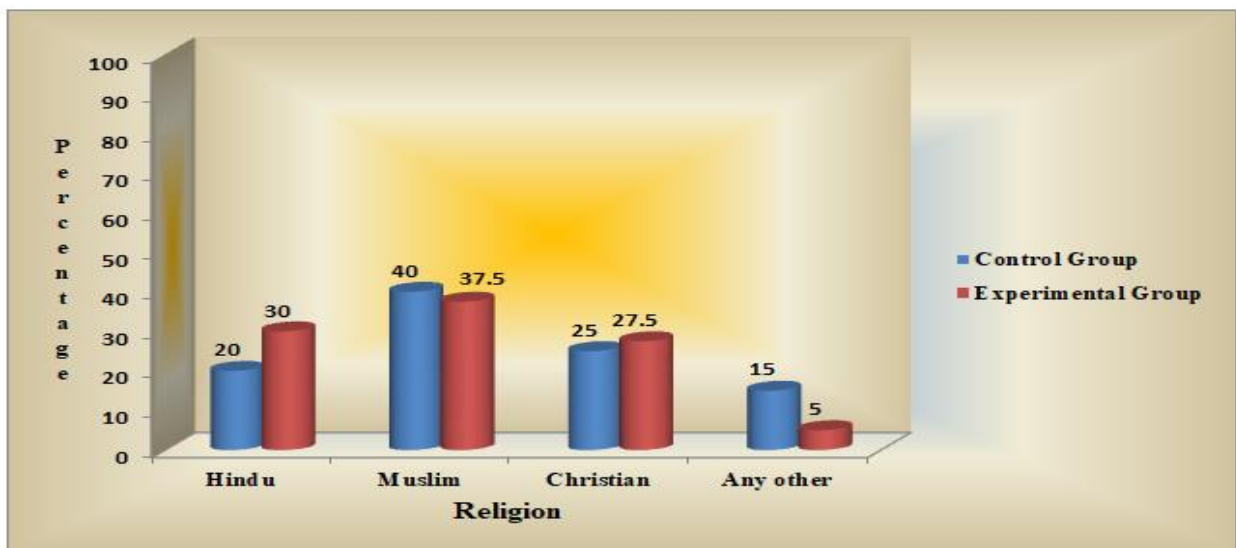


Fig 3:- Clustered cylindrical diagram showing the distribution of caregivers by religion in control and experimental group

The above table and diagram reveals the distribution of caregivers by religion. Control group 20% Hindu, 40% Muslim, 25% Christian and 15% others and 30% Hindu, 37.5% Muslim, 27.5% Christian and 5% others in experimental group.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
4.	<b>Residence</b>				
	Rural	12	60	19	47.5
	Urban	5	25	15	37.5
	Semi-urban	3	15	6	15
	Total	20	100	40	100

Table 5:- Distribution of caregivers according to their residence. (n=60)

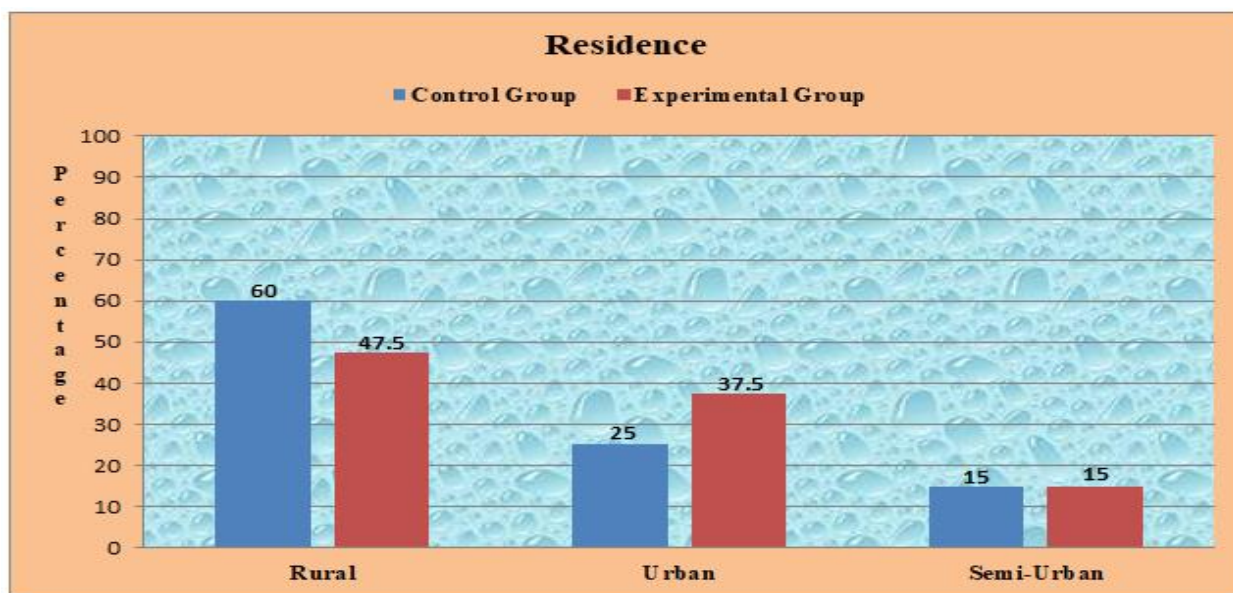


Fig 4:- Column diagram showing the distribution of caregivers according to their residence in control and experimental group.

The above table and diagram depicts the caregiver’s place of residence. The majority of the caregivers 60% in control group and 47.5% in experimental group were from rural area, 25% in control group and 37.5% in experimental group were from urban area and 15% in control group and 15% in experimental group were from semi-urban area.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
5.	<b>Educational status</b>				
	Illiterate	0	0	0	0
	Primary school	11	55	12	30
	Secondary school	5	25	6	15
	Higher secondary	3	15	18	45
	Graduate	1	5	4	10
	Any other	0	0	0	0
	Total	20	100	40	100

Table 6:- Distribution of caregivers according to their educational status. (n=60)

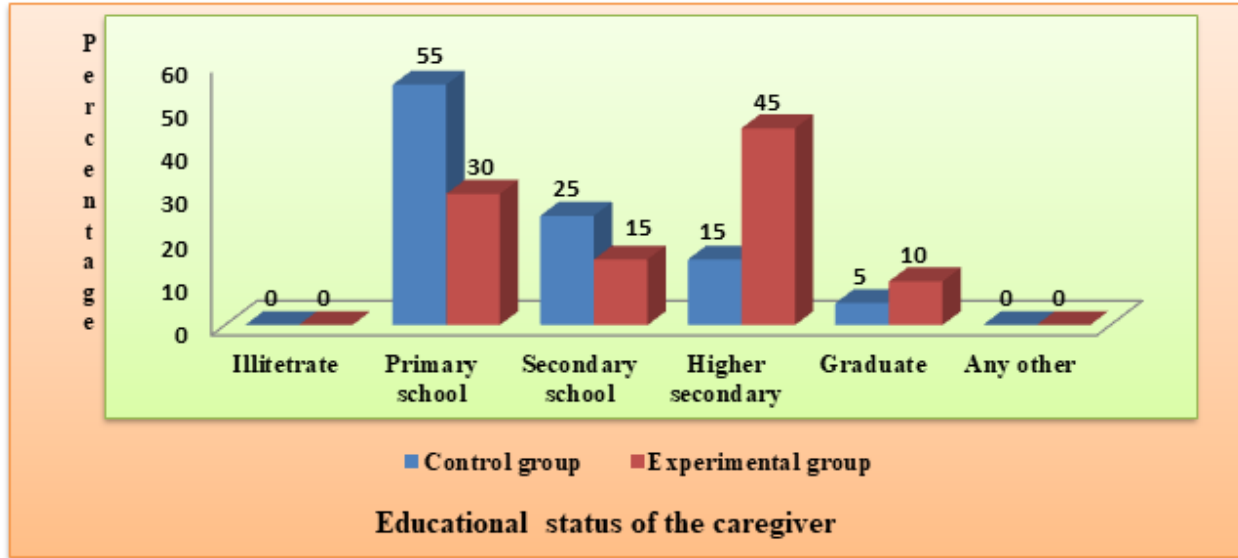


Fig 5:- 3-D clustered column diagram showing the distribution of caregivers according to their educational status in control and experimental group

The above table and diagram shows majority of the caregivers 55% in control and 30% in experiment group got primary school, 25% in control group and 45% in experimental group got secondary school, 15% in control group and 45% in experimental group got higher secondary education and 5% in control and 10% in experimental group got graduation.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
6.	History of stroke since				
	<1 year	10	50	12	30
	1-5 year	6	30	19	47.5
	>5 year	4	20	9	22.5
	Total	20	100	40	100

Table 7:- Distribution of caregivers according to patient history of stroke since. (n=60)

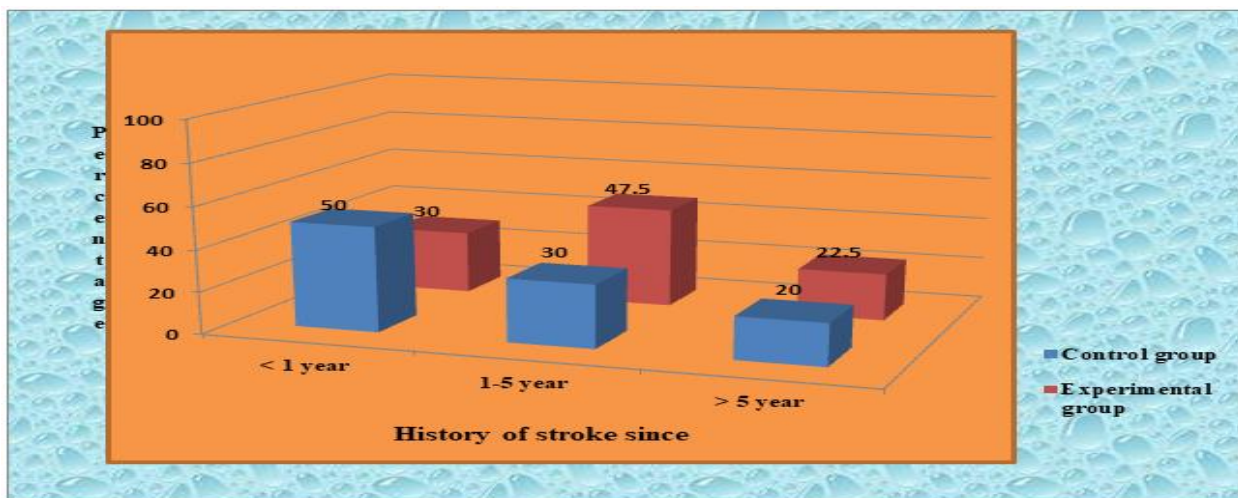


Fig 6:- 3-D column diagram showing the distribution of caregivers according to patient's history of stroke in control and experimental group

The above table and diagram depicts history of stroke. < 1 year, 50% in control group and 30% in experimental group, 1-5 years, 30% in control group and 47.5% in experimental group and > 5 years, 20% in control group and 22.5 in experimental group.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
7.	<b>Occupation of the patient</b>				
	Agriculture	8	40	19	47.5
	Official	5	25	6	15
	Business	4	20	12	30
	Any other	3	15	3	7.5
	Total	20	100	40	100

Table 8:- Distribution of caregivers according to occupation of the patient. (n=60)

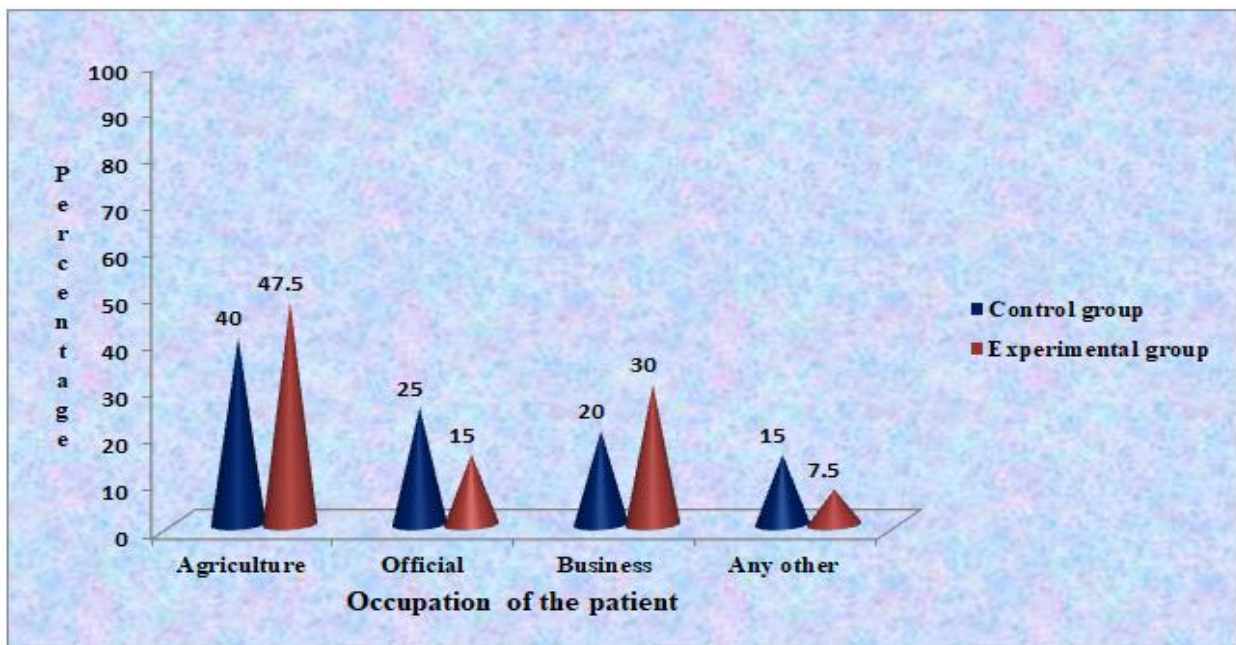


Fig 7:- Clustered cone diagram showing the distribution of caregivers according to patients occupation in control and experimental group

The above table and diagram indicates the occupation of the patients. 40% Agriculture, 25% Officials, 20% Business and 15% other in control group and 47.5 Agriculture, 15% Officials, 30% Business and 7.5% others in experimental group.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
8.	<b>Occupation of the caregiver</b>				
	Agriculture	4	20	9	22.5
	Official	2	10	2	5
	Business	3	15	5	12.5
	Any other	11	55	24	60
	Total	20	100	40	100

Table 9:- Distribution of caregivers according to occupation of the caregiver. (n=60)

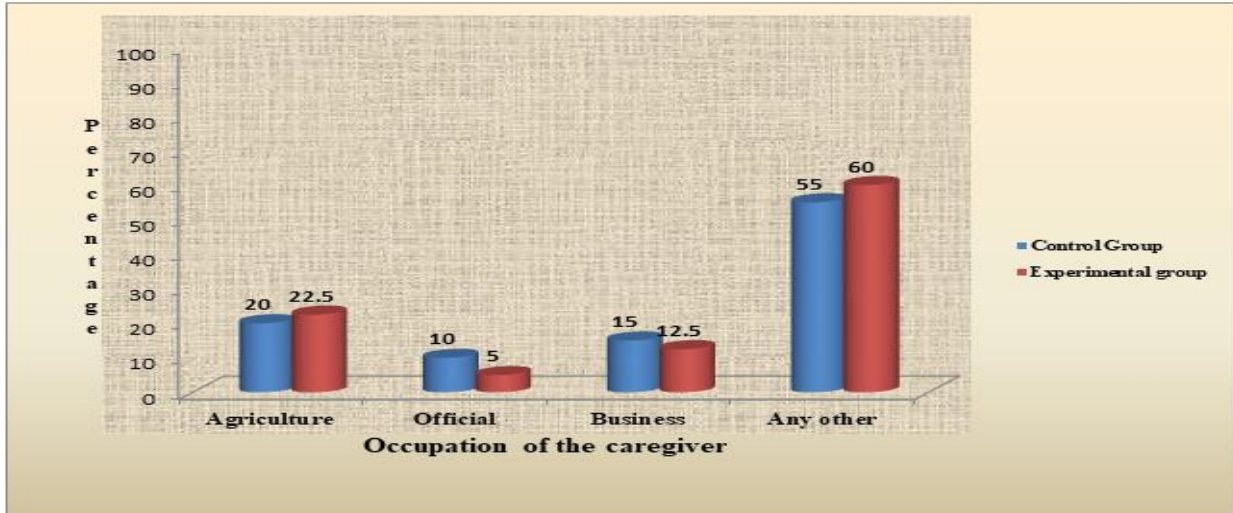


Fig 8:- Clustered cylindrical diagram showing the distribution of caregivers according to their occupation in control and experimental group

The above table and diagram indicates the occupation of the caregivers. 20% Agriculture, 10% Officials, 15% Business and 55% other in control group and 22.5 Agriculture, 5% Officials, 12.5% Business and 60% others in experimental group.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
9.	<b>Exposure to mass media regarding stroke rehabilitation</b>				
	Read any article in news paper	2	10	8	20
	Heard any commentary in radio	0	0	0	0
	Witness any program in television	2	10	5	12.5
	No exposure	16	80	27	67.5
	Total	20	100	40	100

Table 10:- Distribution of caregivers according to exposure to mass media. (n=60)

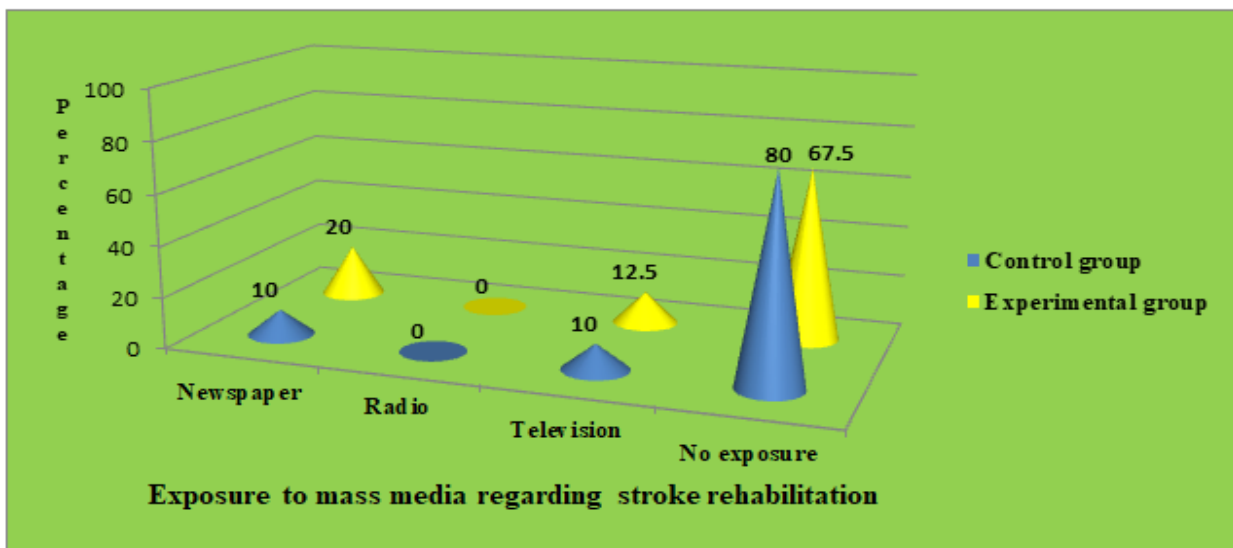


Fig 9:- 3-D cone diagram showing the distribution of caregivers according to exposure to mass media regarding stroke rehabilitation in control and experimental group.



The above table and diagram states the distribution of caregivers in exposure to mass media. 10% in control group and 20% in experimental group exposed to News paper, 10% in control group and 12.5% in experimental group exposed to Television and 80% in control group and 67.5% in experimental group were no exposure to any media.

Sl no.	Demographic variables	Control group (n=20)		Experimental group (n=40)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
10.	<b>Previous experience with stroke victim</b>				
	In family	2	10	4	10
	In neighboring home	4	20	12	30
	No experience	14	70	24	60

Table 11:- Distribution of caregivers according to previous experience with stroke victim. (n=60)

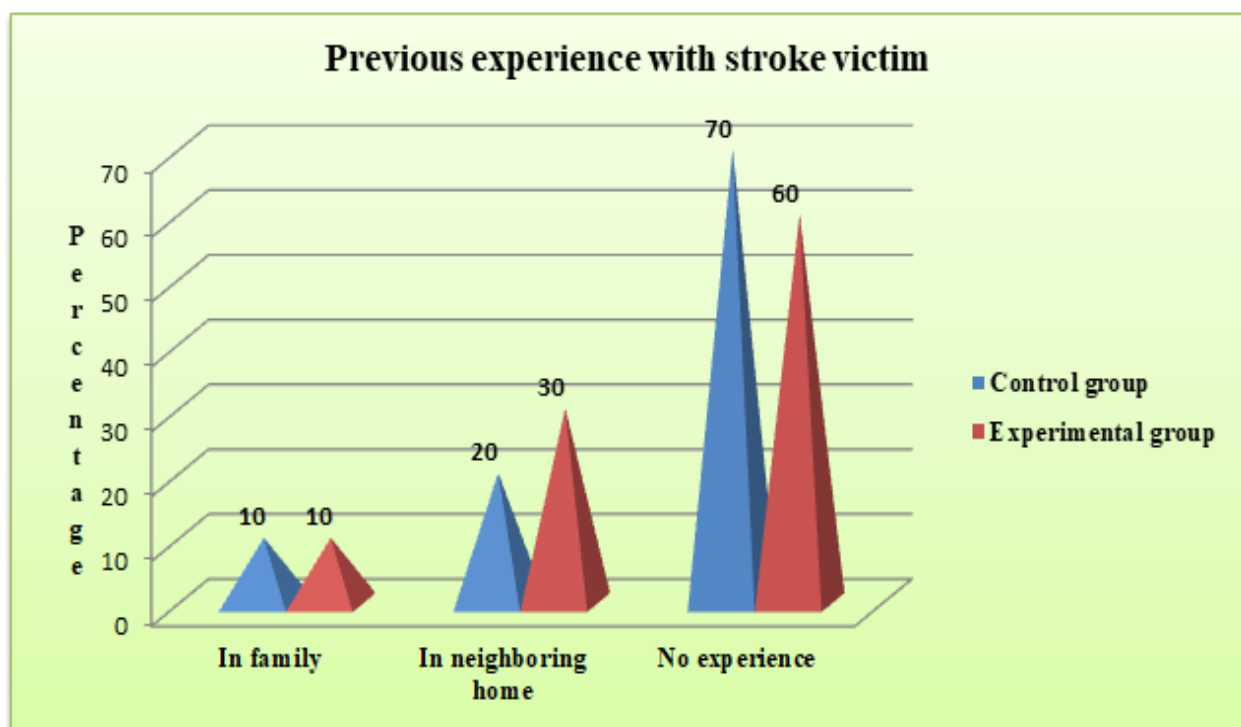


Fig 10:- Clustered pyramidal diagram showing the distribution of caregivers according to previous experience with stroke victim in control and experimental group.

The above table and diagram focuses on the distribution of caregivers by previous experience with stroke victim. 10% Family, 20% Neighbouring home and 70% No exposure in control group and 10% Family, 30% Neighbouring home and 60% No experience in experimental group.

Analysis and interpretation of pre-test level of knowledge between the experimental and control group.

➤ Objective:1. To identify the knowledge of caregivers of stroke patients in experimental and control group regarding stroke rehabilitation.

Level of knowledge	Pre-test			
	Control group (n=20)		Experimental Group (n=40)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Poor	15	75	28	70
Average	4	20	10	25
Good	1	5	2	5
Very Good	0	0	0	0

Table 12:- Frequency and percentage distribution of pre-test level of knowledge of caregivers in control and experimental group. (n=60)

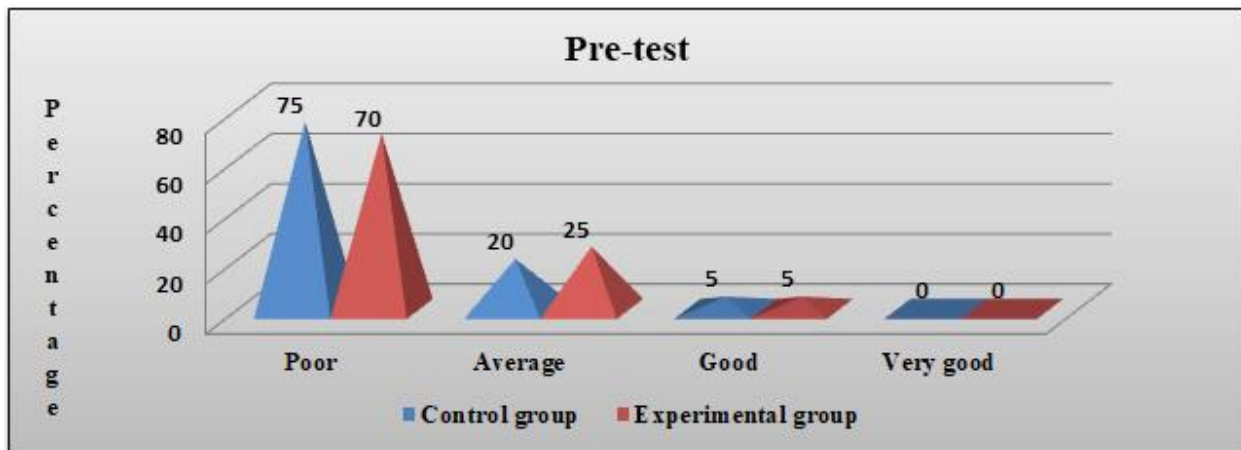


Fig 11:- Clustered pyramid diagram representing percentage distribution of pre-test level of knowledge of caregivers in control and experimental group

The above diagram reveals that the percentage distribution of pre-test level of knowledge. 75% Poor, 20% Average, 5% Good knowledge in control group and 70% Poor, 25% Average, 5% Good knowledge experimental group.

Analysis and interpretation of post-test level of knowledge between the experimental and control group.

➤ Objective:2. To determine the knowledge of caregivers of stroke patients in experimental and control group regarding stroke rehabilitation after the administration of Video Assisted Teaching (VAT).

Level of knowledge	Post-test			
	Control group (n=20)		Experimental Group (n=40)	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Poor	11	55	0	0
Average	8	40	3	7.5
Good	1	5	27	67.5
Very Good	0	0	10	25

Table 13:- Frequency and percentage distribution of post-test level of knowledge of caregivers in control and experimental group (n=60)

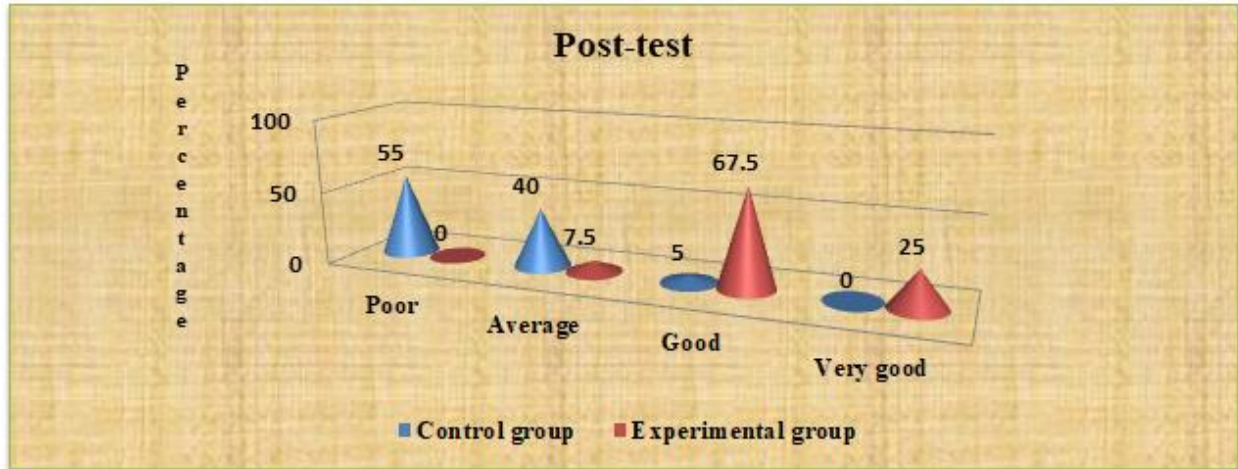


Fig 12:- Clustered cone diagram representing percentage distribution of post-test level of knowledge of caregivers in control and experimental group

The above diagram reveals that the percentage distribution of post-test level of knowledge. 55% Poor, 40% Average, 5% Good knowledge in control group and 7.5% Average 67, 5% Good knowledge and 25% Very good in experimental group.

Comparison between pre-test and post-test level of knowledge between the experimental and control group.

➤ Objective:3. To evaluate the effectiveness of Video Assisted Teaching (VAT) by comparing post-test knowledge scores regarding stroke rehabilitation between experimental and control group among caregivers of stroke patients.

Knowledge score	Group	Max. possible score	Range	Mean	SD	Mean %
Pre-test	Control	32	20-5	12.25	3.93	38.28
	Experimental	32	21-5	12.72	3.66	39.75
Post-test	Control	32	20-8	12.55	3.28	39.21
	Experimental	32	29-18	24.10	3.03	75.31

Table 14:- Range, mean, median, mean percentage and standard deviation of pre-test and post-test knowledge score (n = 60)

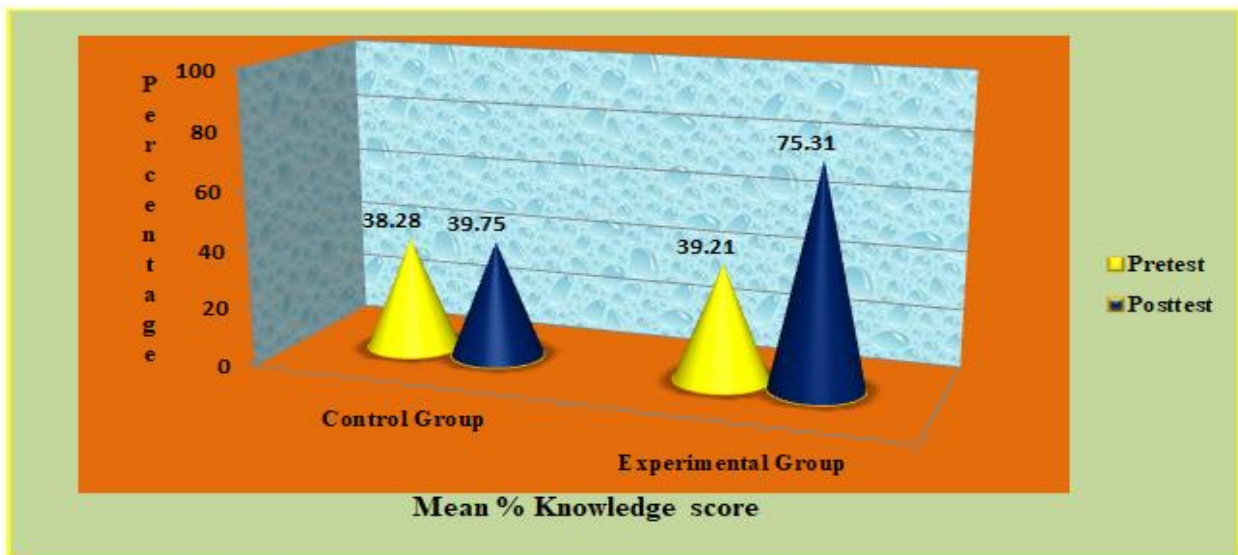


Fig 13:- Clustered cone diagram representing mean percentage of pre-test and post-test knowledge scores in control and experimental group

The above table and figure states the mean percentage of pre-test and post-test knowledge scores in control and experimental group. In control group score was 38.28% in pre-test and 39.75% in post-test and 39.21% in pre-test and 75.31% in post-test in experimental group.

Association between pre-test mean levels of knowledge with socio demographic variables

- **H<sub>2</sub>**- There will be a significant association between selected socio-demographic variables with pre-test knowledge scores of caregivers of stroke patients in experimental group and control group.

➤ Objective.4: To associate the pre-test knowledge scores with selected socio-demographic variables regarding stroke rehabilitation among the caregivers of stroke patients in both groups.

Sl. No.	Demographic variables	Experimental Group (n=40)		$\chi^2$ (df)
		< Median 25	≥ Median 25	
1.	<b>Age in years</b>			
	21-50	5	7	0.476 (1)
	51-60	15	13	
2.	<b>Caregiver relationship to the patient</b>			
	First degree	13	16	0.501 (1)
	Second degree & Un related	7	4	
3.	<b>Religion</b>			
	Hindu & Muslim	15	12	1.025 (1)
	Christian & Any other	5	8	
4.	<b>Residence</b>			
	Rural	7	12	2.506 (1)
	Urban & Semi-urban	13	8	
5.	<b>Educational status of the caregiver</b>			
	Primary school & Secondary	12	6	\$ 7.778* (1)
	Higher Secondary & above	4	18	
6.	<b>History of stroke since</b>			
	<1 year	7	5	0.476 (1)
	>1 year	13	15	
7.	<b>Occupation of the patient</b>			
	Agriculture	11	8	0.902 (1)
	Any other	9	12	
8.	<b>Occupation of the caregiver</b>			
	Agriculture	6	3	1.290 (1)
	Any other	14	17	
9.	<b>Exposure to mass media regarding stroke rehabilitation</b>			
	News paper & television	5	8	1.025 (1)
	No exposure	15	12	
10.	<b>Previous experience with stroke victim</b>			
	In family & in neighboring home	14	2	\$ 16.701* (1)
	No experience	4	20	

Table 15:- Chi-square with Yates correction associates the pre-test knowledge and socio-demographic variables in the experimental group. (n=40) (table value  $\chi^2_{(1)}=3.84$ , \$ Yates correction, \* Association is present)

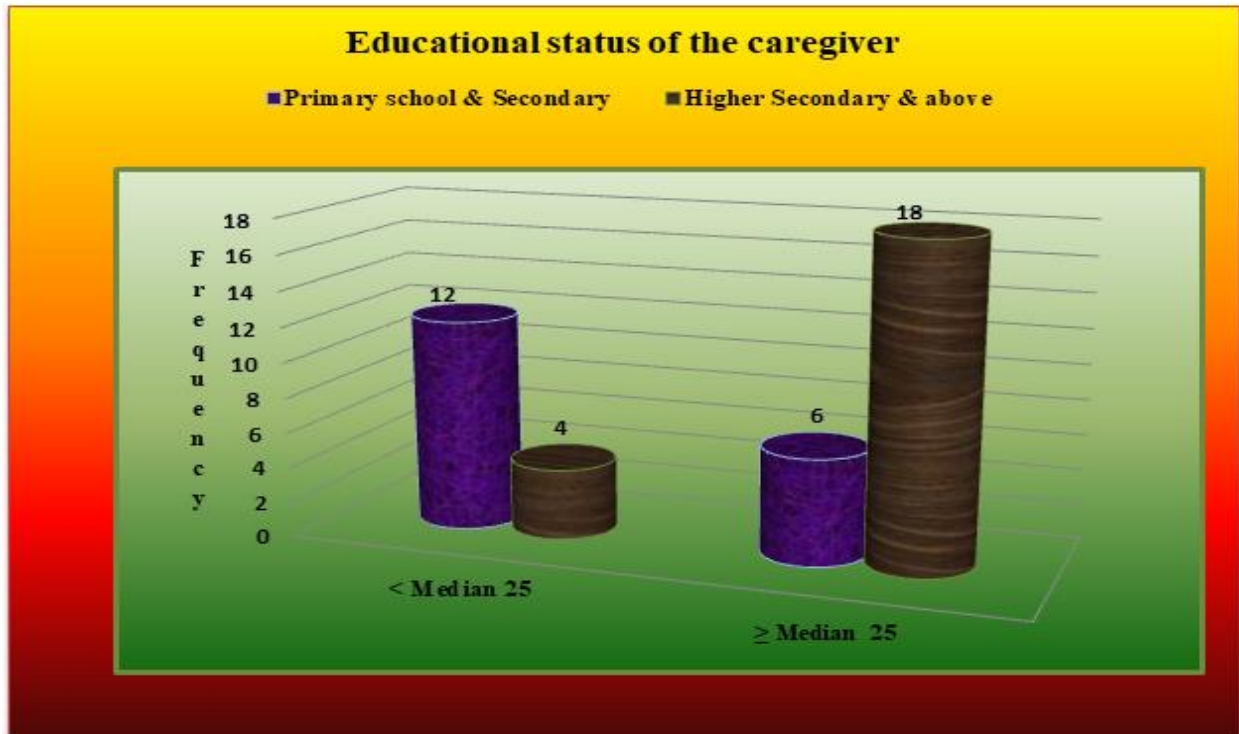


Fig 14:- Clustered cylinder diagram showing association between pre-test level of knowledge and educational status of the caregiver in the experimental group

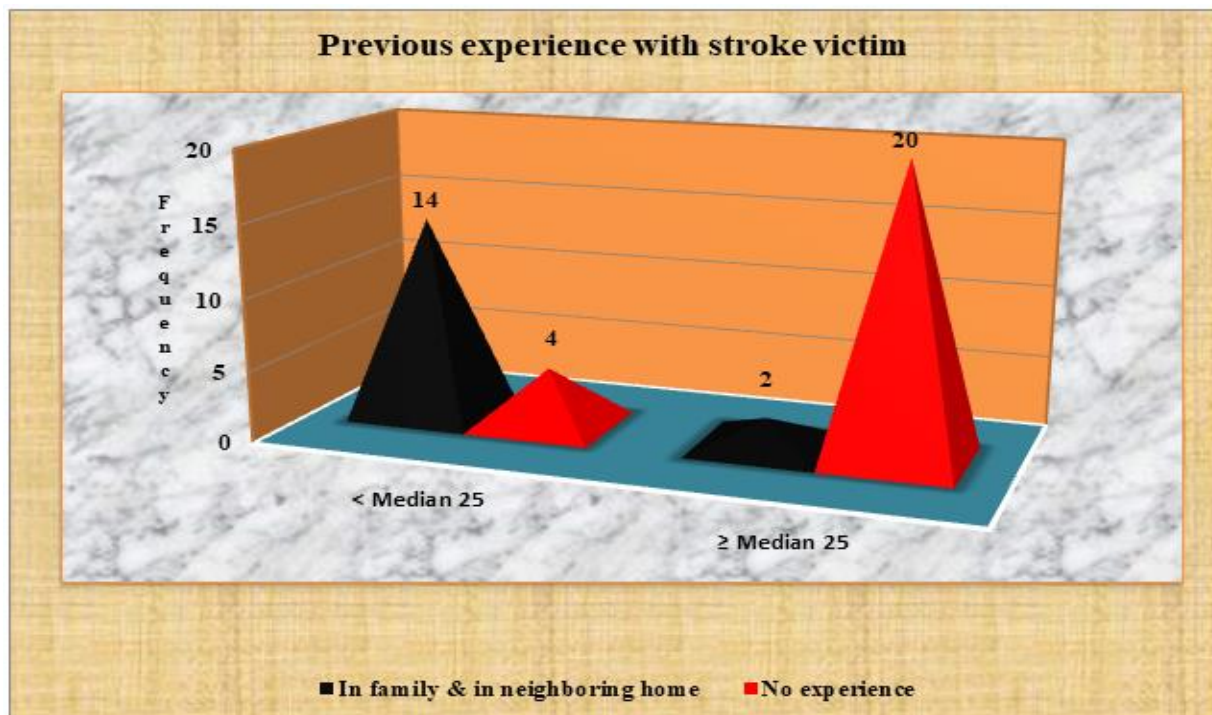


Fig 15:- 3-D clustered pyramid diagram showing association between pre-test level of knowledge and history of stroke since in the experimental group

Sl. No.	Demographic variables	Control Group (n=20)		$\chi^2$ (df)
		< Median 12	$\geq$ Median 12	
1.	<b>Age in years</b>			
	21-40	1	3	\$ 0.312 (1)
	41-60	9	7	
2.	<b>Caregiver relationship to the patient</b>			
	First degree	9	5	\$ 0.615 (1)
	Second degree & Un related	2	4	
3.	<b>Religion</b>			
	Hindu & Muslim	7	5	\$ 0.208 (1)
	Christian & Any other	3	5	
4.	<b>Residence</b>			
	Rural	7	5	\$ 0.208 (1)
	Urban & Semi-urban	3	5	
5.	<b>Educational status of the caregiver</b>			
	Primary school & Secondary	9	7	\$ 0.312 (1)
	Higher Secondary & above	1	3	
6.	<b>History of stroke since</b>			
	<1 year	7	3	\$ 0.208 (1)
	>1 year	5	5	
7.	<b>Occupation of the patient</b>			
	Agriculture	3	5	\$ 0.102 (1)
	Any other	7	5	
8.	<b>Occupation of the caregiver</b>			
	Agriculture	4	2	\$ 0.238 (1)
	Any other	6	8	
9.	<b>Exposure to mass media regarding stroke rehabilitation</b>			
	News paper & television	1	3	\$ 0.312 (1)
	No exposure	9	7	
10.	<b>Previous experience with stroke victim</b>			
	In family & in neighboring home	2	4	\$ 4.33* (1)
	No experience	8	6	

Table 16:- Chi-square with Yates correction associates the pre-test knowledge and socio-demographic variables in the control group. (n=20) (table value  $\chi^2_{(1)}=3.84$ , \$ Yates correction, \*Association)

Table.no.16, shows that the association between the mean level of knowledge and socio demographic variable in the control group. Based on the objectives used to Chi-square with Yates correction associate the means score of level of knowledge and selected socio-demographic variables in control group. The Chi-square with Yates correction and fisher, exact test shows that there is significance association between the pre-test knowledge and socio demographic variable.

*B. Association between caregiver's knowledge level and previous experience with stroke victim in experimental group*

Data indicated in the table 15, shows that the obtained  $\chi^2$  (4.33) was greater than the table value (3.84) which indicate that there was association between the knowledge level and previous experience with stroke victim at 0.001 level of significance.

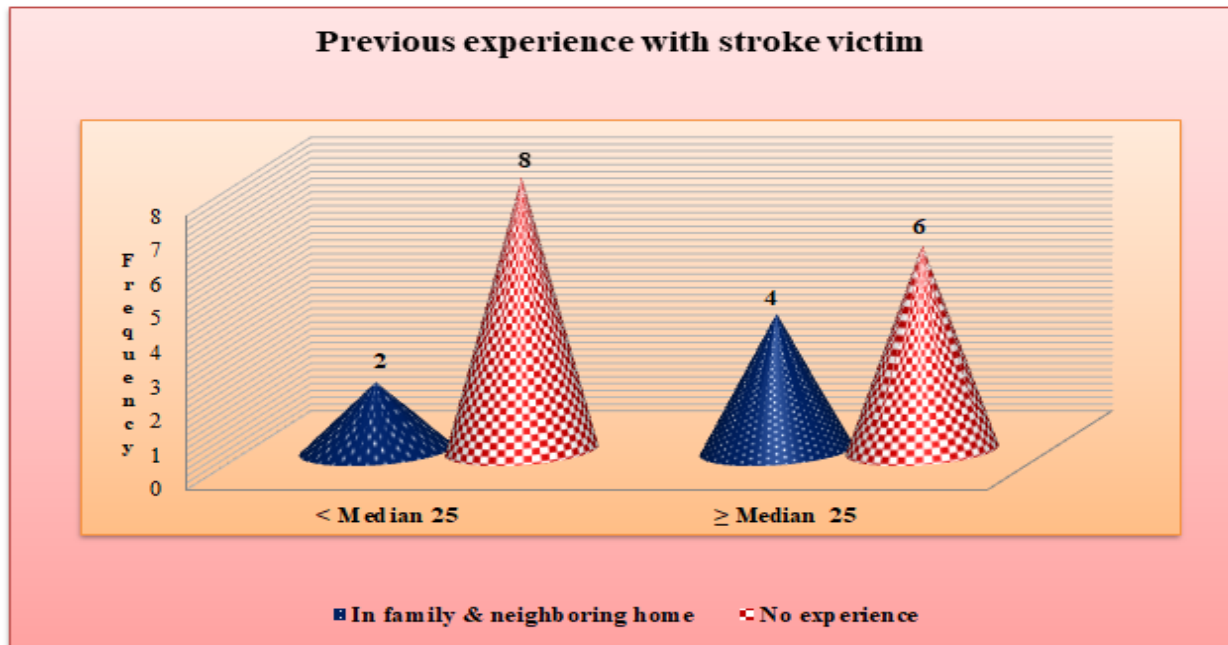


Fig 16:- Clustered cone diagram showing association between pre-test level of knowledge and history of stroke since in the control group

#### IV. CONCLUSION

Caregivers require knowledge, skills, and judgment to carry out the tasks of care for patients. Caring for patient's ranges from providing direct care, performing complex monitoring tasks, interpreting patient symptoms, assisting with decision making, and providing emotional support and comfort. Each type of involvement demands different skills and knowledge, organizational capacities, role demands and social and psychological strength from family members. Each of these is a potential area of concern for patient safety and caregiver's distress.

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