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A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Prevention Of Cerebrovascular Accident Among The Hypertensive Patient Admitted At Selected Hospital Of Vadodara, Gujarat

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Abstract

introduction:- *A Cerebrovascular Accident is a serious life-threatening medical condition that occurs when a blood supplying artery becomes suddenly blocked and starts to bleed. Due to rupture of blood vessels and blockage in the pathways there is restriction of blood and oxygen in reaching the brain's tissues and leads to brain death.[2] CVA is the abrupt damage of brain cells because of less supply of oxygen to the brain which is mainly caused by either tearing or stoppage of artery. It is also known as "Stroke". In this, the person looses certain functioning of the body part due to disturbances in supply of blood to a brain. It has three types mainly – blockage in the artery, tearing of blood vessels and acute loss of focal cerebral to function[5]*

Objectives:- *The objectives of the study were to evaluate the pretest level of knowledge and to evaluate the effectiveness of structured teaching programme and to find an association between pretest level of knowledge of hypertensive patient on knowledge regarding prevention of cerebrovascular accident and selected demographic variables.*

Materials And Methods:- *This study utilized a quantitative research approach with a one-group pre-test post-test design to evaluate the effectiveness of structured teaching program on knowledge regarding prevention of cerebrovascular accidents among hypertensive patients. Non-probability convenience sampling technique was employed to select 100 hypertensive patients in Parul Sevashram Hospital, Vadodara ,Gujarat. Sociodemographic data and knowledge were assessed using a self-structured questionnaire.*

Results: *The pre-test and post-test study finding reveals that that in the pre-test 93% received a Poor knowledge, and 7% had an Average knowledge participants and 0% has Good Knowledge whereas in post-test 2% received a Poor knowledge, and 26% had an Average knowledge participants and 72 % has Good Knowledge .regarding prevention of cerebrovascular accident among hypertensive patients. The effectivenss of structured teaching programme on knowledge regarding prevention of cerebrovascular accident among hypertensive patients was tested by t-test. Mean post-test knowledge score 21.86 was higher than mean pre-test knowledge score 7.43 with a standard deviation of 1.903 ,while the post-test means increased significantly to 21.86 with a standard deviation of 4.456 (t value= 32.156, df= 99, p=0.0001) and was found highly significant at p<0.05 level. Findings indicate that structured teaching programme was effective in improving the knowledge regarding prevention of cerebrovascular accident among hypertensive patients. Additionally the variables analyzed, only* ***'Monthly Income'*** *showed a statistically significant association with knowledge scores , other demographic factors, including age, gender, type of family, marital status, diet, occupation, education, personal habits, family history of hypertension, and prior information about cerebrovascular accidents, did not exhibit significant associations with knowledge scores, as their p-values exceeded the 0.05 threshold.*

Conclusions: *The study finding shows that the structured teaching programme was successful in improving the hypertensive patients knowledge regarding prevention of cerebrovascular accident. Hence, 'Monthly Income' showed a statistically significant association with knowledge scores , other demographic factors, including age, gender, type of family, marital status, diet, occupation, education, personal habits, family history of hypertension, and prior information about cerebrovascular accidents, did not exhibit significant associations with knowledge scores.*

Ethical approval: *The research was completed with appropriate research guidelines, the study was proposed and submitted to the ethical committee, Parul University Institutional Ethical Committee for Human Research (PUIECHR/PIMSR/00/081734/7514), Limda, Vadodara, and expert of the committee approved the study.*

Keywords: *Cerebrovascular accidents, Structured Teaching Programme, knowledge, Hypertensive Patients.*

INTRODUCTION

A Cerebrovascular Accident is a serious life-threatening medical condition that occurs when a blood supplying artery becomes suddenly blocked and starts to bleed.[1] Due to rupture of blood vessels and blockage in the pathways there is restriction of blood and oxygen in reaching the brain's tissues and leads to brain death.[2]

CVA is the abrupt damage of brain cells because of less supply of oxygen to the brain which is mainly caused by either tearing or stoppage of artery. It is also known as "Stroke". In this, the person looses certain functioning of the body part due to disturbances in supply of blood to a brain. It has three types mainly – blockage in the artery, tearing of blood vessels and acute loss of focal cerebral to function[5]

A stroke, or cerebrovascular accident, is an emergency medical condition characterized by an acute compromise of the cerebral perfusion or vasculature. The leading cause of ischemic stroke is hypertension whereas clotting disorders, carotid dissection, and illicit drug abuse are common causes in the younger populations.[1]

There are three main types of stroke: ischaemic, intracerebral and subarachnoid haemorrhage. In the US, the proportion of ischaemic strokes, intracerebral haemorrhage and subarachnoid haemorrhage is 87%, 10% and 3%, respectively. These percentages seem to be similar globally, with a trend of a higher increase in the frequency of haemorrhage in developed countries in relation to developing countries, while death rate is significantly higher in developing countries compared with developed countries.[3]

Even though cerebrovascular stroke is preventable through the prevention of modifiable risk factor, it is one of the leading causes of death and disability worldwide. For example, people with hypertension were four times more likely to have stroke than those with normal blood pressure[4]

MATERIAL AND METHOD

A Quantitative research approach design was implied to conduct this study. The study was conducted at Parul Sevashram Hospital, Vadodara (Gujarat), on Hypertensive patients regarding prevention of Cerebrovascular Accidents. This are the sample for the study and sample size was 100. Non-probability convenience Sampling Technique was used for sample selection. Criteria for the sample, inclusion criteria are of age, willing to participate in the study, and are present the time of data collection where as in exclusion criteria include patients who have hypertension with communicable disease, hypertensive patients who had attended educational proramme on same topic. Knowledge level were assessed using a self-structured knowledge questionnaire. The data collection tool was sent to 12 experts for validation out of which 8 were received back with their valuable suggestions and comments on the study tool. 20 Sample were taken for the pilot study. The reliability was determined by section II – self-structured questioners containing 30 items. The tool was administered to 20 hypertensive patients. The reliability for prevention of cerebrovascular accident was calculated using the test-retest method. Reliability for medication compliance calculated r=0.983 which is highly significant. Hence tool was found reliable.

RESULT

Data was Arranged, Organized and Presented as follows:

Section I- Findings related to demographic data of participants.

Section II- Findings related to knowledge participants on structured teaching programme regarding the prevention of cerebrovascular accident among hypertensive patients.

Section III- Findings related to association of the demographic variables with pre-test knowledge regarding prevention of cerebrovascular accident among hypertensive patients.

SECTION I

Findings related to the demographic data of the participants.

This section deals with selected demographic variables of participants.

Table 1: Frequency Distribution of participants as per Demographic Variables.

n=100

Sr. No.	Demographic Variable	Frequency	Percentage (%)
1	Age in years		

	35 – 44 Years	61	61%
	45 – 54 Years	30	30%
	54 & Above	9	9%
2	**Gender**		
	Male	85	85%
	Female	15	15%
3	**Type of Family**		
	Nuclear	21	21%
	Joint	79	79%
4	**Monthly Income**		
	Below 10,000 Rs	19	19%
	10,001 - 20,000 Rs	44	44%
	20,001 - 30,000 Rs	26	26%
	Above 30,000 Rs	11	11%
5	**Marital Status**		
	Married	72	72%
	Single	22	22%
	Divorced	4	4%
	Widow	2	2%
6	**Diet**		
	Vegetarian	71	71%
	Non vegetarian	6	6%
	Mixed	20	20%
7	**Occupation**		
	Government Employee	13	13%
	Private Employee	58	58%
	Retired	17	17%
	Farmer	9	9%
	Self Employed	3	3%
8	**Education**		
	Illiterate	46	46%
	Primary Education	48	48%
	Higher Secondary Education	4	4%
	Post graduate & above	2	2%
9	**Personal Habits**		
	Smoking	53	53%
	Alcoholism	38	38%
	Tobacoo chewing	3	3%
	None	6	6%
10	**Any Family history of hypertension**		
	Yes	24	24%
	No	76	76%

11	**Do you have previous information of Cerebrovascular Accident**		
	Yes	8	8%
	No	92	92%

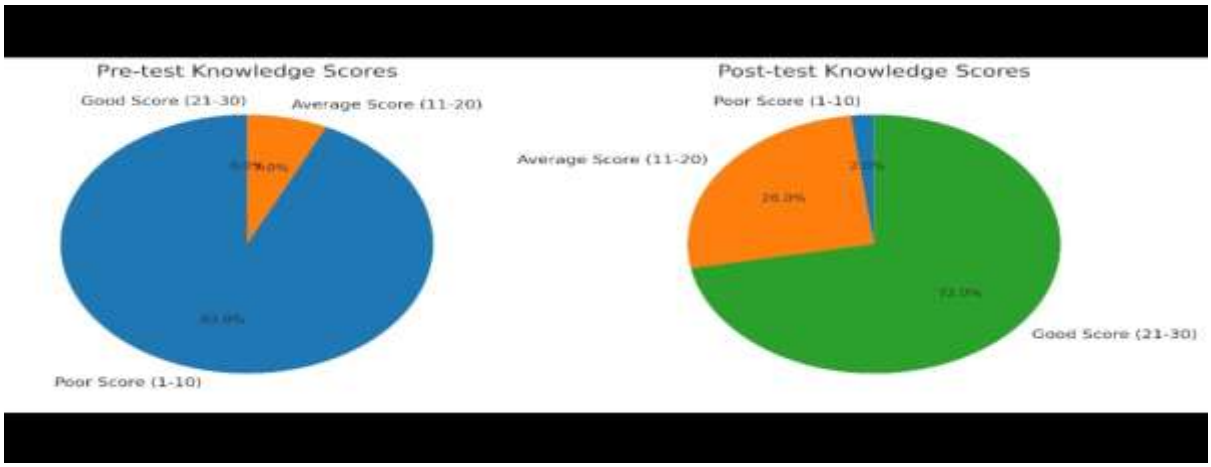
Table 1 describes the demographic data of a comprehensive profile of a predominantly **middle-aged (35–54 years), male (85%)** population, largely residing in **joint families (77%).**
A significant portion of this group has limited formal education, with **46% being illiterate** and **48%** having only **primary education**. Economically, the majority **earn ₹20,000 or less per month,** indicating a lower-income bracket.
Occupationally, **58%** are **private employees**, while **17%** are **retired**, suggesting a mix of active and non-active employment statuses. Dietary habits lean heavily towards **vegetarianism (71%),** reflecting regional or cultural preferences.
Personal habits reveal that over **half of the population smokes (53%),** and a significant portion consumes **alcohol (38%),** highlighting potential public health concerns. Despite these risk factors, only **24%** report a **family history of hypertension**, and a mere **8%** have prior information about cerebrovascular accidents, indicating a gap in health awareness. The data underscores the need for targeted health education and intervention programs, especially considering the prevalent lifestyle choices and limited health literacy within this demographic.

SECTION II

Section II- Findings related to knowledge participants on structured teaching programme regarding the prevention of cerebrovascular accident among hypertensive patients.

Table 2: Comparison of Pre and Post-test Knowledge Scores of participants.
n=100

Knowledge Score	**Pre-Test**	**Post-test**
	Frequency (%)	**Frequency** (%)
Poor Score (1 - 10)	93%	2%
Average Score (11 - 20)	7%	26%
Good Score (21 - 30)	0%	72%
TOTAL	**100(100%)**	**100(100%)**



Comparison of Pre-Test and Post-Test Knowledge scores of participants

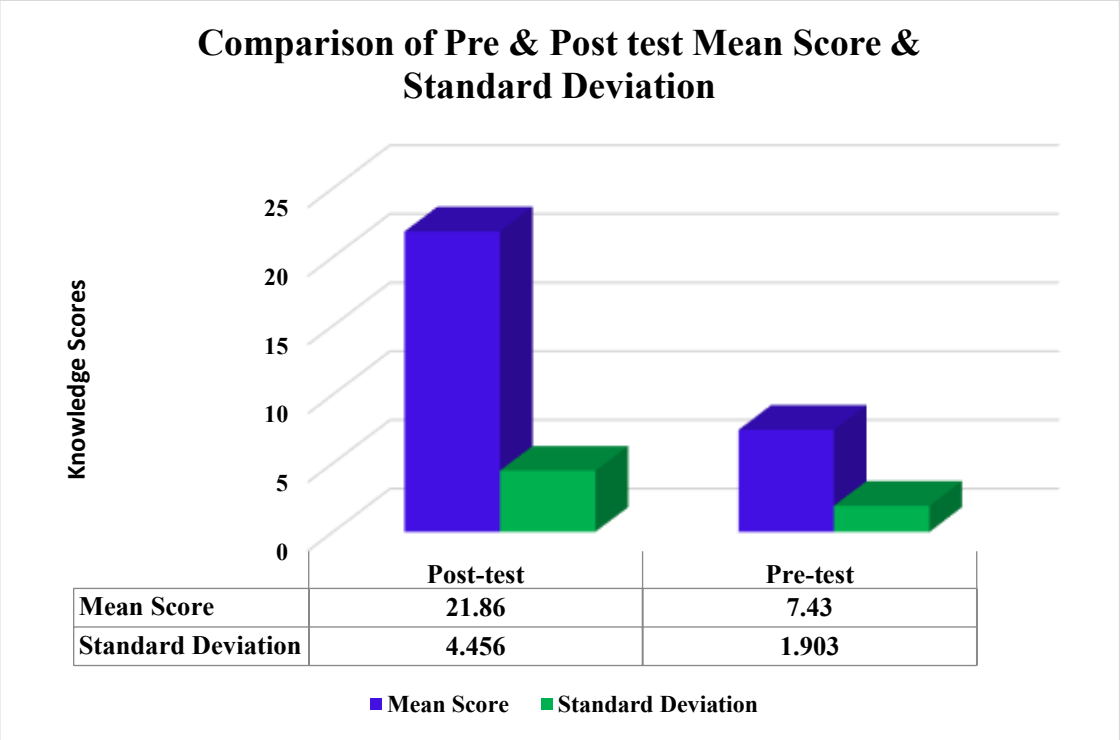
Table 2: Illustrates a significant improvement in knowledge scores following an Structured Teaching Programme. Initially, **93%** of participants scored in the **poor range (1–10),** with only **7%** achieving **average scores (11–20),** and none attaining **good scores (21–30).**

Post-intervention, the distribution shifted markedly: only 2% remained in the poor scores category, 26% reached **average**, and a notable 72% achieved **good scores.** This transformation indicates a substantial enhancement in participants' knowledge levels, suggesting the **effectiveness of the intervention** in elevating understanding from predominantly low to high proficiency.

Table 3: Comparison of overall Knowledge Scores of participants regarding the prevention of cerebrovascular accident among hypertensive patients.

Knowledge Score	Mean Score	Standard Deviation	Degree of Freedom	Calculated 't' Value	't' Table Value	p-value
Post-test	21.86	4.456	99	32.165	13.540	0.0001*
Pre-test	7.43	1.903				

Table 3: Compares pre-test and post-test knowledge scores to assess the effectiveness of an intervention. The pre-test mean score was 7.43 with a standard deviation of 1.903, while the post-test mean increased



significantly to 21.86 with a standard deviation of 4.456.

A paired t-test was conducted with 99 degrees of freedom, yielding a calculated t-value of 32.165. This value far exceeds the critical t-value of 13.540, indicating a highly significant difference between pre-test and post-test scores. The p-value associated with this result is 0.0001, well below the conventional significance threshold of 0.05, confirming that the improvement in scores is statistically significant.

SECTION III

Table 4: Findings related to the association of the demographic variables with pre-test knowledge score of the participants on (STP) structured teaching programme.

n=100

Sr. No.	Demographic Variable	F	Knowledge Score			X^2 Value	df	p-value
			Poor	Average	Good			
1	Age in years							

	35 – 44 Years	61	55	6	0	2.051	2	0.359
	45 – 54 Years	30	29	1	0			
	54 & Above	9	9	0	0			
2	Gender							
	Male	85	80	5	0	1.087	1	0.297
	Female	15	13	2	0			
3	Type of Family							
	Nuclear	21	20	1	0	0.205	1	0.651
	Joint	79	73	6	0			
4	Monthly Income							
	Below 10,000 Rs	19	15	4	0	7.969	3	0.047*
	10,001 - 20,000 Rs	44	41	3	0			
	20,001 - 30,000 Rs	26	26	0	0			
	Above 30,000 Rs	11	11	0	0			
5	Marital Status							
	Married	72	72	0	0	1.991	2	0.370
	Single	22	19	3	0			
	Divorced	4	2	2	0			
	Widow	2	1	1	0			
6	Diet							
	Vegetarian	71	67	4	0	1.065	2	0.587
	Non vegetarian	6	5	1	0			
	Mixed	20	19	1	0			
7	Occupation							
	Government Employee	13	13	0	0	2.911	4	0.573
	Private Employee	58	52	6	0			
	Retired	17	16	1	0			
	Farmer	9	9	0	0			
	Self Employed	3	3	0	0			
8	Education							
	Illiterate	46	41	5	0	2.102	3	0.552
	Primary Education	48	46	2	0			
	Higher Secondary Education	4	2	2	0			
	Post graduate & above	2	1	1	0			
9	Personal Habits							
	Smoking	53	50	3	0	6.939	3	0.074
	Alcoholism	38	36	2	0			
	Tobacoo chewing	3	3	0	0			
	None	6	4	2	0			
10	Any Family history of hypertension							
	Yes	24	23	1	0	0.389	1	0.533
	No	76	70	6	0			

11	Do you have previous information of Cerebrovascular Accident							
	Yes	8	8	0	0	0.655	1	0.419
	No	92	85	7	0			

Table 4 presents a statistical analysis examining the relationship between various demographic variables and knowledge scores related to cerebrovascular accidents (strokes). Using the Chi-square test, the study assesses whether differences in knowledge levels across demographic categories are statistically significant. A p-value less than 0.05 indicates a significant association.

Among the variables analyzed, only 'Monthly Income' showed a statistically significant association with knowledge scores ($\chi^2 = 7.969$, df = 3, p = 0.047), suggesting that income levels may influence awareness about strokes.

Other demographic factors, including age, gender, type of family, marital status, diet, occupation, education, personal habits, family history of hypertension, and prior information about cerebrovascular accidents, did not exhibit significant associations with knowledge scores, as their p-values exceeded the 0.05 threshold.

This analysis implies that socioeconomic status, as reflected by monthly income, may play a role in an individual's knowledge about strokes, highlighting the need for targeted educational interventions in lower-income groups.

DISCUSSION

This chapter discusses the study's findings and their interpretation, including statistical analysis, literature review, and comparison with similar studies. It addresses knowledge and what all other demographic factors influences prevention of cerebrovascular accidents among hypertensive patients.

Objective 1

"The first objective is to evaluate the pre test level of knowledge regarding prevention of cerebrovascular accident among hypertensive patients."

To assess the pre-test level , an evaluative research approach was conducted in Lakshmi Hospital& Specialist hospital, in **Bangalore, Karnataka.** In pretest, out of 60 respondents41 (68.3%) of the respondents had inadequate knowledge, 19(31.7%) of the respondents had moderate knowledge and none of the respondents had adequate knowledge.

The research study was conducted at **Eternal Hospital at Jaipur in year 2022**, to assess the pretest level of knowledge .The findings of this study shows that in pre -test majority of the subjects 61.66% (37) had average knowledge and 10% (6) subjects had poor knowledge about the topic, and 28.33% (17) subjects had good knowledge about the topic, and none was found in category of very good

Objective 2

The second objective was to evaluate the effectiveness of structured teaching programme on knowledge regarding prevention of cerebrovascular accident among hypertensive patients.

According to the results of this study, the descriptive study was conducted in **Itanagar in year 2020** . The aim of the study is **to evaluate the effectiveness of structured teaching programme knowledge regarding prevention** of cerebrovascular stroke among hypertensive patient . The study sample consists of 30 hypertensive patients and sampling technique used is convenience sampling technique to select the samples. Data was collected with the help of self-structured Validated questionnaire .The **results revealed that majority of the patients 23 (76.6%) of the patients had poor knowledge, 7 (23.3%) had average knowledge and none of the patient had good knowledge. Whereas, after the implementation of planned teaching program. 7 (23.3%) of the patients had poor knowledge, majority of the patients 21 (70%) had average knowledge and 2 (6%) had good knowledge . So this shows there is gain in knowledge after teaching programme.**

Objective 3

The third objective is to find an association between pre test level of knowledge regarding prevention of cerebrovascular among hypertensive patients within their selected demographic variables.

According to the study ,this study investigated the association between demographic variables and pre-test level of knowledge among hypertensive patients the study shows that 60 hypertensive patients using Non- Probability Convenient sampling technique was done. The research is quantitative study conducted

at selected hospitals of **Mehsana** district in the **year 2015 The results shows as overall the highest percentage in the demographic data including the age group 40% (41-45), gender 63.33% (female), occupation 50% (unemployed), religion 93.34% (Hindu),dietary practices 93.34% (vegetarian),History of alcoholism 86.67% (NO), History of smoking 56.67% (NO) Duration of illness 40% (1-5 year) Number of hospital visit 58.33%% (1-10), previous knowledge regarding prevention of stroke 56.67% (NO) First source of knowledge 53.84 %(Mass media)**. Post test knowledge mean score (19.33 ± 3.69) was higher than the pre test knowledge mean score (10.80 ± 4.02). **This indicates that there is association in between the pre-test level of knowledge and within demographic variable.**

CONCLUSION

The study's findings led to the conclusion that monthly income plays a vital role in prevention of cerebrovascular accident rather than any other socio demographic factors. The STP was successful in improving knowledge level of cerebrovascular accident patients. This analysis implies that socioeconomic status, as reflected by monthly income, may play a role in an individual's knowledge about strokes, highlighting the need for targeted educational interventions in lower-income groups.

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