"Risk Factors of Stroke among the Patients Suffering from Cerebrovascular Episode in Selected Hospitals: A Retrospective Study"

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Abstract

Background: Cerebrovascular disorders are the third leading cause of death in the united states and accounts for about 150,000 mortalities annually. An estimated 550,000people experience a stroke each year. When second strokes are consider in the estimates the incidence to 700,000 per year in the united states alone. Along with a high death rate, stroke produce significant morbidity in people who survive them. It is major leading cause of India and 20-30% deaths occurs within first 10 days after stroke. Disability adjusted life years lost due to stroke are estimated to range from 597 to 795/100,000 person years in India. A high proportion of young people (<40 years) are affected by stroke in India. **Objectives:** 1. To assess the risk factors of stroke among the patients suffering from cerebrovascular episode in selected hospitals. 2. To associate the risk factors of stroke with their selected demographic variables. **Methodology:** Non experimental retrospective design used for the study. It was conducted over 100 cerebrovascular episode patients by using Non probability purposive sampling technique. **Result:** Assessment was done by using checklist. The finding shows the frequency and percentage wise distribution of cerebrovascular episode patients admitted in selected hospitals.47% of the patients had family history of stroke,67% of the patients had hypertension,65% of the patients had blood pressure more than 120/80 mmHg, 25% of the patients were suffering from heart disease, 61% had obesity,50% had diabetes mellitus,35% had blood sugar more than 110 mg/dl, 20% had history of smoking, 23% had habit of drinking alcohol,65% were always stressful at home, 35% of them were suffering from sleep disturbance, 65% of them used fruits and vegetables in their routine diet, 71% of them consume diet with high in oily food, fat and excess of salty foods, 65% of the patients regularly take the sweet drinks and sugary foods, 79% were taking balanced diet, 33% of them perform any king of exercise in daily routine and 34% of them feels need of help from another person to perform everyday activities. **Conclusion:** Study conclude that age in years jof patients, marital status, area of residence, type of family, occupation, monthly family income, BMI with cerebrovascular episode is

statistically not associated with their risk factor score. Gender of patient, Educational level of patient, awareness about stroke condition, with cerebrovascular episode was associated with their risk factors score.

Key words: Risk factor, Stroke, Cerebrovascular Episode, Hospitals, Patients.

Introduction:

Stroke is term used to describe neurological changes caused by an interruption in the blood supply to a part of the brain[2]. A stroke is an acute compromise of the cerebral perfusion or vasculature or cerebrovascular accident (CVA). Approximately 85% strokes are ischemic and rest are haemorrhagic. Over the past several decades, the incidence of stroke and mortality are decreasing. Stroke is the leading cause of adult disability worldwide. It is thus critical to recognize stroke early and treat it rapidly to prevent or minimize morbidity and mortality. There are many causes of stroke. Hypertension is the leading cause of ischemic stroke. In the younger population, there are numerous causes of stroke including clotting disorders, carotid dissection and illicit drug abuse[3].

Background of the study:

Stroke is a major public health concern. The prevalence of stroke in the general population differs from 40 to 270 per 100,000 in India. Approximately 12% of all stroke occurs in those aged <40 years. It is projected that by 2015 the number of cases of stroke would increase to 166,372

in the country. It is the third biggest killer in India after heart attacks and cancers. An estimated 5.7 million people died from stroke in 2005 and it is projected that these deaths would rise to 6.5 million by 2015[6].

Need of the Study:

Study was conducted to assess risk factors, clinical presentations and predictors of stroke subtypes among adult patients admitted to stroke unit of Jimma university medical center (JUMC). Prospective observational study design was carried out. A standardized data extraction checklist and patient interview was used to collect data. A total of 116 eligible stroke patients were recruited during the study period.

Result: The mean age of the patients was 55.1 ± 14.0 years and males comprised 62.9%. According to world health organization (WHO) criteria of stroke diagnosis, 51.7% of patients had ischemic while 48.3% had haemorrhagic stroke. The most common risk factor identified was hypertension (75.9%) followed by family history (33.6%), alcohol intake (22.4%), smoking (17.2%) and heart failure (17.2%). The most common clinical presentation was headache complained by 75.0% of the patients followed by aphasia 60.3% and hemiparesis 53.4%[9].

By reviewing the study, there is a need to assess the Risk factors of stroke among the patients suffering from cerebrovascular episode.

Statement of the Problem

A Retrospective study to assess the Risk factors of stroke among the patients suffering from cerebrovascular episode in selected hospitals

OBJECTIVES

Primary Objectives:-

Operational Definition

- **Risk factor:** In this study risk factor means, Something that increase a person's chance of developing a disease.[12]
- **Stroke:** In this study stroke refers to the patients who are disabling attack or loss of consciousness.

Delimitation:

This study is delimited to patient with Stroke & patient who are willing to participate

Assumption:

- Will be able to identify the risk factors of stroke among the patients suffering from cerebrovascular episode.
- There may be some association between risk factor and development of the disease.

Ethical Aspect:

The ethical committee of the institution had given the approval for this study proposal. Prior permission was obtained from the concern authority for conducting

To assess the risk factors of stroke among the patients suffering from cerebrovascular episode in selected hospital

Secondary objectives:-

1. To assess the risk factors of stroke among the patients suffering from cerebrovascular episode in selected hospitals.
2. To associate the risk factors of stroke with their selected demographic variables

- **Cerebrovascular Episode:** In this study, cerebrovascular episodes refer to the patient who are at risk of stroke.
- **Hospitals:** In this study hospital refers to the patients who are hospitalized with cerebrovascular cases.
- **Patients:** In this study patient refers to both male and female who are hospitalized and between the age group of 30-60 and above

this study. After explain all the aspects of the study to the sample, written consent were taken from them. All the information obtains from the sample was kept confidential.

Review of Literature:

Review of literature is divided in two sections:

- Literature related to Cerebrovascular Episode.
- Literature related to Risk factors of stroke.

Conceptual Framework:

The conceptual framework used for the present study is developed from the health belief model.

Methodology

Research approach: quantitative research approach

Research design: Non-experimental retrospective research design

Setting: Research setting for present study is selected hospitals of the city.

Variables

- *Research variable:* In this study Risk factors of stroke among the patients suffering from cerebrovascular episode.

  Demographic variable: Age, Gender, Marital status, Area of residence, Education status, Occupation, Types of family, Monthly family income, Awareness about stroke, Height, Weight, BMI.

Population

- *Target population:* It includes all patients suffering from cerebrovascular episode.
- *Accessible population:* It includes patients suffering from cerebrovascular episode in selected hospitals and are available at the time of data collection

Sampling

- *Sample size:* 100 patients suffering from cerebrovascular episode
- *Sampling technique:* Non probability purposive sampling technique

Sampling criteria

- *Inclusion criteria:*

In this study, inclusive criteria was

Patients suffering from Cerebrovascular episode who are -

1. All patients diagnosed with cerebrovascular episode.
2. Willing to participate in study.
3. Available at the time of data collection.
4. Able to understand Marathi/Hindi/English.

- *Exclusion criteria:*

In this study exclusive criteria was, Patients suffering from Cerebrovascular episode-

1. Who are not willing to participate
2. With altered level of consciousness

Description of Tools

Section I- semi- structured questionnaire on demographic variables

Section II – Check-list of risk factor of stroke

Section III- Association of level of risk factors of stroke in relation to demographic variables

Validity

Content and construct validity of tool was determined by 20 experts including medical surgical nursing subject, physician and statistician.

Reliability

In this study, the reliability of tool was determined by administering the Checklist to 10 samples. Karl Pearson correlation coefficient formula was used. The Checklist was said to be reliable if the correlation coefficient was more than 0.8 The

correlation coefficient 'r' of the questionnaire was 0.682.

Pilot study

A sample of 10 cerebrovascular patients was selected. And collected data was coded, tabulated and descriptive and inferential statistics used to analyze. The pilot study was feasible in term of time, money and resources.

Data collection

Data collection Main study was done by following steps

1. Permission was obtained from the higher Authority of the hospital setting.

2. Non – probability purposive sampling technique was used to select samples from selected hospitals.

3. The sample was approached in a small group on daily basis.

4. Before collecting the data, self-introduction was given by the investigator and the purpose and objectives of the study was explained.

5. Written consent from the samples was taken.

6. Risk factors of stroke was assessed by checklist.

Result:

Section I: Description on assessment of level of risk factors of stroke among the patients suffering from cerebrovascular episode in   selected hospitals with regards to demographic variables.

Table No. IV- 1: Table showing Percentage wise distribution of patients according to their demographic characteristics. n=100

Demographic Variables	Frequency(f)	Percentage (%)
Age(yrs)		
30-40 yrs	17	17
41-50 yrs	19	19
51-60 yrs	21	21
≥61 yrs	43	43
Gender		
Male	69	69
Female	31	31
Education		
Primary	20	20

Secondary	26	26
Higher Secondary	33	33
Graduate	21	21
PG and above	0	0
Marital Status		
Married	73	73
Unmarried	9	9
Widow/Widower	17	17
Separated	1	1
Area of residence		
Rural	36	36
Urban	54	54
Urban Slum	10	10
Type of family		
Nuclear	31	31
Joint	55	55
Extended	14	14
Occupation		
Govt Job	0	0
Private Job	37	37
Business	23	23
Farmers	37	37
Any Others	3	3
Monthly Family Income(Rs)		
Below 10000 Rs	13	13
10001-15000 Rs	34	34
15001-20000 Rs	36	36
≥20001 Rs	17	17
Awareness about stroke condition		
Yes	19	19
No	81	81
Body Mass Index(kg/m2)		

Below 18(Underweight)	0	0
18-24.99(Normal)	38	38
25-29.9(Overweight)	60	60
≥30(Obese)	2	2

Section II: Description on assessment of level of risk factors of stroke among the patients suffering from cerebrovascular episode in selected hospitals

Table No. IV- 2: Table showing Assessment with level of risk factors of stroke
n=100

Level of risk factors of stroke	Score Range	Level of Risk Factors of stroke	
		No of patients	Percentage
Mild Risk	0 to 6	7	7
Moderate Risk	7 to 12	89	89
Severe Risk	13 to 20	4	4
Minimum score		5	
Maximum score		13	
Mean risk factor score		8.90 ± 1.74	
Mean % risk factor score		44.50 ± 8.71	

Table no. IV-3: Table showing Area wise distribution of Assessment with level of risk factors of stroke

n=100

Sr. No.	Risk factors	Yes	No	Mean	SD
Family History					
1.	Did anyone from your family suffered with stroke?	47(47%)	53(53%)	0.47	0.50
Hypertension					
2.	Have you ever checked your B.P.? If yes then was the B.P.?	67(67%)	33(33%)	1.32	0.93
3.	Is your B.P. greater than 120/80mmHg?	65(65%)	35(35%)		
Heart Disease					
4.	Have you ever been suffering from any heart disease?	25(25%)	75(75%)	0.28	0.47
5.	Do you have history of any blood disorder? If yes then specify	3(3%)	97(97%)		
Obesity					
6.	Do you know obesity is a cause of stroke?	61(61%)	39(39%)	0.61	0.49
Diabetes mellitus					
7.	Have you ever been diagnosed with Diabetes mellitus?	50(50%)	50(50%)	0.85	0.91
8.	Is your fasting blood sugar greater than 100mg/dl?	35(35%)	65(65%)		
Smoking					
9.	Do you have habit of chewing tobacco? if yes, then specify the time duration?	20(20%)	80(80%)	0.67	0.69
10.	Do you have habit of smoking ?if yes, then specify the time duration?	47(47%)	53(53%)		
Alcohol					

11.	Do you have habit of drinking alcohol
	
	if yes ,then specify
	
	  a. How much amount?
	  b. How much frequency?
	  c. Specify the time duration?
		23(23%)	77(77%)	0.23	0.42

Stress					
12.	Are you always stressful in home or workplace?	65(65%)	35(35%)	0.65	0.47
Sleep Apnea					
13.	Are you suffering from sleep disturbance?	35(35%)	65(65%)	0.35	0.47
Drug abuse					
14.	Do you have any addiction of substance?	0(0%)	100(100%)	0.00	0.00
Diet					
15.	Is your diet contain fruits and vegetables in daily routine	65(65%)	35(35%)		
16.	Is your diet high in Oily food, fat and excess of salty foods?	71(71%)	29(29%)	2.80	0.66
17.	Do you regularly take the sweet drinks and sugary foods?	65(65%)	35(35%)		
18.	Are you taking balanced diet?	79(79%)	21(21%)		
Exercise					
19.	Are you perform any form of exercise in daily routine?	33(33%)	67(67%)	0.33	0.47
Others					
20.	In the last two weeks did you feel the need of help from another person to perform everyday activities?	34(34%)	66(66%)	0.34	0.47

Section III: Association of level of risk factors of stroke among the patients suffering from cerebro-vascular episode in selected hospitals in relation to demographic variables

Table no. IV- 4: Table showing Association of level of risk factors of stroke among the patients suffering from cerebrovascular episode in selected hospitals in relation to demographic variables. n=100

Demographic Variables	Calculated value			Df	Table value	Level of Significance P≤0.05	Significance
	t-value	F-Value	p-value				
Age (yrs)	-	0.36	0.77	3,96	2.70	p>0.05	NS
Gender	5.12	-	0.0001	8	2.31	p<0.05	S
Educational	-	2.82	0.043	3,98	2.70	p<0.05	S
Marital status	-	1.29	0.28	3,96	2.70	p>0.05	NS
Area of residence	-	2.22	0.11	2,97	3.09	p>0.05	NS
Type of family		2.67	0.14	2,97	3.09	p>0.05	NS
Occupation	-	1.19	0.31	3,96	2.70	p>0.05	NS
Monthly family income (Rs)	-	0.75	0.52	3,96	2.70	p>0.05	NS
Awareness about stroke condition	3.15	-	0.002	98	1.98	p<0.05	S
Body mass index(kg/m2)	-	0.24	0.78	2,97	3.09	p>0.05	NS

Key-S-Significant   **NS- Not Significant**

Discussion

Shah SK , Shah S, Shah SK, BK (2015) Conducted a descriptive study to assess the risk factors of stroke among the cerebrovascular patients. Two tools were used for collecting data. Tool I is structure interview questionnaire sheet to collect data about the patients demographic data. Tool II is an checklist for the patients to assess the risk factors of stroke among the cerebrovascular patients.

The result of the study reported there were 68 number of males and 51 number of females. The mean age was 59.76±11.22. About 63(52.9%) of cases were of Ischemic Stroke and 56 (47.1%) of cases were Hemorrhagic Stroke. Among the modifiable risk factors, alcohol use was seen in 75(63%) and constituted largest risk factor.

Smoking was present in 70(58.8%) of patients, followed by

Hypertension in 60(50.4%) and Diabetes 11(9.2%) of patients.Other modifiable risk factors like previous vascular events 9(7.6%) and heart disease 4(3.4%) were less common in our study.

The mean age of stroke was 59.76±11.22 with ischemic stroke being more common than hemorrhagic stroke. The maximum number of cases occurred in age group 60 years and above. In the younger age group (40-60 years), hemorrhagic stroke predominated. Male are at higher risk of having stroke than female. Out of modifiable risk factors, alcohol use followed by smoking, hypertension and Diabetes was common. Preventing strategies adopted for the modifiable

risk factors may have significant role in preventing the upcoming adverse effects.[61]

Conclusion

Thus, it was concluded that age in years of patients, marital status, area of residence, type of family, occupation, monthly family income, BMI with cerebrovascular episode is statistically not associated with their risk factor score.

Gender of patient, Educational level of patient, awareness about stroke condition, with cerebrovascular episode were associated with their risk factors score.

IMPLICATION OF THE STUDY

The findings of the study have implication for nursing practice. Nursing administration, and nursing research.

NURSING PRACTICE

- The health professionals including nurses will be more vigilant and tactful in order to identify and provide knowledge and assess the risk factors of stroke among the cerebrovascular patients.
- The findings of the study will help the nursing professionals who working in hospital setting, and gaining the knowledge and help in planning and implementation of health teaching and assessing the risk factors of stroke.

NURSING EDUCATION

- Nurses who are up to date with the knowledge about stroke condition will impart the knowledge to nursing students which will ultimately update the knowledge.
- Now days much emphasis is given on comprehensive care in the nursing curriculum. So this study can be used by nursing teachers as an informative illustration for nursing students.
- Checklist on assessing the risk factors of stroke could help educators to use it as a tool for teaching.
- Students must be given clinical field assignment, in which they must be given opportunity to interact with people and create awareness regarding risk factors of stroke.

- Efforts can be taken to include risk factors of Stroke condition in nursing curriculum to increase the knowledge of student nurses.

- Nurse who are up to date knowledge with the risk factor of stroke will ultimately decrease the mortality related to diseases. Descriptive study will help to know the current knowledge and risk factors of stroke among the cerebrovascular patients. And will help the nurse educators to plan the teaching accordingly.[64]

NURSING ADMINISTRATION

- Findings of the study can be used by the nursing administrator to identify the policies and plans for providing education to the staff nurses and health professionals.

- It would help the nursing administrator to be planned and organized or giving continuing education to the nurses and others to updating and applying the knowledge of risk factors of stroke and prevention of this condition.

- Implications, specific to directors of nursing and administrators of health care facilities, also exist. Nursing staff should be provided with the opportunity to learn about Stroke and its risk factors and become proficient. A continuing education program should be offered and attendance encouraged.

- The result of the study contributes to the body of knowledge of nursing.

- In service education must be conducted for the nurses to create awareness regarding

Risk factors of stroke among the cerebrovascular episode patients.

- Research studies can be conducted in assessing the risk factors of stroke, knowledge and practice regarding stroke condition.[65]

NURSING RESEARCH

- The findings of the study have added to the existing body of the knowledge in relation with Risk factors of stroke among the patients suffering from cerebrovascular episode which will enhance the knowledge and would help to keep it updated. Even though the nurse's knowledge was found to be good. Many more areas can be improved with the help of the study data.

- Other researchers may utilize the suggestions and recommendations for conducting further study.

- The tools and technique used has added to the body of knowledge and can be used for further references.[66]

RECOMMENDATIONS

- A similar study can be replicated on a larger population for the generalization of the findings

- A Study may be conducted to evaluate the effectiveness of planned teaching programme on knowledge and risk factors of stroke among the cerebrovascular patients.

- A similar study can be carried out to evaluate the effectiveness of video assisted

teaching programme on knowledge and risk factors of stroke among the cerebrovascular patients.

- A self-instructional module can be used to assess the effectiveness and risk factors of stroke among the cerebrovascular patients.

- A study can be carried out to evaluate the planned teaching programme on the risk factors of stroke among the cerebrovascular patients in selected hospitals

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