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A CROSS-SECTIONAL STUDY TO ASSESS THE KNOWLEDGE REGARDING RISK FACTORS AND WARNING SIGNS OF STROKE AMONG PATIENTS WITH HYPERTENSION ATTENDING ADULT INPATIENT AND OUTPATIENT DEPARTMENTS OF A SELECTED TERTIARY CARE HOSPITAL IN WESTERN MAHARASHTRA WITH A VIEW TO DEVELOP AN INFORMATION MATERIAL

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ABSTRACT

Background: Stroke is the most devastating of all the neurological disorders and is the second leading cause of death worldwide. Hypertension is the most important modifiable risk factor for stroke .There is a need to study the knowledge and level of awareness about the early warning signs of stroke especially among the high risk group of people . Material and methods: This was a cross sectional study conducted on 303 hypertensive patients attending the inpatient and outpatient departments of a tertiary care hospital in Western Maharashtra. A self structured questionnaire has been used to collect data about patient's characteristics and knowledge regarding risk factors and warning signs of stroke. Convenient sampling was used to select the samples based on the inclusion and exclusion criteria. Data was analyzed through SPSS 23 and descriptive statistics (frequency, percentage and mean) and inferential statistics(F test and Mann Whitney test) were used .The figure of $p<0.05$ was considered as statistically significant. Results : Out of the 303 participants evaluated, 92 (30.4%) were in the 51–60 years age group, 221 (72.9%) were male, and 278 (91.7%) were married. Regarding knowledge of stroke risk factors, 100 (33.01%) demonstrated good knowledge, 135 (44.5%) had average knowledge, and 68 (22.44%) exhibited poor knowledge. As for knowledge of stroke warning signs, 127 (41.91%) had good knowledge, 160 (52.8%) had average knowledge, and 16 (5.28%) had poor knowledge. A statistically significant association was found between knowledge levels and factors such as age, gender, educational qualification, occupation, monthly income, regular exercise habits, and dietary modifications. Conclusion :Lacunae still exists amongst hypertensive patients on knowledge regarding risk factors and warning signs of stroke

Keywords: Stroke, Risk Factors, Warning Signs, Hypertension, Knowledge

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INTRODUCTION

Stroke, as defined by the WHO, is a "rapidly developing clinical sign of focal (or global) disturbance of cerebral function, lasting 24 hours or longer or leading to death, with no apparent cause other than vascular origin[1]." It occurs when the blood supply to the brain is disrupted, leading to brain damage and functional impairment. Approximately 87% of strokes are ischemic, caused by arterial clots, while hemorrhagic strokes result from vessel rupture. Transient ischemic attacks (TIAs), or "mini-strokes," involve temporary clots and resolve without acute infarction. Stroke often leads to severe disabilities, including partial paralysis and cognitive impairments[2]. According to a report from the World Stroke Organization and the Lancet Neurology Commission, stroke is the second-leading cause of death worldwide, despite being highly preventable and treatable. The report also warns that, if current trends continue, stroke-related deaths could increase by 47% by 2050[3].

Hypertension is the leading modifiable risk factor for stroke, responsible for about 50% of ischemic strokes and greatly increasing the likelihood of hemorrhagic strokes.[4]. According to the WHO, hypertension is defined as systolic blood pressure >140 mm Hg or diastolic blood pressure >90 mm Hg on two separate occasions[5]. Managing hypertension effectively can lower stroke risk by up to 34%[6].

In India, stroke poses a significant public health challenge, with prevalence rates ranging from 84–424 per 100,000 and case fatality ratios as high as 42%. Early recognition of symptoms and awareness of modifiable risk factors are essential for prevention[7]. This study aims to assess hypertensive patients' awareness of stroke risk factors and warning signs to guide effective prevention strategies.

AIM OF THE STUDY

To assess the knowledge regarding risk factors and warning signs of stroke among patients with hypertension attending adult inpatient and outpatient departments of a selected tertiary care hospital in Western Maharashtra.

OBJECTIVES

Primary objective

1. To assess the knowledge regarding risk factors of stroke among patients with hypertension attending adult inpatient and outpatient departments of a tertiary care hospital in Western Maharashtra.
2. To assess the knowledge regarding warning signs of stroke among patients with hypertension attending adult inpatient and outpatient departments of a tertiary care hospital in Western Maharashtra.

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3. To find the association of knowledge of risk factors of stroke with selected demographic variables.
4. To find the association of knowledge of warning signs of stroke with selected demographic variables.

Secondary Objective

To develop an information material regarding risk factors and warning signs of stroke

Inclusion &exclusion criteria

The study included participants aged 30–80 years with hypertension who were willing to participate. It excluded critically ill hypertensive patients, pregnant women, and those with a history of stroke, ensuring a focused sample population to assess awareness of stroke risk factors and warning signs among individuals at risk.

DESCRIPTION OF THE TOOL

The data collection tool consisted of 3 sections

Section A:Demographic Data(sample characteristics)

Section B: Part 1-Knowledge assessment regarding risk factors of stroke

Section B: Part 2-Knowledge assessment regarding warning signs of stroke

MATERIALS & METHODS USED

This cross-sectional study was conducted on 303 hypertensive patients attending the inpatient and outpatient departments of a tertiary care hospital in Western Maharashtra. A self-structured questionnaire was used to collect data on patient characteristics and knowledge of stroke risk factors and warning signs. Participants were selected using convenient sampling based on inclusion and exclusion criteria. Data analysis was performed using SPSS version 23, employing descriptive statistics (frequency, percentage, and mean) and inferential statistics (F-test and Mann-Whitney test). A p-value of <0.05 was considered statistically significant.

RESULT

The study included a total of 303 participants, with the majority (30.4%, n = 92) belonging to the 51–60 years age group. Gender distribution revealed that most participants were male (72.9%). In terms of marital status, 91.7% (n = 278) of the participants were married. Regarding education, approximately 38% had attained a secondary level of education. Employment data showed that 17.2%

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(n = 52) were working in the government sector, while a smaller proportion (7.9%, n = 241) were employed in private firms.

On assessing the knowledge regarding stroke risk factors,out of the total 303 participants, 100 (33.01%) demonstrated *good* knowledge, 135 (44.55%) had *average* knowledge, and 68 (22.44%) showed *poor* knowledge about stroke risk factors as depicted in Fig No:1.

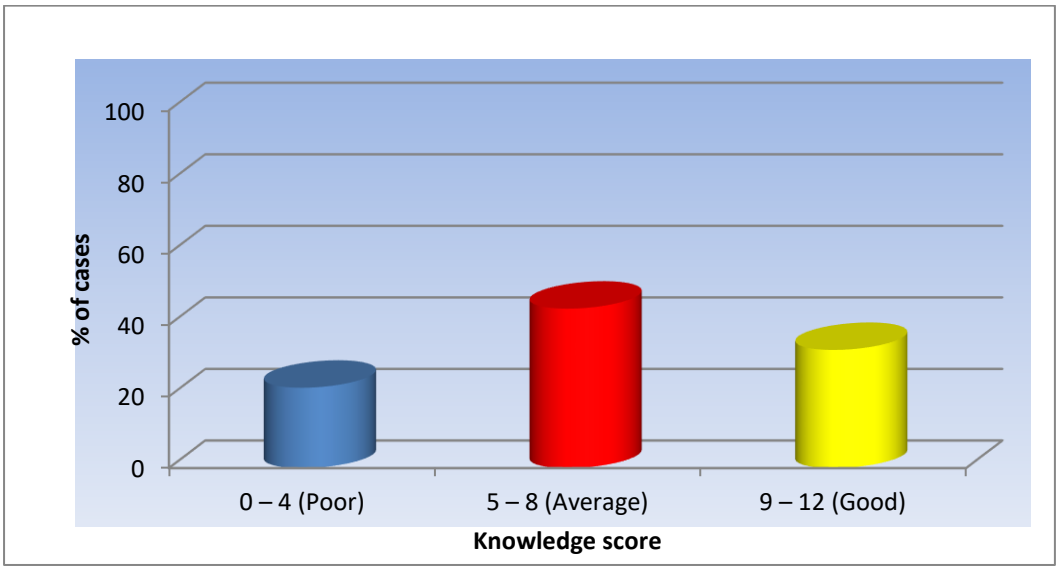

Figure 1 :Knowledge levels regarding stroke risk factors among the study participants.

On assessing the knowledge regarding stroke warning signs, the majority of participants, 160 (52.8%), demonstrated *average* knowledge, followed by 127 (41.91%) with *good* knowledge, while only 16 (5.28%) exhibited *poor* knowledge as shown in Fig.2

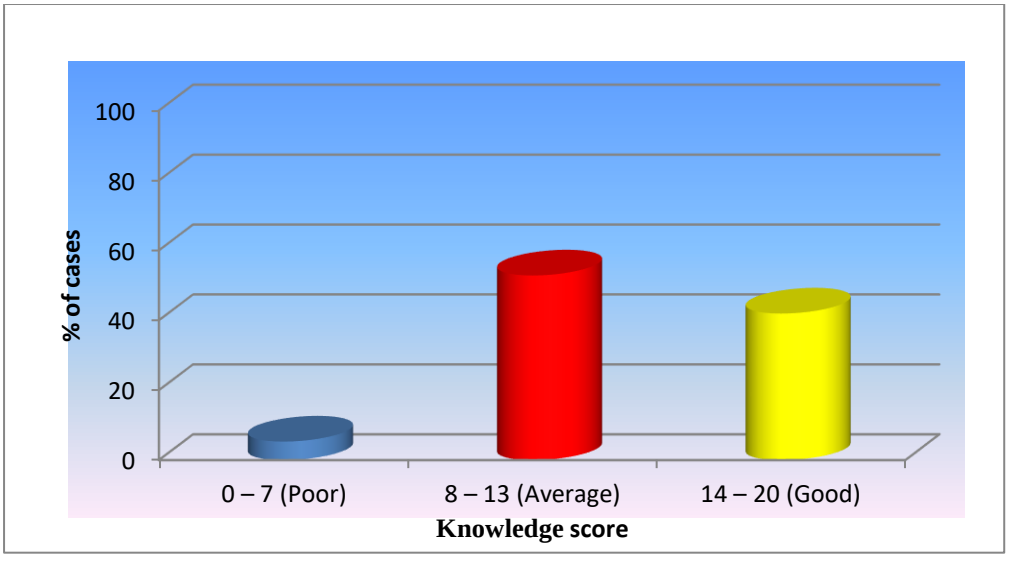

Figure 2 : Knowledge regarding warning signs of stroke among the study participants.

A statistically significant association was observed between knowledge of risk factors of stroke and factors such as age, gender, educational qualification, occupation, monthly income, regular exercise habits, and dietary modifications. A highly significant difference in knowledge scores was observed

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based on the educational qualification of hypertensive patients in the selected sample, with a p-value of less than 0.0001.(Table.1)

Educational qualification		Knowledge score		F Value	P Value
	n	Mean	SD		
Primary	106	5.92	2.650	14.65	<0.0001
Secondary	114	6.99	2.773		
Graduate	67	8.36	2.604		
Post graduate & above	16	9.13	2.705		

Table 1 :Association between knowledge of stroke risk factors and the educational qualification of the study subjects.

A statistically significant association was found between knowledge levels of warning signs of stroke and factors such as educational qualification, monthly income and dietary modifications. There was no significant association between smoking habits and knowledge regarding warning signs.

DEVELOPMENT OF INFORMATION MATERIAL

The analysis of the data indicated that there is a gap exists regarding the knowledge of stroke risk factors and warning signs among hypertensive patients. A poster was developed depicting the meaning of stroke, its types and various modifiable and non-modifiable risk factors of stroke. It also included the main warning signs of stroke and also various means to prevent the occurrence of stroke. This poster was validated by experts from the field of Neuromedicine and Medical Surgical nursing. The poster was displayed at all the adult OPDs and other patient contact zones of the tertiary care hospital to provide the information. The effectiveness of the information material will be assessed in the next level study.

CONCLUSION

In the present study, 33% of participants had good knowledge, 44% had average knowledge, and 22% had poor knowledge regarding stroke risk factors. Regarding warning signs, 42% had good knowledge, 53% had average knowledge, and 5.2% had poor knowledge. A statistically significant association was observed between knowledge levels and factors such as age, gender, educational qualification, occupation, monthly income, regular exercise habits, and dietary modifications.

The findings highlight the need for comprehensive health education and promotion programs

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targeting at-risk individuals and the community at large. Additionally, the study underscores the importance of healthcare providers placing greater emphasis on educating patients to improve awareness and preventive behaviours.

RECOMMENDATIONS:

These findings suggest the need for all the stakeholders to focus on the education and empowerment of high-risk groups to decrease the burden of the stroke across the world.

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ETHICAL STATEMENT

IEC permission obtained prior to starting the study in the selected tertiary care hospital. Informed consent taken from the participants preoperatively for the research study

BIBLIOGRAPHY

1. Aho K, Harmsen P, Hatano S, Marquardsen J, Smirnov VE, Strasser T.Cerebrovascular disease in the community: results of a WHO collaborative study. Bull World Health Organ. 1980;58(1):113–30.
2. Easton JD, Saver JL, Albers GW, Alberts MJ, Chaturvedi S, Feldmann E, et al. Definition and evaluation of transient ischemic attack: A scientific statement for healthcare professionals from the American heart association/American stroke association stroke council; council on cardiovascular surgery and anesthesia; council on cardiovascular radiology and intervention; council on cardiovascular nursing; and the interdisciplinary council on peripheral vascular disease. Vol. 40, Stroke. Stroke; 2009. p. 2276–93.
3. World Stroke Organization & Lancet Neurology Commission. (2023). *Global stroke report: Stroke is the second-leading cause of death worldwide*. The Lancet Neurology. https://doi.org/10.1016/S1474-4422(23)00115-4

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4. American Heart Association. (2022). *High blood pressure and stroke*. Retrieved from https://www.heart.org/en/health-topics/high-blood-pressure/health-threats-from-high-blood-pressure/how-high-blood-pressure-can-lead-to-stroke
5. World Health Organization. Hypertension [Internet]. [cited 2020 May 23]. Available from: https://www.who.int/health-topics/hypertension/
6. Law M, Wald N, Morris J. Lowering blood pressure to prevent myocardial infarction and stroke: a new preventive strategy. Vol. 7, HTA Health Technology Assessment NHS R&D HTA Programme Health Technology Assessment. 2003.
7. Pandian, J. D., & Sudhan, P. (2013). Stroke epidemiology and stroke care services in India. *Journal of Stroke*, *15*(3), 128–134. https://doi.org/10.5853/jos.2013.15.3.128

Janczura, K., & Mazur, G. (2020). The impact of hypertension on stroke incidence: A review of the literature. *Journal of Cardiovascular Disease*, 45(2), 123-130. https://doi.org/10.1016/j.jcard.2020.01.012

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