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Research Article

A Descriptive Study to Assess Awareness Regarding Causes of Stroke Among Adults in Selected Area of Pulwama District

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A B S T R A C T

Stroke is a significant public health issue and one of the leading causes of death and long-term disability globally. In India, the prevalence of stroke is rising steadily, yet public awareness about its causes and risk factors remains limited. Poor knowledge often results in delayed identification and treatment, leading to adverse health outcomes. This study aimed to assess the level of awareness regarding the causes of stroke among adults in the Pulwama district of Jammu & Kashmir and to explore the association between awareness levels and selected demographic variables. A cross-sectional study was conducted among 60 adults aged 40–60 years, selected using non-probability convenience sampling. Data were collected using self-structured form comprising (25) items related to demographic details and stroke-related knowledge. The tool's validity was confirmed by experts, and reliability was established with a Cronbach's alpha of 0.80 and a retest value of 0.89. Data were analyzed using statistics (frequency, percentage, mean, standard deviation) and chi-square tests to identify associations ($p < 0.05$). Findings showed 46.6% had moderate, 33.3% adequate, and 20% inadequate awareness of stroke causes. Most were female (60%), aged 46–50 (36.6%), with 50% having no formal education. A significant association was found between awareness levels and demographic variables such as age and education. The study indicates a moderate level of stroke awareness among adults in Pulwama, with knowledge gaps more pronounced among the less educated. There is an urgent need for targeted health education and community-based awareness initiatives to improve stroke prevention and early recognition.

Keywords: Stroke, Awareness, Risk Factors, Adults, Pulwama District, Health Education.

Introduction

Stroke is a serious and life-threatening medical condition that occurs when the blood supply to a part of the brain is interrupted or significantly reduced, depriving brain tissue of oxygen and essential nutrients. Within minutes, brain cells begin to die, which can result in permanent brain damage, physical disability, or even death if timely treatment is not received.

There are two primary types of stroke: ischemic stroke, which accounts for nearly 85% of all cases and occurs due to a blood clot or narrowing of an artery supplying the brain; and hemorrhagic stroke, which occurs when a blood vessel ruptures, causing bleeding within or around the brain and exerting pressure on brain tissue. Another related condition is the transient ischemic attack (TIA), commonly referred to as a "mini-stroke." Although temporary, it serves as an important warning sign of a potential major stroke in the future.

The clinical symptoms of stroke include sudden numbness or weakness (often on one side of the body), confusion or difficulty speaking, visual disturbances, loss of balance or coordination, dizziness, and severe headache without known cause. The acronym FAST—Face drooping, Arm weakness, Speech difficulty, and Time to seek emergency help—has been widely promoted as a simple tool to aid in early recognition and timely medical intervention. Prompt treatment is crucial in reducing morbidity and improving recovery outcomes.

Globally, stroke is one of the leading causes of mortality and long-term disability. In India, it ranks as the third leading cause of death, with its prevalence increasing steadily each year. Millions of people are affected, and many survivors are left with serious impairments. Despite the severity of this condition, awareness about stroke causes, warning signs, and risk factors remains inadequate, particularly in low- and middle-income communities. Factors such as limited health literacy, lack of preventive education, and poor access to healthcare services contribute to this knowledge gap.

Stroke risk factors are multifactorial and include genetic predisposition, hypertension, high cholesterol, atrial fibrillation, diabetes, stress, depression, smoking, sedentary lifestyle, poor dietary habits, and excessive alcohol consumption. Understanding these risk factors and recognizing early symptoms are essential for effective prevention and timely management.

Given the rising incidence of stroke and the limited public knowledge in India, there is an urgent need for community-based studies to evaluate awareness levels and identify educational gaps. This study was conducted to assess the awareness regarding causes of stroke among adults in selected areas of Pulwama district, Jammu & Kashmir. By identifying existing knowledge levels and their association with demographic variables, the study aims to provide insights that can guide targeted health education interventions and improve community preparedness for stroke prevention.

Need for the Study

Stroke is among the leading causes of mortality and long-term disability worldwide. Globally, it accounts for nearly one in six cardiovascular disease-related deaths, contributing to over six million deaths annually. In the United States, a stroke occurs every 40 seconds, with one death reported approximately every three minutes and fourteen seconds. More than 795,000 people experience a stroke each year in the U.S., of which 610,000 are first-time events.

In India, stroke is the third leading cause of death, and its prevalence is gradually rising. Each year, millions of Indians are diagnosed with stroke, with many left severely impaired or deceased. Despite this growing public health burden, awareness about stroke risk factors, early warning signs, and preventive strategies remains alarmingly low. Studies consistently show that only a small fraction of adults can correctly identify major symptoms of stroke. This lack of knowledge leads to delays in seeking medical care, which directly worsens outcomes.

Awareness of stroke causes is therefore critical. As a medical emergency, stroke requires immediate recognition and treatment to minimize damage. Since most strokes are preventable, public knowledge about risk factors—such as hypertension, diabetes, smoking, high cholesterol, physical inactivity, poor diet, and alcohol use—plays a key role in reducing incidence and mortality.

Given the limited awareness observed globally and in India, there is a pressing need to assess the knowledge levels of adults in specific communities. Pulwama district, like many areas, may reflect this knowledge gap. Conducting a study to evaluate awareness of stroke causes among adults will help identify deficiencies, guide educational strategies, and ultimately contribute to better prevention and timely intervention.

Research Problem Statement

A descriptive study to assess awareness regarding causes of stroke among adults in a selected area of Pulwama district.

Research Objectives

To assess the awareness regarding causes of stroke among adults in the selected area of Pulwama district. To determine the association between awareness levels and selected demographic variables.

Assumption

There may be some level of awareness regarding the causes of stroke among adults in the selected area.

Operational Definitions

- **Assess:** The process of systematically collecting, evaluating, and interpreting data about awareness of stroke causes among adults in Pulwama district.
- **Knowledge:** The information, understanding, and skills that individuals acquire through education, experience, or study related to stroke and its causes.
- **Awareness:** A state of being informed or cognizant about stroke, its risk factors, and warning signs, reflected in recognition, understanding, and health-related behaviors.
- **Selected Area:** The specific geographic location within Pulwama district where the study was conducted.
- **Adults:** Middle-aged individuals between 40 and 60 years of age included in this study.

Review of Literature

A review of literature is an essential step in the research process, providing a foundation for understanding the current state of knowledge, identifying gaps, and guiding the direction of new studies. Stroke, as a major public health issue, has been widely studied in terms of awareness, risk factors, and preventive measures across different populations. The following studies highlight the state of awareness regarding stroke in diverse contexts:

Awareness Among Students and Young Adults

Several studies have examined stroke awareness among university and school students. Moattar et al. (2023) assessed knowledge, attitudes, and practices of university students in Saudi Arabia, finding that more than half had poor knowledge, with only 5.3% achieving good knowledge scores. Similarly, Wajid Syed et al. (2023) found that undergraduate healthcare students in Saudi Arabia had variable knowledge of stroke, with significant gaps in recognizing risk factors and warning signs. Studies from Tabuk University (Mirghani et al., 2022) and King Faisal University (Almalki et al., 2020) confirmed that even medical students often demonstrated insufficient understanding of stroke causes and symptoms, especially regarding diabetes, obesity, and lifestyle-related risks.

School-level studies also reflected low awareness. Umar et al. (2019) reported that only 8% of middle and high school students in Michigan correctly identified stroke as the fifth leading cause of death, and fewer than 6% recognized all major symptoms. A Japanese study by Matsuzono et al. (2015) demonstrated that targeted education for junior high school students not only improved their knowledge but also positively influenced their parents' awareness, highlighting the value of early educational interventions.

Awareness in Healthcare and Nursing Students

Nursing students, despite their professional training, also show limited awareness. Badria et al. (2022) and Kankaya et al. (2021) observed that while students were generally familiar with risk factors like hypertension and symptoms like weakness, their understanding of post-stroke consequences and treatment remained poor. Similarly, Marly et al. (2022) in India found unsatisfactory knowledge levels among allied health students and caregivers, underscoring the need for greater emphasis on stroke education in medical curricula.

Awareness in the General Population

Community-based studies consistently show that public awareness is inadequate. Lim et al. (2014) in Singapore found that fewer than half of respondents could identify FAST symptoms, and fewer than 60% knew the emergency ambulance number. In the Gulf Cooperation Council countries, Kamran et al. (2007) reported very limited knowledge of stroke, particularly among younger adults, with many unable to identify basic risk factors.

In India, Pandian et al. (2005) conducted a large hospital-based survey in Northwest India, where 45% of participants could not identify the brain as the affected organ in stroke, and 21% could not name a single risk factor. Misconceptions such as faith healing and alternative medicine were also prevalent. These findings highlight the critical need for structured public education programs.

Awareness in African Contexts

In Nigeria, Wasiu et al. (2022) conducted a study among undergraduates and reported good awareness of stroke as a disease but limited recognition of warning signs. Only about 42% could identify stroke symptoms, though most were familiar with risk factors such as hypertension and smoking.

Key Insights

Across diverse populations, consistent themes emerge:

Low knowledge levels are common even among educated groups such as medical and nursing students.

Hypertension and smoking are widely recognized as risk factors, while diabetes, obesity, and atrial fibrillation are less frequently identified.

Warning signs of stroke (e.g., speech difficulty, vision problems, imbalance) are poorly understood, with many unable to recall FAST indicators.

Educational interventions—whether through schools, universities, or community programs—have been shown to significantly improve awareness.

Methodology

"There is nothing impossible to him who will try." – Alexander the Great

Research methodology provides a systematic approach to addressing a research problem and ensures that findings are accurate, valid, and reliable. The present study was conducted to assess the awareness regarding causes of stroke among adults in selected areas of Pulwama district. A quantitative research approach was adopted, as it allowed the collection and analysis of data in numerical form, enabling objective interpretation through statistical methods. The study employed a descriptive cross-sectional research design, which is appropriate for describing existing phenomena without introducing any intervention.

The study was carried out in Pulwama district, Jammu & Kashmir, and the target population included adults aged 40 to 60 years residing in this region. A total of 60 participants, both male and female, were selected using a non-probability convenience sampling technique, based on their availability and willingness to participate. The inclusion criteria required that participants be residents of the selected area, within the age group of 40–60 years, able to understand English, Urdu, or Kashmiri, and willing to provide informed consent. Adults working in the medical field and those who were physically unfit or had disabilities were excluded from the study.

Data were collected using a self-structured knowledge questionnaire developed after reviewing relevant literature, consulting experts, and drawing from the investigator's experience. The tool consisted of 25 items organized into two sections. Section I captured demographic details such as age, gender, occupation, and educational qualification, while Section II consisted of multiple-choice questions assessing awareness regarding causes of stroke. Each correct response was scored as one, and incorrect or unattempted responses were scored as zero. The total score ranged from 0 to 25, with awareness categorized as good (19–25; 76– 100%), average (13–18; 49–75%), and below average (0–12; 0–48%).

The tool underwent content validation by a panel of eight experts in nursing, and necessary modifications were incorporated based on their feedback. Reliability of the tool was established through the test–retest method, with Cronbach's alpha values of 0.80 (test) and 0.89 (retest), confirming strong internal consistency and reliability. Prior to the main study, a pilot study was conducted on 10 participants at Galender Pampore on October 15, 2024. The pilot confirmed the feasibility of the study design and procedures, requiring no major modifications.

CATEGORY	PERCENTAGE	SCORE
GOOD	76-100%	19-25
AVERAGE	49-75%	13-18
BELOWAVERAGE	0-48%	0-12

Measurement criteria for awareness regarding causes of stroke.

For data collection, permission was obtained from the relevant institutional authorities, and informed consent was secured from each participant after explaining the purpose of the study. The questionnaire was administered individually, and the average time taken to complete it was 30 minutes.

The data were analyzed using SPSS version 26. Descriptive statistics such as frequency, percentage, mean, median, standard deviation, and range were used to describe demographic variables and awareness scores. Inferential statistics, specifically the chi-square test, were applied to determine associations between awareness levels and selected demographic variables. A p-value of less than 0.05 was considered statistically significant.

Data Analysis and Interpretation

This chapter presents the analysis and interpretation of data collected from 60 adults in order to assess their awareness regarding the causes of stroke in selected areas of Pulwama district. Data analysis was carried out using both descriptive statistics (frequency, percentage, mean, median, standard deviation, and range) and inferential statistics (chi-square test). The data were analyzed using SPSS version 26, with a significance level set at $p < 0.05$. The findings are presented in accordance with the study objectives: (1) to assess the awareness regarding causes of stroke among adults, and (2) to determine the association between awareness and selected demographic variables such as age, gender, education, occupation, qualification, and source of information.

A master data sheet was prepared to record the responses, which were then tabulated and subjected to statistical analysis. For clarity, the results are organized into three major sections. Section I presents the demographic characteristics of the participants, which provide the background profile of the sample. Section II describes the levels of awareness regarding the causes of stroke. Section III focuses on the association between levels of awareness and selected demographic variables.

Section I: Demographic Characteristics

The demographic data revealed that the majority of participants (36.6%) belonged to the age group of 46–50 years, while 60% of the respondents were female. In terms of

occupation, 33.3% were self-employed or businessmen, whereas 50% of the participants had no formal education. Sources of information varied, with health professionals and the internet being reported by 33.3% of the sample. These findings highlight the diverse socio-demographic background of the study population, which is crucial in understanding variations in awareness levels.

Section II: Levels of Awareness

The analysis of awareness scores indicated that 46.6% of participants demonstrated a moderate level of awareness, 33.3% had adequate awareness, and 20% showed inadequate awareness regarding the causes of stroke. The mean awareness score was found to be in the moderate range, suggesting that while some participants were able to identify key risk factors such as hypertension and high cholesterol, significant gaps remained in their understanding of other contributing factors like diabetes, obesity, atrial fibrillation, and lifestyle-related risks.

Section III: Association Between Awareness and Demographic Variables

Inferential analysis using the chi-square test revealed a significant association between awareness levels and selected demographic variables, particularly age and educational qualification ($p < 0.05$). This indicates that older participants and those with higher levels of education were more likely to demonstrate better awareness of stroke causes. Conversely, gender, occupation, and source of information did not show a statistically significant association with awareness levels.

Overall, the findings demonstrate that while a moderate level of awareness regarding stroke exists within the adult population of Pulwama district, knowledge gaps persist, especially among less-educated individuals. These results underscore the need for targeted awareness programs aimed at vulnerable groups in order to improve stroke literacy and prevention.

Table 1.Reveals the Socio-Demographic Variables 20

Frequency and Percentage distribution of Socio-demographic			
Characteristics	**Variables(n=60)**		
	Content	**Frequency**	**Percentage**
Age(Years)	40-45	18	30
	46-50	22	36.66
	51-55	10	16.67
	56-60	10	16.67
Gender	Male	24	40
	Female	36	60
	Government employees	12	20
Occupation	Self employed	20	33.33
	Businessman	20	33.33
	Other	8	13.34
	No formal education	30	50
Qualification	Primary	15	25
	Secondary	10	16.67
	Graduate/above	5	8.33
Source of information	Books	10	16.67
	Health professional	20	33.33
	Internet	20	33.33
	Not any source of information	10	16.67

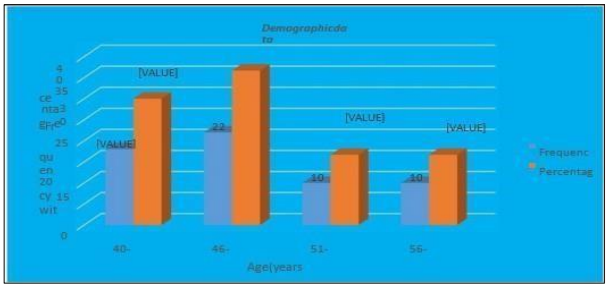

Figure 1.3Dbardiagramshowingfrequencyandpercentagedistributionofstudy subjects according to their age

Above graph depicts that maximum of adults i.e. 22(36.66%) are of 46-50 years of age, followed by 18(30%) adults are of 40-45 years of age, followed by 10(16.67%) adults respectively of age 51-55 and 56-60 years of age.

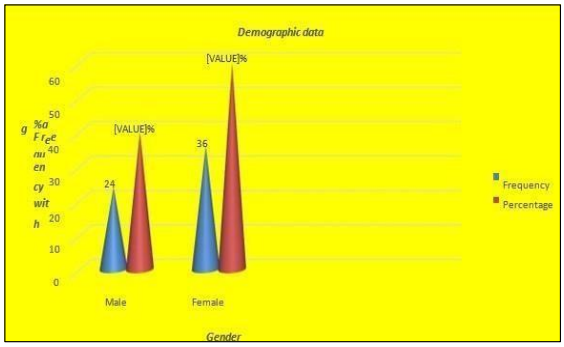

Figure 2.Cone diagram showing frequency and percentage distribution of study subjects according to the gender

From the above graph it is clear that majority of adult 1.e 36(60%) were females and rest 1.e 24(40%) were males

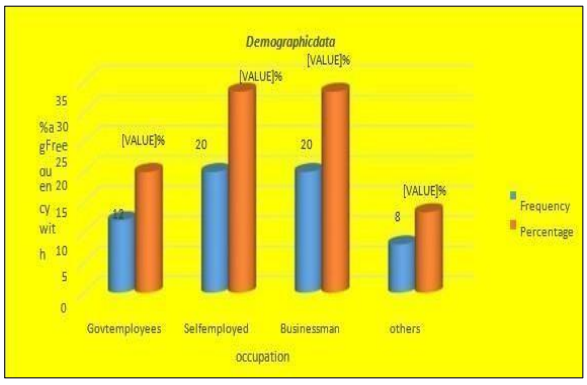

Figure 3.Cylinder showing frequency and percentage distribution of study subjects according to their occupation

Above graph reveals that majority of adults 1.e 20 (33.33%) & 20 (33.33%) respectively were self-employed and businessman, followed by12 (20%) as Govt employee & 8(23.34%) as others

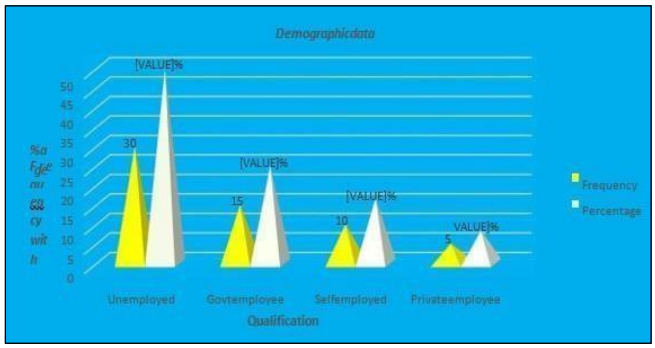

Figure 4.Pyramid showing frequency and percentage distribution of study subjects according to their Qualification

From the above pyramid it is clear that most of adults i.e. 20(30%) were unemployed, followed by 15(25%) adult were govt employee, followed by 10(16.67%) were selfemployed. The least number of adults i.e 5(8.33%) were working in private sector

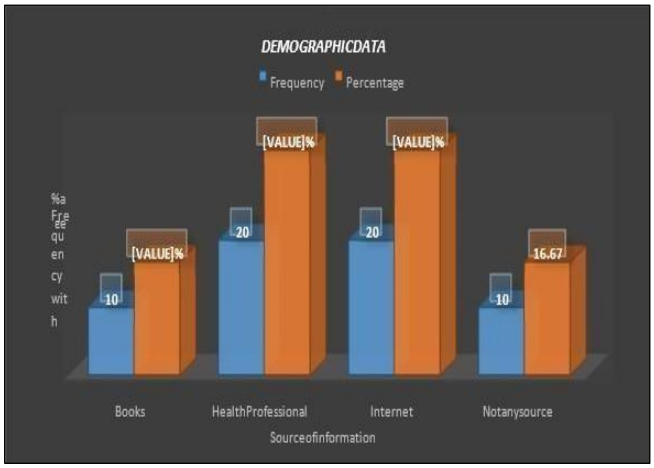

Figure 5.3d bar showing frequency and percentage distribution of study subjects according to their Source of information

Above bar diagram reveals that most of adults i.e 20 (33.33%) & 20(33.33%) respectively, got their information through health professional & internet, followed by books as 10(16.67%).The remaining 10(16.67%) adults reveal that they did not use any media with regard to their source of information

Table 2.Frequency and percentage distribution of level of awareness regarding causes of stroke among adults in selected area of Pulwama district

N=60

Levelofawareness	Frequency	Percentage
Inadequate awareness (0-6)	12	20
Moderately awareness (7-13)	28	46.67
Adequate awareness (14-20)	20	33.33

MinimumScore:0 MaximumScore:20

The frequency and percentage distribution of level of awareness regarding causes of stroke among adults in selected area of Pulwama district is displayed above. Majority of adults among the sample that is 28(46.67%) have moderate awareness, while as 20(33.33%) adults have adequate awareness and only 12(20%) adults have inadequate awareness regarding causes of stroke among adults in the sample as is evident from the above table.

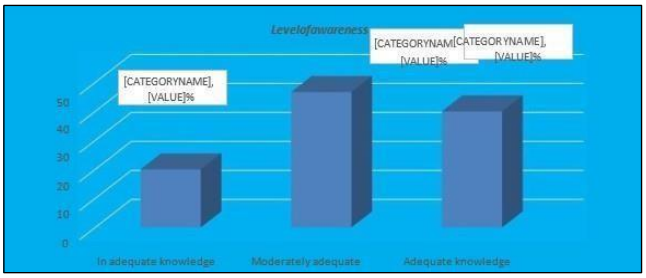

Figure 6.Bar Diagram showing level of awareness regarding causes of stroke among adults in selected area of Pulwama district

The above bar diagram shows level of awareness regarding causes of stroke among adults in selected area of Pulwama district and is displayed above. Majority of adults among the sample that is 28(46.67%) have moderate awareness, while as 20(33.33%) adults have adequate awareness and only 12(20%) adults have inadequate awareness regarding causes of stroke among adults

Table 3.Descriptive statistics of level of awareness regarding causes of stroke among adults in selected area of Pulwama district

(Mean± SD)	Mode	Median	Mini mum	Maxi mum	Range
(12.33±2.	12	20			
155)	12	10	7	16	9
Adequate awareness (14-20)	20	33.33			

The table presents the descriptive statistics of the level of awareness regarding the causes of stroke among adults in the selected area of Pulwama district. The mean awareness score was 12.33, indicating the average score achieved by the participants. The mode of the knowledge score was 12, showing that this score occurred most frequently among the samples. The median score, representing the middle value of the distribution, was 10, indicating that half of the participants scored below this value. The maximum awareness score recorded was 16, while the minimum was 7. Consequently, the range of awareness scores, calculated as the difference between the maximum and minimum scores, was 9, reflecting the spread of knowledge levels among the participants.

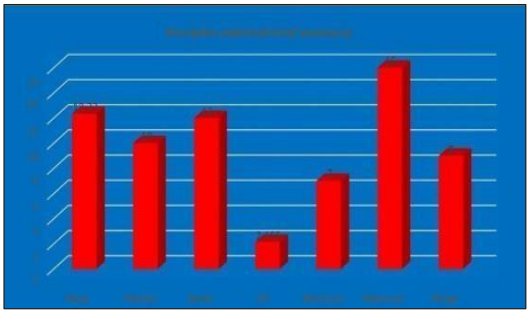

Figure 7.Bar diagram showing descriptive Statistics of level of awareness score

Table 4.Association between knowledge with Demographic Variables

Variables		Inadequate Awareness	Moderately Adequate	Adequate Awareness	x^2 Test	x^2 Table Value	df	P value	Inter-preta-tion
Age(years)	40-45	4	20	0	18.26	12.5	6	0.002	S*
	46-50	6	10	6					
	51-55	4	2	6					
	56-60	1	1	0					
Gender	Male	26	16	10	3.26	5.99	2	0.196	NS
	Female	0	6	2					

Occupation	Government employees	0	2	9	6.21	9.48	4	0.72	NS
	Self employed	15	12	0					
	Business	1	18	3					
Qualification	No formal education	1	24	7	22.73	6	0.001	12.5	S*
	Primary	2	18	3					
	Secondary	1	0	2					
	Graduate/ above	0	0	2					
Source of information	Books	4	10	10	7.81	12.5	6	0.765	NS
	Health professional	12	10	0					
	Internet	8	4	0					
	Not any source of information	0	0	2					

Conclusion

The present study revealed that adults in the Pulwama district exhibit a moderate level of awareness regarding the causes of stroke. While a significant proportion of participants could identify common risk factors such as hypertension and high cholesterol, notable gaps persist, especially concerning less recognized risk factors like diabetes, atrial fibrillation, and obesity. The analysis highlighted that age and educational status significantly influenced awareness levels, with lower knowledge observed among individuals with limited formal education. These findings underscore the critical role of demographic factors in shaping health literacy and the need for targeted interventions.

To bridge these gaps, it is essential to implement community-based health education programs, patient- centered interventions, and widespread awareness campaigns. Such initiatives can enhance public understanding of stroke risk factors, promote early preventive measures, and ultimately reduce stroke-related morbidity and mortality. Strengthening collaboration among healthcare providers, policymakers, community leaders, and educators is vital to ensure sustained awareness and effective preventive strategies.

Implications of this study extend to healthcare providers, who should reinforce patient education; policymakers, who should prioritize funding for preventive programs; and communities, which can utilize schools, social media, and local events to disseminate information. High-risk groups, including older adults and individuals with lower educational attainment, require focused attention. Moreover, researchers are encouraged to conduct longitudinal and experimental studies to evaluate the long-term effectiveness of awareness initiatives.

Despite its contributions, the study has limitations, including a small sample size, absence of a control group, potential social desirability bias, and time and funding constraints, which may affect the generalizability of results. Future research should aim to overcome these limitations by involving larger and more diverse populations, incorporating control groups, and designing interventions that address hidden risk factors while promoting healthy lifestyles.

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