

Effectiveness of Structured Teaching Programme on Knowledge Regarding Management and Prevention of Stroke among Students of a Selected College of Mizoram

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ABSTRACT

Background: Stroke is a major public health problem and one of the leading causes of mortality and disability worldwide. The burden of stroke is no longer confined to the elderly population; an increasing no. of cases are being reported among young adults due to unhealthy lifestyle practices, stress, tobacco and alcohol consumption and physical inactivity. Lack of awareness regarding stroke warning signs, risk factors, management, and prevention contributes to delayed treatment and poor outcomes.

Objectives: To assess the effectiveness of a structured teaching programme on knowledge regarding the management and prevention of stroke among students of a selected college of Mizoram

Methods: A quantitative approach with a pre-experimental one group pre-test post-test research design was adopted for the study. The sample comprised of 60 students studying in Government Hrangbana College, Aizawl, Mizoram, selected through convenience sampling. Data were collected using a demographic proforma and a structured knowledge questionnaire. Pre-test was conducted, followed by administration of a structured teaching programme on stroke management and prevention and the post-test was conducted after seven days. The collected data were analyzed using descriptive and inferential statistics using SPSS version 25.

Results: Findings showed that before the intervention, most students had inadequate knowledge (61.7%), while 38.3% of the students demonstrated moderate knowledge. Whereas in the post-test all students (100%) showed adequate knowledge. The mean post-test knowledge score (22.17 ± 1.76) was significantly higher than the mean pre-test score (8.30 ± 3.12). The calculated paired t-value (28.021) was found to be statistically significant with a p-value of 0.000 ($p < 0.05$).

Conclusion: The study concluded that the structured teaching programme improved student's knowledge regarding management and prevention of stroke

Keywords: Stroke, Structured Teaching Programme, Knowledge, Prevention, Management, College students

INTRODUCTION

“Education is the most powerful weapon which you can use to change the world.”

- Nelson Mandela

Health education plays a crucial role in shaping awareness, attitudes, and practices related to disease prevention and health promotion. Among various health conditions, stroke has emerged as one of the most critical public health challenges globally due to its sudden onset, high mortality rate, and long-term disability outcomes. Despite advancements in healthcare, stroke continues to remain a major global health challenge, and a leading cause of death and disability worldwide, largely due to delayed recognition and inadequate awareness regarding its warning signs and risk factors [1]

Stroke, a leading cause of morbidity, mortality and disability worldwide, poses a significant threat to the health and well-being of individuals, families, and communities. Nearly 12 million people experience stroke each year, over 7 million die from stroke, and approximately 94 million people live with its consequences worldwide [1]. Approximately 1 in 4 adults over the age of 25 years is estimated to experience a stroke in their lifetime. Stroke contributes significantly to global disability-adjusted life years (DALYs), making it a major public health concern [2].

In India, the burden of stroke is also rising, accounting for approximately 7.8% of all deaths. Stroke is currently the fourth leading cause of death and the fifth leading cause of disability in the country. The incidence of stroke in India ranges between 105 and 152 per 100,000 population per year [3]. Hypertension remains the most significant modifiable risk factor for stroke [4]. Other modifiable risk factors include diabetes mellitus, smoking, physical inactivity, obesity and unhealthy dietary habits, whereas non-modifiable includes age, gender and family history. Stroke is therefore considered a medical emergency requiring immediate attention due to its life-threatening impacts or consequences [5].

The key signs of stroke are facial drooping, arm weakness on one side, and speech difficulties such as slurring or incoherent speech. Other symptoms may include visual disturbances, dizziness, and loss of balance [6]. Knowing the signs of stroke and seeking immediate emergency medical care can save lives and improve the outcome for survivors. The “FAST” approach Face drooping, Arm weakness, Speech difficulty, and Time to call emergency services has been widely recommended for early recognition as it helps any person to identify a stroke quickly and take timely intervention and immediate action to transfer the patient to the nearest hospital [4]. Early identification and immediate medical attention are crucial in reducing brain damage and improving survival outcomes.

Despite the growing global and national burden of stroke, existing literature reveals that awareness regarding stroke warning signs, risk factors, and immediate response remains inadequate, particularly among young adults and college students [4]. Several studies have been conducted in different populations; however, most of them focus on general community groups or patients rather than students, who represent an important segment for early health education and awareness dissemination. Furthermore, limited studies have been conducted in the Northeastern region of India, particularly among college students in states like Mizoram, where sociocultural and educational differences may influence health knowledge levels. There is also a paucity of interventional studies assessing the effectiveness of structured teaching programmes in improving knowledge regarding stroke management and prevention among this population. This identifies a clear gap in the literature regarding targeted educational interventions among college students.

In view of this gap and the importance of early recognition and prevention of stroke, there is a need to enhance awareness through structured educational approaches among students to improve timely response

and promote preventive health practices [2]

OBJECTIVES

1. To assess the pretest level of knowledge regarding management and prevention of stroke among the students in selected college of Mizoram.
2. To assess the Post test level of knowledge regarding management and prevention of stroke among the students in selected college of Mizoram.
3. To compare the pretest and post-test knowledge scores of students to determine the effectiveness of the structured teaching programme.

HYPOTHESES

H1: There will be a significant difference between the pre-test and post-test knowledge scores regarding management and prevention of stroke among students of the selected college of Mizoram after the structured teaching programme.

MATERIALS AND METHODS

Research Approach:

A quantitative research approach was adopted to assess the effectiveness of structured teaching programme on knowledge regarding the management and prevention of stroke among students of a selected college of Mizoram.

Research Design: A Pre-experimental One group pre-test post-test research design was adopted for the present study.

Study Setting: The study was conducted in Government Hrangbana College, Aizawl, Mizoram.

Population and Sample: The population comprised of 60 college students studying in Government Hrangbana College, Aizawl, Mizoram.

Sampling Technique: A non-probability convenience sampling technique was used to select the study participants based on the inclusion criteria.

Description of Tool: Based on the objectives of the study, the study tools were developed and divided into two sections:

Section A-Demographic Proforma: It consists of demographic data of participants like Age, Gender, Previous knowledge; if yes, Source of information, Any family history of stroke, Diet preferences.

Section B: Structured Knowledge questionnaires on knowledge regarding management and prevention of stroke: The Knowledge questionnaires consist of 3 Components. Each component consisting of 8 questions, making it a total question of 24.

Component I: Stroke and its symptoms.

Component II: Prevention of stroke.

Component III: Treatment and Rehabilitation of stroke.

Validity and Reliability:

To determine the content validity, the tools were submitted to five (5) experts. The experts were in the Department of Community Medicine (1), Department of Community Health Nursing (1), Department of Neurosurgery (1), Department of Neuroscience Nursing (1), and Department of Critical Care Nursing (1). Experts were chosen on the basis of their experience and interest in this area and requested to give their opinion and suggestions regarding the tool.

Based on the suggestions given by the experts, necessary modifications and corrections were made after consulting with the guide.

The reliability of the study instrument was assessed using Cronbach's Alpha. The pre-test yielded a reliability coefficient of 0.764, indicating acceptable reliability, while the post-test showed a Cronbach's alpha value of 0.892, indicating good reliability.

Data Collection Procedure: After obtaining administrative permission from the concerned authorities and informed consent from the participants, data were collected using a self-administered structured questionnaire. Structured teaching programme was given and a post-test was carried out after seven days. Confidentiality and anonymity of the participants were maintained throughout the study.

Statistical Analysis: The collected data were analyzed using descriptive and inferential statistics. Frequency, percentage, mean, standard deviation, Paired t-test, and Fisher's exact test were used for data analysis. Statistical significance was considered at $p < 0.05$.

RESULTS

Table 1. Frequency and percentage distribution of the demographic characteristics among students of Govt. Hrangbana College, Aizawl, Mizoram.
(n = 60)

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
18 – 20 Years	49	81.7
21 – 23 Years	11	18.3
24 – 26 Years	0	0
Gender		
Male	26	43.3
Female	34	56.7
Others	0	0
Any previous knowledge on stroke		
Yes	0	0
No	60	100
Any family history of stroke		
Yes	4	6.7
No	56	93.3
Diet Preferences		
Vegetarian	12	20
Non-Vegetarian	47	78.3
Vegan	1	1.7

Table 1 shows the demographic characteristics of the study participants revealed that the majority of students (81.7%) were in the age group of 18–20 years, while 18.3% belonged to the 21–23 years category, and none were in the 24–26 years group. With regard to gender, 56.7% of the participants were female, and 43.3% were male, with no participants in the 'others' category. None of the students (100%) had prior

knowledge about stroke, indicating a lack of baseline awareness among the study population. In terms of any family history of stroke, 6.7% of the participants reported a positive history, while 93.3% had no family history of stroke. Regarding dietary preferences, the majority (78.3%) were non-vegetarians, while 12% were vegetarians, and 1.7% followed a vegan diet.

Figure 1: Percentage distribution of pre-test and post-test level of knowledge regarding management and prevention of stroke among students of Govt. Hrangbana College, Aizawl, Mizoram.
(n=60)

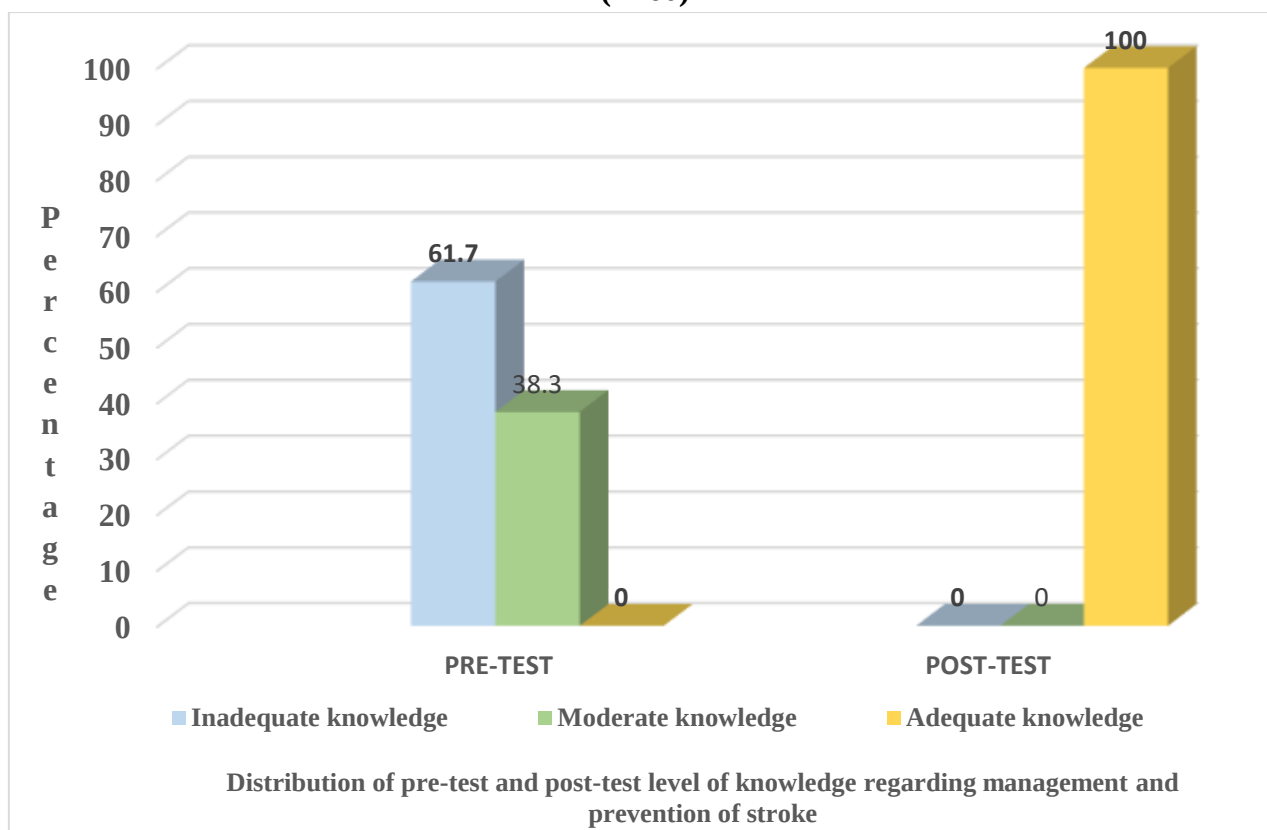


Figure 1 depicts the distribution of pre-test and post-test level of knowledge regarding management and prevention of stroke among college students revealed that during pre-test the majority of participants (61.7%) had an inadequate level of knowledge, while 38.3% of the students demonstrated moderate knowledge. Notably, none of the students exhibited an adequate level of knowledge prior to the implementation of the structured teaching programme.

Table 2: Effectiveness of structured teaching programme on knowledge regarding the management and prevention of stroke among students of Govt. Hrangbana College, Aizawl Mizoram
(n = 60)

Variables	Mean ± S.D	Mean D	t value	df	P value
Pre-test	8.30 ± 3.12	-13.87	-28.021	59	0.000*

Post-test	22.17 ± 1.76				
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Table 2 depicts the comparison of pre-test and post-test knowledge scores which reveals that the mean post-test score (22.17 ± 1.76) was higher than the mean pre-test score (8.30 ± 3.12), indicating a marked improvement in knowledge following the structured teaching programme. The paired t-test analysis showed that the difference between pre-test and post-test scores was highly statistically significant ($t = 28.021$, $P = 0.000$), which is less than the level of significance ($p < 0.05$). This result indicates that the structured teaching programme was highly effective in improving the knowledge of students regarding the management and prevention of stroke.

DISCUSSION

The discussion section presents the interpretation of the findings of the present study in relation to its objectives and hypotheses and compares the results with relevant literature and previous studies.

The findings are consistent with several earlier studies. Swapna Mary et al. (2022) conducted a study on the effectiveness of a structured teaching programme regarding warning signs and prevention of stroke among hypertensive patients in selected hospitals at Bangalore. The study revealed that during the pre-test, 68.3% of the respondents had inadequate knowledge and none had adequate knowledge. However, after the structured teaching programme, 65% of the respondents attained adequate knowledge, demonstrating a significant improvement in knowledge levels.

Sheeba Wiselin and Lekshmi (2018) conducted a study using a quasi-experimental one group pre-test post-test research design regarding the effect of a structured teaching programme on knowledge related to prevention and warning signs of stroke among high-risk patients. The study findings revealed a significant improvement in the level of knowledge after the administration of the structured teaching programme ($p < .001$), indicating the effectiveness of the intervention in enhancing awareness regarding stroke prevention and warning signs.

Similar findings were reported by Shrigan et al. (2023) in a study conducted to assess the effectiveness of a planned teaching programme on knowledge regarding stroke among nursing assistants in a selected hospital, Mumbai. The study findings revealed that only 18% of the participants had adequate knowledge during the pre-test, whereas there was a 64% increase in adequate knowledge during the post-test following the teaching programme. The study concluded that the planned teaching programme was effective in improving knowledge regarding stroke among nursing assistants.

Similar findings were reported by Khandare (2021) in a study conducted to assess the effectiveness of a structured teaching programme on knowledge regarding stroke rehabilitation among staff nurses serving in a tertiary care hospital in Maharashtra. The study findings revealed that the mean post-test knowledge score was significantly higher than the mean pre-test knowledge score, and the obtained t value was statistically significant at $p < .05$, indicating that the structured teaching programme was effective in improving the knowledge of staff nurses regarding stroke rehabilitation.

Devi (2022) evaluated the effectiveness of a structured teaching programme on knowledge regarding warning signs and prevention of stroke among hypertensive patients. The study reported a significant increase in knowledge scores post-intervention, with paired t-test results indicating high statistical significance ($p < 0.05$), supporting the rejection of the null hypothesis and acceptance of the effectiveness of the STP.

Similarly, Purbia (2025) conducted a study on the effectiveness of a Structured Teaching Programme on knowledge and practice regarding post-stroke rehabilitation among nursing officers. The mean post-test scores were markedly higher than pre-test scores, with paired t-test analysis yielding results comparable to the current study (highly significant difference, $p < 0.001$), concluding that the STP was highly effective.

CONCLUSION

The findings of the present study indicate that the Structured Teaching Programme was highly effective in enhancing students' knowledge regarding the management and prevention of stroke.

A clear improvement was observed from a low baseline level of awareness, where most students had either inadequate or moderate knowledge, to a post-test outcome where all students achieved adequate knowledge. This improvement was statistically strongly supported by a marked rise in mean scores, with a calculated t-value of 28.021 ($p < 0.05$), confirming its significance.

Overall, the results suggest that structured teaching programmes are an effective and practical approach to improving stroke-related awareness, particularly among young adults who initially possess limited knowledge. This further emphasizes the need to integrate such teaching programmes into college health education to strengthen early awareness and encourage preventive practices related to stroke.

LIMITATIONS

- Knowledge was assessed using a questionnaire; therefore, responses depended on participants understanding and honesty.
- The post-test was conducted after a short interval of one-week, long term retention of knowledge was not assessed.
- The study measured knowledge only and did not assess actual preventive practices or behavioural changes.

RECOMMENDATIONS

- Similar educational programmes may be conducted among students of other colleges and universities.
- Future studies may include a control group to compare the effectiveness of the intervention.
- Studies may be conducted with a larger sample size to improve generalizability.
- Educational interventions may also focus on stroke prevention practices and emergency response behaviours.
- Similar studies may be conducted among high-risk groups such as hypertensive and diabetic individuals.

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