

Knowledge of the FAST (Face, Arm, Speech, Time) Stroke Recognition Tool among Hypertensive Patients Attending the Outpatient Department of a Selected Hospital in Madurai

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Abstract

Background: Stroke is a major public health problem and an important cause of death and long-term disability. Hypertension is a major modifiable risk factor for stroke. Early recognition of stroke warning signs and prompt emergency care are critical because several acute stroke interventions are time dependent. The FAST (Face, Arm, Speech, Time) tool provides a simple framework for recognizing common warning signs and emphasizing the need for immediate medical help.

Objective: To assess knowledge regarding the FAST stroke recognition tool among hypertensive patients attending the outpatient department of a selected hospital in Madurai, including knowledge of the individual FAST components and its association with selected demographic and clinical variables.

Methods: A quantitative, descriptive cross-sectional design was used. Thirty hypertensive patients attending the outpatient department of a selected super-speciality hospital in Madurai were recruited using convenient sampling. Data were collected using a structured questionnaire comprising demographic and clinical variables and a 30-item multiple-choice knowledge questionnaire on FAST stroke recognition. Ethical clearance, institutional permission, and written informed consent were obtained. Descriptive and inferential statistics were used for analysis.

Results: Of the 30 participants, 57% had moderate knowledge, 33% had inadequate knowledge, and 10% had adequate knowledge regarding FAST stroke recognition. No statistically significant association was reported between knowledge level and age ($\chi^2=1.821$, $p=0.935$), gender ($\chi^2=2.174$, $p=0.337$), educational status ($\chi^2=7.72$, $p=0.461$), occupation ($\chi^2=4.53$, $p=0.605$), duration of hypertension ($\chi^2=2.917$, $p=0.572$), history of diabetes mellitus ($\chi^2=3.47$, $p=0.176$), family history of stroke ($\chi^2=0.673$, $p=0.714$), or previous information regarding stroke ($\chi^2=3.176$, $p=0.204$).

Conclusion: Most participants had only moderate or inadequate knowledge of FAST stroke recognition. The findings support the need for structured, nurse-led stroke education for hypertensive patients, with emphasis on recognizing facial drooping, arm weakness, speech difficulty, and the urgency of seeking emergency medical care.

Keywords: Stroke; FAST, Face Arm Speech Time, stroke recognition, hypertension, knowledge assessment, hypertensive patients.

1. Introduction

Stroke is a major neurological disorder and a significant public health problem worldwide. It occurs when cerebral blood flow is interrupted because of a blocked or ruptured blood vessel, resulting in brain injury. Stroke may lead to paralysis, speech impairment, cognitive changes, dependence in activities of daily living, and death. Its consequences extend beyond the affected individual to families, communities, and health systems.

Hypertension is one of the most important modifiable risk factors for stroke. Effective prevention therefore requires both control of vascular risk factors and timely recognition of acute neurological symptoms. Because acute stroke treatment is time dependent, delay in recognizing symptoms or seeking emergency care can adversely affect outcomes.

The FAST (Face, Arm, Speech, Time) stroke recognition tool is a simple public-facing approach to identifying common warning signs. Facial drooping, arm weakness, and speech difficulty are key warning signs, while the 'Time' component emphasizes the need to seek emergency medical assistance immediately. Assessing knowledge of FAST among hypertensive patients is therefore relevant because this population is at increased risk of stroke and may benefit from targeted health education.

The present study was undertaken to assess knowledge of FAST stroke recognition among hypertensive patients attending the outpatient department of a selected hospital in Madurai and to examine whether knowledge was associated with selected demographic and clinical characteristics.

2. Statement of the Problem

“A Study to Assess Knowledge of the FAST (Face, Arm, Speech, Time) Stroke Recognition Tool among Hypertensive Patients Attending the Outpatient Department of a Selected Hospital in Madurai.”

3. Objectives

1. To assess the level of knowledge regarding the FAST stroke recognition tool among hypertensive patients.
2. To assess knowledge regarding the individual components of FAST (Face, Arm, Speech, and Time).
3. To determine the association between the level of knowledge regarding FAST and selected demographic variables.
4. To determine the association between the level of knowledge regarding FAST and selected clinical variables among hypertensive patients.

4. Hypotheses

H1: There will be a significant association between the level of knowledge regarding the FAST stroke recognition tool and selected demographic variables among hypertensive patients.

H2: There will be a significant association between the level of knowledge regarding the FAST stroke recognition tool and selected clinical variables among hypertensive patients.

5. Materials and Methods

5.1 Research design and setting

A quantitative research approach with a descriptive cross-sectional design was adopted. The study was conducted among hypertensive patients attending the outpatient department of a selected Meenakshi super-speciality hospital in Madurai.

5.2 Population and sample

The target population comprised hypertensive patients attending the outpatient department. Thirty participants were selected using convenient sampling.

5.3 Variables

The independent variables were age, gender, educational status, occupation, place of residence, duration of hypertension, family history of stroke, history of diabetes mellitus, and previous exposure to stroke-related health education. The dependent variable was knowledge regarding the FAST stroke recognition tool.

5.4 Data collection instrument

Data were collected using a structured questionnaire consisting of demographic and clinical variables and a 30-item multiple-choice knowledge questionnaire regarding FAST stroke recognition.

5.5 Ethical considerations

Ethical clearance and institutional permission were obtained before data collection. Written informed consent was obtained from all participants.

5.6 Data analysis

Descriptive statistics were used to summarize participant characteristics and knowledge levels. Inferential analysis used chi-square tests to examine associations between knowledge category and selected demographic and clinical variables, with statistical significance assessed using the reported p-values.

6. Results

A total of 30 hypertensive patients participated in the study. The demographic distribution is presented in Table 1.

Variable	Category	n	%
Age	30–40 years	12	40
	41–50 years	12	40
	51–60 years	5	17
	Above 60 years	1	3
Gender	Male	10	33
	Female	20	67
Educational status	No formal education	3	10
	Primary education	7	23
	Secondary education	7	23
	Higher education	6	20
	Graduate and above	7	23

Occupation	Government job	0	0
	Private job	11	37
	Self-employed	9	30
	Unemployed	9	30
	Retired	1	3
	Other	0	0
Place of residence	Rural	17	57
	Urban	13	43
Monthly family income	< ₹10,000	3	10
	₹10,001–₹20,000	18	60
	₹20,001–₹30,000	8	27
	Above ₹30,000	1	3

6.1 Overall level of knowledge

Among the 30 participants, 17 (57%) had moderate knowledge, 10 (33%) had inadequate knowledge, and 3 (10%) had adequate knowledge regarding FAST stroke recognition (Table 2). Thus, the majority of participants demonstrated only a moderate level of knowledge, while one-third had inadequate knowledge.

Knowledge level	Score range reported	n	%
Adequate	11–15	3	10
Moderate	6–10	17	57
Inadequate	1–5	10	33
Total		30	100

6.2 Area-wise knowledge regarding FAST components

The source report presented area-wise mean scores for face drooping, arm weakness, speech difficulty, time to seek medical help, and overall knowledge. These values are reproduced below as reported in the study document; the score denominators require verification before journal submission because they are not internally consistent with the stated 30-item questionnaire.

Area	Maximum score reported	Mean score reported	Mean % reported
Face drooping	32	1.07	3.34%
Arm weakness	50	1.67	3.34%
Speech difficulty	44	1.47	3.34%
Time to seek medical help	50	1.63	3.27%
Overall knowledge	47	1.57	3.34%

6.3 Association with demographic variables

No statistically significant association was reported between knowledge level and the demographic variables of age, gender, educational status, or occupation.

Variable	χ^2	p-value	Interpretation
Age	1.821	0.935	Not significant
Gender	2.174	0.337	Not significant
Educational status	7.72	0.461	Not significant
Occupation	4.53	0.605	Not significant

6.4 Association with clinical variables

No statistically significant association was reported between knowledge level and duration of hypertension, history of diabetes mellitus, family history of stroke, or previous information regarding stroke.

Clinical variable	χ^2	p-value	Interpretation
Duration of hypertension	2.917	0.572	Not significant
History of diabetes mellitus	3.47	0.176	Not significant
Family history of stroke	0.673	0.714	Not significant
Previous information regarding stroke	3.176	0.204	Not significant

7. Discussion

The present study found that 57% of hypertensive patients had moderate knowledge of FAST stroke recognition, 33% had inadequate knowledge, and only 10% had adequate knowledge. These findings indicate a substantial gap in awareness among a population at increased risk of stroke. The result reinforces the importance of integrating stroke-warning-sign education into routine hypertension care and outpatient nursing practice.

The study specifically examined knowledge of facial drooping, arm weakness, speech difficulty, and the need to seek medical help promptly. Although the supplied report describes knowledge in each of these domains as inadequate or very limited, the numerical area-wise scores should be verified against the original questionnaire and scoring key before publication.

No significant associations were reported between knowledge level and the selected demographic or clinical characteristics. In this sample, therefore, knowledge gaps appeared to be distributed across the measured subgroups rather than being concentrated in a single demographic or clinical category. Given the small sample size and convenient sampling method, these findings should be interpreted cautiously and should not be generalized beyond the study setting without further evidence.

The findings are consistent with the broader rationale for FAST education described in the study references: stroke recognition and rapid response are important components of improving timely access to acute stroke care. The results also support the proposed role of structured, nurse-led education in strengthening awareness among patients with hypertension.

8. Conclusion

The study concluded that knowledge of FAST stroke recognition among hypertensive patients attending the selected hospital outpatient department was predominantly moderate, with a substantial proportion demonstrating inadequate knowledge. No statistically significant association was reported between knowledge level and the selected demographic or clinical variables. The findings highlight the need for systematic health education focused on recognition of facial drooping, arm weakness, speech difficulty, and the urgency of seeking emergency medical assistance.

9. Implications for Nursing Practice

- Nurses can incorporate brief FAST education into routine outpatient assessment and health education for patients with hypertension.
- Visual aids, demonstrations, and repeated reinforcement may be used to improve recognition and recall of stroke warning signs.
- Family members and caregivers may also be included in stroke-awareness education because they may be present when symptoms occur.
- Hypertension clinics can use standardized stroke-recognition messages as part of preventive and risk-reduction counselling.

10. Limitations

- The sample size was limited to 30 participants.
- Convenient sampling was used, which limits representativeness and generalizability.
- The study was conducted in a single hospital outpatient setting.
- The supplied report does not provide sufficient detail on questionnaire validation, reliability, inclusion and exclusion criteria, or the exact scoring procedure.
- The reported area-wise maximum scores and overall mean score are internally inconsistent with the stated 30-item questionnaire and require verification before submission.

11. Recommendations

- A larger study using probability sampling may be conducted across multiple hospitals or community settings.
- A structured nurse-led educational intervention could be evaluated using a pre-test/post-test design.
- Future studies may examine whether improved FAST knowledge translates into faster recognition and emergency healthcare-seeking behaviour.
- The knowledge questionnaire should undergo documented content validation and reliability testing, with the scoring framework clearly reported.

12. Declarations

Ethics approval: The source report states that ethical clearance and institutional permission were obtained. The approval number and approving committee name were not provided and should be added before submission.

Informed consent: Written informed consent was obtained from all participants.

Funding: Not reported in the source document.

Conflict of interest: Not reported in the source document.

Data availability: Not reported in the source document.

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