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STROKE AWARENESS: KNOWLEDGE, ATTITUDE AND HEALTH SEEKING BEHAVIOR OF RURAL POPULATION IN TERTIARY CARE HOSPITAL, SVIMS, TIRUPATI

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ABSTRACT

Background: Stroke causes chronic adult disability and mortality with rising incidence in India. Lack of awareness of stroke warning signs and symptoms are significant reasons for delay in seeking medical care. Knowledge on stroke is very important in early detection of stroke. **Aim:** To assess the knowledge, Attitude and Health seeking behavior of rural population in a tertiary care hospital, SVIMS, Tirupati. **Materials and Methods:** Questionnaire based study was done over 6 months among 200 subjects. The response of the participants was recorded and analyzed using Microsoft, SPSS – 25.0 Software. **Results:** The KAP questionnaires were given to 200 subjects. In this study, 52% subjects were female, mostly in the age group of 41 – 50 years. A term called 'stroke' was known to 55.7% and 40% of subjects respectively. Among total subjects 65% subjects from stroke affected family (SAF), 35% subjects from non stroke affected family (NSAF). Paralysis the most recognized symptoms in SAF whereas loss of consciousness and paralysis in NSAF. Hypertension was identified as the most common risk factor for stroke in SAF whereas family history in NSAF. **Conclusion:** Participants from the both SAF and NSAF groups had lesser knowledge about stroke. It is very important and necessary to improve the patient knowledge on stroke by conducting educational programs.

KEYWORDS: Stroke, awareness, knowledge, attitude, practice, tPA, window period.

1. INTRODUCTION

Stroke is a major cause of death and disability, a focal neurological deficit that lasts 24 hours due to an interruption in the blood flow to the brain.[1,2,3] Stroke can be classified into ischemic, hemorrhagic and transient.[4] Hemorrhagic stroke is a devastating event and it has very high mortality rate that ranges from 51% - 65%.[5] Especially in underdeveloped and developing countries, there is a lack of knowledge about that timely treatment of hypertension and other chronic diseases like vascular diseases that may help to decrease the incidence of stroke and morbidity among stroke-survivors.[6,7,8] In India the prevalence of stroke is vary from region to region that ranges from 40 to 270 per 100,000 population.[9] The burden can be reduced by public knowledge, right attitude and practices of stroke, so it is necessary to identify the target population with low stroke awareness.[10,11] Most patients arrive at the hospital more than 4.5 hours after symptom onset typically in 24 hours, which renders only a minority of patients eligible for treatment. Delay in hospitalization contributes to high mortality and morbidity in stroke.[12] Thrombolytics can be used within the window period, for which early identification of the signs and symptoms of stroke is essential. Further Studies on the knowledge, attitude, and practice (KAP) of stroke have mostly been undertaken in developed countries and the studies are now being conducted in developing countries like India too.[13,14] Intravenous (IV) thrombolytic administration of recombinant tissue plasminogen activator (tPA) remains the principal therapy for acute ischemic stroke (AIS) patients in the early hours after stroke onset. However, which patients are most likely to benefit from thrombolytic treatment remains unclear.[15,16] Careful selection of patients who are suitable for thrombolytic treatment is very important because it can maximize the benefits and reduce the risk of symptomatic intracranial hemorrhage as far as possible.[17,18] To combat the effects of stroke, the time from the onset of stroke symptoms to hospital arrival must be improved to provide timely and effective treatment. Many factors contribute to delays in seeking treatment for stroke, but the principal factor is believed to be a lack of public knowledge regarding stroke symptoms and the need for a rapid response.

2. MATERIALS AND METHODS

The prospective observational study was conducted over the period of 6 months(July 2019 - December 2019) in Sri Venkateswara Institute of Medical Sciences (SVIMS), Tirupati, Andhra Pradesh. 200 subjects from OPD, ICU, General ward of the Department of Neurology

in SVIMS belongs to rural areas were included. The prospective study protocol was approved by the Institutional Ethics Committee (Roc.No.AS/11/IEC/SVIMS/2017). Written consent form was obtained from each participant before collecting data. Based upon the inclusion and exclusion criteria, subjects were divided into two groups. i.e., stroke affected families and non-stroke affected families. The inclusion criteria in this study have patients who willing to participate in the study and the patients above 18 years of age. The exclusion criteria in this study have people who not willing to participate in the study and below 18 years of age group. The procedure involved in the study was summarized in Table-1.

Table 1: Study procedure.

Patient data collection form has been given which includes socio-demographic characteristics (age, gender, education). Standard and validated Questionnaires have been given to the participants, which includes stroke specific knowledge and other variables includes tobacco consumptions, diabetes, hypertension, had a stroke before. The subjects were asked if they have heard the term "stroke" and its signs and symptoms, organ affected, risk factors, complications, whether the onset of the stroke was sudden or gradual and the treatment options. The data have been recorded based on the questionnaires.

In this study "family screening questionnaires of stroke" have been used to detect the awareness among the study population. The questionnaires contain 16 questions related to knowledge, attitude and practice, that shown in Table-2. Here "Knowledge" indicates general information and awareness about stroke and regarding its signs and symptoms and risk factors. "Attitude" implied the participant reacted to stroke and "Practice" indicated that the behavior in the phase of stroke events. So the study population was expected to answer "Yes" or "No" to the particular questions. In this study, Data was collected on pre-defined pro forma and transformed into the Microsoft Excel spreadsheets. Descriptive statistics including mean ± standard deviation (SD) for continuous data and Frequencies with percentages for categorical data was calculated. Fischer's exact test was performed to test the statistical significance of various qualitative variables between Stroke affected and Non-stroke affected families. A p-value ≤ 0.05 is considered as statistical significance. All the statistical analysis was performed by using SPSS version 25.0 (IBM SPSS Inc., Armonk, NY).

Table 2: Questionnaire for the assessment of Stroke awareness.

Question	Response	Stroke Affected Family (n=70)	Non-Stroke Affected Family (n=130)	p-value
Have you heard about stroke?	Yes	39 (55.7%)	52 (40%)	0.038*
Are you aware of Paralysis?	Yes	69 (98.6%)	124 (95.4%)	0.425
Do you know anyone who had stroke?	Yes	62 (88.6%)	88 (67.7%)	0.001*
History of Stroke	Yes	64 (91.4%)	3 (2.3%)	<0.0001*
Do you have knowledge about the following symptoms of stroke?				
Loss of Consciousness?	Yes	58 (82.8%)	69 (53.1%)	<0.0001*
Paralysis of One side of the body?	Yes	58 (82.8%)	99 (76.1%)	0.367
Headache?	Yes	37 (52.8%)	32 (24.6%)	<0.0001*
Vomiting?	Yes	8 (11.4%)	6 (4.6%)	0.085
Fits?	Yes	17 (24.3%)	25 (19.2%)	0.467
Is stroke management as important as Cardiac attack?	Yes	35 (50%)	63 (48.5%)	0.883
Do you know urgent period in treatment of stroke?	Yes	2 (2.8%)	2 (1.5%)	0.613

Fischer's exact test. *indicates significant p-value.

Question	Response	Stroke Affected Family (n=70)	Non-Stroke Affected Family (n=130)	p-value
Are you aware of factors that predispose to stroke:				
Age	Yes	16 (22.8%)	23 (17.7%)	0.455
Sex	Yes	5 (7.1%)	1 (0.8%)	0.021*
Hypertension	Yes	44 (62.8%)	49 (37.7%)	0.001*
Diabetes	Yes	41 (58.6%)	52 (40%)	0.017*
Obesity	Yes	2 (2.8%)	5 (3.8%)	1.0
Smoking	Yes	10 (14.3%)	14 (10.8%)	0.498
Alcoholism	Yes	17 (24.3%)	24 (18.5%)	0.361
Family history	Yes	40 (57.1%)	59 (45.4%)	0.138
Is stroke Familial Disease?	Yes	41 (58.6%)	59 (45.4%)	0.103
Is stroke infectious disease?	Yes	5 (7.1%)	9 (6.9%)	1.0

Fischer's exact test. *indicates significant p-value.

ATTITUDE

Do you think stroke people can be Reemployed?	Yes	31 (44.3%)	30 (23.1%)	0.002*
Can stroke be prevented?	Yes	14 (20%)	20 (15.4%)	0.434
Advise on control of risk factors before stroke?	Yes	6 (8.6%)	8 (6.1%)	0.567
Taking precautions after stroke	No	12 (17.1%)	37 (28.5%)	0.086

Fischer's exact test. *indicates significant p-value.

PRACTICE

Question	Response	Stroke Affected Family (n=70)	Non-Stroke Affected Family (n=130)	p-value
What should you do if you see a patient just getting an attack?				
Advise to take rest	Yes	20 (28.6%)	29 (22.3%)	0.389
Take to local hospital	Yes	67 (95.7%)	114 (87.7%)	0.078
Call a Doctor	Yes	11 (15.7%)	12 (9.2%)	0.244
Take time to Recover	Yes	5 (7.1%)	10 (7.7%)	1.0
Aware of Prevention?	Yes	5 (7.1%)	7 (5.4%)	0.756
Aware of Treatment?	Yes	36 (51.4%)	48 (36.9%)	0.052
Aware of Medication?	Yes	36 (51.4%)	52 (40%)	0.137
Aware of Physiotherapy?	Yes	44 (62.8%)	45 (34.6%)	<0.0001*
Aware of both Medication & Physiotherapy?	Yes	31 (44.3%)	29 (22.3%)	0.002*

Fischer's exact test. *indicates significant p-value.

3. RESULTS AND DISCUSSION

Over the period of 6 months 200 participants were involved in the study. The minimum age group involved in the study was 18 years and maximum 80 years. There were 96 male participants involved in the study that constitutes 48% and 104 female subjects constitute 52% and having the major proportion when compared to male that shown in figure-1.

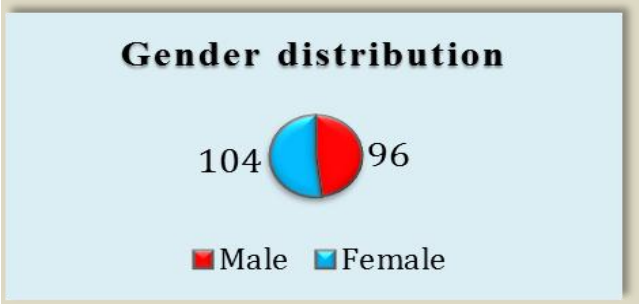

Figure 1: Distribution based on Gender.

The family history is one of the major factors for assessing the awareness related to stroke. Among 200 participants only 37 subjects had the history of stroke and having the least proportion of the total subjects that contributes 18.5%. There were 163 subjects who had no history of stroke that contributes 81.5% among total subjects shown in figure-2.

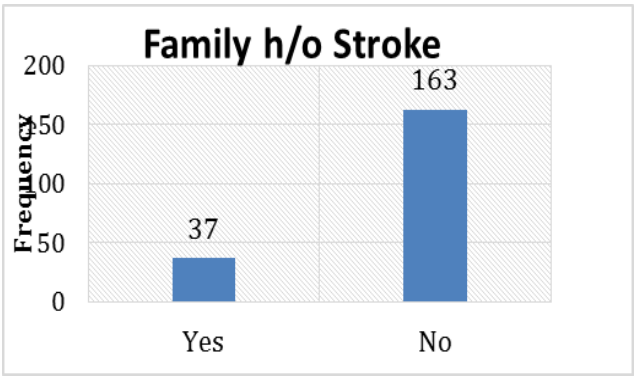

Figure 2: Distribution based on Family history of Stroke.

The subjects who had a family history of stroke is very less when compared to the subjects who had no family history. Among 200 participants, most of the patients were illiterate, contributes to 37%. The participants who studied primary were 18%. Participants with secondary education constituting 17%. The participants with intermediate education were 8.5%. Graduates were having the portion with 19.5% shown in table-3.

Table 3: Distribution based on Educational status.

Educational Status	Frequency	Percentage
Illiterate	74	37%
Primary Education	36	18%
Secondary Education	34	17%
Intermediate	17	8.5%
Graduate	39	19.5%
Total	200	100%

Among 200 participants Stroke Affected Families (SAF) are having the lesser proportion to 35%, while Non Stroke Affected Families (NSAF) with 65% shown in Table-4.

Table 4: Distribution based on Type of family.

Type of Family	Frequency	Percentage
Stroke affected family	70	35%
Non-Stroke affected family	130	65%
Total	200	100%

70 subjects belong to the Stroke Affected Family (SAF) and 130 subjects are included in the Non Stroke Affected Family (NSAF) group. Over 55.7% of SAF group have heard about the term stroke, whereas 40% of NSAF group heard the term stroke. 98.6% of SAF group were aware of paralysis whereas 95.4% of NSAF. 88.6% of SAF group knew at least one person who had stroke, whereas 67.7% of NSAF group. SAF group had a history of stroke over 91.4%, in contrast to NSAF group with only 2.3% ($p<0.0001$). SAF group identified Loss of

consciousness and Paralysis as the most common symptom of stroke with 82.8%, whereas NSAF group identified that paralysis as the most common symptom with 76.1% (p <0.0001). So there was less knowledge regarding headache, vomiting is associated with stroke. The knowledge of risk factors was even poor in SAF's. Only 50% of the people in SAF group knew that stroke management is as important as cardiac attack and in NSAF group, 48.5% of the people knew the importance of the management as cardiac attack. Both SAF and NSAF groups had poor knowledge of the window period of stroke with 2.8% and 1.5% respectively. SAF group identified Hypertension as the main predisposing factor of stroke by 62.8% and NSAF group identified family history as the main predisposing factor of stroke by 45.4%. 58.6% of SAF group answered that the stroke is a familial disease, whereas NSAF group were 45.4%. Both the groups having better knowledge on the question whether stroke is an infectious disease, only 7.1% and 6.9% of the participants have agreed with stroke is an infectious disease in SAF, the NSAF respectively. The results regarding to attitude reveal that there was similarity in the response of the both groups. 44.3% of SAF group said stroke people can be reemployed, whereas 23.1% of the NSAF (p = 0.02). Both SAF and NSAF groups answered that stroke can be prevented with 20% and 15.4% respectively. 8.6% of the SAF group advises others on the prevention of stroke, whereas 6.1% of the NSAF group. 17.1% of SAF and 28.5% of NSAF groups said that have to take precautions after getting stroke. Regarding practice, the majority of the participants agreed to get the patient to hospital as soon as possible. 95.7% of SAF and 87.7% of NSAF groups said they prefer to take local hospital immediately. Only 5 people from SAF and 7 from NSAF groups were aware of prevention of stroke. 51.4% of SAF group and 40% of the NSAF group were aware of medication for the stroke. A SAF group had better knowledge with 62.8% than NSAF group with 34.6%. SAF group with 44.3% had better knowledge on both medication and physiotherapy when compared to NSAF with 22.3% (p = 0.002). The results of family screening questionnaire were shown in Table -2. In our study total number of 200 subjects were taken. The subjects are included in our study on a condition that all of them belong to rural areas, aged above 18 years coming to the department of neurology. Among those 200 subjects, over 48% were male and 52% were female. 70 subjects belong to SAF group and 130 subjects belong to NSAF group. Our results indicate that both SAF and NSAF groups were aware of basic information of stroke. This indirectly tells us how prevalent stroke is among the general population. Over half of our subjects have heard the term stroke. Other studies done in West Bengal, Hyderabad, Jordan. The results indicate that their subjects had better knowledge when compared to our study. Most of the studies, including our present

study stated that subjects have identified the brain as the affected organ in stroke. The SAF group in our study had suffered stroke more than NSAF group. Paralysis and loss of consciousness were identified by the subjects in our study. Subjects were unaware of other symptoms like vomiting, headache, fits and left ignored. A Study was done by Saba S. Madae'en'[19] in Jordan resulted in loss of speech as the most common symptom. This was found different when compared to other studies. Our study has concluded that hypertension was the most common risk factor identified by SAF group and family history was the most common risk factor identified by NSAF group. A Study done by Sujata Das[20] in West Bengal concluded that the subjects in her study answered hypertension and diabetes as the most common risk factors. Another study done by Saba S Madae'en' tells us that their subjects found getting older as the most common risk factor. Around half of the subjects in our study believe that stroke management is as important as cardiac arrest. It indicates that the other half of our study had no knowledge on how important it is to treat stroke immediately. None of the groups in our study had good knowledge on the Window Period of stroke. This shows that stroke is being ignored by most of the general population. This ignorance is not desirable and need to be addressed immediately through awareness camps or surveys. Both the groups strongly accepted on the fact that stroke is not an infectious disease but a familial disease. Our group was optimistic about reemployment of stroke patients, unlike NSAF group. Less than a quarter of the subjects of our study answered that stroke can be prevented. It indicates that the general population is unaware of the fact that stroke can be prevented by monitoring the chronic diseases existing in them. A Study done by Devika Adusumilli[21] in Hyderabad also gave the same results like our study. Both SAF group and NSAF group in our study said they prefer to take the patient to local Hospital immediately instead of resting the patient for a good while. This could be beneficial to the patient. Half of the subjects in our study were aware of the treatment and medication. They had poor knowledge on Physiotherapy to be done in stroke patients. The comparison has been shown in table-5.

Table 5: Comparison of studies undertaken in different states to explore the KAP in relation to Stroke.

Parameter	Our Study	West Bengal	Hyderabad	Jordan
Sample Size	200	282 - SAF, 282 - NSAF	392	1854
Term Stroke knowledge	55.7% SAF 40% NSAF	98.94% SAF 94.68% NSAF	70.20%	63.8%
Affected Organ	Brain	Brain	Brain	Brain
Recognized symptom	Paralysis-SAF LOC & Paralysis-NSAF	Paralysis & LOC in both	-	Loss of speech
H/O Stroke	91.4% SAF 2.3% NSAF	85.4% SAF 45.04% NSAF	6.83%	1.5%
Risk Factor	Hypertension(SAF) Family Histoty (NSAF)	Hypertension and diabetes in both groups	-	Getting Older

4. CONCLUSION

In our study, we have assessed the stroke awareness in terms of knowledge, attitude and health seeking behavior of rural population. The entire study was conducted in the form of standard questionnaires and recorded. Stroke awareness in terms of knowledge, attitude and health seeking behavior of the patients from rural population in the department of Neurology was quite low. Although the subjects had good knowledge of basic information about stroke, it is really essential to conduct health education programs, awareness camps to educate the people on early stroke identification, risk factors, complications, preventive measures and increase quality of life of people prone to stroke as well as stroke affected people.

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