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Knowledge, attitude and practices of the general population about Stroke

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Abstract:

Stroke (Cerebrovascular Accident) is a cause of a significant mortality and morbidity across the world(1) with case fatality of 18% to 42% (2). Many studies have identified lack of knowledge of presenting symptoms of stroke as a main cause for the delay in treatment initiation. Our study aims to evaluate the knowledge, attitudes and practices about stroke among the patients attendants and/or the first respondents of the patient. Aim: 1. To assess the knowledge of general public in identifying the symptoms of stroke. 2. To study the factors affecting the time interval between stroke symptom onset and reaching hospital. Methodology: This is a Cross sectional prospective study. The participants were asked questions in their mother tongue from the study protocol. Results: The study group has 140 participants with average age of 36 years. 55% are females, 60% are urban dwellers and 28% are illiterates. Urban dwellers have more knowledge of stroke. Literate participants could enumerate more symptoms. 50% of the participants said that the patient needs immediate hospitalization. 80% respondents have taken their stroke patient to the nearest hospital within 4 hours. 57% respondents have reached the hospital in an ambulance. Conclusion: Robust awareness programs, improving the literacy rates and establishing a well-coordinated communication network in the health care system will facilitate

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timely intervention and improved outcomes in stroke patients.
Keywords: Stroke, symptoms, knowledge, general public, questionnaire, literacy, awareness.

INTRODUCTION

Stroke (Cerebrovascular Accident) is a major health problem globally. It is cause of a significant mortality and morbidity across the world.[1] With increasing life expectancy and prevalence of life style diseases, the burden of stroke is also increasing. In India, Crude incidence rates range from 108 to 172/100,000 people per year and one-month case fatality is 18% to 42% (2). Early hospitalization and timely intervention could prevent the high morbidity and mortality in stroke. Time bound thrombolysis within 4.5 hours of onset in acute ischemic stroke has improved the survival and also disability, subsequently the dependency in day to day living (3). This is only possible when the either the patient , the attendants or first responders have adequate knowledge to suspect a stroke and the urgency to take to nearest stroke unit within the stipulated time. Many studies have identified lack of knowledge of presenting symptoms and manifestations of stroke as a main cause for the delay in treatment initiation (4,5,6).
Ours is a tertiary care hospital. The patients here include a heterogenous group of urban and rural people from varied socio economic strata. Our study aims to evaluate the knowledge, attitudes and practices among the of the patients' attendants and/or the first respondents of a CVA patient about stroke, its symptoms and the need for initiating time bound treatment.

Aim of the study: 1. To assess the knowledge of general public in identifying the symptoms of stroke. 2. To study the factors affecting the time interval between stroke symptom onset and reaching hospital.

Methodology: This is a Cross sectional prospective study, conducted in a tertiary care teaching hospital with the sample size of 140.

Inclusion criteria:

1. The attendants and/ or first respondents of the patients admitted with stroke confirmed by CT scan and Physician.
2. Age more than 18 years.

Exclusion criteria:

1. Age less than 18 years. 2. Not willing to give written consent.

After taking approval of Institutional Ethics Committee and the written consent of the participants, they were asked questions in their mother tongue from the study protocol.

The first part of questinnaire has information about demographic details of the participants i.e age, gender, educational qualifications and the area of residence. The second part of the questionnaire has two subsets of questions- the first sudset to understand the knowledge of the respondent about whether they know what stroke is, the symptoms of stroke, the number of symptoms they can enumerate, any past experience with stroke patient, their knowledge of the need for hospitalization of the patient and the need for emergency admission.

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The next subset has questions to understand the practical application of their knowledge about Stroke and the need for time bound admission in hospital. The questions were a) Did you identify that this patient had stroke b) Transportation method availed to reach the hospital c) If any delay in reaching the hospital , the reasons for the same.

Statistical Analysis: The results are tabulated. The categorical variables were expressed as absolute frequencies and percentages. A chi-squared test was used to assess the possible differences in the categorical variables based on prior stroke knowledge, and the characteristics of both the groups were compared. SPSS was utilized for performing the data analysis. A p-value ≤0.05 were considered statistically significant.

Results:

Age :

Table- 1

Age (years)	Number	Percentage	Males (number)	Females (number)
18-30	58	41.4%	34	24
31-40	32	22.8%	12	20
41-50	35	25%	13	22
51-60	12	8.5%	03	09
61-70	03	2.1%	01	02
Total	140	100%	63	77

The minimum age of participants was 18 years and the maximum age was 70 years. Maximum number of participants was within 18 to 30 years age group. The average age was 36 years.

Gender:

Table- 2

	Males	Females	Total
Number	63	77	140
Percentage	45%	55%	100%

The majority of the respondents were female ie 77 (55%).

Demography:

Table- 3

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	Rural	Urban	Total
Number	55	85	140
Percentage	39.3%	60.7%	100%

Majority of the subjects are from urban area ie 85 (60%).

LiteracyStatus:

Table- 4

	Number	Percentage	Males (number)	Females (number)
Illiterate	40	28.5%	10	30
School passed	47	33.5%	25	22
Intermediate	18	12.8%	08	10
Graduation	35	25%	20	15
Total	140	100%	63	77

Among the participants 40 ie 28% are illiterates, majority ie 47 (33.5%) have completed schooling, 25% are graduates.

QUESTIONNAIRE RESPONSES

DOMAIN OF KNOWLEDGE & ATTITUDE:

1. The number of respondents who have heard/ understand about stroke.

Table- 5

	Yes	No	Total
Number	129	11	140
Percentage	92.1%	7.8%	100%

Majority of the participants, 129 (92%) have heard about stroke.

2. Number of respondents who have seen a stroke patient previously

Table-6

	Yes	No	Total
Number	82	58	140
Percentage	58.5%	41.4%	100%

58% of the participants have seen a stroke patient prior to this.41 % have not seen stroke patient till now.

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3. Symptoms of stroke the participants can name.
Table-7

Symptom	Number	Percentage
Weakness of limbs	116	82.8%
Deviation of mouth	56	40%
Speech disturbances	42	30%
Loss of consciousness	12	8.5%
Headache	09	6.4%
Loss of sensation	07	5%
Behavioural disturbances	05	3.5%
Involuntary movements/seizures	4	2.8%

The predominant symptom to identify stroke was weakness of limbs by 116 (83%) followed by deviation of mouth by 56 (40%) and speech disturbance by 42 (30%).

4. Number of symptoms of stroke known to the study subjects.
Table-8

Number of Symptoms	Number	Percentage
0	19	13.5%
1	30	21.4%
2	61	43.5%
3	21	15%
4	6	4.2%
5	3	2.1%

The participants were asked to name the symptoms of stroke that they knew. 13.5% ie 19 persons could not name any symptoms. Majority ie 43.5% (61) persons named 2 symptoms, followed by one symptom identified with strike by 30 (21.4%) persons.3 (2.1%) could enumerate five symptom of stroke.

5. The number of the participants agreed for the need for hospitalization
Table-9

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	Yes	No	Total
Number	124	16	140
Percentage	88.6%	11.4%	100%

87% (124) participants had agreed that the patient needs hospitalization. Only 16 (11.4%) felt that hospitalization is not needed.

6. The time period within which the patient has to be taken to a hospital.

Table-10

Response of participants	Number	Percentage
Immediately	70	50%
Within 1 hour	17	12.1%
Within 6 hours	08	5.7%
Within 24 hours	25	17.9%
Within few days	04	2.8%
No idea	16	11.4%
Total	140	100%

50 % (70) of the participants said that the patient needs immediate hospitalization. 12% (17) felt that the patient can be admitted within an hour of symptom onset. 18% (25) said we can wait till 4 hours to admit in a hospital. 16 (11.4%) had no idea about need for time bound hospitalization.

QUESTINNAIRE ON DOMAIN OF 'PRACTICE'

7. The number of participants who have identified Stroke in their patient

Table-11

	Yes	No	Total
Number	57	83	140
Percentage	40.7%	59.2%	100%

57 (40.7%) participants had identified that their patient had symptoms of stroke, the remaining 83 (59%) failed to recognize stroke in the patients they were accompanying.

8. Transportation means employed to reach hospital

Table-12

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Response of participants	Number	Percentage
Ambulance	80	57.1%
Auto	49	35%
Car	07	5%
Bus	03	2.1%
Bike	01	0.7%
Total	140	100%

57% (80) respondents have reached the hospital in an ambulance. The next common transportation means was auto in 49 (35%).5% travelled by car, 2% by bus and 1 by bike.

9. Actual time taken in reaching the hospital

Table-13

Time in hours	Number	Percentage
<4hours	112	80%
4hrs – 24hrs	22	15.7%
>24 hrs	06	4.3%
Total	140	100%

80% (112) respondents have taken their stroke patient to the hospital within 4 hours, 22 (15.7%) have gone to hospital within 24 hours and 4.3% have gone to hospital after more than 1 day.

DISCUSSION

This study conducted in a tertiary care hospital to assess the knowledge of the patients attendants about stroke, its symptoms, need for time bound hospitalization and the application of this knowledge in a real life scenario.

The study group has 140 participants with age ranging from 18 years to 70 years and average age is 36 years. 55% of them are females. In a study by Sirisha et al (9) the average age of the participants was 39.64 years, the age was between 17–85 years, with 32.6% women participants, unlike our study which has more female than male subjects. Among the participants 28% are illiterates. Among the literate participants, majority ie 47 (33.5%) have completed schooling, 25% are graduates.60% are urban dwellers.

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92% of the participants have heard about stroke and 58.5% had previously seen a patient of stroke. Urban dwellers have more knowledge of stroke (p=0.018), have previously seen stroke patients more (p=0.029), could enumerate more symptoms of stroke (p=0.032) than rural participants. Similar difference between urban and rural dwellers ($p<0.001$) was noted by Sirisha et al (9) also. Literate participants could enumerate more symptoms than illiterates (p=0.001) and graduates could name more features of stroke than just school completed respondents. Soto Camara et al (10) also observed a statistically significant correlation ($p \leq 0.001$) between educational attainment of secondary/higher level and the correct identification of the warning signs of stroke.

Weakness of limbs is the most common symptom identified with stroke by 82.8% of the respondents. .43% of the participants are able to identify two symptoms of stroke, which are weakness of limb and deviation of mouth, followed by identifying speech disturbances as a manifestation of stroke. 60% of these subjects had previously seen a patient of stroke. These findings are in concurrence with findings of Sirisha et al (9) and Soto Camara et al (10). 89% of urban subjects, 81% of rural subjects, 90% of male and 83% of females could name the symptoms of stroke. 96% of the subjects who have seen a stroke patient prior to this study are able to identify the symptoms of stroke in their patient. Among the 13.5% who did not know identify any symptoms of stroke, 58% are illiterates.

Though 92% of the participants have heard about stroke and 58.5% had previously seen a patient of stroke , only 40.7% participants had identified that their patient had symptoms of stroke, the remaining 59% failed to recognize stroke in the patients they were accompanying. This shows a knowledge – practice gap in identifying stroke in real life situation. Similar findings are observed in studies in which patients are interviewed following hospital admission for stroke [11]. Among the participants who identified stroke, 54% are urban dwellers, 67% literates, 63% are subjects younger than 40 years. There is no much difference between men and women participants (51% vs 49%).

87% participants had agreed that the patient needs hospitalization. Only 11.4% felt that hospitalization is not needed. 50% of the participants said that the patient needs immediate hospitalization. 12% felt that the patient can be admitted within an hour of symptom onset. 18% said we can wait till 24 hours to admit in a hospital. 11.4% had no idea about need for time bound hospitalization.

80% (112) respondents have taken their stroke patient to the nearest hospital within 4 hours. 58% are urban residents, 72% are literates. 85% are graduates and 76% of School completed group have taken their patients to the nearest hospital in less than 4 hours. 60% of them are taken to nearest primary care and secondary care health centres like CHC (Community Health Centre), Area hospitals and Nursing homes.15.7% have gone to hospital within 24 hours and 4.3% have gone to hospital after more than 1 day. Among the 20% who reached hospital after 4 hours, 64% of them did not know the necessity to take the patient in time bound manner, 21% opted for home remedies, 10% due to lack of help , 3% due to the occurrence of stroke at night. In a study

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by Das et al, 10.7% believed in indigenous modalities of stroke treatment such as oil massage, faith healing and magic (12).

57% respondents have reached the hospital in an ambulance. This consists of 54% of rural and 59%of urban subjects. The next common transportation means was auto in 35%, 5% travelled by car and 2% by bus.

Strengths and limitations: The subjects included both rural and urban natives across the age groups from young to old. Majority of the participants are urban dwellers and the knowledge of stroke and its symptoms is better among them and also among literates. Therefore, further studies focusing on rural population may highlight more local issues/ believes pertaining to stroke identification.

Conclusion

Treatment of stroke with revascularization procedures has a huge impact on the morbidity and mortality of the patient, quality of life of the individual and financial burden. Time bound revascularization procedures and accessibility of Stroke centres equipped to perform these procedures form the limiting factors. Robust awareness programs designed to educate population about early identification of stroke and time bound admission to nearest stroke unit are a necessity, with particular focus on rural population. Improving the literacy rates and also introducing such knowledge in the curriculum of school children can make significant improvement in the knowledge, attitude and practices of general population. Since many of the respondents in our study have taken their patients to the nearest health care facility, it is imperative to establish a well-coordinated communication network between the paramedical ambulance staff, primary, secondary health care units and the Stroke unit for decreasing symptom onset to treatment initiation time.

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