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Study on stroke awareness among caregivers of stroke patients

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Abstract

Background: Stroke related morbidity and mortality could be minimised with early medical interventions. Lack of awareness on stroke warning signs and risk factors are significant reasons for delay in seeking medical care and resultant adverse outcome. The caregiver knowledge on stroke is important in early detection of stroke, hence the study.
Aims: To assess the knowledge on warning signs and risk factors of stroke among caregivers of stroke patients.
Materials & methods: This cross-sectional questionnaire based study was done over 6 months among 50 caregivers of hospitalized stroke patients. Questionnaire adopted from Leicester Stroke Awareness Campaign Study was administered to the participants and their response was recorded andanalyzed using Microsoft SPSS-IV software.
Results: In the study 62 % participants were females; most in the age group of 41-60 years. Term called 'stroke' and 'brain' as the affected organ was known to 70% and 94% of subjects respectively. Sudden onset weakness of arm and leg was identified as a warning sign by 82% and 80% of caregivers. High blood pressure was the most identified (78 %) risk factor. Knowledge on stroke warning signs and risk factors were found to be good in 34% and 46% of subjects respectively. This knowledge was found to be significantly higher among educated and younger subjects.
Conclusion: Caregivers of stroke patients had good knowledge of stroke warning sign and risk factors. Caregivers education on stroke might be of great utility to spread the stroke awareness in society.
Keywords: Stroke, stroke awareness, caregivers, risk factors, warning signs.

1. Introduction

Stroke is the third leading cause of death worldwide and its survivors have significant morbidity. [1] Stroke is potentially preventable by modifying its potentially reversible risk factors. The emergence of lifestyle diseases in developing countries has resulted in a steady increase of stroke incidence. In India, the incidence of stroke is 1.5 per 1000 population, with mortality at 41.08%. [2]

Stroke being a medical emergency requires early diagnosis and interventions. Patients require prolonged individualized care in rehabilitation programs. Despite the advances in imaging and the novel management options in the last decade; the stroke survival rates have remained low. This is possibly due to the failure in identifying the warning signs of stroke and resultant delay in seeking medical care. Studies have shown the knowledge on stroke to be poor in developed countries. [3,4]

Reasonable awareness on stroke among the observant/ family members could improve early identification and facilitation of medical care in stroke.[5] We assessed caregivers of stroke patients on their awareness about warning signs and risk factors of stroke.

1.1 Objective

To assess the knowledge of caregivers of stroke patients on the warning signs and risk factors of stroke.

2. Materials & methods

This was a cross sectional questionnaire based study with a sample size of 50 subjects. After approval of the Institutional Ethics Committee the study was conducted over a period of six months from July 2016. Caregivers of patients admitted to a tertiary care hospital in Southern India with a diagnosis of stroke were randomly selected. Those caregivers who fulfilled the selection criteria were included in the study after obtaining their informed written consent. The Stroke awareness questionnaire as used by the Leicester Stroke Awareness Campaign [6] was administered to the participants and their responses were marked by the investigators to the data sheet. The questionnaire had 11 questions on warning signs and 4 on risk factors for stroke. It included questions on stroke symptoms, stroke and stroke campaigns. Demographic characteristics and literacy level of subjects were also recorded on the preformatted data sheet for further analysis. For the warning symptoms and signs correct response scored one mark each with a maximum score of 11. This score was graded as poor (0-3 marks), moderate (4-7 marks) and good (8-11 marks). For the risk factor knowledge, a score of three/ four was good.

2.1 Selection criteria

The caregiver is the person who is with the patient and helping the patient with impairment to cope with his/ her daily routine.

2.2 Inclusion criteria: i) Caregiver of stroke patients older than 18 years.

2.3 Exclusion criteria: i) Caregivers who are stroke survivors. ii) Caregivers who are health care professionals.

2.4 Statistical analysis

The data collected was analyzed using percentage, frequency and chi square test.

3. Results

This questionnaire based study was done among 50 subjects who were caregivers of patients with stroke. In the study 60 % of participants were in 41 to 60 years of age. There were 19 (38%) males and 31 (62%) females included in this study. Among them 20% were uneducated, 34% studied till high school, 24% till higher secondary and the remaining 22% were graduates. The term ‘stroke’ was known to 70 % of caregivers and 6% were aware on stroke awareness campaigns. Also, 94 % (n- 47) felt ‘brain’ and 6% (n- 3) felt the blood vessels to be the affected organ in stroke.

Table1: Correct responses regarding warning signs of stroke in the descending order

Warning signs	Number	Percentage (%)
Sudden onset weakness/numbness of arm	41	82
Sudden onset weakness/numbness of leg	40	80
Sudden onset problems with speech	32	64
Sudden onset breathlessness	27	34
Sudden onset chest pain	24	48
Sudden onset fainting	23	46
Sudden onset loss of vision	21	42
Sudden onset headache	20	40
Sudden onset dizziness	18	36
Sudden onset leg/arm pain	14	28
Sudden onset double vision	13	26

There were 11 questions on signs and symptoms of stroke. Table-1 shows the correct responses in the descending order as numbers and percentages. Sudden onset weakness of arm (82 %), sudden onset weakness of the leg (80 %) and speech disturbances (64%) were the most identified features of stroke. Other correctly identified symptoms were sudden onset fainting (46%), loss of vision (42%), headache (40%) and dizziness (36%). The least identified among the questions were sudden development of arm/leg pain (28%) and double vision (26%). The non-neurological symptoms in the questionnaire; acute chest pain and breathlessness were identified as warning signs of stroke by 48% and 34% respectively.

Based on the scores obtained; 32 % had poor knowledge on warning signs of stroke while moderate and good knowledge was seen 34 % each.

The questions on risk factors for stroke and the descending order of correct responses are shown in Table-2. High blood pressure was identified as a risk factor by 78%, diabetes followed at 56% and smoking at 54% of the participating caregivers. Only 14% identified alcohol as a risk factor for stroke occurrence.

Table 2: Correct responses regarding risk factors of stroke in the descending order

Risk factors	Number	Percentage (%)
High BP	39	78
Diabetes	28	56
Smoking	27	54
Too much alcohol	7	14

Good knowledge of stroke risk factors was found in 46% participants and 20 % did not identify any of the risk factors. Among the caregivers 12% identified ‘one’ and 22% identified ‘two’ of the risk factors in the questionnaire.

Table 3: Association between Demographic Characteristics and Stroke Awareness

	Organ involved		Warning signs			Risk factors	
	Correct	**Wrong**	**Poor**	**Moderate**	**Good**	**Poor**	**Good**
Age (years)							
18-40	8	2	0	5	5	4	6
41-60	29	1	9	11	10	16	14
61-80	10	0	7	1	2	8	2
p value	0.106		0.021			0.177	
Gender							
Male	17	2	4	9	6	13	6
Female	30	1	12	8	11	15	16
P value	0.291		0.245			0.166	
Education							
None	10	0	9	1	0	9	1
High school	17	0	7	4	6	10	7
PUC	12	0	0	8	4	9	3
Graduate	8	3	0	4	7	1	10
P value	0.010		0.000			0.001	

Table 3 shows the association between demographic characteristics and stroke awareness. Most caregivers could identify 'brain' as the organ involved in stroke. A statistically significant association was found with stroke awareness and educational status (p-0.010). Younger participants had good knowledge on the warning signs of stroke as compared to the older ones; which was statistically significant (p-0.021). The caregivers with higher education had good knowledge on the warning signs as compared to uneducated caregivers, which was statistically significant (p- 0.000). With the knowledge on risk factors significant association was observed with education (p- 0.001). There was no significant co-relation for gender and stroke awareness.

4. Discussion

There is a rising trend in the incidence of stroke in India. [7] Recent studies have shown that 55-70% of stroke survivors become fully independent in a year while 7to 15.7% remain physically impaired.[2] The ICMR survey in 2004 estimates the stroke related' disability-adjusted life year'(DALY) in India to be 597.6/100000 person.[8]

This study assessed the knowledge of warning signs and risk factors of stroke among the caregivers of patients hospitalized with stroke. We found 70% of caregivers to be aware of the condition 'stroke', a similar study from Brazil showed an awareness of 70.5%. [9] A study at Mangalore showed 30% awareness among participants.[10] In this study 94%identified 'brain' as the organ involved; as against 75 % and 73.4 % in studies from Jordan and Australia.[11,12] In a comparable study from North-west India, only one-third of participants could relate stroke to brain as the affected organ.[13] The awareness in the present study might be high as the participants were caregivers of hospitalized patients with stroke.

Weakness/numbness of the arm (82%) and leg (80%) were the most identified warning signs; followed by problems with speech (64%). Unilateral limb weakness was the most identified warning sign in previous studies.[10,13-16] Speech related problems were the most identified warning sign of stroke in studies from countries like Brazil, Jordan and Ireland.[9,11,17] Awareness on warning signs was good (score 8-10) in 34% subjects, but it ranged from 6% to 26% in other studies among general population. [10,11,13,15] A German study done among stroke support groups showed51.5 % awareness on warning signs of stroke.[14]

High blood pressure was identified by 78% of caregivers as a risk factor for stroke. This was similar to other studies done from different geographical areas.[10,11,3-18] Smoking was the most identifiable risk factor in a study from Australia.[12] Risk factor awareness of stroke was good among 46% of subjects in this study. Other studies from India had observed risk factor awareness at 13% and 14% [10,13]. Awareness on risk factors of stroke was between 14% and 38% in studies from other countries. [4,12,15,18] The German stroke support groups had 48.1 % awareness on risk factors of stroke.[14]

There was no gender difference on stroke awareness, which was consistent with the previous studies.[9,13,15,16] As seen with other studies, this study found the younger and educated participants to have more awareness on warning signs and risk factors for stroke.[12-16] Majority of the subjects in this study were younger and educated, which would have contributed to better awareness.

The current study observed good knowledge of stroke among care givers. This is contrary to other studies done in general population. This is probably from the fact that the subjects were caregivers of hospitalized stroke patients. The participants could have gained some knowledge about the entity during their interaction with the healthcare professionals. This bias is possibly the limitation of this study. It may be prudent to initiate stroke awareness programs in general population to increase awareness on warning symptoms and risk factors of stroke.

5. Conclusion

The caregivers of stroke patients in this study had relatively good knowledge of the warning signs and risk factors. Risk factor modification, early identification of warning signs and medical intervention are essential in reducing stroke related morbidity and mortality. The stroke awareness can be enhanced by community or hospital based stroke awareness programs among population who are at risk.

Conflicts of interest

Authors have no disclosures to declare.

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