

## Awareness of the warning symptoms and risk factors of stroke among adults seeking health care from a rural hospital of India

Sir,

Stroke is a major disabling health problem in developing countries like India. Stroke burden in India has been rising in the last few decades, in contrast to developed countries where it has plateaued or decreased. Currently, the average annual incidence rate of stroke in India is 145 per 100,000 populations, which is higher than the western nations.<sup>[1]</sup> Approximately, 12% of all strokes occur in the population <40 years of age.<sup>[2]</sup> From the current Indian population of about 1.2 billion, approximately 1.8 million people may suffer from stroke annually and about one-third of them may die. This entails the issue of prevention and treatment of stroke serious attention for developing countries.<sup>[3]</sup>

Early recognition of symptoms and prompt medical care are essential for providing appropriate treatment to prevent adverse clinical outcomes in patients with stroke.<sup>[4]</sup> Therefore, it is important to identify the level of awareness about stroke warning symptoms and risk factors for its prevention and to reduce the associated mortality and morbidity. A study was therefore undertaken to determine the level of awareness of warning symptoms and risk factors of stroke among patients attending rural health and training center (RHTC).

A hospital-based cross-sectional study was carried out in the RHTC, which was, the field practice area of department of Community Medicine during April-May 2013. Total number

of consecutive adult patients above 18 years of age reporting the outpatient department of RHTC from 1<sup>st</sup> April to 31<sup>st</sup> May 2013 were included in the study with due informed consent. In the process, total study subjects were 540 and it was a convenient sample. The study subjects were interviewed using a predesigned, pretested and structured questionnaire. The questionnaire included items pertaining to warning symptoms of stroke and its risk factors identified by the American Heart Association.<sup>[5]</sup> The structured questionnaire contained 21 items, including 9 stroke and 12 items for risk factors. The participants were interviewed individually and they were asked to identify stroke symptoms and its risk factors. All the symptoms and risk factors were translated to local language and presented in a chart, which was shown to the study subjects to identify the symptoms and risk factors in the form of yes or no. The data were analyzed using SPSS software version 16.

The age of study population varied from 19-59 years. The mean age was  $41.67 \pm 11.36$ . In this study, 56.7% of people were male and 43.3% were female. In the present study, 35.4% were skilled workers including teacher/clerk or similar service holders. About 52% people were having primary education and 64.8% belong to the lower social class.

Table 1 shows that the most frequent symptom identified was sudden numbness or weakness of the arm or leg on one side of the body (93.88%) followed by sudden trouble walking, loss

**Table 1: Accurate responses for stroke signs and symptoms (n = 540)**

Stroke warning signs and symptoms	Number (percentage)
Sudden numbness or weakness of the arm or leg, especially on one side of the body	507 (93.88)
Sudden trouble walking, loss of balance or coordination	494 (91.48)
Sudden numbness or weakness of the face especially on one side of the body	465 (86.11)
Sudden trouble seeing in one or both eyes	343 (63.52)
Sudden trouble speaking or understanding	155 (28.7)
Nausea or vomiting	107 (19.81)
Sudden dizziness	96 (17.7)
Sudden severe headache with no known cause	75 (13.88)
Sudden confusion	53 (9.81)
Not identified any symptoms	33 (6.11)

of balance or coordination (91.48%) and sudden numbness or weakness of the face especially on one side of the body (86.11%). 6.1% of them could not identify any of the warning symptoms.

In our study, about 71% of study subjects were aware about less than 4 symptoms considered as having low level of awareness of stroke warning symptoms. In all, 41% were aware about less than 6 risk factors and considered having low level of awareness about stroke risk factors. The awareness of stroke warning symptoms was significantly lower in low socioeconomic group ( $P < 0.001$ ) and among study subjects educated up to secondary level ( $P < 0.001$ ). Similarly the awareness of risk factors was significantly lower in low socioeconomic group ( $P < 0.01$ ) and among study subjects educated up to secondary level ( $P < 0.001$ ). There is no difference in level of awareness in other socio-demographic variables like age, gender, occupation, type of family, etc.

The present study reveals the level of awareness of stroke warning symptoms and risk factors among rural adults attending a health institution which may be reflected as low level of awareness among rural population with significant association with socio-economic status and level of education.

In this rural setting, the focus of intervention should be toward improving the awareness about stroke warning symptoms and risk factors. The educational interventions by interns and social

workers posted in RHTC can be the first step in this direction to increase awareness.

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