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### Original Article

# A study on awareness of risk factors and warning symptoms of stroke in general population of Andhra Pradesh, South India

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#### ABSTRACT

Stroke is one of the most common neurological disorders in clinical practice. It is the leading cause of adult disability. The aim of the study was to assess the awareness of warning symptoms and risk factors of stroke among general population of South India. The study subjects were the general population who visited OPD of the Urban Health Centre of Katuri Medical College and Hospital, Guntur (A.P.), India. 49.35% subjects knew hypertension as risk factors of stroke. 44.70% study subjects knew alcohol consumption as risk factor of stroke. Only 22.22% study subjects knew obesity as risk factor for stroke. 46.77% of study subjects had knowledge of sudden numbness or weakness of the face, arm, or leg especially one side of the body as warning symptoms of stroke. 43.67% study subjects had knowledge of sudden confusion /sudden difficulty in speaking/ sudden difficulty in understanding written and spoken words as warning symptom of stroke.

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### 1. Introduction

Stroke is one of the most common neurological disorders in clinical practice. It is the leading cause of adult disability. According to WHO, it is the second commonest cause of death worldwide [1]. In 2005, stroke deaths accounted for 87% of deaths in developing countries and an estimated 5.8 million people died from stroke worldwide [2]. It is projected that deaths due to stroke will rise to 6.5 million by 2015 and by 2020, stroke and coronary artery disease together are expected to be the leading cause of lost healthy life years [3]. Surveys in different parts of India have shown that the prevalence of stroke varies in different regions of India and ranges from 40 to 270 per 100,000 population [4-7]. The population in India is now surviving beyond the peak years (age 55-65 years) for the risk of stroke [8]. With rising trends of hypertension, diabetes, smoking and stress in daily life among Indian population India, is likely to face enormous socioeconomic burden to meet the cost of rehabilitation of stroke victims. Awareness and knowledge in general population, regarding risk factors and warning symptoms of stroke are essential for the prevention and initiation of immediate effective treatment of stroke. Besides that awareness of risk factors may also improve adherence to medical advice

regarding lifestyle modifications. Systematic reviews have shown that one time advice from healthcare workers during routine patient interactions can have an appreciable impact on patient's behavior [9-10]. However, persons at risk often tend to misunderstand their own risk, underestimating their probability for stroke and assuming that adverse events will not happen to them [11].

The present study is aimed to evaluate general awareness of risk factors of stroke as well as warning symptoms in general public.

### 2. Materials and methods

The present cross-sectional study was conducted in patients who visited OPD of Urban Health Centre, Guntur which is under control of Katuri Medical College and Hospital, Guntur, Andhra Pradesh, South India. By systematic random sampling method every 5th patient who is above 20 yrs and willing to participate in the study were selected for the study. The study was conducted during March and April month of 2009. The total study subjects included in the study were 387. Study subjects were interviewed by the researcher. Informed consent was taken from the patients or relatives after giving explanation about the study. An interview session took approximately 15 to 20 minutes to elicit the information from study participants.

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### 3. Results

Table 1 Depicts that most of study subjects were in the age of 41-50(35.40%) years followed by 51-60 yrs (26.62%).7.75% study subjects were above 60 yrs.60.47% were males and 39.53% were females. Nearly half (49.10%) of study subjects were having their highest level of education as secondary or senior secondary, only 09.04% were postgraduates and 08.01% were illiterates.

**Table 1: Demographic distribution of study subjects (n=387)**

Demographic Variable	No(%)
<b>Age in Years</b>	
20-30	28(07.24)
31-40	89(22.99)
41-50	137(35.40)
51-60	103(26.62)
> 60	30(07.75)
<b>Gender</b>	
Male	234(60.47)
Female	153(39.53)
<b>Education</b>	
Illiterate	31(08.01)
Higher Secondary	87(22.48)
Senior secondary	103(26.62)
Graduate	131(33.85)
Post graduate	35(09.04)

Table 2 Depicts that hyper tension (49.35%) was the most commonly reported risk factor followed by Alcohol consumption (44.70%), tobacco use (40.83%), diabetes mellitus (34.88), and family history of stroke (18.35%), TIA /previous stroke (20.41%). Hypercholesterolemia was reported by least (27.65%) study subjects. Other risk factor like obesity was reported by 22.22 % of study subjects.

**Table 2: Knowledge of risk factors of stroke in study subjects(n=387)**

Risk factors	No(%)
Hypertension	191(49.35)
Alcohol	173(44.70)
Smoking	158(40.83)
Diabetes Mellitus	135(34.88)
Family H/O stroke	71(18.35)
TIA/Previous stroke	79(20.41)
Heart disease	94(24.28)
Hypercholesterolemia	107(27.65)
Obesity	86(22.22)

Table 3 depicts that sudden numbness or weakness of the face, arm or leg, especially on one side of the body was the most common warning sign reported by majority of the study subjects (46.77%), followed by sudden confusion /sudden difficulty in speaking/ sudden difficulty in understanding written and spoken words (43.67%), sudden trouble in walking /Sudden dizziness/ Sudden loss of balance or coordination (40.56%), sudden trouble in seeing with one or both eyes (27.64%). Sudden severe headache of unknown cause was reported by least number of study subjects (08.01%).

**Table 3: Knowledge of warning symptoms of stroke in study subjects (n=387)**

Warning symptoms of stroke	No(%)
Sudden numbness or weakness of the face, arm or leg, especially on one side of the body.	181(46.77)
Sudden confusion /Sudden difficulty in speaking/ Sudden difficulty in understanding written and spoken words	169(43.67)
Sudden trouble in walking /Sudden dizziness/ Sudden loss of balance or coordination	157(40.56)
Sudden trouble in seeing with one or both eyes	107(27.64)
Sudden severe headache with no known cause	31(08.01)

### 4. Discussion

Stroke continues to be a leading cause of death and long term disability in adults worldwide. In India and other developing countries, an alarming increase in the incidence of stroke has been observed owing to an increase in life span with rising trends of hypertension, diabetes, smoking and stress in daily life. Previous studies have shown a poor knowledge of stroke among patients with established risk factors for stroke and in community at large[12-15]. Most of the patients and caregivers did not recognize the onset of stroke and their knowledge of risk factors was poor [16]. Awareness of risk factors and warning symptoms of stroke in general population is essential for prevention and initiation of prompt treatment.

The major findings of the present study revealed that only nearly 50% of study subjects had knowledge of warning symptoms of stroke and nearly 50% were well informed of risk factors of stroke. These findings from present study were similar to the findings from Pandian JD et al [17].

### Conclusion and recommendations

As more than 50 % of study subjects were not aware regarding common risk factors and warning symptoms of stroke, there is a need to develop health education modules, programs to improve the awareness of stroke both at primary and secondary health care levels.

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