

# A CROSS SECTIONAL STUDY ON AWARENESS ABOUT STROKE AMONG HYPERTENSIVE PATIENTS ATTENDING NON COMMUNICABLE DISEASE CLINIC AT A TERTIARY HOSPITAL IN CHENNAI

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## Abstract

**INTRODUCTION:** Stroke is the second most leading cause of morbidity and mortality in developing Countries like India. The warning signs of stroke are left unrecognized which lead delay in treatment. Therefore, it is necessary to assess the awareness level about risk factors, signs and symptoms and complications of stroke.

**OBJECTIVE:** To examine the level of awareness about stroke among hypertensive patients and to create awareness among them.

**METHOD:** A cross sectional study was conducted at a Tertiary Hospital in Chennai (Govt. Stanley Medical College and Hospital). Moreover, 420 hypertensive patients were included in the study during the period between June 2018- November 2018. After obtaining informed consent from the patients, details were collected by face-to face interview using questionnaire designed for the study.

**RESULT:** A total of 420 responses were collected in which male and female participants between the ages of 40 to 60 years, were nearly equal. Most of the participants belong to upper lower class. 59% have heard about stroke and 13.1% had experienced stroke previously and relatively high percent of them knew from someone who suffered from stroke. The most commonly recognized risk factor of stroke were hypertension (56.7%) followed by smoking (28.8%). The most identified symptom of stroke by 57.1% of population was difficulty in speaking; Weakness of one side of the body by 48.3% were followed by other symptoms. Paralysis of one side of the human body (47.1%), seizures (41.1%) were the most recognized complications of stroke.

**CONCLUSION:** This study concludes that there is inadequate knowledge about stroke among the study participants which can be further improvised by some health education programs/events.

## INTRODUCTION

Stroke is a debilitating and devastating disease. It is the second leading cause of death worldwide, exceeded only by ischemic heart disease and a leading cause of adult disability. Other the fact that the stroke is largely preventable, the global incidence of stroke is rising, there is still relatively low awareness of the risk factors of Stroke [1]

The term "STROKE" is applied to acute several manifestations of cerebrovascular diseases. It causes both mental and physical crippling. Hereby, WHO defines "STROKE" as "a rapidly developing clinical signs of focal (or global) disturbance of cerebral function; lasting more than 24 hours or that leading to death, with no apparent cause other than the vascular origin".[2]

India as a developing country is facing a double burden in communicable and non-communicable diseases. India has the highest cases of deaths and disability due to stroke. The adjusted prevalence rate of stroke is 84-262/100,000 in rural and 334-424/100,000 in urban areas [3]. The Government of India has started the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke (NPCDCS) as the first step. The government is mainly focuses on early diagnosis, management, public health awareness, infrastructure and capacity building at different

levels of health care to all the non-communicable diseases including stroke [3].

Early identifying of symptoms and prompt medical care are necessary for providing appropriate treatment to prevent adverse clinical outcomes in patients with stroke. Moreover, it is very important to identify the level of awareness about stroke warning symptoms and risk factors for its prevention and to lower the associated mortality and morbidity.

This study was based on assessing the awareness of risk factors, signs and symptoms and the complication of stroke among the hypertensive patients attending the non-communicable disease clinic at a Tertiary Hospital in Chennai. (Govt. Stanley Medical College Hospital).[4]

## METHODOLOGY

**Study Design:** A Cross Sectional Study.

**Study Duration:** 6 months (June 2018 - November 2018)

**Study Population:** Both Males and Females between 40 and



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60 years of age who have been diagnosed as hypertensive patients.

**Study Area:**

Non communicable disease clinic at a tertiary hospital (Govt. Stanley Medical College Hospital)

**Sample Size:**

According to the study on “Prevalence on awareness of stroke among elderly public in eastern India by Bidyut Kumar Das et al, sample size was calculated with P – prevalence 67%, q – 33% [3]. With 95% Confidence level and relative precision of 7% of Prevalence, sample required for the study was calculated as follows. Sample size  $n = 4pq/d^2 = 420$  (with non-responsive rate of 5%)

**Sampling Technique:** Convenient sampling technique

**Inclusion Criteria:** The Hypertensive patients of age between 40 and 60 years attending non-communicable disease clinic.

**Exclusion Criteria:** Unconscious patients, patients with auditory impairment, visual impairment and mental deformities were excluded from this study.

**Methoda of Data Collection:** After giving preliminary introduction about the study in their mother tongue ,written consent was obtained from each respondent ,the validated structured questionnaire was used to assess the awareness about stroke among hypertensive patients through face-face interview .

**Data Analysis:** Data was entered in MS EXCEL and analysed using Statistical Package for Social Sciences Software (SPSS) Version 16.Descriptive statistics (mean, median, mode) were used to describe continuous variable, while proportion was used for categorical variable.

**RESULTS**

**1. Sociodemographic Profile:** This study was done among a sample of 420 hypertensive patients between the age group of 40 – 60 years of various socioeconomic statuses.

Table 1 : Sociodemographic Profile

Variable	Frequency (%)
Age group	40 - 50 yrs. 204 (48.5)
	51 - 60 yrs. 216 (51.5)
Gender	Male 223 (53.1)
	Female 197 (46.9)
Socio-economic Class	Upper 15 (3.6)
	Upper Middle 106 (25.2)
	Lower Middle 122 (29)
	Upper Lower 154 (36.7)
	Lower 23 (5.5)
	Total 420 (100)

In this study, there is almost an equal distribution was seen in age group. 53.1% of the study population was

males. 36.7% participants of this study belonged to upper lower class and 3.6% participants belong to upper socio economic status. (Table 1)

**2 . Hypertension - Status, Awareness about its Complications, Practice of Lifestyle Modification after being diagnosed as Hypertensives**

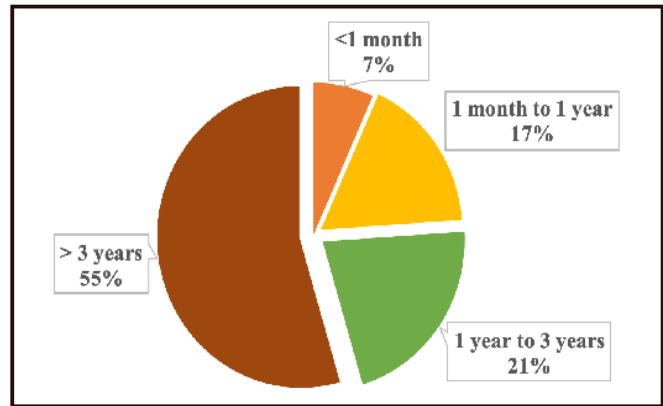


Figure 1: Duration of being diagnosed as Hypertensive

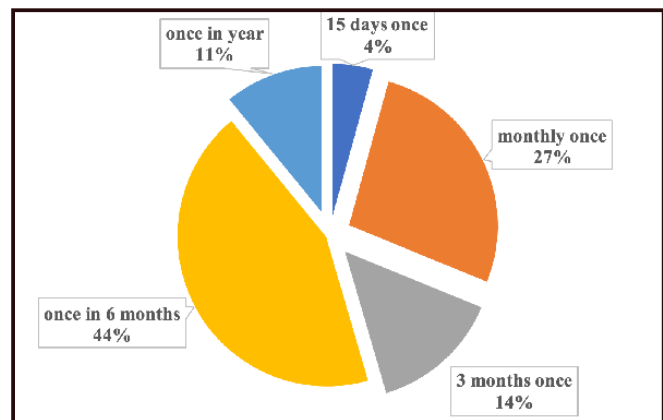


Figure 2 : Frequency of Duration for check-up after being diagnosed as Hypertensives

From the study, it is observed that most of the study participants were diagnosed to have hypertension for more than 3 yrs.(54.5%) and 43.6% of study participants used to come for regular check-ups once in six months ( figure 1 & 2)

Table 2 : Lifestyle modification doneafter being diagnosed as Hypertensives

Life Style Modifications	Yes n (%)	No n (%)
A. Dietary changes	327 (77.9)	93 (22.1)
1. Decreased Salt Intake	243 (57.9)	177 (42.1)
2. Decreased oil intake	137 (32.6)	283 (67.4)
3. Decreased fast foodintake	175(41.7)	245 (58.3)
4. Increased Intake of Fruits and vegetables	71 (16.9)	349 (83.1)
B. Exercise	138 (32.9)	282 (67.1)

77.9% of hypertensive patients followed dietary modifications of which decreased salt intake is followed by 57.9% and 41.7% had followed decreased intake of fast food .Only 32.9% were performing exercises.

Table 3 : Awareness about complications of untreated Hypertensives

Complications of Hypertension	Awareness about Complications	
	Is a Complication n (%)	Is not a Complication n (%)
1. Myocardial Infarction (HeartAttack)	220 (52.4)	200 (47.6)
2. Stroke	166 (39.5)	254 (60.5)
3. Retinopathy (Eye Problem)	52 (12.4)	368 (87.6)
4. Nephropathy (Kidney Problem)	55 (13.1)	364 (86.9)
5. Sudden Death	42 (10)	378 (90)

The most common complication in untreated cases of hypertension will be Coronary artery disease (Myocardial infarction) followed by stroke and the same pattern is well observed and analyzed in the study. Here, 220 hypertensive patients were aware that myocardial infarction as a major complication followed by stroke (166 patients).

**3.Awareness about Stroke - Risk Factors, Signs & Symptoms, Complications**

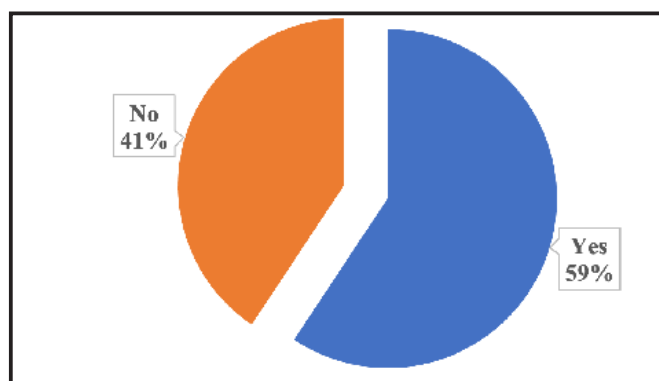


Figure 3 : Heard about Stroke

Among the 420 hypertensive patients participated in the study, 248 patients heard about stroke from their family members or others affected by stroke followed by advice from the physician, internet and mass media. 55 Participants (13.1%) had already experienced stroke.

Respondents those who have heard about stroke i.e., 248 participants (59%) were asked to choose multiple answers regarding the risk factors for stroke. On analyzing 56.7% were aware that Hypertension is risk factor for stroke followed by smoking as another major risk factor. (Figure 4)

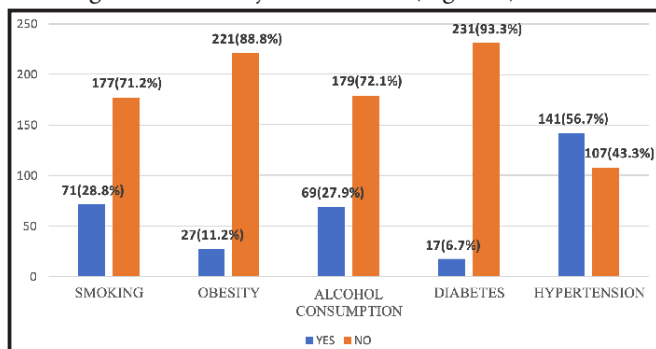


Figure 4 : Frequency of awareness about Risk Factors of Stroke

Table 4 : Frequency of awareness about signs and symptoms of stroke

SIGNS AND SYMPTOMS OF STROKE	YES n (%)	NO n (%)
1. Difficulty In Speaking <sup>#</sup>	142 (57.1)	106 (42.9)
2. Fever	12 (4.8)	236 (95.2)
3. Vertigo <sup>#</sup>	38 (15.2)	210 (84.8)
4. Vision Problems <sup>#</sup>	18 (7.1)	230 (92.9)
5. Breathlessness	10 (4)	238 (96)
6. Headache <sup>#</sup>	35 (14)	213 (86)
7. Neck Stiffness	40 (16)	208 (84)
8. Weakness of One Side of Body <sup>#</sup>	11 (48.3)	237 (51.7)
9. Gastro-intestinal problems <sup>#</sup>	22 (4.3)	226 (95.7)
10. Sweating	81 (9)	167 (91)

<sup>#</sup>-Relevant signs and symptoms of stroke

Nearly 40-50% of study population considered Difficulty in speech and weakness of one side of body as signs and symptoms of stroke.

Table 5 : Frequency of awareness about the complications of stroke (n=248)

Complications	Yes n (%)	No n (%)
1. Seizure	102 (41.1)	146 (58.9)
2. Infection	13 (5.2)	235 (94.8)
3. Skin Cracks	10 (4)	238 (96)
4. Dental Caries	10 (4)	238 (96)
5. Bronchitis	17 (6.7)	231 (93.3)
6. Paralysis of one side of body	117 (47.1)	131 (52.9)
7. Recurrent Stroke	41 (23.8)	207 (76.2)
8. Myocardial Infarction	45 (16.7)	203 (83.3)

From the set of complications given in the questionnaire, majority of the study population identified paralysis in one side of the body (47.1%) also seizures (41.1%) as the complications of stroke. Irrelevant complications such as bronchitis (6.7%), infections (5.2%), skin cracks (4%), and dental caries (4%) were also believed to be complications by the study subjects.

After assessing the awareness about stroke, Information on the risk factors of stroke, warning signs and symptoms, complications and measures to be taken was conveyed to all the study participants.

**DISCUSSION**

A total of 420 questionnaires were collected in which male and female participants were nearly equal. Between the ages of 40 to 60 years, most of the participants belong to upper lower class which was similar to the study by Bidyut Kumar Das et al "Prevalence on awareness of stroke among elderly public in Eastern India" [3].

Only 248(59%) of study participants have heard about stroke and relatively high percent of them knew from someone who suffered from stroke, Other studies in different

countries revealed the lack of awareness among the general population [1].

Knowledge of stroke risk factors can affect the stroke incidence, and help design the prevention strategies. Risk factors awareness of stroke in the general population of India is inadequate. Of the total population, 49.8% were not aware of risk factors; 17.2% could recognized 1 to 3 risk factors, 20.6% recognized 4 to 7 risk factors and 12.4% recognized  $\geq$  8 risk factors, which were comparable with the study showing one fifth of subjects did not identify a single risk factor. The most commonly recognized risk factors were hypertension (56.7%) followed by smoking(28.8%) in this study which is similar to other studies[13].

Those had heard about stroke had a poor awareness regarding sign and symptom of stroke except for Difficulty in speech (42.8%) and also weakness on one side of the body (51.7%).

This was comparable with the study, where the weakness of one side was identified by 62.2% patients as the most common symptom, and less than 8% identified other stroke symptoms by Pandian et al in Northwest India.

Paralysis of one side of the body (47.1%), seizures (41.1%) were the most recognized complications of stroke which was also similar to other studies.

## CONCLUSION

Awareness about stroke was inadequate, and these gaps of knowledge which shall result in the late arrival of patients with stroke at specialized facilities thus leading to delaying treatment [17]. Thus, Health Educational programs at the community levels involving mass media, schools, institutions, universities and governmental agencies are needed in order to improve stroke awareness with the hypertensive patients to prevent morbidity.

**Conflict of interest :** Dr. P. Seenivasan who is an author of this article is also a member of the editorial board and he was not involved with the processing and reviewing of this particular article.

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