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ASSESSMENT OF KNOWLEDGE ON RISK FACTORS AND WARNING SIGNS OF STROKE AMONG PATIENTS WITH HYPERTENSION IN SELECTED VILLAGE, KANCHEEPURAM DISTRICT.

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ABSTRACT

Stroke is a leading cause of death and functional impairment. While patients with hypertension are particularly vulnerable to stroke, research suggests that they have poor awareness of stroke risk factors and warning signs. The objective of the study was to assess the level of knowledge on risk factors and warning signs of stroke among patients with hypertension in Maraimalai Nagar. Quantitative research and descriptive survey design was adopted for the study. A total of 40 samples were selected using non probability purposive sampling technique at Maraimalai Nagar. The tool used for the study comprises of 2 sections, section A- Demographic Data (which includes: sex, age, marital status, education, physical activity level, income, duration illness and treatment, smoking history, alcohol intake history, history of any other disease) and section B- a structured questionnaire developed by the investigator which includes 25 questions to assess the knowledge on risk factors and warning signs of stroke. The data was collected from the 40 samples and the analysis was done using descriptive and inferential statistics. The study findings revealed that among 40 samples, 23(57.5%) samples had moderate knowledge, 17(42.5%) samples had poor knowledge and none of them had good knowledge, which indicates that awareness on risk factors and warning signs of stroke for patients with hypertension is important to prevent complications.

KEY WORDS

Stroke, Hypertension, Warning signs, Risk factors, Knowledge.

INTRODUCTION

High blood pressure, also termed as hypertension is a condition that afflicts almost 1 billion people worldwide and is a leading cause of mortality and morbidity. Therefore, this disease is often referred as a “Silent Killer.” In most of the instances, this disease remains asymptomatic until severe to express as one of the following outcomes: stroke, myocardial infarction, renal dysfunction, visual problems and others. Thus, hypertension is affirmed as the major risk factor for stroke, coronary artery disease and myocardial infarction [1].

High blood pressure is one of the most common causes of stroke as it strains blood vessel walls causing them to thicken and deteriorate. Traditional risk factors of ischemic stroke in young adults include smoking, diabetes mellitus and hypertension. Studies from Asia showed ischemic and hemorrhagic strokes had the same risk factors, especially a history of hypertension being the major predisposing risk factor [2].

The incidence of stroke among adults was less than 2 % in some developing countries in 1990, whereas there was stroke occur in 5% of Western European adults, 8 % of Americans and 13 % of Saudi Arabians. In Thailand, stroke was the fourth leading cause of death at 28.96 per 100,000 in 2009 and in India, death due to stroke for the year 1998 – 1999 was 36/100,000. A statistical analyses on gender influence on stroke showed that women always outnumbered men, except in the age group of 50- to 69 [3].

Hypertension, thus gains importance as a prominent medical and public health issue. Hypertension affects nearly 1 billion individuals worldwide and is responsible for approximately 7.1 million deaths per year. In India, 25-30 % of the urban population and 10 - 12 % of the rural areas suffer from high BP and are

thus hypertensive individuals prone to stroke risk. Furthermore, this was observed that 30 % are still unaware that they have hypertension, despite 59% of them are receiving treatment to hypertension [4]. The study conducted in Australia reported that within 12 months of stroke – approximately 37 % die and 10 % experience a recurrent stroke. Of those who survive stroke - approximately 51 % are disabled in one of the day-to-day activities and 50 % exhibit cognitive impairment or dementia [5]. Similarly, a survey in different parts of India showed prevalence of stroke to be approximately 200 per 100, 000 population. India thus faces an enormous socioeconomic burden to meet the cost of rehabilitation of stroke victims, as more people are now surviving the peak age (55-65 years) common for stroke occurrence [6].

There are two main ways in which we can reduce the burden of this disease. First, we can improve outcome after stroke by providing patients with proven therapies. Although the proportion receiving therapy could be improved by increasing the number of centers in which the therapy could be administered, reducing the delay to hospitalization would also considerably improve access to the therapy. The second way in which we can reduce the burden of stroke is to reduce the number of people experiencing a stroke. This could be undertaken by implementing good primary and secondary prevention measures at an individual and population level. The individual (or high-risk) approach involves identifying high-risk people and altering their risk factor profile by either reducing risky behaviors or introducing treatments. The population (or mass) approach involves either mass screening or education campaigns to reduce risky behaviors at the population level [7].

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 [8, 9].

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 [10]. **Sama et al** reported about one fourth of patients in their study, who recalled being informed of their increased risk by physician did not perceive themselves to be at risk for stroke [11].

The present study is aimed to assess the knowledge on the risk factors and warning signs of strokeamong patients with hypertension as a risk group.

MATERIALS AND METHODS

Quantitative approach and descriptive survey design was adopted for the present study. The variables studied are study variable and demographic variables. The study variable was the risk factors and warning signs of stroke, whereas the demographic variables and clinical variables includes: sex, age, marital status, education, physical activity level, income, duration illness and treatment, smoking history, alcohol intake history, and history of any other disease. The study was conducted in Maraimalai Nagar, Kancheepuram district, Kattankulathur block, Tamil Nadu, with a total population of 16,874. The accessible population includes the patients with hypertension living in Maraimalainagar. Sample consisted of patients with hypertension in Maraimalai Nagar who fulfilled the inclusion criteria. The sample size for the present study was 40. Non-probability Purposive sampling technique was adopted to select the samples for the study. The inclusion criteria includes: (i) Patients who were diagnosed as having hypertension by a qualified medical officer (ii) Patients with hypertension who are living in Maraimalai Nagar. (iii) Patients with hypertension who are willing to participate in this study. (iv) Patients with hypertension who can understand Tamil or English. The Exclusion criteria includes: (i) Patients who are diagnosed of stroke.

The tool used for the data collection was a structured questionnaire developed by the investigator which consists of 2 sections:

Section A- Structured questionnaire to elicit the demographic data of patients with hypertension who are living in Maraimalai Nagar.

Section B- Self structured questionnaire to assess the knowledge on the risk factors and warning signs of stroke which consists of 25 questions.

The content of the tools were established on the basis of opinion of nursing experts. Suggestions were incorporated in the tool. The reliability of the tool was done by test retest method. The r value was 0.80 which indicated a positive co-relation to proceed for the main study. The study was approved by the dissertation committee of SRM College of Nursing, SRM University, Kattankulathur, Kancheepuram District. Permission was obtained from the Dean, SRM College of Nursing and informed consent was obtained from each participant for the study before starting data collection. Assurance was given to the subjects that anonymity of each individual would be maintained and they are free to withdraw from the study at any time.

The investigator explained the objectives and methods of data collection. Data collection was done within the given period of 1 week in Maraimalai Nagar. The data collection was done during the day time. Self-introduction about the researcher and details about the study was explained to the samples and their consent was obtained. The knowledge on the risk factors and warning signs of stroke was assessed among the selected patients with hypertension in Maraimalai Nagar using the tool. The confidentiality about the data and finding were assured to the participants. The participants took 30 minutes to complete the tool and their co-operation was imperative. Statistical analysis was performed using SPSS software version 16. Chi square was used to assess the univariate relationship between components of stroke knowledge, warning signs, risk factors, and demographic variables.

RESULTS

Data analysis and the results are tabulated below:

Table 1: Frequency and Percentage distribution of demographic data of the patients with hypertension; N=40

Demographic data		Frequency	Percentage
Sex	Male	13	32.5%
	Female	27	67.5%
Age	30 -40 years	2	5.0%
	41 -50 years	8	20.0%
	51 -60 years	17	42.5%
	> 60 years	13	32.5%
Marital status	Married	29	72.5%
	Unmarried	2	5.0%
	Widow/Widower	9	22.5%
Education	No formal education	5	12.5%
	Primary/secondary	7	17.5%
	High school/Higher secondary	22	55.0%
	Degree and above	6	15.0%
Work status/physical activity level	Not active	3	7.5%
	Lightly active	8	20.0%
	Moderately active	27	67.5%
	Vigorously active	2	5.0%

Table 1 depicts the demographic profile of the patients with hypertension. Considering sex, 67.5% of the patients were females. With regards to age, 42.5% of the patients were in the age group 51-60 years. 72.5% of the

patients were married. 55% of the patients studied up to secondary school. Considering level of physical activity, 67.5% of the patients were moderately active.

Table 1a: Frequency and Percentage distribution of disease related variables; N=40

Disease related variables		Frequency	Percentage
Duration of illness	< 1 year	5	12.5%
	1-2 years	4	10.0%
	2-3 years	4	10.0%
	> 3 years	27	67.5%
Duration of treatment	< 1 year	7	17.5%
	1-2 years	4	10.0%
	2-3 years	4	10.0%
	> 3 years	25	62.5%
Smoking habit	In the past	1	2.5%
	At present	2	5.0%
	Never	37	92.5%
Intake of alcohol	In the past	1	2.5%
	At present	2	5.0%
	Never	37	92.5%
Other diseases	Yes	21	52.5%
	No	19	47.5%

Table 1a depicts the disease profile of the patients. 67.5% of the patients have duration of illness >3years, 62.5% of the patients have duration of treatments >3years, 92.5% of the patients have never smoked, 92.5% of the patients have never taken alcohol, and 52.5% of the patients have other diseases aside hypertension.

Table 2: Assessment of knowledge on risk factors and warning signs of stroke among patients with hyper tension; N=40

Level of knowledge	No. of patients	Percentage
Poor	17	42.5
Moderate	23	57.5
Good	0	0.0
Total	40	100.0

Table 2 reveals that 23% of the patients have moderate knowledge, 17% of the patients have poor knowledge and none of them have good knowledge.

Table 3: Association between level of knowledge score and demographic variables

Demographic variables		Level of knowledge score					Chi square test
		Poor		Average		N	
		n	%	n	%		
Sex	Male	1	7.6%	12	92.4%	13	**$\chi 2=6.84$**
	Female	14	51.8%	13	48.2%	27	**p=0.01****
Age	30 -40 years	1	50.0%	1	50.0%	2	$\chi 2=1.17$ p=0.76
	41 -50 years	2	25.0%	6	75.0%	8	
	51 -60 years	6	35.3%	11	64.7%	17	
	> 60 years	6	46.2%	7	53.8%	13	
Marital status	Married	10	34.5%	19	65.5%	29	$\chi 2=2.12$ p=0.35
	Unmarried	0	0	2	100.0%	2	
	Widow/Widower	5	55.6%	4	44.4%	9	
Education	No education	1	20.0%	4	80.0%	5	$\chi 2=3.66$ p=0.30
	Primary	5	71.4%	2	28.6%	7	
	Secondary	9	40.9%	13	59.1%	22	
	College degree and above	0	0	6	100.0%	6	
Work status/physical activity level	Not active	2	66.7%	1	33.3%	3	$\chi 2=1.27$ p=0.73
	Lightly active	3	37.5%	5	62.5%	8	
	Moderately active	9	33.3%	18	66.7%	27	
	Vigorously active	1	50.0%	1	50.0%	2	

Table 3 reveals that there was a significant association found between the knowledge and the sex at P=0.01 level. It was also found that there was a significant association of knowledge with duration of illness and duration of treatment.

DISCUSSION

Hypertension is a major risk factor for stroke, and stroke prevention is the most important achievement of modern antihypertensive treatment. Inability to recognize stroke warning signs and delay in seeking medical attention for recognized symptoms contribute to treatment delay, thus limiting the potential for intervention and impacting negatively on potential stroke outcome. The present study addresses only the baseline knowledge of stroke warning signs and risk factors among patients with hypertension. The outcome of the study revealed that majority 23(57.5%) samples had moderate knowledge on risk factors and warning signs of stroke.

Similar study was conducted by Anne Hickey, Deirdre Holly, Hannah McGee Ronan Conroy and Emer Shelley in 2012 on Knowledge of stroke risk factors and warning signs in Ireland:. 1000 members of the general public were interviewed by telephone using quota-based population sampling of adults (≥18 years). Information was gathered using the Stroke Awareness Questionnaire (SAQ).The results revealed that 71% of participants could correctly list two or more risk factors for stroke, typically generic lifestyle risk factors. Two-thirds could not identify two warning signs for stroke. While 31% could identify two or more stroke warning signs, there was no consistency in warning signs identified. Less than 50% stated they would call an ambulance if having a stroke. Overall, there were significant gaps in knowledge, with poorest levels evident in those aged ≥65 years. [12]

Mathew J. Reeves, Joanne G. Hogan, and Ann P. Rafferty [2002] also conducted a similar study on knowledge of stroke risk factors and warning signs

among Michigan adults. The outcome of the study revealed that eighty percent reported at least one correct risk factor for stroke, and 28% reported three. The most frequently mentioned risk factors were hypertension (32%), smoking (29%), and physical inactivity (26%). Sixty-nine percent reported at least one correct warning sign of stroke, but only 14% reported three. The most frequently mentioned warning signs were sudden weakness or numbness (46%) and sudden slurred speech, disorientation, or difficulty understanding (30%). Predictors for inadequate knowledge of both stroke risk factors and warning signs were similar and included age, race, sex, education, hypertension, and smoking. [13]

Considerable education is needed to increase the public's awareness of the warning signs and risk factors for stroke, it may be appropriate to focus educational efforts in the mass media and to encourage primary care physicians to expand their patient education of stroke, especially to those groups at increased risk.

CONCLUSION

In Conclusion, the present study findings revealed that majority 23(57.5%) samples had moderate knowledge on risk factors and warning signs of stroke and none of them had adequate knowledge and it was also found that significant association was established between the knowledge with duration of illness and duration of treatment**,** which implies that educational programs must focus on risk factor modification and actions to take if stroke symptoms occur. However, stroke education will not be effective if directed only toward those at greatest risk for stroke. Therefore, persons of all age groups must be able to recognize the signs and symptoms of stroke to facilitate rapid identification and transport of the patient to the hospital. Future studies are needed which focus on community surveys including both rural and urban populations. Efforts should be made to educate the public about modern concepts of stroke treatment, so that people make more rational and beneficial health care decisions.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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