Prevalence, Knowledge on Early Recognition and Initial (First Aid) Management of Heart Attack and Stroke among Adults in Pooncheri, Chengalpattu District, Tamil Nadu

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Abstract: Background: Cardiovascular diseases (CVDs) are the leading cause of death globally. An estimated 17.9 million people died from CVDs in 2019, representing 32% of all global deaths. Of these deaths, 85% were due to heart attack and stroke. Out of the 17 million premature deaths (under the age of 70) due to noncommunicable diseases in 2019, 38% were caused by CVDs. **Aim:** Determine the prevalence, level of knowledge, early recognition, and initial management of heart attack and stroke among adults· **Materials and Methods :** This quantitative study used the cross-sectional research design content analysis approach and consisted of adults in rural areas. The participants were selected through a convenience sampling technique, a structured questionnaire was used. Data were analyzed using descriptive and inferential statistics where $p>0.05$ was considered significant. **Result:** This study provides information on the prevalence of stroke n=48, (24. %), Heart attack n=17, (8.5%). Knowledge level of score in heart attack and stroke is seen in demographic variables knowledge score, as evidenced by $p<0.01$ heart attack (Chi-square=50.245, p=.000**), stroke in $p<0.01$ (Chi-square=30.034, p=.000**) scores in had a highly significant association with early recognition and initial management of heart attack and stroke. **Conclusion:** The study discovered comparable knowledge of stroke and heart attack in the demographic variables with significant associations. Finally, people with knowledge of stroke and heart attack have a moderate level of knowledge on early recognition and initial management of heart attack and stroke.

Keywords: Prevalence, Knowledge, Heart attack, stroke, Early recognition, Initial management

Introduction

An update for 2023 from the ICMRstated that cardiac disorders were responsible for a rate of 28% of deaths in India in 2016. which were 15.2%. It was also mentioned that non-communicable diseases, such as smoking, drinking, having a poor diet, and not getting enough exercise, carry several dangers. The government of India is in charge of managing the national initiative to prevent and manage cancer, diabetes, cardiovascular diseases, and the brain. The program is designed to address cardiovascular diseases, such as heart attacks and

strokes in India the research in the 2016 study was updated.[1]Incidence & prevalence of stroke in India a systematic review of the results of the study, stroke incidence increased significantly in low- and middle-income nations like India between 1970-1979 and 2000-2008. Out of a total of 3079 independent titles, ten popular-based cross-sectional studies were determined to be appropriate for screening. The use of meta-analysis was not possible due to the studies' heterogeneity. Over the previous ten years, the overall stroke in the country as a whole ranged from 105 to 152/per 100,000 people annually, while the basic report of stroke ranged from 44.29 to 559/per individual. The outcomes were better than those of rich countries.[2]

People in both developed and developing countries must be aware of the warning signs of heart attacks and strokes and take action to avoid them to minimize mortality and morbidity. HA symptoms such as pain and/or discomfort in the jaw, neck, or back were reported by slightly more than a quarter of the respondents (26.35%), whereas 71.65% indicated only difficulty breathing or pain in the chest as symptoms. Only 35.6% said they would call an ambulance if they saw someone with HA symptoms, whereas 82% identified one, and 11.5% identified all five[3].A population-based, random sample of 7,840 household addresses was selected from a validated national sampling frame. Each participant was asked eight questions on signs and symptoms of heart attack and 10 questions on stroke. The response rate was 65.2% with 4,192 respondents. The level of knowledge for preselected, common signs and symptoms of heart attack and stroke was 57.8% and 57.1%, respectively. The respondents scored a mean of 5.0 (SD 2.4) out of 8 for heart attack, while they scored a mean of 6.8 (SD 2.9) out of 10 for stroke. We found a comparable knowledge of stroke and heart attack signs and symptoms in the community to countries within the same economic, educational, and healthcare strata. However older persons, those with lower educational levels and those who are unemployed/retired require more public health education efforts.[4]

The focus of thestudy was on Native Americans in the US and their awareness of heart disease and stroke indications. National surveillance data were analyzed using multivariate techniques. The study population included adult Native Americans. The dependent variable was limited knowledge about heart attacks and strokes. Male, older, less educated, less wealthy, uninsured, residing in a rural region, without a recent physical and a medical physician. The acknowledged traits of adult Native Americans who have had a stroke or heart attack should be the basis for educational activities. by healthcare professionals who prioritize expanding their expertise.[5]The first step in receiving care is to be aware of the signs of a stroke and a heart attack, as well as dial Emergency if one of these conditions is suspected. During this research, Americans from rural and non-rural areas were compared for their knowledge of stroke and heart attack signs a Behavioral Safety Component Monitoring file with multiple years of data was cross-sectionally examined using multivariate methods done using the BRFSS database. Low awareness of heart attacks and strokes served as the dependent element in this analysis.[6]

Material and method

The research was executed out only after consent from the Chettinad Academic of Research and Education's Institutional Human Ethical Committee. Furthermore, authorization was sought by the Medical Surgical Department, approval was provided through the UG committee, and each individual's informed consent was obtained. Throughout the inquiry, the subjects' data was kept private. Study variableIndependent The most important independent variable in the study was the socio-demographic adults in rural community people. Dependent variable- The dependent variable was early recognition and initial management of heart attack and stroke.Research designin a cross-sectional study gathered information from rural adult people for this study, cross-sectional research design was selected. I used to assess Adults' Heart Attack and Stroke Prevalence, Knowledge, Early Recognition, and Initial (First Aid) Management among adults Being an anonymous survey, this study was exempt from ethical committee evaluation. I conducted each chosen home to do an interview Schedule in either Tamil or English. Participants must be between the ages of 18 and 69. non-respondents were those who declined to participate in the interview or who did not speak any of the languages.Study setting and

populationIn the Pooncheri village of the Chengalpattu district of Tamil Nadu, the survey was conducted from Dec 2022 to Jan 2023. 200 residences and 415 people make up the entire population of Pooncheri village. Of the adults overall in Pooncheri 200 were between the age group 18-69 years. The study participants include anyone who is over the age of 18 to 69 years of adults through an assessment knowledge questionnaire. There were 699 residents in all. 245 people (between the ages of 18 and 69) living in the village were selected for the study using a simple random sample. The group's ages ranged from 18 to 69. Adults in this rural community (>18 years of age) were all welcome to take part in the research. I was taken from the 200 samples the number of samples was established using the straightforward random selection formula shown below:$N=z^2*p*(1-p)/E^2$ $N=z^2*p*(1-p)/E^2$ sample size n=200.Inclusion criteria; Does anyone speak and comprehend Tamil or English? Adults present at the time the data were collected, Adults 18 to 70 years old, Willingness to take part in the research. Exclusion criteria; those Who are above 70 and under 18 years old, those who are unwilling to take part in the study, Identifying the critically unwell.The content validity is determined by three external and one internal. Experts in numerous domains, including medical surgery nursing, interventional cardiology, neurology, and biostatistician, reviewed the material. Their feedback and suggestions were used to improve the material. This contributed to the tool's content validity. The study's planned interview approach was based on a thorough examination of relevant literature, including papers, journals, and books, as well as advice from experts in the field. During the development of the tool, the study's goal was also taken into account. This investigation's data-collecting tools were divided into three categories.

Section I - Demographic variablesIt has 14 objects such as age, gender, religion, marital status, education status, employment status, monthly family income, source information, and Dietary pattern If you are affected with any illness, Family history of heart attack, Family history of stroke,
Family history of alcohol, family history of obesity

Section-II The tool consists ofquestionnaires to assess the knowledge on early recognition and initial management of heart attack among adultsthe scoring value obtained is “Yes” it is 1 & for “No” it is 0. The scoring value was obtained in three categories: Inadequate knowledge, Moderate adequate knowledge, and Adequate knowledge.

Section -III The tool consists ofquestionnaires to assess the knowledge on early recognition and initial management of stroke among adultsthe scoring value obtained is “Yes” it is 1 & for “No” it is 0. The scoring value was obtained in three categories: Inadequate knowledge, Moderate adequate knowledge, and Adequate knowledge.

Data collection procedure

The research approval was given by the Institutional Ethical Clearance Committee200 samples were collected from 28.11.2022 to 06.01.2023. A systematic questionnaire was utilized to collect the data. After carefully reviewing the available literature, a structured English questionnaire was created the professional assessment checked the questionnaire's content and validated it the researcher translated it into Tamil, and a Tamil specialist verified the tool. Over one month, the data was gathered in the rural Pooncheri area. The data was collected through the use of direct questionnaire methods of adults on inclusion criteria Each participant's consent was gained before the collection of data by stating the study's goalswho needed more information about the questions or answers had the questions rephrased and repeated.For data on sociodemographic variables, and knowledge questionnaires as heart attack and stroke Each sample data-gathering procedure took around 30 to 45 minutes Precautions were taken to avoid discussion between participants and avoid prejudiceand after completing the questionnaire, a pamphlet with information about heart attacks and strokes was delivered.In this study, data analysis using SPSS version 26. Analyzed included categorical data provided as percentiles and data that was continuously reported as the mean along with the standard deviation. The data have been examined and associated using the chi-square test. Indicators were deemed as statistically significant at a significance probability value of 0.05.

Result

Sample proportionate distribution based on demographic variables

According to the study of the prevalence of stroke, No, (n=160,80.10%), yes (n=40,19%). Regarding the family history of certain disorders and habits, the participants responded yes for the following: family history of stroke, the prevalence of heart attack No is (n=170,80.10%) yes (n=40,10.90%). Regarding the family history of certain disorders and habits, the participants responded yes to the following family history of a heart attack. If you are affected with any disease, the majority responded to diabetes (n=84, 42.0%), the remaining responses from the study participants were hypertension (n=51,25.5%), stroke (n=48,24.0%) and heart attack (n=17,8.5%). The mean level of knowledge regarding stroke and heart attack are 5.24 and 4.97 respectively, with a standard deviation of 1.257 and 1.944. The majority of the people (n=131, 65.5%) who have heart attacks and stroke (n=191, 95.5%) have a moderate level of knowledge on the management of stroke.

Association between knowledge score of early Recognition and Initial Management Heart attack

It was seen that variables gender, age, marital status, education, employment, monthly income, source of information, dietary pattern,if your affected with any disease, history of obesity, smoking, drinking, heart attacks, strokes, and other medical conditions among the family in the had significant p values <0.05, for both early recognition and initial management which shows that these variables: association with gender people were Chi-square=18.740, p=.001, age people were Chi-square=125.525, p=.000,marital status people were Chi-square=115.509, p=.000,education people were Chi-square=89.213, p=.000, employment status people were Chi-square=52.892, p=.000,dietary pattern people were Chi-square=9.822, p=.044, if you are affected any diseases people were Chi-square=50.245, p=.000,family history of heart attack were Chi-square=11.257,p=.004, family history of stroke were Chi-square=33.266, p=.000 family history of alcoholism were Chi-square=11.336, p=.023, family history of obesity were Chi-square=10.819, p=.004had significant associations with heart attack score in Early recognition and Initial Management among adults.

Association between diseases affected and the level of knowledge on heart attack among adults.

It is seen that the variable having medical conditions like,heart attack, stroke, hypertension, and diabetes knowledge score, as evidenced by p<0.01 (Chi-square=50.245, p=.000**).

Association between knowledge score of Early recognition and initial management stroke

It was seen that variables gender, age, marital status, education, employment, monthly income, source of information, dietary pattern,if your affected with any disease, history of obesity, smoking, drinking, heart attacks, strokes, and other medical conditions among the family had significant p values <0.05, for both early recognition and initial management which shows that these variables association with gender people were gender Chi-square=36.290, p=.000, age people were Chi-square=18.485, p=.018, Marital status people were Chi-square=28.005, p=.000, education people were Chi-square=30.745,p=.001, monthly Income were Chi-square=29.282, p=.000, source information people were Chi-square=33.056, p=.000 if you are affected any diseases Chi-square=28.737, p=.000,family history of alcoholism were Chi-square=20.101, p=.000 had significant associations with stroke score in Early recognition and Initial Management among adults.

Association between diseases affected and the level of knowledge on stroke among adults

It is seen that the variable having medical conditions like heart attack, stroke, hypertension, and diabetes knowledge score, as evidenced by p<0.01 Stroke score p<0.01 (Chi-square=30.034, p=.000**). had a highly significant association with stroke.

Discussion

Results discussed with current literature support

In this study, we found that the current level of prevalence, knowledge on early recognition and initial management of heart attack and stroke was fair in the in-community population prevalence in our sample size including to stroke 48,24.0%, Heart attack17,8.5%. Demographic variables which had significant associations with initial management and early recognition of heart attack were: Age, Marital status, Education, Employment status, Dietary pattern, I you are affected any diseases, Family history of heart attack, Family history of stroke, Family history of alcoholism,Family history of obesity. With the stroke score, demographic variables like gender, age, marital status, education, monthly income source information, if you are affected any diseases, family history of alcoholism had significant associations. In binary logistic Regression for heart attack knowledge score, it was seen that age, marital status education and monthly income added significantly to the model/prediction. For stroke knowledge score showed that gender, marital status, and education added significantly to the model/prediction.It is seen that the variable having medical conditions like: heart attack, stroke, hypertension, and diabetes knowledge score, as evidenced by p<0.01 (Chi-square=50.245, p=.000**), Stroke score p<0.01 (Chi-square=30.034, p=.000**). had a highly significant association with heart attack and stroke.

Luan et al (2021) The volunteers on average identified 5.2 out of 14 indicators of stroke and 2.6 out of 6 signs of heart attack, according to a published in 2021. If they noticed signs of stroke, 75% of those surveyed said they would dial 108 right away. However, urging someone to see a doctor was the second most common step, coming in at 59% as opposed to immediately seeing a physician (34%). It was difficult to identify unusual heart attack symptoms including nausea and anxiety. Females, those with greater numeracy scores, participants with greater (vs. poorer) education levels, and participants with personal or familial histories of heart attacks all demonstrated higher ailment detection rates. Additionally, there was a negative correlation between symptom detection rate and burden across China's four economic zones, of cardiovascular illnesses.

The claim that the study will significantly 393 responders in all gathered. Only 71.65% of respondents (71.6%) are aware of any additional indications of HA including discomfort or chest pain. Only Nearly a quarter of those surveyed (26.35%) have heard of HA complaints such as back, neck, or other body aches or cheeks. Among those surveyed, just 35.6% stated they would contact an ambulance if they spotted anyone displaying signs of HA. while 82% only identified signs and only 11.5% all five HA symptoms.[7]

They reported that 28.4% of participants had diabetes and 72.5% of them had hypertension. In contrast, the mean awareness score for HA indicators was lower at 4.3/9 than it was for risk factors (7.3/11) when compared to scores for signs of stroke (5.8/9). The predictors of insufficient knowledge of CVD risk, HA and stroke symptoms, and variables, were identified by stepwise multiple regression analyses. were old age, poor schooling, and low income. Limited received hazard of stroke or is HA also associated with limited comprehension of CVD risk factors.[8]

According to the current study indicates that even though many adults took part in this research, were residents in all. 200 people (between the ages of 18 and 69) living in the village were selected for the study using a simple random sample. The group's ages ranged from 18 to 69. Adults in this rural community (>18 years of age) were all welcome to take part in the research. The number of samples was established using straightforward random selection and the prevalence of stroke was 24.0% (n=48) and heart attack was 8.5% (n=48), Knowledge level of score in heart attack is seen that the variable: Having medical conditions like heart attack, stroke, hypertension, Diabetes had a highly significant association with heart attack knowledge score, as evidenced by p<0.01 (Chi-square=50.245, p=.000**). Knowledge level of score in strokeit is seen that the variable having medical conditions like heart attack, stroke, hypertension, and diabetes had a highly significant association with stroke knowledge score, as evidenced by p<0.01 (Chi-square=30.034, p=.000**).

Conclusions

The conclusion of the present study indicates that even though many adults took part in this research, the prevalence of stroke was 24.0% (n=48) and heart attack was 8.5% (n=48). majority of the people (n=131, 65.5%) have a moderate level of knowledge on the management of heart attacks. The majority of the people (n=191, 95.5%) have a moderate level of knowledge on the management of stroke. Knowledge level of score in heart attack it is seen that the variable Having medical conditions like heart attack, stroke, hypertension, and diabetes had a highly significant association with heart attack knowledge score, as evidenced by p<0.01 (Chi-square=50.245, p=.000**).Knowledge level of score in strokeIt is seen that the variable having medical conditions like heart attack, stroke, hypertension, and diabetes had a highly significant association with stroke knowledge score, as evidenced by p<0.01 (Chi-square=30.034, p=.000**).

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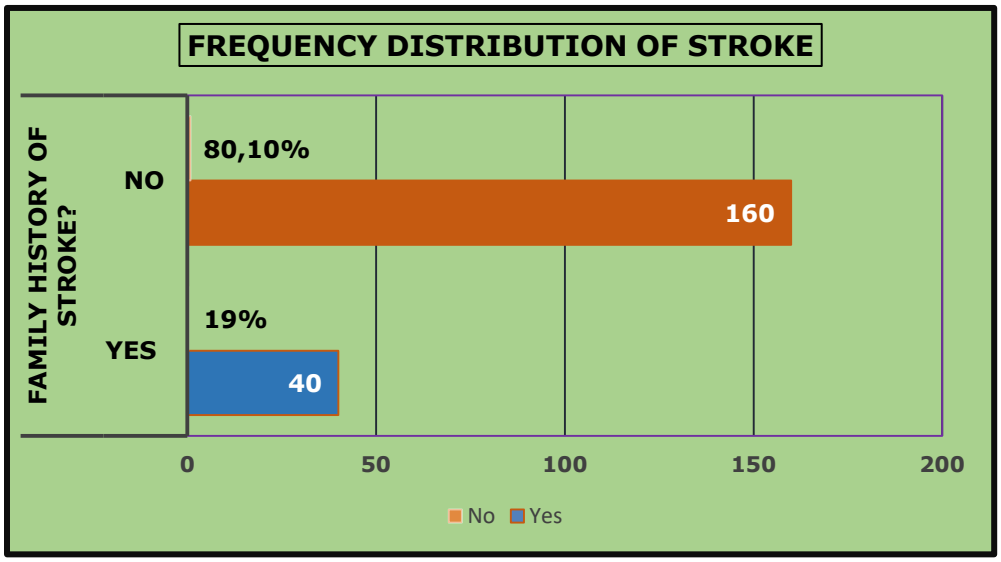
Figure

The Respondents of Stroke



The Respondents Heart Attack

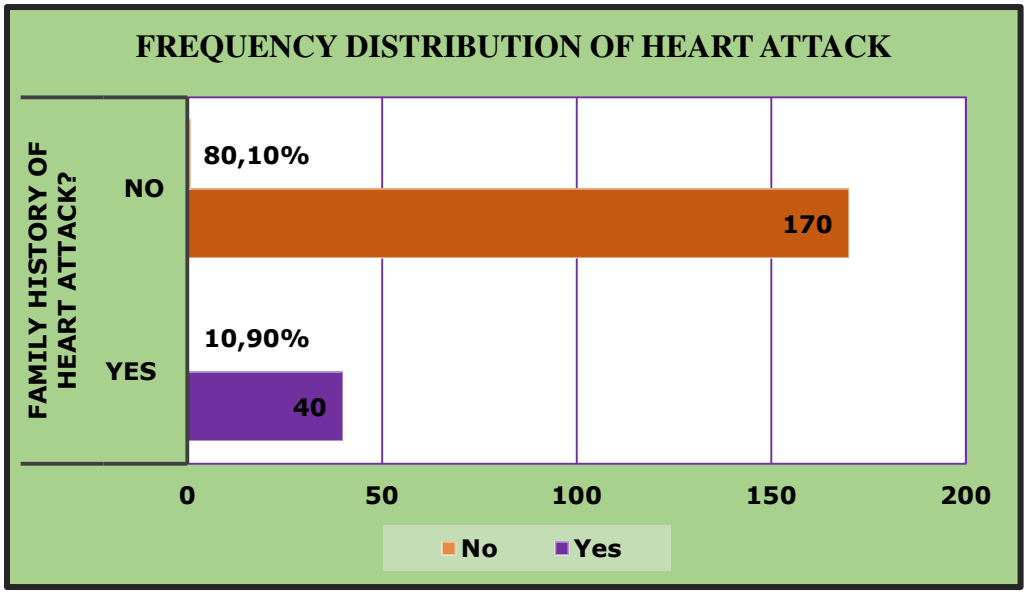


Table. 1. Association between knowledge score of early recognition and initial management of heart attack with the different demographic variables.

Knowledge score on early recognition and initial management of Heart attack N= 200							
Characteristics	**Category**	**Adequate**	**Inadequate**	**Moderate**	**Df**	**χ2**	**P-value**
Gender	Male	12	15	70	4	18.740**S**	**.001****
	Female	4	31	59			
	Transgender	1	6	2			
Age	18–29Yrs	0	35	10	8	125.525**S**	**.000****
	30-39Yrs	6	9	60			
	40-49Yrs	11	2	13			
	50-59Yrs	0	6	60			
	60-69Yrs	0	0	15			
Marital status	Single	0	33	17	4	115.509**S**	**.000****
	Married	6	5	107			
	Divorced	0	0	0			
	Widow	0	0	0			
	Separated	17	52	131			

Education	Illiterate	0	26	11	10	89.213 **S**	**.000****
	Primary school education	0	0	12			
	Secondary school education	0	12	44			
	Undergraduate	11	0	44			
	Diploma	6	9	9			
	Master	0	5	11			
Employment status	Home maker	0	0	58	6	52.892 **S**	**.000****
	Employed	11	0	12			
	Self-employed	6	45	51			
	Unemployed	0	0	0			
	Student	0	7	10			
	Retired	0	0	0			
Dietary pattern	Vegetarian sometimes non-vegetarian	0	6	27	4	9.822 **S**	**.044***
	Non-vegetarian sometimes vegetarian	17	46	98			
	only vegetarian	0	0	6			
Family history of heart attack?	Yes	6	5	11	2	11.257 **S**	**.004****
	No	11	47	120			
Family history of stroke?	Yes	0	0	48	2	33.266 **S**	**.000****
	No	17	52	83			
	No	7	40	101			
Family history of obesity	Yes	1	0	0	2	10.819 **S**	**.004****
	No	16	52	131			

Table 1.1. Association between diseases affected and the level of knowledge on heart attack among adults.

Category	Chi X^2	Df	P-Value
If you are affected by diseases? a. Diabetes mellitus	50.245	6	**.000****
b. Heart attack			
c. Hypertension			
d. Stroke			

Table.2. Association between knowledge score of early recognition and initial management stroke with the different demographic variables.

Knowledge score on early recognition and initial (First aid) management of stroke N= 200							
Characteristics	**Category**	**Adequate**	**Inadequate**	**Moderate**	**Df**	**X^2**	**P-VALUE**
Gender	Male	1	3	93	4	36.290 **S**	**.000****
	Female	0	1	93			
	Transgender	1	3	5			
Age	18–29Yrs	0	0	45	8	18.485 **S**	**.018****
	30-39Yrs	0	3	72			
	40-49Yrs	2	0	24			
	50-59Yrs	0	3	36			
	60-69Yrs	0	1	14			
Marital status	Single	0	0	50	4	28.005 **S**	**.000****
	Married	0	2	116			
	Divorced	0	0	0			
	Widow	0	0	0			
	Separated	2	7	191			
Education	Illiterate	0	2	35	10	30.745 **S**	**.001****
	Primary school education	0	3	9			
	Secondary school education	0	0	56			
	Undergraduate	2	0	53			
	Diploma	0	0	24			

	Master	0	2	14			
Monthly Income	Upper class- Rs.8220 and above	2	4	27	8	29.282 **S**	**.000****
	Upper middle class–Rs.4110-8219	0	0	9			
	Middle class- Rs.2465-4109	0	0	121			
	Lower middle class- Rs.1230-2464	0	0	20			
	Lower class - Rs. <1230	0	0	14			
Source of information	Tv	0	0	63	6	33.056 **S**	**.000****
	social media	1	6	120			
	You tube	1	1	2			
	Radio	0	0	0			
	Newspaper	0	0	0			
	Magazines	0	0	0			
	only vegetarian	2	7	191			
Family history of alcoholism?	Yes	2	6	43	4	20.101 **S**	**.000****
	No	0	1	147			
	No	2	7	190			

*** Significant at 0.05 level of significance S-Significant NS-Not significant**

Table 2.2. Association between diseases affected and the level of knowledge on stroke among adults

Category	**Chi X^2**	**Df**	**P-Value**
If you are affected by diseases? a. Diabetes mellitus	28.737	9	**.000****
b. Heart attack			
c. Hypertension			
d. Stroke			