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A Population Based Study on Prevalence of Hypertension among Adults in an Urban Community in Tamil Nadu

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Abstract:- Hypertension is a non-communicable disease, which is a significant public health problem globally. It is a "silent killer". Frequency of hypertension varies from 10-15% in rural and 25-30% in urban population. It is one of the leading risk factors for morbidity and mortality relating to cardiovascular and kidney disease. Hypertension is an iceberg disease as unknown morbidity exceeds known morbidity. Ranging from genetics to modern sedentary lifestyle, the risk factors varies. From this study we can conclude that hypertension In the overall population is also high and more young adults are getting diagnosed with hypertension which will further lead on to other cardiovascular complication including cerebrovascular accident. Numbers of newly diagnosed cases are also increasing. It is important to monitor the B.P of young adults for early detection of hypertension and pre-hypertension.

I. INTRODUCTION

Hypertension is a non-communicable disease, which is a significant public health problem globally. It is a "silent killer". [1]Frequency of hypertension varies from 10-15% in rural and 25-30% in urban population. It is one of the leading risk factors for morbidity and mortality relating to cardiovascular and kidney disease. Hypertension is an iceberg disease as unknown morbidity exceeds known morbidity. Ranging from genetics to modern sedentary lifestyle, and noise pollution the risk factors varies. Increased urbanisation, technological advancements which cut down job opportunities which in turn builds stress on younger generation, who are the working force of a nation. [2]It is ranked 3rd as a cause of disability adjusted life years. The present study was done to estimate prevalence of hypertension and to assess associated risk factors among adults of urban population.

II. OBJECTIVES

- To study the prevalence of hypertension among adults in a urban community in Tamil Nadu.
- To determine the risk factors associated with hypertension.

III. MATERIALS AND METHODOLOGY

- *Study Area* : Thirumazhisai
- *Study Period* : January 2019-March 2019 (3 Months)
- *Study Design*: A Population based cross-sectional study.
- *Study Population*: All residents of Thirumazhisai above 18 years.
- *Sample Size* : 271 adults
- *Sampling Method*: Simple random sampling
- *Study Tool* : Structured questionnaire was administered, Determination of blood pressure by using sphygmomanometer was done, three readings and its average were taken.

ISSN No:-2456-2165

IV. DATA ANALYSIS

Data entry and analysis was done using SPSS software version 25. Descriptive statistics was calculated for the background variables. Association between the risk factors and hypertension was analysed and chi-square test was employed as test of significance.

Limitations of the study were we have taken a simple random sampling and selected area contained almost a homogenous population.

V. RESULTS

Study was conducted among 271 participants of which 50.9% were females and 49.1% males. Out of total participants 72.7% had high school education,17.7% had primary school education and n=23(8.5%) were graduates. n=119(43.9%) were farmers, n=90(33.2%) were homemakers, n=26(9.6%) were domestic workers and n=11(4.1%) were having business as occupation. Majority of the participants were from lower middle class n=182 (67.2%) followed by lower class n=68(25.1%), n=212(78.2%) of participants belonged to nuclear family. n=262(96.7%) of total participants depend on private hospitals for treatment of illness.

Socio-Demographic Profile	**Male** (%)	**Female** (%)	**Total**
Age Group			
18-35	17(39.5)	26(60.5)	43
36-45	36(48.6)	38(51.4)	74
46-65	63(51.2)	60(48.8)	123
66-85	17(54.8)	14(45.2)	31
Educational Status			
Illiterate	2(66.7)	1(33.3)	3
Primary school	24(50)	24(50)	48
High school	99(50.3)	98(49.7)	197
Graduate	8(34.8)	15(65.2)	23
Socio-Economic Status			
Lower	24(35.3)	44(64.7)	68
Lower middle	90(49.5)	92(50.5)	182
Upper lower	5(100)	0(0)	5
Upper middle	13(86.7)	2(13.3)	15
Upper	1(100)	0(0)	1
Marital Status			
Married	128(48)	138(51.9)	266
Unmarried	5(100)	0(0)	5

Table 1:-Socio-economic profile of the study subjects based on gender distribution

Out of the 271 participants studied, n=49(18.1%) were found to be hypertensive. Among hypertensive, 40 participants were taking medications regularly, n=45(91.83%) of the hypertensive cases have been diagnosed within less than 5 year duration. Majority of the population follow mixed type of diet.90.8% consume junk food. Among the hypertensive, 52.4% were non-smokers, 45% were ex-smokers and only 7% were current smokers .Of the total hypertensive people 12.2% were obese and 20.4% were overweight. Among the 49 hypertensive participants 20.4% people had diabetes as comorbidity .Total prevalence of diabetes in the study participants was 29.5%.All the hypertensive patients are exposed to noise pollution which was affecting their sleep.

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	Hypertension		Total	P value
	Yes n(%)	No n(%)		χ^2
Gender				
Male	21 (15.8)	112 (84.2)	133	0.349
Female	28 (20.3)	110 (79.7)	138	$\chi^2 = 2.80$
				$df=1$
Age				
18-35	5 (11.6)	38 (88.4)	43	0.423
36-45	12(16.2)	62 (83.8)	74	$\chi^2 = 0.92$
46-65	24(19.5)	99(80.5)	123	$df=3$
66-85	8(25.8)	23(74.2)	31	
Educational status				
Illiterate	0(0)	3(100)	3	0.000
Primary school	29(60.4)	19(36.9)	48	$\chi^2 = 71.14$
High school	19(9.6)	178(90.4)	197	$df=3$
Graduate	1(4.3)	22(95.7)	23	
Socio-economic status				
Lower	33(48.5)	35(51.5)	68	0.000
Lower middle	14(7.7)	168(92.3)	182	$\chi^2 = 57.37$
Upper lower	0(0)	5(100)	5	$df=4$
Upper middle	2(13.3)	13(86.7)	15	
Upper	0(0)	1(100)	1	
Watching television				
<6 hours a day	9 (4.5)	189(95.5)	198	0.000
>6 hours a day	40(54.8)	33(45.2)	73	$\chi^2 = 90.92$
				$df=1$
Junk food				
Consumer	43(17.5)	203(82.5)	246	0.417
Non-consumer	6(24)	19(76)	25	$\chi^2 = 0.65$
				$df=1$
BMI				
Normal	33(20.2)	130(79.8)	163	0.437
Overweight	10(13.3)	65(86.7)	75	$\chi^2 = 1.65$
obese	6(18.2)	27(81.8)	33	$df=2$
Family history				
Present	4(8.2)	127(57.2)	131	38.682
Absent	45(91.8)	95(42.8)	140	df=1
Smoking				
Current smoker	2(4.1)	5(2.3)	7	
Ex smokers	44(89.8)	78(35.1)	122	$\chi^2 = 51.606$
Non smokers	3(6.1)	139(62.6)	142	$df=2$
Diet				
Vegetarian	1(2.0)	23(10.4)	24	$\chi^2 = 3.442$
Mixed	48(98.0)	199(89.6)	247	$df=1$
Thyroid disorder				
Present	7(14.3)	9(3.3)	16	$\chi^2 = 7.564$
absent	42(85.7)	213(78.6)	255	$df=1$
Exercise				
Regular	48(98.0)	221(99.5)	269	$\chi^2 = 1.386$
Sedentary	1(2.0)	1(5)	2	$df=1$

Table 2:- Distribution of the study subjects based on hypertension

VI. DISCUSSION

In our study, the overall prevalence of hypertension among the study population was 18.1%.This prevalence was lesser than national average for India i.e. 29.8%(3).The systematic review of pooled epidemiological studies of India done by Anchala et al showed the prevalence of 27.6% for rural areas of south India and 21.1% for rural areas of south India which were more than our study(3).

Prevalence of hypertension among males and females were 15.78% and 20.28% respectively, which was lower for both groups compared to the urban Indian average i.e. 24.2% and 22.7% in males and females respectively(4).

Prevalence of hypertension is more in people who are watching television for more than 6 hours a day.81.6% of the hypertensive people were watching television for more than 6 hours a day. This shows sedentary life habits are contributing more towards the development of lifestyle diseases and its complications.

Around 34.7% of hypertensive patients belong to age group below 45 years of age which is not at all desirable. According to the fourth national family health survey the prevalence of hypertension of hypertension between age groups of 15 and 49 is only 11.3%(5).Hypertension in young adults leads to decrease in life expectancy and makes high chances of cardiovascular morbidity and mortality in population.

VII. CONCLUSION

From this study we can conclude that hypertension in the study population is low but more young adults are getting diagnosed with hypertension which will further lead on to other cardiovascular complication including cerebrovascular accident. The higher prevalence of HTN in urban areas may have arisen as cardiovascular disease risk factors among the urban poor and middle class are rapidly increasing in India(6). Numbers of newly diagnosed cases are also increasing. It is important to monitor the B.P of young adults for early detection of hypertension and pre-hypertension.

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