

Prevalence of Hypertension among Adults Residing In Urban Slums of Ramnagar, Belgaum City-A Cross-Sectional Study

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Abstract: Hypertension is a global public health challenge and major risk factor for cardiovascular mortality. It is third leading silent killer which is affecting 1 billion adults and is estimated to cause 7.1 million deaths annually. India being low & middle income country and larger proportion of population are living in urban slum where overcrowding and standard of living are due to this, prevalence of hypertension is more, and have a major impact on health and health care. Therefore, it is important to find the prevalence of hypertension among adults residing in urban slum of Ramnagar, Belgaum city. A cross-sectional community based study among 364 adults of aged 20-59 years in urban slum. The anthropometric measurement and blood pressure was taken according to WHO criteria. The data was analyzed by using percentage for prevalence and Chi-square test was used to find out the association. The overall prevalence of hypertension was found to be 90(24.7%). Majority of the hypertensive (60.4%) were seen in the age group between 50-59 years. The higher prevalence of hypertension was found with overweight (37.5%, obesity (48.6%), extra salt intake (30%), lack of physical exercise (22.9%), saturated fat intake (29.6%), non-vegetarian diet (24.5%) and shown significant association. Prevalence of hypertension was high among adults. Advancing age, sex, lack of physical exercise, BMI were found to be important factors contributing to the causation of hypertension. Therefore, preventive programs are necessary to tackle the rising burden of hypertension.

Key words: Hypertension, Risk factors, Urban Slum, Body Mass Index

I. Introduction

Hypertension is a global public health problem affecting 26% (1 billion) adult population worldwide in the year 2000.¹ It is estimated to cause 7.1 million deaths annually accounting for 13% of all deaths and it is projected to increase to 29.2% by the year 2025.² It is an enormous health problem and is one of the biggest health challenges in the 21st century and third leading silent killer in the world and one in three adults are found hypertensive worldwide.^{3,4}

In developed countries it is 4th leading cause of premature death, whereas in developing countries it is 7th leading cause of premature death.^{3, 5} Hypertension is largely ignored as a public health problem in developing countries, because of the asymptomatic nature of the condition.⁶ In India hypertension is emerging as a major public health problem and is more prevalent among urban compared to those of rural people.⁷

In urban India almost 35% of the people are hypertensive. It is the commonest cardiovascular disease, posing a major public health challenge and is due to the consequence of urbanization, change in life style pattern, diet, stress and the overall socio-economic and epidemiological transition.⁶

As India is still on the path of development, many rural people are shifting to urban area. Hence there are large numbers of people living in urban slums which are overcrowded and their standard of living is poor. Because of these factors people are at risk of hypertension in slum area and there are very few studies done in these areas, so the present study is undertaken to find out the prevalence of hypertension in adults in the community setting of urban slum and preventive strategies can be planned to promote health among all sections of the population after assessing risk factors leading to hypertension.

II. Material And Methods

A Cross-sectional study was conducted among adults aged 20-59 years in catchment of Urban Health Centre Ramnagar, Belgaum city for a period of 9 months (i.e. January to September 2013). The sample size was calculated by using formula $n = z^2pq/d^2$ (Where, $p = 35\%$, absolute error $d = 5\%$). Thus sample size was calculated as 364. This study included all participants who gave the written informed consent and were residing at least from one year in the Ramanagar. The adults who were pregnant and ill during data collection were excluded for this study. Systematic random sampling was used (i.e. sampling Interval= total household/ total

sample size= 3245/364= 8.91≈ 9, so 8st house was selected by simple random sampling and every 9th house was taken) to select the sample. Pre- designed and pre- tested questionnaire was used to collect information regarding socio-demographic characteristics, dietary habits and history regarding diseases. Anthropometric measurement and blood pressure were measured using standard techniques. Ethical clearance was obtained from Institutional Ethics committee of J. N. Medical College, KLE University Belgaum, Karnataka, India. All the data were entered into SPSS-20 version and analyzed at 5% level of significance and interpreted by using descriptive and inferential statistics.

III. Results

This study was conducted among 364 adults of urban slums of Ramnagar. Among them, 170(46.7%) were males and 194(53.3%) were females. 58.5% of participants were literates. 9.3% were in business, 17.3% were in service, 17% were labourers, 9.1% were students, 33.2% were housewives, 10.4% were driver and 3.6% were not working. 12.9% were unmarried, 82.7% had married. 63.2% belonged to nuclear family, 56% belonged to class II followed 37.4% Class III, according to Modified B. G. Prasad classification of socio-economic status. The overall prevalence of hypertension was found to be 24.7%. Out of the total hypertensive, 80.7% were known cases of hypertension and taking medication. Only 14.3% of hypertensive was newly diagnosed cases of hypertension. The prevalence of hypertension was significantly associated with age, sex, family history and BMI (TABLE: 1). As the age increases the prevalence of hypertension steadily increases. Prevalence of hypertension was significantly higher in female, positive family history of parents and obese participants.

TABLE No. 1: Prevalence of Hypertension by various risk factors

Variables	Normotensive (n=274)		Hypertensive (n=90)		Total (N=364)		χ ² Value	P Value
	No.	%	No	%	No	%		
Age in years								
20-29	99	94.3	6	5.7	105	28.85	96.7	0.001*
30-39	82	92.1	7	7.8	89	24.45		
40-49	57	72.2	22	27.8	79	21.70		
50-59	36	39.6	55	60.4	91	25.00		
Sex								
Male	136	80.0	34	20.0	170	46.7	3.827	0.043*
Female	138	71.1	56	28.8	194	53.3		
Family history								
Father	22	55	18	45	40	10.99	32.285	0.001*
Mother	3	42.9	4	57.1	7	1.92		
Absent	198	84.6	36	15.4	234	64.29		
Unaware	51	61.4	32	38.6	83	22.8		
BMI								
Underweight	27	87.1	4	12.9	31	8.52	43.923	0.001*
Normal	166	86.9	25	13.1	191	52.47		
Overweight	45	62.5	27	37.5	72	19.78		
Obesity	36	51.4	34	48.6	70	19.23		

* significant

57.1% had consumed mixed diet, 22% had consumed extra salt and only 7.4% had consumed saturated oil in their diet. 14.8% participants had the habit of alcohol consumption and 9.9% had smoking habits, 12.9% of participants had family history of hypertension and 39% participants had BMI ≥25 and 31.6% were found to have abdominal obesity. Association between prevalence of hypertension and dietary pattern is shown in the TABLE 2.

TABLE NO. : 2 Prevalence of hypertension and dietary pattern

*Diet habit	Normotensive		Hypertensive		Total
	No.	%	No.	%	
Vegetarian	117	75.0	39	25.0	156
Mixed	157	75.5	51	24.5	208
**Salt intake					
Extra salt intake	56	70.0	24	30.0	80
No extra salt intake	218	76.6	66	23.2	284
***Type of oil consumed					
Saturated	19	70.4	8	29.6	27
Unsaturated	255	75.7	82	24.3	337
Total	274	75.3	90	24.7	364

*χ² = 0.011; d f = 1; p = 0.916 **χ² = 1.533; d f = 1; p = 0.216 ***χ² = 0.377; d f = 1; p = 0.539

IV. Discussion

In this study the overall prevalence of hypertension was found to be 24.7% in adults aged 20-59 years. The prevalence was less when compared to the studies conducted at Puducherry, Delhi, Bombay and Chennai where the prevalences were 27.6%, 27.5%, 36.4% and 39.17% respectively.^{6, 13,15,16} On the contrary there were studies conducted at Durban, Tirupati, Bangalore and Mumbai where the prevalence was lower than the present study that is 19%, 8.6% and 8.6% respectively.^{8, 9,10,14} This variation could be because hypertension is a life style disease and the prevalence is more when there is risk behaviour.

The prevalence of hypertension was high (60.4%) in the age group of 50-59 years and was increasing steadily with age which was comparable with studies conducted in Coastal Karnataka in 2013 and Jamnagar in 2011.^{3, 12} The prevalence of hypertension was more in females (28.8%) than the males (20%). Few studies conducted in Mumbai showed that the prevalence of hypertension was high in females than in males which was similar to our findings.^{14, 15} 46.8 % of hypertensive had the family history of hypertension, 21.4 % did not have family history of hypertension. The results were statistically significant with family history of hypertension. Few studies conducted in Tirupati and Puducherry revealed that family history of hypertension is a risk factor for hypertension (23.3% and 24.4% respectively). The results were statistically significant.^{6,8} In our study, higher prevalence of hypertension was found 42.9 % (overweight 37.5% & obesity 48.6%) whose BMI was ≥ 25 which were statistically significant and was similar to the study conducted in Puducherry.⁶ This study showed prevalence of hypertension was significantly associated with diet habit which was similar to the study conducted in puducherry but did not significant with extra salt intake and type of oil consumed which was similar to the study conducted Tirupati.^{6,8}

V. Conclusion

The prevalence of hypertension was 24.7% among adults aged 20-59 years. The various risk factors like age, sex, family history and BMI were also found to be significantly associated with hypertension among adults. Further large scale studies need to be done to establish the relationship between physical exercise, dietary habits, smoking etc.

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