



RESEARCH ARTICLE

A STUDY ON HYPERTENSION IN AN URBAN SLUM IN BANGALORE, INDIA

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Abstract

INTRODUCTION

Hypertension is reported to be 7th cause of premature death in developing countries and the 4th in developed countries. Hypertension is common in developing countries and more so in urban areas. In view of this a study was undertaken with the objectives to study the magnitude of hypertension in an urban slum and to find out the factors associated with hypertension. **MATERIALS AND METHODS:** A cross-sectional study was undertaken among 90 families in an urban slum in the field practice area of a medical college in Bangalore, Karnataka, from June to August 2014. The study group consisted of all the members above 25 yrs in these families participated in the study. A clinical examination was conducted on the participants. Data was analyzed based on percentages and proportions and chi-square analysis was done using SPSS version 21. **RESULTS:** A total of 112 participants were included in the study. There were 73(65.2 %) females and 39(34.8 %) males. 39(34.8%) participants were normotensives, 42(37.5%) were pre hypertensive and 31 (27.7%) were diagnosed to be hypertensive. 13 (11.6%) participants had normal Body mass index whereas 15 (13.4 %) were overweight and 84 (75%) were obese. 95 (84.8%) participants followed sedentary lifestyle. 15(13.4%) did mild exercise and only 2 (1.8%) did moderate exercise. All 112 (100%) participants cooked rice with salt. Per capita salt intake of more than 5g per day was consumed by 44 (39 %) participants. **CONCLUSION:** There were 65.2 % incident cases of pre hypertension and hypertension in the urban slum population. Obesity was identified in 88.4 % of the individuals. It was found that 84.8 % followed a sedentary lifestyle. There was uniform practice of cooking rice with salt among all 100 % of the families. For control of hypertension awareness programmes are the need of the hour.

KEYWORDS: Hypertension, urban slum

INTRODUCTION

WHO day slogan 2013 “Healthy heart beat , Healthy blood pressure”^[1] Hypertension is reported to be 7th cause of premature death in developing countries and the 4th in developed countries. 13 % of global deaths are attributed to raise blood pressure.^[2] Hypertension is a chronic condition and a silent killer. It means that a person may never experience symptoms related to higher blood pressure. Hypertension is common in developing countries and more so in urban areas. However



awareness of the disease and its treatment and control are low. ^[3] In view of this a study was undertaken with the following objectives:

1. To study the magnitude of hypertension in an urban slum and
2. To find out the factors associated with hypertension

MATERIALS AND METHODS

A cross-sectional study was undertaken among 90 families in an urban slum in the field practice area of Vydehi Institute of Medical Sciences and Research Centre in Bangalore, Karnataka, from June to August 2014. Approval was obtained from the College Ethical Committee. Informed consent was taken from each of the participants before the study and they were explained about the purpose of the study.

The study group consisted of all the members above 25 yrs in these families and those who were willing to participate in the study. A predesigned and pretested questionnaire was administered comprising of questions related to salt consumption, physical activity, addictions and history of hypertension amongst their parents and siblings.

A clinical examination was conducted on all the participants by trained interns in the department of Community Medicine. Blood pressure measurements were taken using mercury Sphygmomanometer and an average of three brachial cuff readings were taken and participants were classified according to JNC 7 report. ^[4]

Anthropometric measurements were recorded. Weight was recorded without footwear and with light clothing using a weighing scale with an error to the nearest ± 500 gm. The weighing scale was regularly checked with known standard weights. A stadiometer was used for measuring the height (without shoes), with an error to the nearest ± 0.5 cm. Data was analyzed based on percentages and proportions and chi-square analysis was done using SPSS version 21.

RESULTS

A total of 112 participants were included in the study. There were 73(65.2 %) females and 39(34.8 %) males. Out of 112 persons in the group in the age group 25 to 70 years, 39(34.8%) participants were normotensives, 42(37.5%) were pre hypertensives and 31 (27.7%) were diagnosed to be hypertensives as shown in table 1.

Table 1:- Hypertensive status of participants

Hypertensive status	No.	%
Normal	39	34.8
Pre hypertensive	42	37.5
Hypertensive	31	27.7
Total	112	100



13(11.6%) participants belonged to 25-35 years age group.40 (35.7%) belonged to 36-45 years of age.26 (23.2.%) belonged to 46-55yrs age group and33(29.5%) were more than 55 years of age as shown in table 2.

Table 2:Age distribution of participants

Age group	No.	%
25-35 yrs	13	11.6
36-45 yrs	40	35.7
46-55 yrs	26	23.2
> 55 yrs	33	29.5
Total	112	100

According to obesity classification for Asians 13 (11.6%) participants were normal. 15 (13.4 %) were overweight and 84 (75%) were obese as shown in table 3. [5]

95 (84.8%) participants followed sedentary lifestyle. 15(13.4%) did mild exercise and only 2 (1.8%) did moderate exercise as shown in table 4.

All 112 (100%) participants cooked rice with salt. Per capita salt intake of more than 5g per day was consumed by 44 (39 %) participants. Participants belonging to socio-economic status class 5 & 6 according to Kuppuswamy's classification consumed salt more than 5g per capita per day and this finding was statistically significant as shown in table 5

Table 3:Distribution of participants according to BMI

BMI	No.	%
18.5-23	13	11.6
23-25	15	13.4
>25	84	75
Total	112	100

Table 4: Distribution of participants according to exercise pattern

Exercise pattern	No.	%
Sedentary	95	84.8
Mild	15	13.4
Moderate	2	1.8
Total	112	100

**Table 5:** Socioeconomic status and Salt intake

Socio economic status	Salt intake					
	Less than 400gm		More than 400gm		Total	
	No.	%	No.	%	No.	%
Class 2	33	61.1	21	38.9	54	100
Class 3	19	70.4	8	29.6	27	100
Class 4	13	72.2	5	27.8	18	100
Class 5	1	25	3	75	4	100
Class 6	2	22.2	7	77.8	9	100
Total	68	60.7	44	39.3	112	100
P value 0.02						

Family history of hypertension was present in father 12 (10.7 %), mother 16 (14.3 %) siblings 2 (1.8%). 10.7 % of participants were smokers and 2.7 % were alcoholics.

DISCUSSION

Prevalence of hypertension was 27.7 % in the present study. In a study done in the urban slums of Gujarat prevalence of hypertension was 22.8 %. ^[6] Prevalence was 8.6 % in urban slums of Tirupathi. ^[7] It was 34.2 % in the urban slums of West Bengal. ^[8] In North Karnataka the prevalence was 37.6 %. ^[9] A study done in urban slums of Nigeria showed 38.2 % prevalence of hypertension. ^[10] In Kenya urban slums prevalence was 22.8 %. ^[11] Prevalence was 24.7 % in the urban slums of Belgaum. ^[12] Prevalence in slums of Surat was 33.3%. ^[13]

In the present study 11.6 % participants had normal BMI and 88.4 % were overweight or obese. In a study done in Belgaum 37.5 % were overweight and 48.6 % were obese. ^[12] Findings of study done in urban slums of Patna showed significant association between BMI and hypertension. ^[14]

Sedentary lifestyle was observed in 95.6 % people in a study done in urban area of Gujarat, similarly it was observed in 84.8 % of participants in our study. ^[6]

Family history of hypertension was present in 23.3% participants in urban slums of Tirupathi, whereas in the present study it was found in 26.8 % participants. ^[7]

Higher salt intake was associated with hypertension in studies done in urban slums of Belgaum and Surat. ^[12,13] In the present study 100 % of the families were cooking rice with salt. In view of



these findings salt reduction should be given priority for prevention and control of hypertension. ^[15] 5 g/day of salt intake is recommended by WHO for reduction of blood pressure. ^[16] Reduction of salt intake has been found to be a cost-effective intervention in reduction of non communicable diseases. ^[17] In a study done in south India higher salt intake was associated with older age and higher income, whereas in the present study higher salt intake was associated with class 5 & 6 socioeconomic status. ^[18]

CONCLUSION

There were 65.2 % incident cases of pre hypertension and hypertension in the urban slum population. Obesity was identified in 88.4 % of the individuals. It was found that 84.8 % followed a sedentary lifestyle. There was uniform practice of cooking rice with salt among all 100 % of the families. For control of hypertension awareness programmes are the need of the hour on healthy lifestyle namely control and prevention of obesity, decreased salt intake, physical activity, cessation of habits such as smoking and drinking alcohol as well as early detection and treatment.

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