

**ORIGINAL RESEARCH****A cross-sectional study of the prevalence & awareness of hypertension in urban area of Kolhapur, Maharashtra****<sup>1</sup>Dr. Jagannath S. Shete, <sup>2</sup>Dr. Amit V. Mohite, <sup>3</sup>Dr. Sanjay Sid**<sup>1</sup>Associate Professor, <sup>3</sup>Assistant Professor, Department of Community Medicine, Prakash Institute of Medical Sciences & Research, Urun- Islampur, Maharashtra, India<sup>2</sup>Associate Professor, Department of Community Medicine, Vedanta Institute of Medical Sciences, Palghar, Maharashtra, India**Correspondence:**

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**Abstract****Background:** Cardiovascular disease (CVD) is a major cause of death and a major contributor to the world's global disease burden, including India. Hypertension exerts a sustainable public health burden on cardiovascular health status and health care system in India. Hypertension is directly responsible for 57 % of all stroke death and 24 % of all coronary heart disease death in India.**Objectives:** i) to find out prevalence of hypertension, ii) to study about awareness & management of hypertension.**Material & methods:** i) Study design - An observational - cross sectional- community based study. ii) Tools used - Predesigned, pretested, structured questionnaire based survey and blood pressure measurement with sphygmomanometer in participants of selected urban areas of Kolhapur city. iii) Study population – Male & female > 18 years of age, residing & available in defined study area of Kolhapur city during data collection period, iv) Statistical tests – mean, percentage and other statistical analysis was conducted by using Microsoft-Excel.**Results:** Total 148 study participants, 97 knew or heard about hypertension. 35 were found to be hypertensive and amongst hypertensive subjects, only 20 were taking regular antihypertensive medications.**Conclusion:** Results of study revealed that more than half participants had knowledge about hypertension and almost one fourth participants were hypertensive but there was still need to increase awareness regarding hypertension & its management.**Keywords:** hypertension, management, urban, prevalence**Introduction**High Blood Pressure is marked as the third most important risk factor for attributable burden of disease in South Asia (2010).<sup>1</sup> Hypertension exerts a sustainable public health burden on cardiovascular health status and health care system in India.<sup>2,3</sup> Hypertension is directly responsible for 57 % of all stroke death and 24 % of all coronary heart disease death in India.<sup>4</sup> WHO rates hypertension as one of the most important cause of premature death worldwide.<sup>5</sup> WHO has termed hypertension as the —Silent Killer. However, only 25.6% of

treated patients had their B.P under control in a multicentre study from India on awareness, treatment and adequacy control of hypertension.<sup>6</sup> According to the World Health Statistics 2012 report, one in three adults had elevated blood pressure worldwide. It has been projected that, in 2025, there will be 1.56 billion adults living with hypertension globally.<sup>7</sup> Recent studies from India have shown the prevalence of hypertension to be 25% in urban and 10% in rural people in India.<sup>8</sup> According to the WHO estimates, the prevalence of raised BP in Indian is 32.5%.<sup>9</sup> Andhra Pradesh (13.3%), Odisha (9%), Chhattisgarh (8.4%) and Gujarat (6.7%) have highest prevalence while Assam and Rajasthan (1.4%), Kerala (2.4%), Bihar (2.7%), Madhya Pradesh (2.8%) and Uttar Pradesh (3.6%) are low prevalence states.<sup>10</sup> Almost everybody is at risk of developing hypertension without a healthy lifestyle habits however there are high risk groups.<sup>11</sup> Risk is related to certain factors that contribute to the development or accelerate a disease progression such as modifiable risk factors which include weight, BMI, smoking, healthy balanced diet, salt restriction in diet, physical activity etc and some non modifiable factors such as age, gender, race etc.<sup>12</sup>

### **Aim**

To study prevalence of hypertension in adults of selected urban community and to assess awareness regarding its management

### **Objectives**

1. To estimate prevalence of hypertension amongst study participants.
2. To assess awareness about hypertension and its management amongst adults of selected Kasaba Bawada area Kolhapur city
3. To find out the demographic profile of study subjects.
4. To suggest recommendations that can help in creating and increasing awareness about hypertension in community

### **Methodology**

The study was a community based cross sectional study conducted between June 2018 and December 2018 among selected adults of Kasaba Bawada area of Kolhapur, Maharashtra. Total 148 adults who were present at their house during data collection time that is from August & September 2018 and who were willing to participate were enrolled in present study. Inclusion Criteria: i) Adults (> 18 years of age) present at their house during data collection period. ii) Adults who were willing to participate in study. Exclusion criteria: i) children, adolescents who were less than 18 years of age. ii) Adults who were not willing to participant in study, iii) pregnant women or any patient who were terminally ill were excluded.

The WHO STEPS for non-communicable disease (NCD) assessment questionnaire was considered as base of our study questionnaire & it was administered to one person at a time and pretested. The questionnaire was altered according to local cultural and influences. The questionnaire consists of information regarding socio demographic profile, anthropometric measurement, dietary habit and physical activity. For physical examination, standardized calibrated mercury sphygmomanometer, stethoscope, weighing machine were used. Hypertension was defined as a systolic blood pressure >140 mm Hg and diastolic blood pressure 90 mm Hg.<sup>13</sup>

All the adults aged 18 years and above who were present in house were requested to participate in study. First in 10 min, with the help of questionnaire, survey was completed. Before the blood pressure measurements were taken, the participants were seated with their backs supported and their legs resting on the floor for at least 5 min. We requested participants not to have cigarette smoking or drinking caffeinated beverages for at least 30

min before measurement. The arm of the participant used for measurement was positioned at the same level as the heart. Three measurements of Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP) were taken with an interval of 1–2 min and the average of three measurements was considered as final reading.

An informed consent was taken from participants. Confidentiality of the respondents was maintained. MS EXCEL was used throughout the study for analysis of the data collected.

## Results

In the present study, total 148 adults were interviewed with the help of predesigned questionnaire and their blood pressure was measured with help of sphygmomanometer on 3 consecutive days. Amongst them, 92(62%) were females & 56(38%) were males (Table 1). 97(66%) knew or heard and 51(34%) did not know about hypertension (Table 2). Amongst study subjects, 35 (24%) were found to be hypertensive, of which 26 (74%) were known case of hypertension and 9 (26%) were newly diagnosed as hypertension(Graph 1). Amongst hypertensive, 11(31.4%) were males and 24(68.6%) were females. 17 (49%) belonged to 51 to 70 years of age group. Amongst total participants, 48(32%) were having high BMI and from hypertensive patients, 18(51%) had high BMI and 12(67%) were females. Out of hypertensive subjects, only 20(57%) were taking regular antihypertensive medication, 22(63%) restricted salt in their diet and 26(74%) were doing regular exercise and keeping follow up with their physician(Table 3).

**Table 1: Demographics distribution**

Age group	Male	Female	Total (%)
18 years to 30 years	13(23%)	17(18%)	30(20%)
31 years to 50 years	7(13%)	23(25%)	30(20%)
51 years to 70 years	15(27%)	19(22%)	34(23%)
71 years & More	21(37%)	33(35%)	54(36%)
<b>Total</b>	<b>56(100%)</b>	<b>92(100%)</b>	<b>148(100%)</b>

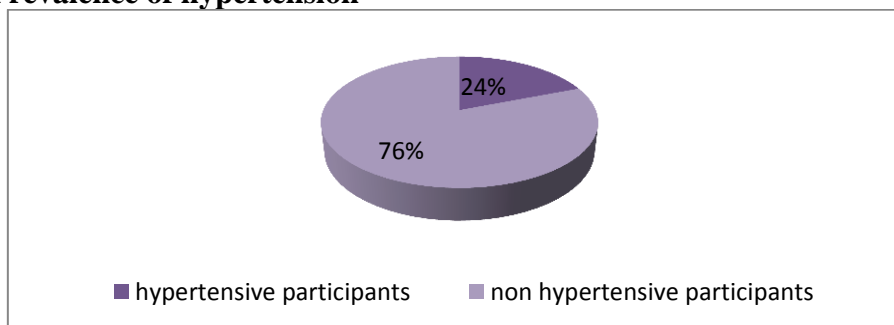
In the above table, it was seen that, 56(38%) were males & 92(62%) were females. Amongst females, 33(35%) were from age group of 71 years & more and 23(25%) were from age group of 31 years to 50 years. Amongst males, 21(37%) were from 71 years & more and 15(27%) were from 51 years to 70 years age group.

**Table 2: Had Knowledge or ever heard about hypertension**

	Frequency	Percentage
<b>Yes</b>	97	66
<b>No</b>	51	34
<b>Total</b>	<b>148</b>	<b>100</b>

In table 2, 97(66%) study subjects had knowledge about hypertension or ever heard about high blood pressure and 51(34%) had never heard about it.

**Graph 1: Prevalence of hypertension**



In graph 1, it was noticed that, 35(24%) participants were hypertensive and 113(76%) were non hypertensive.

**Table 3: Demographic distribution of hypertensive participants**

	Frequency	Percentage
<b>Known case of hypertension</b>	26	74
<b>Newly diagnosed hypertension</b>	9	26
<b>Male</b>	11	31
<b>Female</b>	24	69
<b>Overweight or obese (high BMI)</b>	18	51
<b>Normal or underweight (Not high BMI)</b>	17	49
<b>On regular medication</b>	20	57
<b>Not taking regular or not on medication</b>	15	43
<b>restricted salt in their diet</b>	22	63
<b>Not restricted salt in their diet</b>	13	37
<b>Doing regular exercise and keeping follow up with physician</b>	26	74
<b>Not doing regular exercise and keeping follow up with physician</b>	9	26
<b>Total</b>	35	100

In above table 3, it was seen that, amongst 35 hypertensive detected participants, 9(26%) were newly diagnosed and 26(74%) were already diagnosed, 24(69%) were female hypertensive and 11(31%) were males, 18(51%) were overweight or obese, only 20(57%) were taking their antihypertensive medications regularly whereas 15(43%) were not taking medications regularly, only 22(63%) were restricted salt in their diet and 13(37%) were not following salt restriction. 26(74%) were doing regular exercise and going for regular follow up to their physician whereas 9(26%) were not doing any type of exercise.

### Discussion

In the present study, amongst participants 62% were females & 38% were males. 34% did not know or never heard about hypertension. 24% were found to be hypertensive from them 26% were newly diagnosed as hypertension. Amongst hypertensive, 51% were overweight or obese, 57% were taking regular antihypertensive medication, 63% restricted salt in their diet and 74% were doing regular exercise and keeping follow up with their physician.

In one similar study conducted by Shikha Singh et al in urban Varanasi, Uttar Pradesh, India, it was found that, out of total 640 participants, 47% were male subjects and 53% were females. More than one-third of the study subjects were either overweight or obese. In men, the highest mean systolic BP and mean diastolic BP were among the eldest age group and preceding eldest age group (45–54 years). The overall prevalence of hypertension was 32.96%. Out of the total subjects with hypertension, around one third of the subjects were aware of their condition. Out of those who were aware, 70% were seeking treatment.<sup>14</sup>

In another study done by Gautam B. Sawase et al in Aurangabad, Maharashtra, it was noticed that, out of 360 study subjects, 10.8% were having hypertension, 48% prevalence of hypertension seen in age group 36-60 yrs, Females have shown higher prevalence of hypertension 64.5%. In this study, 81% of hypertensive were already diagnosed to have HTN while 19% were newly diagnosed hypertensive.<sup>15</sup>

## Conclusion

Present study was conducted in a community to estimate prevalence of hypertension & to assess knowledge and awareness about its management amongst adults of Kasaba Bawada, Kolhapur. This study revealed that, majority participants had knowledge or ever heard about hypertension or high blood pressure, and almost one fourth was hypertensive. Amongst hypertensive, more than one third were not taking antihypertensive medications and not following salt restricted diet. There is much more need to create and spread awareness about hypertension, its diagnosis and management by using mass media. Mass screening camps should be organised. Also there should be effective implementation of National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).

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