

# Study of prevalence of hypertension in bank employees of Latur city of Maharashtra

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## Abstract

**Background:** With sedentary lifestyles, commendable work stress, unhealthy food and personal habits these people are at a high risk of non-communicable disease like hypertension. This study was taken up to estimate the prevalence of hypertension among bank employees in Latur city of Maharashtra, India. **Material and Methods:** The present study was prospective, observational study, undertaken in the bank employees working in urban area of the Latur city, Study was explained to bank employees, those willing to participate in study were included after a written informed consent. **Results:** Among 370 subjects, prevalence of hypertension was 32.97 % (122 subjects). Among hypertensive subjects majority were of age group 41-50 years (38.89 %) followed by 31-40 years (22.79 %), male (34.39 %), managerial staff (63.16 %), from private sector (44.19 %). In present study, hypertension was more common in BMI > 30 kg/m<sup>2</sup> (82.76 %), followed by BMI 25- 30 kg/m<sup>2</sup> (56.58 %). Major co-morbidities were diabetes (53.49 %) and family history of hypertension (67.19 %) noted among hypertensive subjects. High incidence of addictions such as smoking (57.63 %), smokeless tobacco use (61.54 %), alcohol use (67.44 %) was noted among hypertensive subjects. Dietary habits such as adding extra salt while eating food (53.42 %), eating foods with high salt content (53.57 %), eating junk food (70.49 %), eating fruits <7 servings/week (40.86 %) noted among hypertensive subjects. Nil Physical activity was common among hypertensive subjects (47.83 %), while very high stress level (74.47 %) was noted among hypertensive subjects. **Conclusion:** Age > 40 years, male gender, managerial staff, private sector employee, BMI > 25 kg/m<sup>2</sup>, pre-existing diabetes, family history of hypertension, smoking, smokeless tobacco use, alcohol use, less physical activity and high stress level were common risk factors noted for hypertension in bank employees.


**Keywords:** hypertension, bank employees, smoking, stress, physical activity

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## INTRODUCTION

Hypertension (HTN), a known precursor to cardiovascular disease, has emerged as a leading cause of global morbidity and mortality. According to the global burden of disease (GBD) study in 2017, high systolic blood pressure (SBP) had claimed over 10.4 million lives and 218 million

disability-adjusted life years (DALY). Overall, 9% of the total DALYs were attributable to high SBP.<sup>1</sup> Epidemiological studies have shown that sedentary lifestyle, obesity and stress are significant risk factors for hypertension.<sup>2,3</sup> High job strain has been associated with significantly higher diastolic blood pressure of 4.5 mmHg during working hours and it has been proven that chefs showed one risk factor more than office workers.<sup>4</sup> As bank workers are exposed to these risk factors, it makes them a potential occupational risk group for hypertension and it is important to do screening for hypertension among them.<sup>5,6</sup> A study among bank employees in Maharashtra state of India reported a hypertension prevalence of 42%.<sup>7</sup> With sedentary lifestyles, commendable work stress, unhealthy food and personal habits these people are at a high risk of non-communicable disease like hypertension. This study was taken up to estimate the prevalence of hypertension among bank employees in Latur city of Maharashtra, India.

## MATERIAL AND METHODS

The present study was prospective, observational study, undertaken in the bank employees working in urban area of the Latur city, Maharashtra. Study was conducted in Department of Community Medicine, MIMSR Medical College, Latur,, India. Study duration was of 6 months (November2018 to April 2019).

**Inclusion criteria:** Study was explained to bank employees, those willing to participate in study were included after a written informed consent.

**Exclusion criteria:** Pregnant female employees, Employees who could not contacted in 3 visit. Employees working on contractual basis

Sample size for the study, was calculated as 370 subjects. Study was explained to senior bank officials and when requested for conducting the study in their branches persuaded to include all the employees in the area. For present interview technique was used as a tool for data collection. The predesigned and pretested questionnaire was used to record data. Study participants general information and socio-demographic details such as age, gender, religion, marital status, education and cadre of employment, type of bank (nationalized, private, and

cooperative) were recorded for each study subject. Medical and personal history was collected in detail for pre-existing hypertension, diabetes, cardiovascular illness, any medications receiving and any addictions (smoking, alcohol consumption, tobacco chewing, etc), physical activity, dietary details (salt consumption). History taking was followed general examination and blood pressure measurement of the individual. Hypertension was defined as systolic blood pressure  $\geq 140$  mm Hg and diastolic pressure  $\geq 90$  mm Hg or already diagnosed case of hypertension by physician or on antihypertensive treatment, as per JNV VII criteria.<sup>1</sup> 3 readings of blood pressure were taken from each individual at 5-5 minute interval. The minimum Blood pressure among the 3 readings was used for blood pressure assessment. Digital sphygmomanometer, calibrated from biomedical agency was used. Stethoscope used was manufactured by Littman, Germany. The data thus collected was entered in MS excel and analyzed with IBM SPSS version 20. Descriptive statistic (percentages) was used to summarize baseline characteristics of the study subject. Association between the categorical variables was analyzed by using chi-square test.

## RESULTS

In present study, among 270 subjects, majority were of age group 31-40 years (36.76 %) followed by 41-50 years (29.19%), male (68.38 %), clerical staff (75.41 %), from public sector (31.89 %). Prevalence of hypertension was 32.97 % (122 subjects). Among hypertensive subjects majority were of age group 41-50 years (38.89 %) followed by 31-40 years (22.79 %), male (34.39 %), managerial staff (63.16 %), from private sector (44.19 %).

**Table 1:** Prevalence of hypertension

Variable	No. of employees	No. of patients with HTN (%)	p value
Age (yrs)			
21-30	48 (12.97 %)	9 (18.75 %)	0.132
31-40	136 (36.76 %)	31 (22.79 %)	
41-50	108 (29.19 %)	42 (38.89 %)	
51-60	78 (21.08 %)	40 (51.28 %)	
Gender			
Male	253 (68.38 %)	87 (34.39 %)	0.352
Female	117 (31.62 %)	35 (29.91 %)	
Office work			
Managerial	19 (5.14 %)	12 (63.16 %)	0.529
Official	72 (19.46 %)	39 (54.17 %)	
Clerical	279 (75.41 %)	71 (25.45 %)	
Type of bank			
Public sector	118 (31.89 %)	47 (39.83 %)	0.632
Private	86 (23.24 %)	38 (44.19 %)	
Cooperative	166 (44.86 %)	37 (22.29 %)	

In present study, hypertension was more common in BMI  $> 30$  kg/m<sup>2</sup> (82.76 %), followed by BMI 25- 30 kg/m<sup>2</sup> (56.58 %). Major co-morbidities were diabetes (53.49 %) and family history of hypertension (67.19 %) noted among hypertensive subjects. High incidence of addictions such as smoking (57.63 %), smokeless tobacco use (61.54 %), alcohol use (67.44 %) was noted among hypertensive subjects. Dietary habits such as adding extra salt while eating food (53.42 %), eating foods with high salt content (53.57 %), eating junk food (70.49 %), eating fruits  $< 7$  servings/week (40.86 %) noted among hypertensive subjects. Nil Physical activity was common among hypertensive subjects (47.83 %), while very high stress level (74.47 %) was noted among hypertensive subjects.

**Table 2:** Prevalence of HTN according to the studied risk factors (n=192).

Variable	No. of employees	No. of patients with HTN (%)	p value
BMI (kg/m <sup>2</sup> )			
<25	265 (71.62 %)	55 (20.75 %)	0.32
25–30	76 (20.54 %)	43 (56.58 %)	
>30	29 (7.84 %)	24 (82.76 %)	
Co-morbidities			
Diabetes	43 (11.62 %)	23 (53.49 %)	
Family history of hypertension	64 (17.30 %)	43 (67.19 %)	
Smoking	59 (15.95 %)	34 (57.63 %)	
Smokeless tobacco use	52 (14.05 %)	32 (61.54 %)	
Alcohol use	43 (11.62 %)	29 (67.44 %)	
Adding extra salt while eating food	73 (19.73 %)	39 (53.42 %)	
Eating foods with high salt content	84 (22.7 %)	45 (53.57 %)	
Eating junk food	61 (16.49 %)	43 (70.49 %)	
Eating fruits <7 servings/week	93 (25.14 %)	38 (40.86 %)	
Moderate Physical activity			
Nil	138 (37.3 %)	66 (47.83 %)	<0.001
≤2 hrs	101 (27.3 %)	34 (33.66 %)	
2.1–4 hrs	88 (23.78 %)	9 (10.23 %)	
>4 hrs	43 (11.62 %)	3 (6.98 %)	
Perceived stress level			0.043
Low	178 (48.11 %)	32 (17.98 %)	
Average	80 (21.62 %)	23 (28.75 %)	
High	65 (17.57 %)	32 (49.23 %)	
Very high	47 (12.7 %)	35 (74.47 %)	

## DISCUSSION

Important work related factors such as economic market globalization, automation, outsourcing, job insecurity, long working hours, usage of computer screen for prolonged periods of time, increasing competition and multifunctional task are significantly reshaping bank employees' lives professionally as well as personally. In a study by Chataut J *et al.*,<sup>8</sup> among 416 bank employees of Kathmandu district, prevalence of hypertension was found to be 11.3%. Of the 47 participants with hypertension, 40(85.1%) were known cases while 7(14.9%) were newly diagnosed. Age, gender, marital status, overweight (BMI ≥25), smoking, alcohol consumption, having diabetes, and family history of -hypertension were found to have significant association with hypertension in univariate analysis. The multivariate logistic regression analysis revealed that gender, having diabetes and physical activity had independent and significant association with hypertension. In a similar study, Shekhar S *et al.*,<sup>9</sup> from 577 bank employees working in an urban area of Marathwada region, Maharashtra, noted that 32.4% of subjects were hypertensive. Association of higher age group and managerial cadre of employment were found to be statistically significant. Ismail IM *et al.*,<sup>10</sup> 117 bank employees including 18 managers/assistant managers, 33 officers and 66 clerks participated in the study. The prevalence of hypertension was 39.3%. Increasing age, family history of hypertension, body mass index ≥ 25

kg/m<sup>2</sup> and abnormal waist-hip ratio were significantly more frequent among the hypertensive than normotensive population. Momin MH *et al.*,<sup>11</sup> studied 1493 bank employees of Surat city, prevalence of hypertension was 30.4% and prehypertension was 34.5%. Out of 455 found as hypertensive, 258 (56.70%) were not having any symptoms at the time of examination. Prevalence was high among persons with age 50 years and above (48.5%); among male (32.5%) as compared to female (23.1%); among employees having small family size; among separated/divorcee person (40.0%). Prevalence of hypertension increased with seniority of the official position of bank employee with highest prevalence among managers (45.9%). Prevalence of hypertension was noted highest among the higher socioeconomic group; SEC I (35.0%) followed by class II (20.4%). In study by Savani NM *et al.*,<sup>12</sup> out of 800 employees, prevalence of hypertension was found 30.4% including 7.6% self reported and 22.8% detected in the study. Highest prevalence of hypertension was reported in 50-59 years age group followed by 20-29 years (26.3%). Hypertension found more among male (90.9%) and work experience less than 10 years (42.8%). Significant association found on assessing risk factors like history of addiction, not doing any physical exercise, obesity, high BMI and hypertension. Ganesh Kumar S *et al.*,<sup>13</sup> studied 192 (128 male and 64 female) bank employees from urban Puducherry, India and mean± SD age of the participants was 39.5±10.6 years. The

prevalence of hypertension and pre-hypertension was 44.3% (95% CI: 37.2%–51.3%) and 41.1% (95% CI: 34.1%–48.1%), respectively. Of 85 participants with hypertension, 47 (55%) was known case and 38 (45%) were newly diagnosed. Multiple logistic regression analysis revealed that living in the 4th (OR: 3.13) or 6th (OR: 3.11) decade of life, consumption of extra salt (OR: 2.49), and physical activity  $\geq 2$  hours per day (OR: 0.21) were associated with hypertension among bank employees. In study by Singh O *et al.*,<sup>14</sup> among 160 male bank employees, generalized obesity and central obesity were found in 9% and 69% subjects, respectively. Nearly half of the subjects were observed to have hypertension and another one-third prehypertension. Nearly 14% subjects had T2DM. Dyslipidemia was observed in this study as high triglycerides (TGs; 10.8%) and low high-density lipoprotein-cholesterol levels (10%), high total serum cholesterol (5%), and high low-density lipoprotein-cholesterol levels (5%). Significant number of subjects had suboptimal lipid levels. The prevalence of metabolic syndrome (MetS) was found to be 38%. Hypertension is a silent killer, because people who have it are often symptom free or unaware of the disease. There is a need for strengthening adoption of certain interventional measures in lifestyle such as reducing salt intake, weight reduction and promoting physical activity among this vulnerable group should be encouraged. Once identified, elevated BP should be monitored at regular intervals because it is a lifelong disease.

## CONCLUSION

Age > 40 years, male gender, managerial staff, private sector employee, BMI > 25 kg/m<sup>2</sup>, pre-existing diabetes, family history of hypertension, smoking, smokeless tobacco use, alcohol use, less physical activity

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