

Prevalence of Hypertension among Class - III and Class - IV Employees at a Tertiary Care Teaching Hospital in Central India - A Cross Sectional Study

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Abstract: ***Introduction:** The prevalence of hypertension is increasing rapidly in urban areas due to changing lifestyle and increasing longevity. The employees are always under stress due to workload and sedentary lifestyle, so it is necessary to study prevalence of hypertension and its risk factors in the employees. **Aim:** To find the magnitude of hypertension among the class III and Class IV employees at a Tertiary Care Hospital. **Materials and methods:** A cross-sectional study was conducted among the class III and IV employees. Out of 400 employees 357 were willing to participate, so finally 357 employees were included in the study. Pretested questionnaire was used for data collection which included questions on various variables related to hypertension. Data collection and analysis was done using Epi info 7.2.6.0. **Results:** Amongst 357 Class - III and Class - IV employees who participated in the study, 56 (15.69%) employees were found to have hypertension and 76 (21.29%) were found to have Pre Hypertension. Hypertension was more in males 35 (61.80%). Majority (34.7%) of the hypertensive were between the age group of 45 - 54. Majority 32 (57.14%) of participants were from upper socio-economic status. **Conclusion:** The magnitude of hypertension among Class - III and Class -IV employees was 15.69% and Magnitude of Pre Hypertension was 21.29%.*

Keywords: Hypertension, prevalence, class III and IV employees

1. Introduction

Studies in the urban Indian population suggest that up to 35 percent of the patients have high blood pressure.¹ Various factors contributing to this may be urbanization, lifestyle changes which include increased salt intake, stress and sedentary lifestyle. Hence, we want to know the prevalence of Hypertension in urban population of India to determine the baseline characteristics so that future trends can be assessed and preventive strategies can be planned to promote health among urban population.² Despite the fact that blood pressure is easy to detect by means of a simple and widely used device, most of the hypertensives are unaware of their condition. Among those who are aware do not seek treatment. Hence, there is need to know self-care activity adherence among the population so that risk factors can be reduced and make them adhere to medication, diet changes and weight management. Due to increasing population growth at a rate of 2% every year and advances in technology, employment opportunities have reduced among young generation leading to stress and hypertension in young persons.³ With a growing trend of hypertension globally, there is a concern that hypertension in young adults may also be on the rise and are not detected because of inadequate screening in this age group. So it is necessary to study the prevalence of hypertension in young population.⁴ Blood pressure measurement in younger ages is a reliable way to predict progression to hypertension in adulthood. Prevention, detection and treatment of hypertension in the age group of 20 - 40 years is necessary to halt the natural history of the disease and delay complications like congestive cardiac failure, stroke and MI (myocardial infarction).⁵ So a community based screening can improve the detection of this silent killer. The World Health

Organization (WHO) for years have been promoting a STEP wise approach (STEPS) to chronic disease risk factor surveillance.⁶ As no other study has been conducted so far in this place, the present study is undertaken based on WHO STEPS methodology to estimate the prevalence of hypertension and to identify the associated risk factors in class III and IV employees of tertiary care centre of Central India among the age group of 18 to 60 years. Many studies have been conducted on hypertension among the rural and urban area but very few studies have been planned among the employees, workers are always under stress and due to workload and stress, so we need to study and it is necessary to study prevalence of hypertension and its risk factors in class III and IV employees at tertiary care centre.

Aim: To find the magnitude of hypertension among the class III and Class IV employees among the one of the Medical College and attached Tertiary Care Hospital.

2. Materials and Methods

A Cross sectional study was conducted at a Tertiary Care Hospital in Central India.

Inclusion criteria: All class III and class IV employees who gave informed written consent to participate in study.

Exclusion Criteria: Non-willing employees and those not available after 3 consecutive visits.

Sampling Technique and Sample Size: The Government medical college has list of all the class III and class IV employees. Complete enumerations of the employees were done. Overall there were 400 employees on the pay role. Out

Volume 13 Issue 3, March 2024

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

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of 400 employees 357 were willing to participate in the study, so finally 357 class III and IV employees were included in the study.

Data collection tool:

Pretested, predesigned and semi structured questionnaire was used for data collection which includes questions on various variables related to hypertension.

A semi - structured questionnaire designed for the purpose of data collection, which included all the details about age, sex, caste, religion, occupation, education, medical history of hypertension, food habits, smoking and alcohol consumption status, and history of regular physical activity.

Also, recording of anthropometric parameters and blood pressure (by aneroid sphygmomanometer).

Statistical analysis: Data collection and analysis was done using Epi info 7.2.6.0

Ethical consideration: Ethical clearance was obtained before the start of study from Institutional Ethical Committee. Consent of the participants was obtained before filling questionnaire. Treatment of the participants who found to have been diagnose with hypertension were facilitated for the further treatment. Confidentiality of the data was maintained throughout the procedure.

3. Results

Table 1: Age wise distribution of the participants

Age	Hypertension		Total	Chi Square Value	P Value
	Present	Absent			
25-34	7 (12.90)	122 (40.53)	129 (36.13)	26.46	0.000007644
35-44	14 (24.1)	92 (30.56)	106 (29.70)		
45-54	18 (34.7)	47 (15.63)	65 (18.20)		
55-64	17 (32.2)	40 (13.28)	57 (15.97)		
Total	56 (100.00)	301 (100.00)	357 (100.00)		

Figures in parenthesis denotes percentages

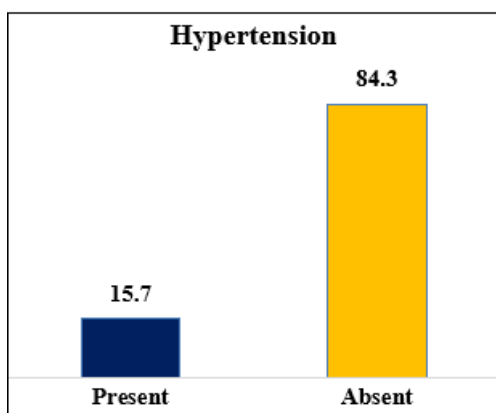
Out of 56 hypertensive participants, majority 18 (34.7%) of the participants were between age group 45 - 54 Years, followed by age group 55 - 64 Years 17 (32.2%). We found significant association between age group and Hypertensive status (p<0.05).

Table 2: Distribution of participants according to Class of Employee

Occupation	Hypertension		Total	Chi Square Value	P Value
	Present	Absent			
Class - III Employee	46 (82.14)	202 (67.11)	248 (69.47)	5.031	0.02490
Class - IV Employee	10 (17.86)	99 (32.89)	109 (30.53)		
Total	56 (100.00)	301 (100.00)	357 (100.00)		

Figures in parenthesis denotes percentages

In our study 46 (82.14%) employees were class - 3 workers as compared with 10 (17.86%) class - 4 workers. We found significant association between Class of employees and Hypertension (p<0.05).



Graph 1: Distribution of participants according to History of Hypertension

Table 3: Magnitude of hypertension:

Sex	Hypertension		Total	Chi Square Value	P Value
	Present	Absent			
Male	35 (61.80)	222 (73.76)	257 (71.99)	2.966	0.08507
Female	21 (38.20)	79 (26.24)	100 (28.01)		
Total	56 (100.00)	301 (100.00)	357 (100.00)		

The magnitude of hypertension among Class - III and Class - IV employee found in our study was 15.69%. The Hypertension was 35 (61.80%) in males as compared with

21 (38.20%) in females, and there was a statistically insignificant association between male and females ($p>0.05$).

Table 4: Magnitude of pre - hypertension:

Sex	Pre - hypertension		Total	Chi Square Value	P Value
	Present	Absent			
Male	61 (80.27)	196 (69.75)	257 (71.99)	3.278	0.07021
Female	15 (19.73)	85 (30.25)	100 (28.01)		
Total	76 (100.00)	281 (100.00)	357 (100.00)		

In our study Out of 357 participants, 76 (21.29%) had Pre Hypertension, out of which 61 (80.27%) were Males as compared with 15 (19.73%) Females. But there was no statistical association between sex and Pre - Hypertension. ($p>0.05$)

4. Discussion

In Present study, out of total 56 (100%) hypertensive, majority 18 (34.7%) of the participants were between age group 45 - 54 Years, followed by age group 55 - 64 Years 17 (32.2%). Age group 25 - 34 years had least number of participants 7 (12.90%). We found significant association between age group and Hypertensive status ($p<0.05$). Our findings were consistent with the study conducted by Zachariah et al⁷ and Patnaik N et al⁸ where we also found that more than 65% of then participants above 45 years were found to have hypertension and we found the statistically significant association between age group and hypertensive status.

The Hypertension was 35 (61.80%) in males as compared with 21 (38.20%) in females, and there was a statistically insignificant association between sex and hypertensive status ($p>0.05$). Shanthirani et al⁹ conducted study in 2003 had observed that the overall prevalence of hypertension was 21% in males as compared with females and there was no significant difference in the prevalence of hypertension between the two genders.

Out of the total 56 (100%) hypertensive, 46 (82.14%) employees were class - 3 workers as compared with 10 (17.86%) class - 4 workers. We found significant association between Class of employees and Hypertension ($p<0.05$). The study conducted by Kishore J et al.¹⁰ found that 4.2% were of clerical staff and 15.8% were of unskilled worker.

Magnitude of Hypertension and Pre - Hypertension:

The magnitude of hypertension among Class - III and Class -IV employee found in our study was 15.69% and Magnitude of Pre Hypertension was 21.29%. Similar findings found from the study conducted by Anshuman Sharma et al¹¹, Diwe K. C et al¹², Prajapati D and Geeta et al¹³, Tanuja R brahmankar et al¹⁴, Ismail et al¹⁵ Karnataka, S Ganesh Kumar and N Deivanai Sundaram¹⁶. Study conducted by Anshuman Sharma et al, Rural Madhy who found magnitude of hypertension and prehypertension 14.2% and 40.8% respectively. The study conducted by diwe K. C et al, Nigeria who found magnitude of Hypertension and Pre hypertension 12.4% and 33.1% respectively.

5. Summary and Conclusion

Out of the total 357 employees 56 (15.69%) were found to have hypertension and 76 (21.29%) were found to have Pre Hypertension. More than half of the Hypertensive was male. There was a statistically significant difference between sex and hypertensive status.

One third of the hypertensive were between the age group of 45 - 54. Significant association was observed between age group and Hypertensive status ($p<0.05$). The magnitude of hypertension among Class - III and Class -IV employee found in present study was 15.69% and Magnitude of Pre Hypertension was 21.29%.

Conflict of interest: No conflict of interest.

Funding: Nil

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