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Original Article

CORRELATES OF HYPERTENSION AMONG THE BANK EMPLOYEES OF SURAT CITY OF GUJARAT

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ABSTRACT

Hypertension is becoming a public health emergency worldwide, especially in the developing countries. The job of bank employees is both sedentary in nature and accompanies high levels of mental stress, thereby at a higher risk of developing hypertension. The present cross-sectional study was conducted to find out the prevalence and the determinants of hypertension among bank employees of Surat city. Prevalence of hypertension was found to be 69.5%. Hypertension was significantly associated with age 45 years or more, alcohol intake, waist circumference, body mass index and diabetes.

Keywords: Hypertension, Body Mass Index, risk factor, correlates, diabetes, alcohol intake

INTRODUCTION

Hypertension is becoming a public health emergency worldwide, especially in developing countries, where studies projected an increase by 80% in the number of hypertensive by the year 2025[1]. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India[2]. Hypertension is a controllable disease and a small decline of 2mmHg population-wide in BP can prevent 151,000 stroke cases. The prevalence of hypertension has increased by 30 times among the urban population over a period of 55 years and about 10 times among the rural population over a period of 36 years[3].

Many studies have shown that physical inactivity is a significant risk factor of hypertension. Also there are evidences that long term mental stress is associated with hypertension but more research is needed in this area[4]. The job of bank employees is both sedentary in nature and accompanies high mental stress also. In India very few studies have been conducted among bank employees who are at a high risk of being hypertensive. The present study was conducted to find out the prevalence and risk factors of hypertension among bank employees of Surat city of Gujarat.

METHODOLOGY

A cross-sectional study was conducted in the seven purposively selected banks (non-probability sampling), of Surat city. The total number of employees (both officer and clerical grade) was 218. Out of this 18 employees could not be contacted in the two visits that we made to the banks. Thus the total sample size covered was 200. The period of the study was five months, from July 2007 to November 2007. Written permission from the managers of the respective banks and verbal consent from the respondents was taken for the study after explaining about the study procedure, including fasting plasma glucose estimation.

Information regarding their biosocial characteristics and their type of diet was recorded in a predesigned and pretested schedule. Also their weight, height, blood pressure was measured and recorded. Blood pressure was measured using a mercury sphygmomanometer with the patient in sitting position. Phase I (appearance of sound) was

taken as systolic blood pressure and phase IV (disappearance of sound) was taken as diastolic blood pressure. Two readings were taken 2 minutes apart and the average was calculated. As per JNC VI criteria for measuring blood pressure, the subjects should not have had tea, coffee etc. at least 30 minutes before the blood pressure is taken. This is a limitation of our study as it was not possible for us to ascertain it. Subjects having Systolic Blood Pressure ³140 mm Hg and/or Diastolic Blood Pressure ³90 mm Hg or on anti-hypertensive medications were classified as hypertensive (JNC-VI)[5]. For classifying obesity, Body Mass Index (BMI) ³30 kg/m2 was considered obese) and Waist circumference (for males ³102 cm and for females ³88 cm was classified as obese)[6] Classification of diabetes was done on the basis of WHO (1999) criteria, according to which FPG ³126mg/dl, 110-126 mg/dl and <110 mg/dl are categorized as diabetic, impaired fasting glycemic and normoglycemic respectively[7]. Those on hypoglycemic drugs/insulin were also classified as diabetic.

Data was analyzed using the software SPSS 11.5 for Windows. The prevalence rates are given as percentages and 95% confidence intervals were estimated. Discrete data was analyzed using Pearson.s Chi-square test for difference in proportions. Two-tailed p-values less than 0.05 were considered significant.

RESULTS

The study subjects consist of 176 males (88.0%) and 24 females (12.0%) with mean age of 46.4 years (25-59 years).

Table 1: Association of hypertension with certain biosocial characteristics and risk factors (n=200)

Biosocial characteristics/risk factors	Subjects (%)	Hypertensive (%)	X^2 Value	p-value
Age				
Less than 45 yrs	62 (31.0)	29 (46.8)	21.89	<0.05*
45 yrs or more	138 (69.0)	110 (79.7)		
Sex				
Male	176 (88.0)	125 (71.0)	1.60	>0.05
Female	24 (12.0)	14 (58.3)		
Occupational Grade				
Clerical	68 (34.0)	44 (64.7)	1.12	>0.05
Officer	132 (66.0)	95 (72.0)		
Type of diet				
Vegetarian	172 (86.0)	118 (68.6)	0.47	>0.05
Non-vegetarian	28 (14.0)	21 (75.0)		
Smoking				
Never used	149 (74.5)	112 (69.1)	0.05	>0.05
Ever used	51 (25.5)	27 (71.1)		
Alcohol				
Never used	129 (64.5)	104 (65.4)	6.12	<0.05*
Ever used	71 (35.5)	35 (85.4)		
Body Mass Index				
<30 kg/m2	172 (86.0)	112 (65.1)	11.14	<0.05*
³30 kg/m2	28 (14.0)	27 (96.4)		
Waist circumference				
Obese	61 (30.5)	88 (63.3)	8.24	<0.05*
Non-obese	139 (69.5)	51 (83.6)		
Diabetes status				
Diabetic	40 (20.0)	33 (82.5)	3.99	<0.05*
Non-diabetic	160 (80.0)	106 (66.3)		

*Significant

Prevalence of hypertension was 69.5% (95% CI: 63.12% to 75.88%) and was much higher when compared to that from various studies conducted among the urban population throughout India[3,8]. Higher mean age of our study group as compared to the general population, .white-collar hypertension and not being able to ascertain about subjects intake of

tea, coffee etc. 30 minutes prior to measuring blood pressure could also have slightly overestimated the prevalence.

Table 1 shows the association of certain biosocial characteristics and risk factors with hypertension. Among the biosocial characteristics studied, prevalence of hypertension was significantly higher (79.7%) in the bank employees of age 45 years or more as compared to the prevalence (46.8%) among those less than 45 years of age. WHO (1978) reported that blood pressure rises with age in both men and women. Studies conducted among the general population in India also report that increasing age is associated with hypertension.[9,10] Sex, occupational grade, and type of family of the subjects were not significantly associated with prevalence of hypertension. Hypertension Study Group (2001) have also reported that there was no significant difference between the mean systolic blood pressures of men and women.[11]

According to WHO (1996), alcohol consumption has been consistently related to high blood pressure in cross-sectional as well as prospective observational studies in several populations. We also found the similar association.

Type of diet (vegetarian vs. non-vegetarian) and smoking (ever-smokers vs. never-smokers) was not significantly associated with hypertension prevalence. This is in contrast to the finding of Chennai Urban Population Study by Shanthirani CS et al.[10] There was a significant difference between the prevalence of hypertension in subjects with BMI ³30 kg/m2 (96.4%) and those with BMI <30 kg/m2 (65.1%). Hypertension Study Group (2001) also observed that a higher BMI was associated with increased risk of hypertension.[11] In Chennai urban population study, Shanthirani CS et. al observed that the mean BMI among hypertensive was significantly higher than among non-hypertensives.[10] In our study when obesity was classified by waist circumference, hypertension prevalence among obese was significantly more (83.6%) than the prevalence among the nonobese (63.3%). In Chennai Urban Population Study by Shanthirani CS et. al mean waist circumference was significantly higher among hypertensive as compared to that among non-hypertensives.[10] According to WHO (1996), central obesity indicated by an increased waist-hip ratio or increased waist circumference has been positively correlated with high blood pressure in several populations. Among the diabetics, prevalence of hypertension was significantly more as had been reported by other studies.[10, 11]

This study highlights the burden of hypertension among the bank employees. As hypertension and diabetes was associated in our study group, it hints at the possibility of higher prevalence of .syndrome X among the bank employees. This possibly puts them at a high risk of coronary heart disease. Studies on non-communicable diseases, focused on such high-risk occupational groups are rarely reported in our country and more of such studies are needed. Special programmes, integrating preventive and curative care for bank employees are required urgently.

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