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Original Research Article

Prevalence of hypertension and its associated risk factors among bank employees in Chidambaram: a cross sectional study

Rajkumar S., Annie I. K.*, John Willian Felix A.

Department of Community Medicine, Rajah Muthiah Medical College and Hospital, Chidambaram, Tamil Nadu, India

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***Correspondence:**
Dr. Annie I. K.,
E-mail: anndhm2003@yahoo.com

ABSTRACT

Background: The job nature of a bank employee is both sedentary and stressful. High level of mental stress places them at a higher risk of developing non communicable diseases like diabetes and hypertension. Aim of the study was to assess the prevalence of hypertension and its associated risk factors among bank employees.
Methods: A descriptive cross-sectional study was conducted among 265 bank employees using a semi structured questionnaire. Risk factors like extra salt intake, lifestyle factors like smoking, alcohol, physical activity were taken into account.
Results: The mean age of the participants was 36.93±8.657. The prevalence of hypertension was found to be 19.5% (52) out of which 5.2% (14) were known cases of hypertension. A significant association was found between extra salt intake, smoking, alcohol and hypertension.
Conclusions: The prevalence of hypertension among bank employees in Chidambaram is low compared to the studies among bank employees in other parts of the country. Extra salt intake, smoking, alcohol and stress levels were found to be the significant factors associated with hypertension.

Keywords: Bank employees, Chidambaram, Hypertension, Risk factors

INTRODUCTION

Hypertension is a serious medical condition and can increase the risk to heart, brain, kidney and other diseases. It is a major cause of early death worldwide, with a proportion of 1 in 4 men and 1 in 5 women-over a billion people-having the condition.[1]

Hypertension is one of the diseases of occupational origin. It is ranked fifth amongst the ten most important categories of occupational illness.[2] The job nature of bank employees is both sedentary and stressful with usually with high levels of mental stress putting them at a higher risk of developing non communicable diseases like diabetes and hypertension.[3] Even with introduction of digital technologies the stress which was expected to come down has only gone up in multi folds compared to the conventional banking methods.

They spend little time for physical activity and a significant number of them resort to smoking and alcohol to vent out their stress.[4] This poor lifestyle along with an unwholesome diet have an adverse effect on their quality of life.

Smoking has been found to have additive effect with hypertension and lead the sequalae of cardiovascular diseases. Physical inactivity maybe a cause or lead to obesity which in turn leads to non-communicable diseases.[5] Hypertension being asymptomatic, many are unaware and unchecked for hypertension.[4]

In India, very few studies have been conducted among bank employees who are at a high risk of developing Non communicable diseases. Hence this study intends to find the prevalence of hypertension among bank employees and its associated risk factors.

METHODS

Study design and area

A descriptive cross-sectional study was conducted among bank employees working in town of Chidambaram, Tamil Nadu for a period of 6 months (January 2022 to June 2022).

Sample size

This study was a part of the dissertation work. The sample size was calculated for the total number of bank employees which was 331. Using the procedure of fixed sample size for fixed population size, for which NMmaster sample size software was used, the required study sample was found to be 265. The study participants were selected by convenient sampling technique.

Inclusion criteria

All the employees from all cadres from both private and government banks were included.

Exclusion criteria

Those who were absent on the day of the study. Those who were not willing for the study were excluded.

Study procedure

After obtaining ethical approval from institutional human ethics committee and permission at all levels to conduct the survey, a predesigned semi-structured questionnaire along with IPAQ shortform scale from WHO and perceived stress scale were used to collect relevant information. The questionnaire consisted of the general information including socio-demographic characteristics like age, sex, type of family, socio-economic status, educational status, cadre of work, marital status along with personal details like smoking habits, dietary pattern, consumption of alcohol. As a part of physical examination, blood pressure, BMI of the participants were measured using manual sphygmomanometer and a calibrated weighing scale.

Statistical analysis

Collected data was entered in Microsoft excel and statistical analysis was carried out using statistical package for social sciences (SPSS) software. A Chi-square test was done to find out the prevalence of hypertension among different categories and stepwise logistic regression model with forward likelihood ratio and adjusted odds ratio was done to find out the association between risk factors and prevalence of hypertension with a confidence interval of 95%.

RESULTS

Among the study participants, 19.5% (52) were found to be hypertensive and 5.2% (14) were previously known hypertensives (Figure 1). The mean age of the participants was 36.84±8. Among the study participants, 60.2% (160) belonged to government sector banks and 39.8% (106) belonged to private sector banks.

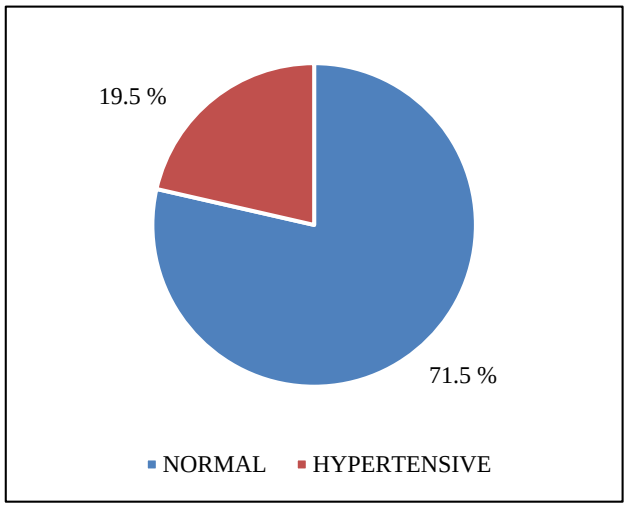

Figure 1: Prevalence of hypertension.

The proportion of hypertension was more among males (14.6%) than females (4.9%). Prevalence of employees who consumed extra salt, alcohol intake was high and those with minimal physical activity were high followed by employees with moderate physical activity.

Age and occupation were found to be statistically significant in relation to hypertension. A considerable group in the age category 26-39 were more prevalent for hypertension. In the cadre of employment 12 were found to be hypertensive among managerial cadre, 22 among clerical cadre and 18 were found to be hypertensive among support staff. Employees belonging to clerical cadre had a higher prevalence of hypertension (8.3%). Based on the marital status, married employees were more prone to be having hypertension (16.9%). Employees in government banks were having higher prevalence of hypertension (11.3%) than employees in private sector (8.3%) (Table 1).

A chi-square test was done to find the prevalence of hypertension in association to the risk factors. $P<0.05$ was considered to be statistically significant. Body mass index, lifestyle factors like smoking, alcohol, adding extra salt to routine food, adding fruit servings to diet, physical activity in a week and stress levels were found to be statistically significant (Table 2).

Table 1: Association between hypertension and selected variables (n=265).

Variables	Hypertension				Chi-square	Df	P value
	Present		Absent				
	N	%	N	%			
Age (years)							
26-39	26	9.8	159	60	14.13	2	<0.01
40-49	11	4.1	32	12			
50-59	15	5.6	23	8.6			
Gender							
Male	39	14.6	133	50.18	3.023	1	0.082
Female	13	4.9	81	30.5			
Designation							
Managerial	12	4.5	31	11.6	4.91	2	0.085
Clerical	22	8.3	126	47.5			
Support staff	18	6.7	57	21.5			
Marital status							
Single	6	2.2	32	12.07	4.468	2	0.107
Married	45	16.9	182	68.6			
Widow	1	0.3	0	0			
Type of bank							
Government	30	11.3	130	49.0	0.163	1	0.401
Private	22	8.3	84	31.6			
Nature of employment							
Permanent	41	15.4	160	60.3	0.377	1	0.338
Temporary	11	4.1	54	20.3			
Education							
Middle school	3	1.1	7	2.6	4.026	4	0.403
High school	11	4.1	32	12.0			
Graduate	29	10.9	150	56.6			
Postgraduate	2	0.7	5	1.8			
Professional	7	2.6	20	7.5			

Table 2: Association of risk factors and hypertension.

Variables	No. of employees	No. of subjects with hypertension	Chi square	Df	P value
BMI (kg/m^2)					
Underweight	2	1	5.25	3	0.15
Normal	101	15			
Overweight	93	17			
Obese	70	19			
Smoking					
Yes	35	22	48.06	1	<0.01
No	231	30			
Alcohol					
Yes	33	19	34.63	1	<0.01
No	233	33			
Adding extra salt					
Yes	36	33	137.68	1	<0.01
No	230	19			
Fruit servings					
Yes	33	8	0.528	1	0.46
No	233	44			
Physical activity					
Mild	26	12	24.11	2	<0.01
Moderate	181	39			
High	59	1			

Continued.

Variables	No. of employees	No. of subjects with hypertension	Chi square	Df	P value
Perceived stress level					
Low	203	16			
Moderate	51	28	75.03	2	<0.01
High	12	8			

Table 3: Stepwise logistic regression analysis for association between hypertension and selected risk factors.

Variables	Regression coefficient	P value	Adjusted odds ratio (95% CI)
Extra salt intake	4.611	<0.01	23.81
Stress level			
High	3.915	<0.01	11.148
Moderate	1.517	0.028	1.020
Smoking	1.362	0.036	1.090
Alcohol	1.992	<0.01	3.144
Physical activity			
Low	-3.651	<0.01	0.003
Moderate	-2.782	<0.01	0.008

All the independent variables like smoking, alcohol, obesity, stress levels, physical activity, extra salt intake and fruit servings were taken for analysis. Among these variables, extra salt intake, smoking, stress levels, physical activity were found to be statistically significant. Binary logistic regression was done to find out the association between risk factors and hypertension. Adjusted odds ratio was calculated keeping a confidence interval as 95%. Employees who had extra salt intake were 23.81 times more prone for developing hypertension. Those with high stress were 11.14 times more prone for developing hypertension. Employees with higher level of stress were found to be having higher prevalence of hypertension which was highly significant. Those who consumed alcohol were 3.1 times more at risk of developing hypertension (Table 3).

DISCUSSION

Though there are various studies conducted among bank employees in foreign countries, there are not many studies conducted among bank employees in India. Those studies revealed a higher prevalence of hypertension among bank employees compared to general population. In our study we assessed the prevalence of hypertension and its associated risk factors among bank employees and found that prevalence of hypertension is lower compared with other studies conducted among bank employees.

In a systematic review, India have shown the prevalence of HTN to be 25% in urban and 10% in rural people.[1] However, according to the WHO 2008 estimates, the prevalence of raised BP in Indians was 32.5% (33.2% in men and 31.7% in women).[6]

In our study, the prevalence of hypertension among bank employees was found to be 19.5%. A study done in Puducherry in 2014 found that prevalence of hypertension and pre-hypertension was 44.3% and 41.1%, respectively.[3] A study among the bank employees of Surat city of Gujarat has found the prevalence of hypertension as high as 69.5 %. In a cross-sectional study conducted in Karnataka found that the prevalence of hypertension was 39.3%.

In a study conducted among bank employees of Marathwada region, Maharashtra, 32.4% of the study participants were found to be hypertensive. In a cross-sectional study conducted in Bagalkot, the prevalence of hypertension among bank employees was found to be 49.4%.

In our study there was a significant association between extra salt intake, smoking, alcohol intake and physical activity with hypertension. A study among the bank employees of Surat city of Gujarat has found significant association with age more than 45 years, alcohol intake, waist hip ratio, BMI and coexistence of diabetes.[7] In the study conducted among bank employees in Surat city it was found that Increasing age, family history of hypertension, body mass index ≥25 kg/m^2 and abnormal waist-hip ratio were significantly more frequent among the hypertensive than normotensive population.[8] Increasing age, gender, marital status, designation, work nature, extra salt intake, physical activity, smoking and alcohol consumption, BMI, and stress were found to be significant risk factors of hypertension in the study conducted in Bagalkot.[9]

In a study of socio-demographic factors affecting prevalence of hypertension among bank employees of Surat city, prevalence was found to be 30.4% and 34.5% were found to be in prehypertension stage. There was high prevalence with increase in age. There was also significant prevalence with cadre of employment and smoking habit.[10] There was a significant association between higher age group and ascending cadre of employment.[5]

Compared to the other studies conducted among bank employees in other parts, prevalence of hypertension was found to be low in the town of Chidambaram. However it was found to be on par with the prevalence of hypertension in urban areas of India.[1] In our present study lifestyle factors like obesity, smoking, alcohol, mental stress, physical activity were found to be statistically significant.

Detailed diet history, sitting time and posture, screen time with use of computers were not assessed due to feasibility of constraints. However, this study has given a valuable information regarding prevalence of hypertension and its associated risk factors in this group which is predisposed to occupational stress. This information can be used for implementation of appropriate interventional measures such as lifestyle modifications, in preventing and controlling hypertension.

Limitations

Our study was conducted in southern part of India and hence cannot be generalised to other parts. Sitting time and screen usage time could not be ascertained due to practical difficulties. Since the data was collected by self-answerable questionnaire, reporting bias could not be ruled out

CONCLUSION

Bank employees form a significant group of population who fall in the category at risk for occupational hazard. With their stressful work nature and sedentary lifestyle, they are at more risk of developing non communicable diseases than the general population. In our present study, the prevalence of hypertension among bank employees is similar to prevalence of hypertension in urban area in India. Our study also found that periodic health check-up, lifestyle modifications, healthy eating patterns and health education regarding harmful practices will aid in betterment of the employees.

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