Original Article

A study on effect of type of work and life style risk factors on prevalence of hypertension among gazetted officers of Maharashtra

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Abstract

Introduction: It is seen that majority of the hypertensive patients remain asymptomatic, only few of them develop some symptoms like headache, giddiness and irritability. That's why hypertension is known as silent killer. The problem which lies with the hypertension is that it cannot be cured completely. And its management requires lifelong medication with some life-style modifications. **Objective:** To study the prevalence of hypertension and profile of it among Government Gazetted officers. **Materials and Methods:** The present analytical cross sectional study was carried among Gazetted officers working in various departments of state Government for a period of one year in Solapur district of Maharashtra. The minimum sample size estimated for the present study was 354, based on the anticipated prevalence of hypertension in Gazetted officers as 18% with confidence level of 95% and absolute precision of 4%. In all, 355 Gazetted Government officers of class I and class II cadre were studied. Blood pressure was measured with a standard mercury sphygmomanometer. Chi-square test was applied wherever necessary. Data was analyzed using window excel and epi_info 6. **Results**: The prevalence of hypertension among Gazetted officers found to be 20.28%. In present study significant positive association was found between age and prevalence of hypertension. The prevalence of hypertension was found significantly higher in men than women. The association between education and hypertension found to be statistically significant ($P<0.001$) while there was no association between Socioeconomic status and hypertension. ($P>0.05$) Prevalence of hypertension was noted higher at every level of BMI. Prevalence of hypertension was significantly higher in smokers, alcoholic and had significant association. ($P<0.05$) **Conclusion:** Hence, we conclude that due to high prevalence of hypertension in white collar job people should be screened regularly.

Keywords: Lifestyle, Hypertension, Gazetted officers.

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INTRODUCTION

The cause of hypertension is often unknown and high blood pressure of unknown origin is usually referred as essential or primary hypertension. Most investigations consider high blood pressure to be a quantitative deviation from the norm and this view has fostered the epidemiological approach to hypertension, in which the distribution, determinants and development of blood pressure are investigated its approach has lead to the notion that essential hypertension in adults is the result of a process that starts early in life.[1] Blood pressure levels are evidently determined in part by genetic factors, but environmental influences operate as well. They are especially apparent when people from one society previously free of hypertension manifest it upon migration to a new environment. It follows that, if it were possible to identify and modify the environmental influences causing progressively increasing blood pressure, essential hypertension could be prevented.[2] It is seen that majority of the hypertensive patients remain

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asymptomatic, only few of them develop some symptoms like headache, giddiness and irritability. That's why hypertension is known as silent killer. When symptomatic, its diagnosis is easy but in asymptomatic cases search of hypertensive is possible only through routine health checkups, active surveys or screening programmes. If majority of the hypertensive are asymptomatic, it is a matter of concern, because such patients are unaware of the disease and are at equal risk for developing complications. Furthermore, if hypertension is not controlled or prevented chances of heart attack, heart failure, stroke and kidney diseases increases. The relationship between blood pressure and risk of CVD events is continuous, consistent, and independent of other risk factors.[3,4] According to Indian studies it is noted that 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.[5] The problem which lies with the hypertension is that it cannot be cured completely. And its management requires lifelong medication with some life-style modifications. The only way to curb the problem of hypertension is by its prevention. Decreased physical activities coupled with increased mental tension are important contributors of hypertension. They are commonly seen amongst employees of the profession where working is mostly sedentary. Therefore, higher prevalence of hypertension was reported from employees of such profession. The government employees fit in this picture and that's why present study was carried out among Gazetted government employees.

AIM AND OBJECTIVE

- To study the prevalence of hypertension and profile of it among Government Gazetted officers.

MATERIALS AND METHODS

The present analytical cross sectional study was conducted in Solapur district of Maharashtra. The study was carried among Gazetted officers all over the district working in various departments of state Government for a period of one year. The minimum sample size estimated for the present study was 354, based on the anticipated prevalence of hypertension in Gazetted officers as 18% with confidence level of 95% and absolute precision of 4%. In all, 355 Gazetted Government officers of class I and class II cadre were studied. The semi-structured questionnaire schedule specially designed for the study was pretested and modified during the pilot study was used. The questionnaire was designed in English containing the demographic profile, working pattern and risk factors among respondents. The socioeconomic status (SES) measured by modified B.G. Prasad classification. Blood pressure was measured with a standard mercury sphygmomanometer and 12.5 cm wide cuff while participant seated comfortably in the chair in his or her office cabin. Three readings of blood pressure were taken at the interval of 5 minutes, and average of these three readings was considered as a final reading. Hypertension was defined on the basis of 7th report of Joint National Committee[6] of Hypertension which provides a classification of Blood pressure for adults aged 18 years or older. They defined Hypertension as person having Systolic blood pressure ≥140 mmHg or Diastolic blood pressure ≥100 mmHg. Chi-square test was applied wherever necessary. Data was analyzed using window excel and epi_info 6.

RESULTS

Table 1: Distribution of respondents according to demographic characteristics and hypertension:

Characteristics		Hypertension		Total (n=355) (%)	P value
		Present (n=72) (%)	Absent (n=283) (%)		
Age group (years)	21-30	01 (02.22)	44 (97.78)	45 (12.68)	X2=24.67; df=3; P<0.001*
	31-40	11 (11.58)	84 (88.42)	95 (26.76)	
	41-50	33 (24.08)	104 (75.92)	137 (38.59)	
	51-60	27 (34.61)	51 (65.39)	78 (21.97)	
Sex	Male	70 (22.00)	248 (78.00)	318 (89.58)	X2=4.67; df=1; P=0.03*
	Female	02 (05.00)	35 (95.00)	37 (10.42)	
Education	Undergraduate	13 (36.00)	23 (64.00)	36 (10.14)	X2=6.21; df=2; P-0.04*
	Graduate	36 (18.60)	158 (81.40)	194 (54.65)	
	Post graduate	23 (18.40)	102 (81.60)	125 (35.21)	
Socioeconomic Status	I andII	28 (17.95)	128 (82.05)	156 (43.94)	X2=0.94; df=1; P=0.33
	III, IV and V	44 (22.11)	155 (77.89)	199 (56.06)	

(P<0.05 Statistically Significant)

The majority of respondents with hypertension were from age group 51-60 years (34.61%). The association between age and hypertension found to be statistically significant. (P<0.001). In the study, among 355 respondents 318 (89.58%) were males and 37 (10.42%) were females. Out of these males 22% and only 5% females were hypertensive. The association between sex and hypertension found to be statistically significant. (P<0.001). The majority of respondents with hypertension were Undergraduate (36%). The association between education and hypertension found to be statistically significant (P<0.001) while there was no association between Socioeconomic status and hypertension. (P>0.05).

Table 2: Distribution of respondents according to working characteristics and hypertension

Characteristics		Hypertension		Total (n=355) (%)	P value
		Present (n=72) (%)	Absent (n=283) (%)		
Cadre	I	27 (23.00)	90 (77.00)	117 (32.95)	X2=0.35; df=1; P=0.43
	II	45 (18.90)	193 (81.10)	238 (67.05)	
Years of service	0-5	01 (01.81)	54 (98.19)	55 (15.49)	X2=32.35; df=4; P<0.001*
	6-10	06 (09.37)	58 (90.63)	64 (18.03)	
	11-20	25 (20.83)	95 (79.16)	120 (33.80)	
	21-30	24 (31.17)	53 (68.83)	77 (21.69)	
	31-40	16 (41.02)	23 (58.98)	39 (10.99)	
Type of work	Technical	17 (17.71)	79 (82.29)	96 (27.04)	X2=2.14; df=2; P=0.34
	Administrative	14 (16.67)	70 (83.33)	84 (23.66)	
	Both	41 (23.43)	134 (76.57)	175 (49.30)	

(P<0.05 Statistically Significant)

In the study, among 117 Class I workers 23% were hypertensive while in Class II workers 18.90% were hypertensive. The association between Cadre and hypertension had no statistically significant (P>0.05). The hypertensive respondents were majority in service more than 30 years (41.02%). There was a statistically significant association between years of service done and hypertension. (P<0.05) The type of work had no statistically significant association with hypertension. (P>0.05) (Table 2)

Table 3: Association of lifestyle factors and hypertension among respondents

Factors		Hypertension		Total (n=355) (%)	P value
		Present (n=72) (%)	Absent (n=283) (%)		
BMI (Obesity grade)	<25 (Normal)	24 (13.71)	151 (82.29)	175 (49.29)	X2=13.74; df=3; P<0.05*
	25-30 (I)	39 (25.00)	117 (75.00)	156 (43.94)	
	30-40 (II)	08 (34.78)	15 (65.22)	23 (06.49)	
	>40 (III)	01 (100)	00 (00)	01 (00.28)	
Alcohol consumption	Present	36 (27.06)	97 (72.94)	133 (37.46)	X2=6.07; df=1; P<0.05*
	Absent	36 (16.20)	186 (83.80)	222 (62.54)	
Smoking habit	Present	28 (37.84)	46 (62.16)	74 (20.85)	X2=17.82; df=1; P<0.001*
	Absent	44 (15.66)	237 (84.34)	181 (79.15)	
Exercise	Present	30 (02.05)	106 (77.95)	136 (38.31)	X2=0.43; df=1; P>0.05
	Absent	42 (19.17)	177 (80.83)	219 (61.69)	
Extra salt intake	Present	21 (16.8)	104 (83.20)	125 (35.21)	X2=1.45; df=1; P>0.05
	Absent	51 (22.17)	179 (77.83)	230 (64.79)	

(P<0.05 Statistically Significant)

In the study, BMI, alcohol consumption and smoking habit showed statistically significant association with hypertension.(P<0.05). The extra salt intake and lack of exercise found to be not associated significantly with hyper tension. (P>0.05) (Table 3)

DISCUSSION

The present analytical cross sectional study was carried out to study the profile of hypertension in Gazetted officers. The prevalence of hypertension among Gazetted officers of an urban area found to be 20.28%. Among 72 officers, who had hypertension 70 officers been already on hypertensive drugs and only 2 officers diagnosed at time of study. In the study done by Chor D *et al* (1998) among 1183 employees found 18% prevalence of hypertension.[7] In present study significant positive association was found between age and prevalence of hypertension. Prevalence of hypertension increased as age increased, it was highest in more than 50 years of age group. In a study done by Desai and P. Kumar (1994)

amongst 985 employees at KRIBHCO, Hazira, in Surat, they also reported increase in prevalence of hypertension with increasing age.[8] Overall prevalence of hypertension was found significantly higher in men than women. In a recent study done by Mionjr D *et al* (2004) among 810 employees of a University General Hospital in Brazil, it was found that overall prevalence of hypertension was higher (32%) in men than women (22%).[9] The association between education and hypertension found to be statistically significant (P<0.001) while there was no association between Socioeconomic status and hypertension. (P>0.05). In the present study, type of work and Cadre showed no association with hypertension. As there is no strict compartmentalization of work as far as for gazette officers the effect of associated risk factors with work pattern is nullified. But the gazette officers showed association between years of service and hypertension. This may be attributed due to increase in age. BMI is widely used in adults to assess overweight and obesity, which is a known risk factor in hypertension and other life style related diseases. Prevalence of hypertension was noted higher at every level of BMI. In a recent study carried out by Mion jr D *et al* (2004) prevalence of hypertension was found higher (P <0.05) whose BMI was in the range of overweight and obesity levels.[9] The nicotine content in cigarette smoke acutely raises blood pressure, even in addicted smokers. No tolerance develops, so the blood pressure remains high as long as the individual continues to smoke.[10] This was supported by the present study that prevalence of hypertension was significantly higher in smokers and had significant association. In a similar study done by Gupta R *et al* (1995); among 2122 subjects from the urban population of Jaipur had found higher prevalence of hypertension among smokers.[5] Amongst alcoholics risk of hypertension was higher in past, heavy and regular alcoholics. Yoshita *et al* (2005) measured blood pressure among 3900 men aged 20-59 years annually for 7 years. The baseline systolic BP was higher in drinkers consuming 200-299 and >= 300 g alcohol/week, respectively, than in non-drinkers (P < 0.001).[11] In the present study there was no significant association between exercise and hypertension. But role of healthy habits like yoga, jogging, walking and swimming etc. is as a stress relieving factor in improving blood circulation and reduce body weight. This knowledge indicates that those who adopt healthy life style and do regular exercise of any kind will naturally have lower risk of hypertension. In a study done by Kokkinos P F *et al* (1995) among African-American men found that people who were physically active and fit may develop less hypertension, and those who are hypertensive may lower their blood pressure by regular isotonic exercise.[12] In the present study there was no significant association between extra salt intake and hypertension. Salt is an important factor that contributes to development of hypertension. Pekka Puska *et al* in their follow up study found that salt intake had direct relation with hypertension.[13]

CONCLUSION

Hence, we conclude that due to high prevalence of hypertension in white collar job people should be screened regularly. Life style affects blood presser which can be seen from this study that's why healthy habits should be promoted among this type of group by different types of interventions. This study may help in identifying the common profile of hypertensive or persons at risk amongst other employee, which may further help in identifying the risk group and planning the group specific IEC interventions.

RECOMMENDATIONS

The goal of reduction in prevalence of hypertension and its complications in Gazetted officers can be achieved only by life style changes and regular check up.

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