



## A CROSS SECTIONAL STUDY OF PREVALENCE OF HYPERTENSION AND ASSOCIATED RISK FACTORS IN CLASS 1 TO CLASS 3 EMPLOYEES.

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### ABSTRACT

A cross sectional study was conducted with objective to find the prevalence of hypertension and associated risk factors among class 1 to 3 employees in M.P shah medical college, Jamnagar.

**Materials and Methods:** Conveniently taken sample of 279 classes 1, 2 and 3 employees. Semi structure questionnaire was given which consist of socio demographic and life style pattern. Blood pressure was measured by one mercury sphygmomanometer at the time of visit. Statistical analysis was done with Microsoft excel 2007 and appropriate statistical test.

**Results:** The prevalence of hypertension among class 1 to 3 employees found to be 19.1%. Statistically significant association found for hypertension with age ( $p=0.001$ ), tobacco consumption ( $p=0.001$ ), salty food items intake ( $p<0.05$ ). Highly statistical significant association found for hypertension with giving importance to lowering salt in food and physical exercise. ( $<0.0001$ ).

**Conclusion:** Age, tobacco addiction, lack of physical exercise and salt intake were found to be major predictors for hypertension in study population.

**KEYWORDS :** Hypertension, physical activity, high salt intake, addiction

### INTRODUCTION

Hypertension is a major global public health challenge with nearly 1 billion individual affected worldwide and projected to reach 1.56 billion by 2025<sup>(1)</sup>. Even diabetes mellitus and hypertension (ODH) are major risk factors for cardiovascular diseases, causing nearly 18 million deaths worldwide.<sup>(2)</sup> Hypertension remains the premiere vascular risk factor for chronic kidney disease and cardiovascular diseases including stroke, myocardial infarction and heart failure which are among the leading causes of global morbidity and mortality. Recent estimates have depicted a clear decline in prevalence rates of uncontrolled hypertension in high-income countries over the past 4 decades. In contrast, there has been a significant rise in the burden of uncontrolled hypertension in Lower-Middle Income Countries (LMICs) in sub-Saharan Africa, south Asia, and central and Eastern Europe. The benefits of blood pressure lowering treatment for prevention of cardiovascular disease are well established. A meta-analysis has shown that a 10 mm Hg reduction in systolic blood pressure reduced the risk of major cardiovascular disease events by 20%, coronary heart disease by 17%, stroke by 27%, heart failure by 28%, and all-cause mortality by 13%.<sup>(1)</sup> Recent studies demonstrate that there is a linear correlation between blood pressure and cardiovascular events. Hypertension is also a major cause of disability, causing an estimated 13% of all deaths in the world.<sup>(3)</sup>

### OBJECTIVE:

The objective of this study is

1. To find out the prevalence and
2. To find associated risk factors with hypertension among class 1 to class 3 employees

### METHODOLOGY

A cross sectional study done at Shree M.P. Shah medical college,

among 279 employees of class 1 to 3 were selected of which 204 responded. **A study period:** Between 1<sup>st</sup> November to 15<sup>th</sup> December 2018 in with the help of pretested semi structured questionnaire (WHO's NCD tool for hypertension). Hypertension criteria was given according to JNC-7 (Systolic BP >140mmHg, Diastolic BP >90mmHg) **Sampling technique:** Purposive sampling was done. **Ethical approval:** Was taken from appropriate institution. Data were analysed in Microsoft excel 2007. **Inclusion criteria:** All employees of class 1 to class 3. **Exclusion criteria:** those who were not willing to participate were excluded.

### RESULTS

Table-1 showing socio-demographic factors of class 1 to class 3 in M.P. Shah medical college, Jamnagar. In which more than 40 years age group consist of (40.19%) while less than 40 years age group consist of (59.80%). Among total employees Male(72.05%) and females(27.94%). Class 1(57.8%) employees participated while low participation from class 2(26%) and class 3(16.1%). Half of the employees were living in nuclear family, 37.7% employees in joint family while still 10.7% employees living alone.

Variable	n	%
<b>Age</b>		
<40 yrs	82	40.19%
>40 yrs	122	59.80%
<b>Gender</b>		
Male	147	72.05%
Female	57	27.94%
<b>Economical status</b>		
Class 1	118	57.8%
Class 2	53	25.98%
Class 3	33	16.17%

Type of living		
Nuclear family	105	51.47%
Joint family	77	37.74%
Alone	22	10.78%

Table-2 showing association between hypertension and its risk factors. Life style question patterns were according to NCD tool. (WHO's Non communicable disease questioner tool). Among Employees of less than 40 years of age group 4.90% had hypertension while employees of more than 40 years of age group had 14.21% had hypertension. It was statistical significant(**p<0.05**). 13.72% male had hypertension while 5.39% female had hypertension which was not statistically significant(**p>0.05**). Among all tobacco addicted 4.41% employees had hypertension which was highly statistically significant(**p<0.00001**) We found that 5.88% employees were used to add salt frequently during eating, and 14.21% employees were used to add salt sometimes during eating. Which is statistically significant (**p-0.0002**). In those who had habit of always/often eating salty items like chips, papad, popcorns etc, (7.35%) had hypertension (**p<0.05**). 17.15% employees were used to eat salty items in their routine. Majority employees (86.76%) wanting just the right amount of salt in their food rather than low salt. (**p-<0.00001**) Only 10.78% employees were giving no importance for lowering salt in their food while 49.01% employees were giving very importance to lowering salt in their diet. (**p-0.0002**). Almost all (92.64%) employees had knowledge about high salt consumption could cause the health problem. (**p<0.00001**). 56.85% employees were used to do the moderate exercise in their routine life while 43.15% employees were used to do the vigorous exercise in their routine life. (**p-0.0004**)

Table 2: association between hypertension and its risk fact.(n=204)

Variable	Hypertension		Group difference
	+nt(%)	-nt(%)	
<b>Age</b>			
<40yrs	10(4.90)	72(35.29)	X <sup>2</sup> -4.24
>40yrs	29 (14.22)	93(45.59)	<b>p-0.039</b>
<b>Gender</b>			
Male	28(13.73)	119(58.34)	X <sup>2</sup> -0.001
Female	11(5.39)	46(22.54)	p-0.96
<b>Tobacco addiction</b>			
Yes	09(4.41)	05(2.45)	X <sup>2</sup> -19.8
No	30(14.70)	160(78.44)	<b>p-&lt;0.00001</b>
<b>Type of living</b>			
Nuclear	26(12.74)	78(38.23)	X <sup>2</sup> -4.01
Joint family	10 (4.92)	67(32.84)	p-0.13
Alone	05 (2.45)	18(8.82)	
<b>Fq of adding salt</b>			
Often/sometimes	13 (6.37)	28(13.72)	X <sup>2</sup> -16.5
Rarely	05 (2.47)	60(29.41)	<b>p-0.0002</b>
Never	08 (3.92)	90(44.11)	
<b>Fq of eating salty item</b>			
Always/often	15 (7.35%)	20 (9.80%)	X <sup>2</sup> -12.95
Sometimes	20 (9.80)	86(42.17)	p<0.05
Rarely/never	08 (3.92)	55(26.96)	
<b>Amount of consumption of salt</b>			
Too much	07(3.43)	05 (2.45)	X <sup>2</sup> -38.9
Just the right amount	22 (10.78)	155(75.98)	<b>p-&lt;0.00001</b>
Too little/far too little	10 (4.91)	05(2.45)	
<b>Giving impotence to lowering salt</b>			
Very importance	31(15.19)	69(33.82)	X <sup>2</sup> -17.9
Somewhat importance/not at all importance	08(3.94)	96(47.05)	<b>p-0.0002</b>

thinking too much salt in the diet could cause health problem			
Yes	13 (6.37)	176 (86.27)	X <sup>2</sup> -24.87
No	07 (3.43)	08 (3.93)	<b>P&lt;0.00001</b>
<b>Physical exercise</b>			
Moderate	32 (15.68)	84 (41.17)	X <sup>2</sup> -12.42
Vigorous	07(3.43)	81 (39.72)	<b>p-0.0004</b>

**DISCUSSION**

Up till now no any study regarding hypertension done in medical college, we have done it with focusing on major risk factors of hypertension. Despite of knowledge regarding hazards of high salt intake, prevalence of hypertension we found (19.1%). We also found that out of total 39 hypertensive, 4 employees were first time come to know that they had hypertension at the time of study.

There was significant association found for frequency of adding salt, frequency of eating salty items, Amount of consumption of salt and also knowledge about lowering salt with hypertension. Age, tobacco addiction and physical exercise like factors showed significant association with hypertension. There was also highly significant association found between hypertension and thinking that too much salt in the diet could cause health problem.

Magnitude and risk factors for hypertension among public servants in Tigray, The overall prevalence of hypertension was 16%. Being male and > 50 years was determinants for hypertension.<sup>(4)</sup> A study done in government employees in Nepal, the prevalence of NCDs was found 22.3%. The prevalence of use of any type of tobacco products was 18.5%.<sup>(3)</sup>

Study done for the health of working nurses done by Gallagher: Hypertension prevalence increased with age, peaking at the oldest ages .Many nurses treated for hypertension had poor blood pressure control, were most often aged 45-54 years and were smokers.<sup>(5)</sup>

A study done by Shen for Prevalence, awareness, treatment, and control of hypertension among Chinese working population, the age-standardized prevalence of hypertension was 23.3%.<sup>(6)</sup>

**CONCLUSION**

In present study major risk factor associated with hypertension are age, tobacco addiction, lack of physical exercise and extra salt intake. Even though study subjects are of medical college, prevalence of hypertension is high and showing association with modifiable risk factors. So it is good example of study that we are still lacking in behaviour change in salt restricted diet. So we should spread awareness among hypertensive as well as normotensive persons by salt restricted diet in them, avoiding tobacco addiction and importance in physical exercise so that we can reduce premature mortality from CVDs.

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