

# A Cross Sectional Study on Risk Factors, Smoking and Hypertension of Cardiovascular Diseases among Adult Population in Urban Slum Area, Bhubaneswar, Odisha

Sarthak Satapathy<sup>1</sup>, Archana Patnaik<sup>2</sup>

<sup>1</sup>Postgraduate Student, <sup>2</sup>Professor and Head, Department of Community Medicine, Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha

## Abstract

**Introduction:** India is experiencing an epidemiological transition from communicable diseases to non communicable with cardiovascular diseases as a leading cause of mortality and morbidity. It has been estimated that by 2020, Cardiovascular disease(CVD) will be the largest cause of disability and death in India, with 2.6 million Indians predicted to die due to CVD.

**Objectives:** 1. To study the prevalence of smoking and hypertension among the adult population of field practice area of Hi-tech Medical College. 2.To find out association between these risk factors with the socio-demographic factors of the study populations.

**Methodology:** A cross sectional study was carried out for 4 months from August 2015 to November 2015. A pretested schedule was prepared containing the parameters required to identify the risk factors smoking, hypertension of CVD in the urban field practice area of Hi-tech Medical college, Bhubaneswar.

**Results:** Out of total study participants (681), there were 332 females and 349 males. Prevalence of smoking was found to be 17.5% and that of hypertension was 16.4% in my study population. Almost one third of the patients had positive family history for hypertension (35%). Statistically significant (P=0.001) association was found between hypertension with different age groups (hypertension is more common in the age group of 40-50 years in males and 50-60 years in female).

**Conclusion:** Since high prevalence of cardiovascular risk factors was found in the adult population, continuous health awareness activities and health check-up must be required in the study area.

**Keywords:** *smoking, hypertension and cardiovascular disease*

## Introduction

With the turn of the century, cardiovascular diseases (CVDs) have become the leading cause of mortality in

India<sup>(1)</sup>. In comparison with the people of European ancestry, CVD affects Indians at least a decade earlier and in their most productive midlife years<sup>(2)(3)</sup>. For example, in Western populations only 23% of CVD deaths occur before the age of 70 years; in India, this number is 52%<sup>(4)</sup>. In contrast to developed countries, where mortality from CHD is rapidly declining, it is increasing in developing countries<sup>(5)</sup>. This increase is driven by industrialization, urbanization and related lifestyle changes and is called epidemiological transition<sup>(6)</sup>. Cardiovascular Disease (CVD) is a group of disorders of the heart and blood vessels that affects the cardiovascular system. CVD includes coronary heart disease (CHD), stroke, aortic

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### Corresponding Author:

**Dr. Archana Patnaik**

Professor and Head, Department of Community Medicine, Hi-Tech Medical College, Bhubaneswar, Odisha

e-mail: archanapatnaik1@gmail.com

Mobile: 9437123156

aneurysm and dissection, peripheral arterial disease, rheumatic heart disease, congenital heart disease, deep venous thrombosis and pulmonary embolism and other CVDs (7). By next few years, 2.6 million Indians are predicted to die due to CHD, which constitute 54.1% of all CVD deaths (8). It has also been predicted that India will be the heart disease capital in the world by in near future(9).

**Methodology**

The study was conducted in the urban field practice area of Hi-Tech Medical college and hospital, Bhubaneswar . The total population of ward number - 53 is 15952, out of which the adult population from 30 to 60 years is 5391 . Adult population between 30-60 years were included in our study who were permanent resident of the study area. As per study of Gupta et al(11), the overall prevalence of hypertension is 37% and depending upon that our sample size was calculated as 681 (n = 4PQ/L<sup>2</sup>)

After approval of the institutional ethics committee and consent of the participants, the sample was collected by systematic random sampling method till sample size was reached. The study subjects were then interviewed through the pretested schedule and information regarding demographic profile, risk factors associated and health seeking behavior were collected . Data obtained were tabulated in Microsoft excel sheet. Statistical analysis was done using SPSS (version 20.0).

**Results**

A total of 681 study participants were included in the final analysis out of which 332 were females and 349 were males. Table 1 shows age wise distribution of study participants of which 31% were in the age group 30-40

years, 32% in 40 to 50 years and 37% in age group 50-60 years age group . It shows almost one third of the patients had positive family history for hypertension (35%) (Table 2). From the table number -3 it is found that there is statistically significant (P=0.001)association between hypertension with different age group(hypertension is more common in the age group of 40-50 years in males and 50-60 years in female).prevalence of hypertension was found to be 16.4% in the study population. Almost 82.5% of study population were found to be non-smoker and 17.5% were smokers (table-4). Table 5 shows history of smoking with different socio -demographic factors. Sex is significantly associated with smoking history (P value = 0.001). i.e. sex has direct impact to the Cardiovascular Diseases. And all others are found not statistically significant i.e. no association between the age and marital status with the current smoker of cardiovascular diseases.

**Table 1: Age wise distribution of the study participants**

Age Group (Years)	Number	Percentages (%)
30-40	212	31.13
40-50	216	31.71
50-60	253	37.15

**Table 2: Family History of Hypertension**

Family History	Number	Percentages (%)
No family history	442	65
Father	74	10.80
Mother	69	10.11
Both parent	96	14.09
<b>Total</b>	<b>681</b>	<b>100</b>

**Table 3: Association between Age group and hypertension in the study population**

Age (Years)	Hypertension Male Female		No Hypertension	Chi Square	d.f.	P value
30-40	12	6	194	21.34	2	0.001(S)
40-50	49	5	162			
50-60	18	22	213			

**Table 4: Smoking history among the study population.**

Smoking	Number	Percentages (%)
Present	119	17.5
Absent	562	82.5
Total	681	100

**Table 5: Association of smoking history with socio-demographic factors.**

Demographic factors	Smoking No Yes		Chi Square	d.f.	P value
<b>Sex</b>					
Male	230	119	133.280	1	0.001 (S)
Female	332	0			
<b>Age</b>					
30-40 years	188	24	17.01	2	0.001 (S)
40- 50 years	160	56			
50-60 years	214	39			
<b>Marital Status</b>					
Married	516	114	1.7065	2	0.426(NS)
Unmarried	37	5			
Widowed	9	0			

## Discussion

This study found high prevalence of CVD risk factors among the study population. They were disproportionately distributed by age, sex and marital status.. This was the first community-based study conducted to estimate the prevalence of CVD risk factors in the study area. CH. In our study, one third of the patients had positive family history for hypertension (37.1%).17.5% of the study population were smokers. Singh et al performed a population survey of CHD and risk factors in a rural and urban setting of Moradabad in 1997. A sample of 3575 subjects between ages 25 and 64 was enrolled in the survey. Overall prevalence of CHD was 9% and 3.3% in urban and rural populations respectively<sup>(10)</sup>.

Gupta et al conducted a cross-sectional survey of 1123 subjects in an urban population of Jaipur in 2002 to evaluate the prevalence of coronary artery disease and risk factors<sup>(11)</sup>. The overall prevalence of CAD was 6.2% in men and 10.8% in women. The highest prevalence of risk factors included hypertension (36.9%), tobacco use (23.9%), obesity (63%) and hypercholesterolemia (39.1%).In a recent large study from Kerala, Thankappan et al demonstrated a high prevalence of risk factors comparable to the Unites States<sup>(5)</sup>. A sample of 7449

men and women from rural, urban and slum background were included in the survey. The study underlined the alarmingly low level of awareness, treatment and control of hypertension and smoking in the adult population. Only a third of the individuals were aware of their hypertension and only a quarter were treated; of the treated, one-third had adequate control.

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**Source of Funding:** Nil

**Limitation:** Since the study conducted was limited to one slum area,more slum areas must be studied to generalize the result.

## Conclusion and Recommendation

We found a higher prevalence of different risk factors of cardiovascular diseases among the study population like family history of hypertension, hypertension and smoking in adult population. Strengthening of the current programme for non-communicable disease i.e. National program for Cancer, diabetes mellitus, cardiovascular

disease and Stroke (NPCDCS) should focus especially on the screening aspect of the non-communicable disease. This will help in controlling cardio-vascular disease through promoting on early screening, diagnosis and initiating of effective treatment which will result in preventing CVD associated complication and disabilities.

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