

# A Cross- Sectional Study of Risk Factors of Coronary Heart Disease Among Bank Employees of Bijapur City

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## ABSTRACT

Bank employees, with their resources and infrastructure, are ideal for increasing awareness and initiating preventive activities for the control of coronary heart disease (CHD). However, there are no reliable estimates of CHD risk factor burden, or of its awareness and treatment status among bank employees. The study intends to evaluate the prevalence of risk factors and knowledge of CHD among bank employees of Bijapur city.

**Objectives:** To estimate the prevalence of risk factors of CHD and to assess the knowledge regarding risk factors of CHD among bank employees.

**Methodology:** A cross-sectional study was conducted for a period of three months. The study population consisted of bank employees working in various banks in Bijapur City.

**Keywords:** Coronary Heart Disease, Risk factors, Employees, Knowledge.

**Conflict of Interest:** None

## INTRODUCTION

Coronary heart disease is the largest killer disease in developed countries and is rapidly assuming a similar role in developing countries. The WHO has drawn attention to the fact that coronary heart disease (CHD) is our modern epidemic, not an unavoidable attribute of aging. It is estimated that if incidence of CHD is brought to zero it would increase the life expectancy by 3 to 9%<sup>1</sup>. The estimated prevalence of CHD is around 3-4% in rural areas and 8-11% in urban areas among adults older than 20 years, representing a twofold rise in rural areas and a six-fold rise in urban areas over the past four decades. About 29.8 million people were estimated to have CHD.

India in 2003; 14.1 million in urban areas and 15.7 million in rural areas<sup>3</sup>. It is expected to double in the next two decades, making it the single largest cause of death by the year 2020<sup>4</sup>. While the exact etiology of this predisposition to CHD in Indians is still debated, From a public health point of view, it is clear that the rapid transition in diet and lifestyles with urbanization has contributed to increasing levels of potentially reversible CHD risk factors<sup>2</sup>.

Data from several cross-sectional studies confirm the high prevalence of risk factors such as smoking, type 2 diabetes mellitus, high blood pressure, dyslipidemia and obesity in urban areas. Despite voluminous publications and undivided focus of scientific world on coronary heart disease, it remains the most important cause of morbidity and mortality world over.

The past decades have seen the medical fraternity taking giant leap in understanding the pathophysiology as well as treatment aspects of this disease. In comparison, the preventive and social aspects of the disease have not received much attention in preventing and treating the CHD. It largely remains paper bound and is not actually addressed at a clinical level. It is all the more a pity when we are aware that simple cost effective modifications in the lifestyle can substantially help and achieve this goal. So far, we have failed to curb this rapidly growing pandemic.

The time has come for us to reevaluate our approach to fight this problem. The need of the hour is to reemphasize the vital role of total lifestyle modification of the people at large. Bankers with their sedentary

lifestyles, relatively better socioeconomic condition and highly stressful job are subject to the risk of coronary heart disease.

We decided to select a cohort of bank employees, because they represent the subset of population at risk to develop coronary heart disease. This study was designed to evaluate the risk factors predisposing bank employees of Bijapur city to coronary heart disease.

### OBJECTIVES OF THE STUDY

- 1) To estimate the prevalence of risk factors of coronary heart disease among bank employees of Bijapur city.
- 2) To assess the knowledge regarding risk factors of coronary heart disease among bank employees.

### MATERIALS AND METHODS

- 1) **Source of Data:** The study population consisted of bank employees working in various banks in Bijapur city. There were 804 bank employees working in Bijapur. Since the prevalence of various risk factors in bank employees is not known, so an estimated prevalence of 50% with 95% confidence interval and allowable error of 15%, a sample size of 170 was arrived.
- 2) **Sampling Procedure:** All the bank employees were arranged in alphabetic order and were numbered. The required numbers of bank employees were selected using 4 digit random number table
- 3) **Study Period:** This was a cross-sectional study conducted during a Period of six months, (January 2011 to June 2011)
- 4) **Method of Collection of Data:** The study was conducted at the main branches of nationalized banks of Bijapur city. A list of bank staff was obtained from their respective banks with their age and address. The selected bank employees were interviewed, examined and investigated as per pre-designed and pre-tested performs. Relevant investigations were carried after informed consent.

- 5) **Statistical Analysis;** Rates and Ratios, Percentages and Chi-square test were used for statistical significance

### RESULTS

Prevalence of Risk factors of coronary heart disease among bank employees

**Smoking-** was considered for only males because there were no female smokers in the present study. Among the study population 25.9% were current smokers.

**Smokeless tobacco** -9% were using smokeless tobacco.

**Alcohol** was considered for only males 20% of bank employees of the study were drinking alcohol. Majority of employees were consuming alcohol for more than 8 years

**Extra fat intake :** 8% of males were taking extra fat than 1% of females. Most of them were using sunflower oil.

**Physical activity:** 44% of employees were sedentary and 56% were physically active

**Hypertension ;** Out of 170 study population, the prevalence among males was 38% and among females was 10%. This difference was statistically significant.

**Diabetes mellitus :** the prevalence of diabetes in this study was 21%, the prevalence among males was 24% and among females was 14%. This difference was statistically not significant

The prevalence of overweight (BMI 25-29.9 kg/m<sup>2</sup>) in the present study was 30% and that of obesity (BMI e" 30kg/m<sup>2</sup>) was found to be 2.7%. There was no difference of overweight among males and females.

The prevalence of truncal obesity was 26%.

The prevalence of dyslipidemia is summarized in table no .1

**Table 1. Prevalence of Dyslipidemia**

Risk factors	Men(n=128)	Women (n=42)	Total (n=170)	Z – value	P- value
Borderline high cholesterol (200-239 mg/dl)	29(23%)	9(22%)	39(23%)		
High cholesterol (e"240 mg/dl)	8(6%)	4(8%)	11(6.3%)		
Total(e"200mg/dl)	37(29%)	13(31%)	50(29.3%)	0.25	0.803
Borderline high LDL cholesterol (130-159mg/dl)	21(16%)	5(12.5%)	26(15.3%)		
High LDL cholesterol (e"160mg/dl)	05(4%)	2(4.2%)	7(4%)		
Total (e"130mg/dl)	26(20%)	7(17%)	33(19.3%)	0.54	0.590
Low HDL cholesterol (d"40mg/dl)	24(19%)	5(12.5%)	30(17.7%)	1.13	0.260
Borderline high triglyceride (150-199 mg/dl)	28(29%)	7(16.7%)	36(21%)		
High triglycerides (200-499mg/dl)	22(17%)	7(16.6%)	29.(17%)		
Very high triglycerides (e"500 mg/dl)	1(1%)	-	1(0.67%)		
Total (e"150 mg/dl)	51(40%)	14(33.33%)	66(39%)	0.77	0.442

**Table 2. Prevalence of Risk factors of coronary Heart diseases among bank employees.**

Risk factor	Male%	Female %	Total%
Smoking Tobacco	33(25.9%)	-	31(18%)
Smokeless Tobacco	3(12%)	1(1%)	15(9%)
Alcohol	33(26%)	-	34(20%)
Extra fat Intake	10(8%)	1(1%)	10(6%)
Extra salt Intake	32(25%)	11(25%)	43(25%)
Physical Inactivity	-	-	74(44%)
Family H/o CHD	17(13%)	5(13%)	22(13%)
Hypertension	49(38%)	4(10%)	53(31%)
Diabetes	31(24%)	6(14%)	36(21%)
Over weight	38(30%)	12(29%)	51(30%)
Central obesity	5(4%)	-	5(3%)
Truncal obesity	28(22%)	16(38%)	44(26%)

In this study, 21% of the subjects had no risk factor ,24% had one risk factor , 19% had two risk factors, 14% had three risk factors and 22% had more than three risk factors. The difference among males and females was statically not significant .

**Table 3. Presences of modifiable risk factors \***

Risk factors	Males (n=128)		Females (n=42)		Total (170)	
	No.	%	No.	%	No.	%
None	24	19	12	28	36	21
One	27	21	13	32	41	24
Two	27	21	6	14	32	19
Three	18	14	5	12	24	14
>three	32	25	6	14	37	22

X2 = 5.235      df= 4      p= 0.264

Sedentary habits, high fat diet, smoking, overweight/ obesity, truncal obesity, hypertension, DM, dyslipiemia.

Our study showed that prevalence of dyslipidemia was strongly associated with decrease in the physical activity ( Table 4)

**Table 4. Prevalence of dyslipidemia in relation to physical activity**

Dyslipidemia	physical activity (n=128)				X <sup>2</sup>	Df	P
	Sedentary (n=123)	Mild (n=39)	Moderate (n=48)	Vigorous (n=41)			
High cholesterol(e"200mg/dl)	32	10	4	2	13.842	3	0.003
High LDL cholesterol(e"130mg/dl)	18	7	5	1	5.608	3	0.132
High triglycerides(e"150mg/dl)	51	18	7	6	20.749	3	0.001
Low HDL cholesterol(d"40mg/dl)	22	9	4	1	9.819	3	0.002

Out of the 170 bank employees, 7 (4.11%) were under the treatment for coronary heart disease.

## Knowledge regarding risk factors of Coronary Heart Disease among bank Employees

The mean of scores for all subjects was 13 with standard deviation 3

The level of Knowledge was classified as

1. Poor Knowledge—— Score less than 12
2. Average Knowledge—— Scores to 12 to 17
3. Good Knowledge—— Score more than 18

In the present study, 28(16%) of the study subjects were having poor knowledge.148(72%) of the subjects were having average knowledge and 22(12%) of the subjects were having good knowledge regarding risk factors of coronary heart disease.

## DISCUSSION

The Findings of our study were comparable with other studies conducted among Urban population of Thiruvanthapuram and Jaipur Cities . It was also comparable with industrial employees of North India

**Table 5. Prevalence of risk factors of coronary heart disease in different studies.**

Risk Factor	Present study	D. Prabhakaran et al. (2005) <sup>5</sup>	Gupta et al. (2002) <sup>6</sup>	Kutty et al. (2000) <sup>7</sup>
Male	76%	100%	49%	37%
Smoking	25.9%	36%	49%	57%
Alcohol Consumption	26%	-	-	34%
Sedentary Habits	44%	-	27%	51.4%
BMI( $e^{25}kg/m^2$ )	30%	35%	27%	-
BMI( $e^{25}kg/m^2$ )	3%	3.3%	-	6.3%
Truncal Obesity	26%	66%	63.8%	-
Hypertension	31%	30%	36%	27%
Diabetes	21%	15%	12.2%	16.3%
High Cholesterol	29%	30.1%	39.1%	32%
Presence of two or more risk factors	43%	47%	-	-

## CONCLUSION

Our study revealed that one fourth of the male subjects were used to smoke and consume alcohol. Nearly half of the subjects were found to have sedentary habits. Extra salt consumption was reported by one fourth of the subjects and few of them were found to consume extra fat. Nearly one third of the subjects were found to be hypertensive and one fifth of them were diabetics . An increasing trend was observed for both these conditions with advancing age. Nearly 25% of

the subjects were found to have truncal obesity, one fourth were overweight, one third of the subjects were found to have high cholesterol which was significantly associated with increasing age, Presence of one or more risk factors in majority of the bank employees were observed Most of the employees were having average knowledge regarding risk factors of CHD , about 72% of the subjects were having poor knowledge . So, there is a need to educate the bank employees regarding risk factors of CHD

## Recommendations

1. Health Education regarding risk factors.
2. Practice healthy life style.
3. Regular check-up for risk factors.
4. Screening of the bank employees once in three months
5. Discussion of study reports with experts during campaign
6. Follow up

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