

# Effects of Modifiable Risk Factors among Admitted Patients with Cardiovascular Diseases

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**Abstract:** There are no enough studies that focus on the relationship between the modifiable risk factors and their effectiveness among cardiovascular diseases patients.

**Objective:** To determine the relationship and the main modifiable risk factors among cardiovascular patients in our community.

**Design:** A Cross – Sectional Descriptive Study.

**Setting:** Ibn – Sina Teaching hospital, Hadhramout Province, Yemen.

**Method:** This study was conducted from 1st January 2014 to the end of December 2014. Two hundred and thirty seven admitted patients with cardiovascular diseases were included in our study. Data was entered and analyzed by Statistical Package for Social Software Program (SPSS) version 14.

**Result:** Among Two hundred and thirty seven (237) patients, Male was the predominant gender (60.75%) in our study. Most patients were in the age group of  $\geq 70$  years at the time of admission (46.83%). Diabetes Mellitus, Hypertension, Obesity, Physical Inactivity, Smoking and in compliance to treatment were the powerful risk factors among our studied patients with Significant Statistical relationship (  $P=0.000$ ).

**Conclusion:** we have tremendously defected approaches among preventive measure perspective and health education to aware the public community about the dangerous of those factors and strong impact on their health.

**Keywords:** Modifiable Risk Factors, Cardiovascular Diseases.

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## 1. INTRODUCTION

Worldwide, cardiovascular disease is estimated to be the leading cause of death and loss of disability-adjusted life years<sup>1</sup>. Although age-adjusted cardiovascular death rates have declined in several developed countries in past decades, rates of cardiovascular disease have risen greatly in low-income and middle-income countries<sup>1,2</sup>. By 2013, researchers project that non communicable diseases will account more than three quarter of deaths worldwide. Cardiovascular diseases alone will be responsible for more deaths in low income countries<sup>3</sup>. Current knowledge about prevention of coronary heart disease and cardiovascular disease is mainly derived from studies done in populations of European origin. Two Researchers are unsure to what extent these findings apply worldwide. Some data suggest that risk factors for coronary heart disease vary between populations—e.g., lipids are not associated with this disorder in south Asians,<sup>4</sup> and increases in blood pressure might be more important in Chinese people<sup>5</sup>. To clarify whether those risk factors are really affected among cardiovascular diseases outcome in our community, we conducted this study.

## 2. METHODOLOGY

Our study was a cross – sectional descriptive study that was approved by the Ethics Committee of Ibn – Sina Teaching hospital, Hadhramout Province, Yemen. The duration of this study was from 1<sup>st</sup> January to the end of December of 2014. Two hundred thirty seven admitted patients were included in our study and their diagnosis categorized as one of cardiovascular diseases according to International Classification of diseases -10 ( ICD-10). We excluded all admitted patients who refused to be included in our study (an informed consent was obtained from all patients).

We used a standardized questioner to collect the general information such as age, gender, the definitive diagnosis, Body Mass Index ( we took their height and weight for the calculation) and CAGE scale to measure the alcoholic state grade.

We depend on The Perceived Stress Scale by Sheldon Cohen to determine our studied cases stress score and categorized as low, moderate or high perceived score.

Personal characteristics and history data were entered and analyzed using SPSS version 14. Data were given as frequency distribution, mean values, standard deviation and P-value.

### 3. RESULT

Two Hundred thirty seven studied cases were documented in one year of the study. One hundred fourteen (60.75%) was with male predominance and the mean age was 63.92 with SD ± 15.445. One hundred eleven patients (46.8%) were ≥70 years, see table NO. 1.

**Table NO. 1: Age group distribution among studied patients with cardiovascular diseases:**

Age Group	Frequency	Percentage
40-49	17	7.2%
50-59	26	11%
60-69	83	35%
≥70	111	46.8%
<b>Total</b>	<b>237</b>	<b>100%</b>

Among all cases, eighty nine (37.6%) were Over – weight according the calculated Body Mass Index (BMI) and eighty six (36.6%) were categorized as Type 1 obesity. There was a significant statistical relationship between the grade of patients obesity and increase risk of cardiovascular events among them, see table NO.2.

**Table NO.2: Types of obesity among cardiovascular patients based on Body Mass Index (BMI) :**

Body Mass Index Grade	Frequency	Percentage
Normal	40	16.9
Over-weight	89	37.6
Type 1 obesity	86	36.3
Type 2 obesity	17	7.2
Morbid obesity	5	2
Total	237	100%

**\* Chi – Square= 126.523      \* Degree of Freedom (DF)= 4      \* P- Value= 0.000**

Powerful risk factors among our studied patients with Significant Statistical relationship (P=0.000) , see table NO. 3.

**Table NO. 3: Shows the summary of modifiable risk factors among cardiovascular patients**

Variables		Frequency	X <sup>2</sup>	P-value
<b>Diabetes Mellitus</b>	Yes	174 (73.4%)	51.987	0.000*
	No	36 (26.6%)		
<b>Hypertension</b>	Yes	193 (81.4%)	93.675	0.000*
	No	44 (18.6%)		
<b>Compliance to treatment</b>	Yes	28 (11.8%)	163.345	0.000*
	No	207 (88.2%)		
<b>Smoking</b>	Yes	158 (66.6%)	231.278	0.000*
	No	79 (33.4%)		
<b>Family History</b>	Yes	49 (20.7%)	81.523	0.000*
	No	188 (79.3%)		
<b>Physical Inactivity</b>	Yes	12 (5.1%)	190.441	0.000*
	No	224 (94.9%)		
<b>Alcohol</b>	Yes	12 (5.1%)	190.441	0.000*
	No	224 (94.9%)		
<b>Obesity</b>	Yes	148 (62.4%)	126.523	0.000*
	No	89 (37.6%)		
<b>Stress</b>	Yes	125(52.7%)	0.713	0.938
	No	112 (47.3%)		

#### 4. DISCUSSION

Our goal study was to focus about modifiable risk factors and their effectiveness among our community, and how we can put valuable programs to improve the health education among public community. There are few studies on this subject in our country. There are some limitations to this study. Our resources were insufficient to allow full collection of data for calculating the severity of the risk factors in all patients.

The median age of heart attack and first stroke and the median age at death from ischemic heart disease and stroke offer a means to compare countries and groups in terms of their population experiences of cardiovascular disease. In our study, the most affected age group was those who their ages  $\geq 70$  this result was consistent by another study<sup>6</sup>.

The male predominance (60.75%) was the dominant gender who affected by cardiovascular diseases. This result was consistent by other studies in other countries<sup>7</sup>. So the male gender is the most striking with cardiovascular diseases. While there is another study that the women has affected more than males<sup>8</sup>. Another study explain that because Women are underprivileged in several aspects, and generally suffer from poorer health and greater distress than men,<sup>9</sup> including mood and anxiety disorders and a variety of chronic conditions.

Diabetes Mellitus, Hypertension, Obesity, Physical Inactivity, Smoking and in compliance to treatment were the powerful risk factors among our studied patients with Significant Statistical relationship (  $P=0.000$ ).

This data consistent with many studies that have been emerged before this study<sup>10, 11, 12,13,14,15</sup>. However, the reasons for the increase or decrease of these risks in various parts of the world are more complex.

#### 5. CONCLUSION

The effectiveness variation of risk factor needs either very large cohort trials or case control study as an initial step to assess the importance of those risk factors on development of cardiovascular events especially the first attack among population. By this step we can have a clue about the risk factors that affect the most.

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