

Obesity and its Relation to Coronary Artery Disease (CAD) Incidence

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Abstract

Background: Cardiovascular disease (CAD) has become a global health issue. If you have acute coronary syndrome, you run the risk of dying or being disabled while still in your prime. **Objective:** The primary goal of this study is to assess the obesity effect and its relation to coronary artery disease (CAD). **Method:** These data were collected in a cross-sectional research done at a private hospital in the period of January 2019 to January 2020, and all data was recorded systematically in a preformed data sheet and analysed using applicable statistical techniques. **Result:** In the study male patients were 30

Index terms— coronary artery disease (CAD), obesity, high blood pressure.

1 Obesity and its Relation to Coronary Artery Disease (CAD) Incidence

Lt Col Md Fakhrul Alam ?, Dr. Israt Jahan ?, Dr. Md. Ataul Hoque ?, Capt Swapnil Kumar Roy ?, & Dr. Atia Sharmin Bonna ¥ disease. Due to the fact that asymptomatic individuals seldom seek medical attention, the real prevalence of CAD has been grossly underestimated since childhood. 4 Heart failure is a risk factor even in those without coronary artery disease. The exact process by which obesity causes heart failure without coronary artery disease is uncertain, although two major ideas exist. 5 Firstly, fat people have more blood in their bodies, which makes the heart work harder and can lead to heart failure in the long run. ventricular hypertrophy is a condition in which the heart's muscle size increases as it works harder. Obesity has also been related to sleep apnea, which can lead to respiratory problems and high blood pressure in the long term. 6 The major objective of this study is to examine the obesity impact and its link to coronary artery disease (CAD).

2 II.

3 Objective a) General objective

? To evaluate the obesity effect and its relationship to CAD.

4 b) Specific objective

? To detect risk factor of CAD. that are associated with obesity. Cardiovascular disease is more common in those who are obese in the abdominal area (central obesity or "visceral obesity"). [1][2][3] It has been estimated that between 12 and 16 percent of Indians are affected with coronary artery disease (CAD). Five-fifths (52 percent) of all CVD-related fatalities occur among persons under the age of 50, and about a quarter of all acute myocardial infarctions (MI) occur in those under the age of 40 in India as well 4 Patients who seek medical attention owing to symptomatic sickness may represent the "tip of the iceberg" when combining visible and subclinical diabetes and smoking were all gathered using a WHO-STEPS modified methodology.

5 d) Statistical Analysis

? A pre-formatted data sheet was used to capture all data, and the data was then analyzed using applicable statistical techniques using Microsoft Windows software version 20. Simple percentages were used to assess the

41 prevalence of hypertension. t-tests and chi-square tests were used to determine the significance of the results. At
42 a threshold of 95 percent ($p = 0.05$), all statistical tests were judged significant.

43 IV.

44 6 Result

45 In table-1 shows age distribution of the patients where for both male and female, most of the patients belongs
46 to (41-50) age group, 57%. The following figure is given below in detail: In figure-2 shows gender distribution
47 of the patients. Where among 150 patents male patients were 30% higher than female. The following figure is
48 given below in detail: V.

49 7 Discussion

50 This cross-sectional study was designed to determine the incidence of cardiac disease in obese Bangladeshi adults
51 who were overweight or obese. As a major risk factor for cardiovascular disease (CVD) or heart disease, obesity
52 must be addressed.

53 All research subjects had their blood pressure measured, and we found that the blood pressure of the obese
54 group was statistically significantly greater than that of the normal weight group. Obesity was more prevalent
55 in this study than in the previous one, as we found out during our research process. 6 Overweight and obesity
56 are significant problems in Bangladesh and other developing countries.

57 The prevalence of obesity is expected to be higher in older populations than in younger populations, such as
58 Bangladesh and India, although studies have shown that hypertension is common in developing nations ??,8.
59 As people age, they are more likely to become fat, which is in line with previous studies. 9 According to this
60 survey, 54 percent of males and 46 percent of females are obese. There was no statistically significant difference
61 between males and females despite the greater incidence rate. People with heart disease are more likely to have
62 obesity-related hypertension. Another study done in India's rural areas came to the same conclusion. When we
63 looked at patients with positive cardiac illness, we found a significant prevalence of obesity.

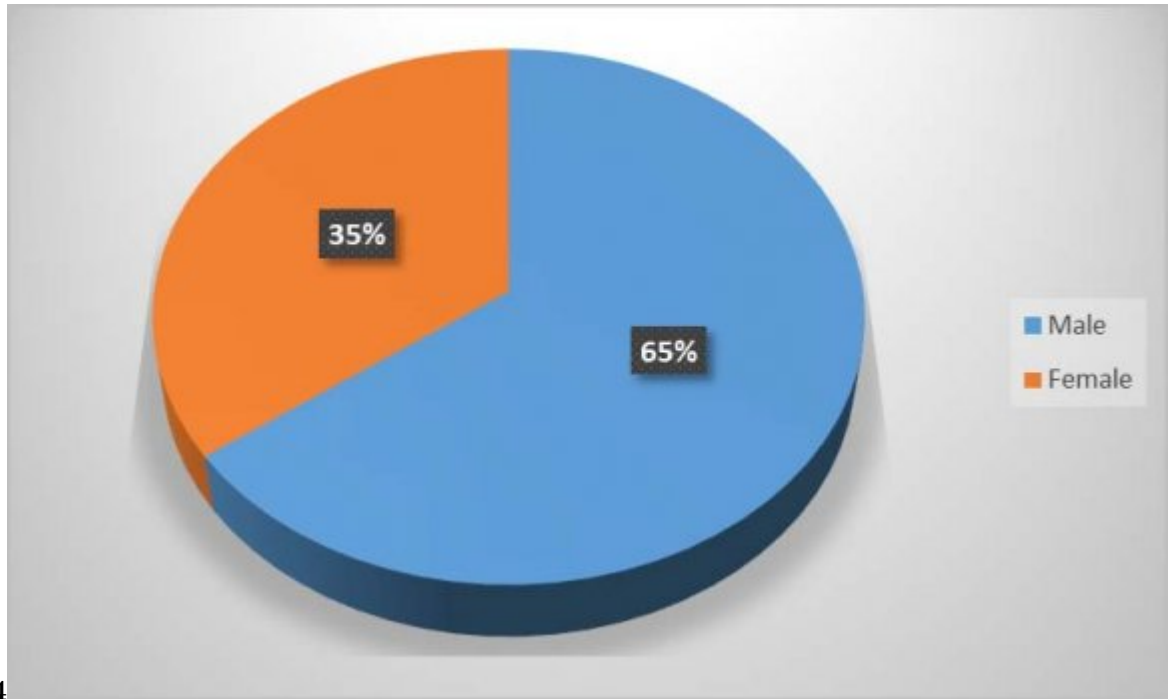
64 Our research revealed that systolic and diastolic hypertension affected 24 and 28 percent of the 100 individuals,
65 respectively. On the other hand, one research revealed that individuals with MI had a larger impact from elevated
66 systolic blood pressure than from elevated diastolic blood pressure Endothelial damage induced by high systolic
67 blood pressure might be the reason, leading to increased atherosclerosis. It has long been recognized that high
68 levels of triglycerides, total cholesterol, and LDL cholesterol in the blood are associated with cardiovascular
69 disease.

70 Similarly, obesity and salt consumption were linked in another research along with age, body mass index
71 (BMI), physical inactivity (including smoking), and a family history of stroke/CVD. 5 The growing salinization
72 of freshwater puts more than 35 million people in coastal Bangladesh at danger; increased salinity in drinking
73 water has been related to higher blood pressure among youthful coastal populations. Since the majority of
74 patients were from rural regions, they may not be aware of the hazards of drinking water salinity, which is why
75 we found a high correlation with this report during the research.

76 Many individuals assume that cooking renders the salt safe. Weight gain, a recognized risk factor for coronary
77 atherosclerosis (CAD), is considered to be made worse with an excessive salt intake. 10 VI.

78 8 Conclusion

79 We can draw the conclusion that obese individuals in Bangladesh have a higher risk of developing heart disease
80 than other patients. In order to establish the prevalence of obesity in heart illness, more study is needed. ¹



234

Figure 1: Figure- 2 :Figure- 3 :Figure- 4 :

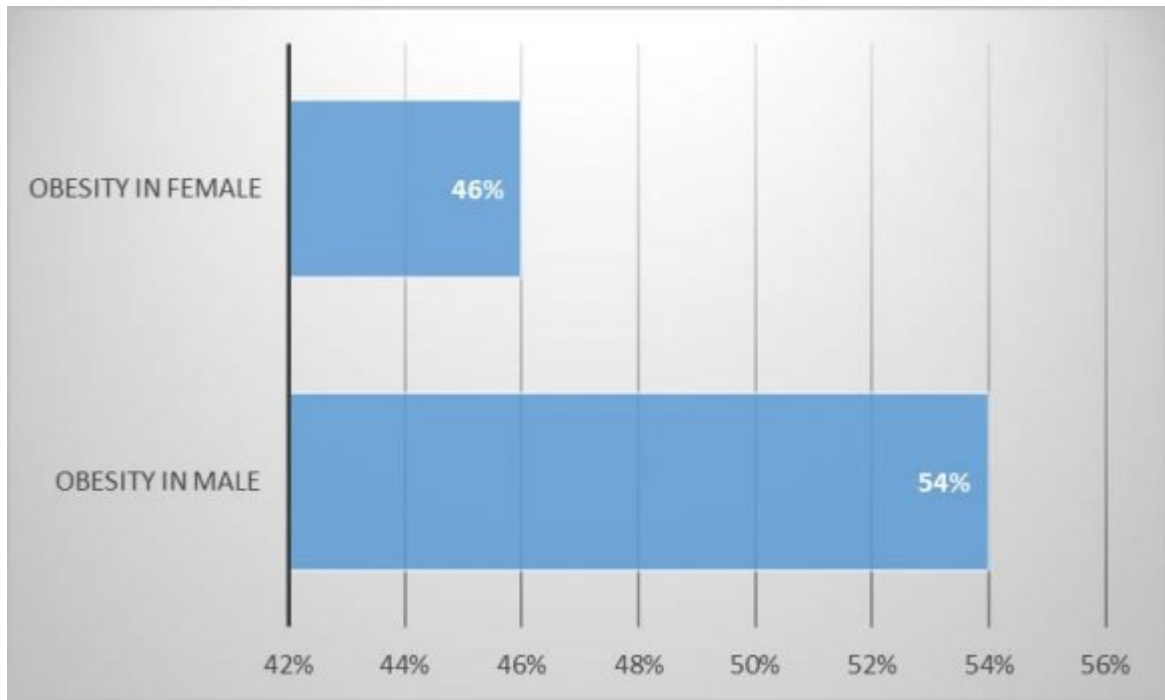


Figure 2:

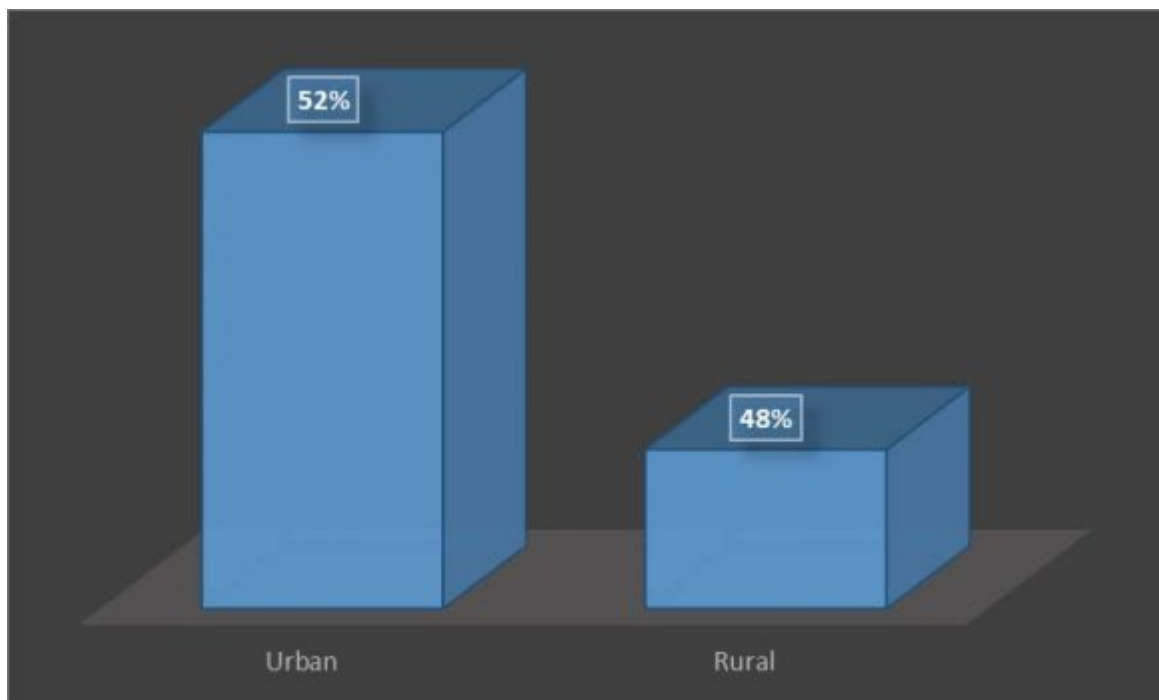


Figure 3:

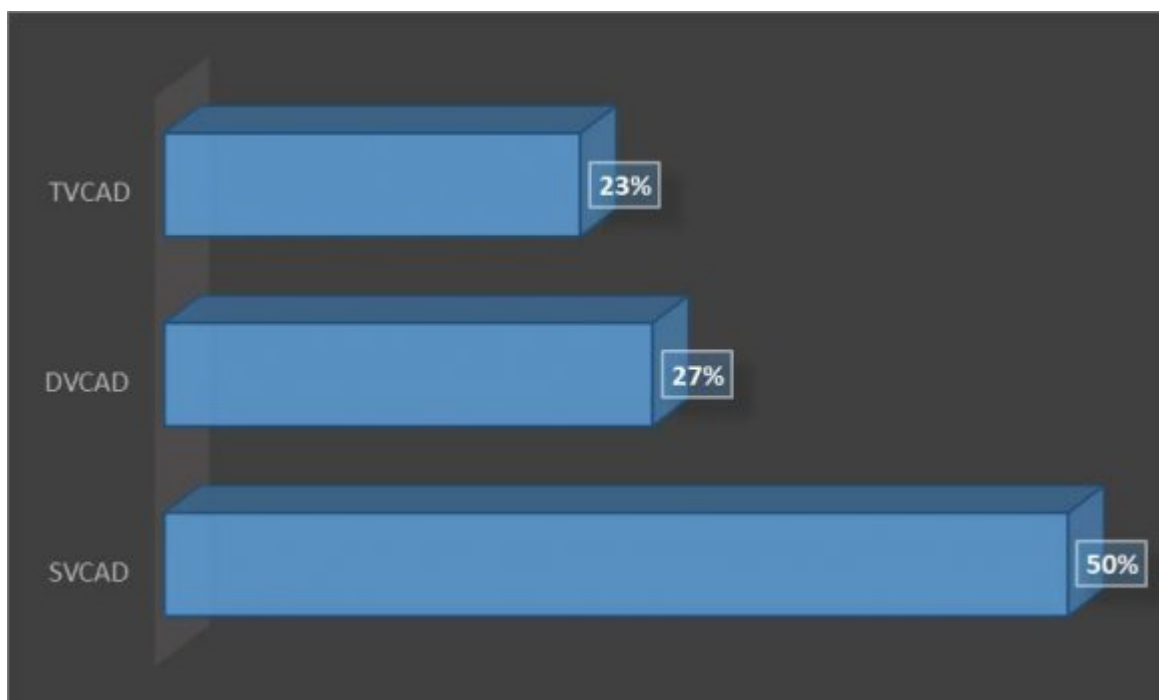


Figure 4:

Age group	%
21-30	6%
31-40	8%
41-50	57%
51-60	20
61-70	9%

Figure 5: Table - 1

Figure 6: Table - 2

Risk Factors	(n = 150) %
Smoking	52%
Hypertension	63.5%
Dyslipidaemia	74%
Obesity	79%
DM	30%
Family history	26%
Sedentary life style	19%

Figure 7: Table - 2

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CORRELATION OF OBE-SITY WITH FAMILY HIS-TORY SMOKING	R-VALUE	P-VALUE
INCOME	-.229 -.124	<0.01 <0.01
OCCUPATION	-.130	<0.01
PHYSICAL ACTIVITY	.008	>0.05
HYPERTENSION	-.142	<0.01
BMI	-.289	<0.01
GENDER	.276	<0.01
AGE	-.022	>0.05
HEART DISEASES	-.285	<0.01
	-.286	<0.01

Figure 8: Table - 3

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