



The prevalence of hypertension and pattern of associated Cardiovascular and Metabolic risk factors in rural people of Bangladesh

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Abstract

Objective: In this study our main goal is to evaluate the prevalence of hypertension and pattern of associated Cardiovascular and Metabolic risk factors in rural people of Bangladesh.

Method: This cross-sectional study was carried out at tertiary medical college and hospital from July 2019 to June 2020. A total of 100 who screened for hypertension according to JNC-7 (systolic blood pressure \geq 140mmHg and diastolic blood pressure \geq 90 mmHg or taking antihypertensive medications considered for the study population. Sample were collected through purposive sampling as per inclusion criteria.

Results: During the study, newly detected cases of HTN was 10% followed by 90% were known cases, control HTN were 62%, uncontrolled HTN was 11% and 5% were systolic HTN. According to ECG, 75% had myocardial ischemia and 25% cases had old MI. 50% cases belong to overweight group followed by 40% cases had normal BMI, .20% cases were under weight, 9.8% were obese. Also, strong correlation observed among IHD and raised LDL; 0.002, low LDL; 0.001, over weight; 0.002, incidence of DM; 0.001.

Conclusion: From our result we can conclude that, the decreased levels of risk variables identified in this study mean that primary preventive actions are a success. However, medical examination standards needs to be updated for detection of obesity and altered level of glycemic status and lipid profile.

Keywords: Hypertension (HTN), cardiovascular diseases, lipid profiles.

Introduction

Hypertension is one of the most important NCDs in the world, which leads substantially to cardiovascular disorder (CVD), heavy stroke,

renal failure, and early mortality.¹⁻³ It is also characterized as the global burden of disease and rated 3rd in a disability-adjusted life-years (DALYs).⁴

Almost 17 million fatalities have taken place globally as a result of CVDs, 9.4 million fatalities are caused by hypertension alone and 80% of fatalities associated with CVD in the developing world, according to the World Health Organization (WHO).⁵⁻⁷

The worldwide hypertension prevalence is anticipated to rise by 2025 from 26% in 2000 to 29.2%, which is predicted to represent over 29% of the world population.⁵ Though in wealthy nations, high blood pressure is more widespread, its prevalence increases in low- and middle-income nations (LMIC).⁸ Asian countries are suffering an ever-growing hypertension burden, including CVDs, especially in Southeast Asia.⁹⁻¹¹ Hypertensive diseases, which affect over 35 percent of adult populations, have become a major problem for health in the Asian area, says the WHO.¹²

First reported in 1976 was HTN prevalence as 1.10%.¹³ The prevalence of HTN, as 11.3%, 18.6% and 20.1%, was shown in one meta-analysis, population-based investigation, and a recently published survey. In Bangladesh the resulting illnesses, which equate to 9,6 million persons aged 25 years or older, represent 7% of fatalities.¹⁴

Objective

- To assess the prevalence of hypertension and pattern of associated Cardiovascular and Metabolic risk factors in rural people Bangladesh.

Table-1: Age distribution of the patients

Age group	%
15-35 years	45
36-56 years	50
57-77 years	6.5
>77 years	1.5
Total	100.0

Methodology

Types of study: It was a cross-sectional study.

Place and period of the study: The study place was carried out at Tertiary medical College Hospital, Bangladesh. Where data were collected from July 2019 to June 2020.

Study Population: A total of 100 who screened for hypertension according to JNC-7 (systolic blood pressure \geq 140mmHg and diastolic blood pressure \geq 90 mmHg or taking antihypertensive medications considered for the study population. Sample were collected through purposive sampling as per inclusion criteria.

Method: Both qualitative and quantitative (Mixed Method) data were collected by using a pre designed questionnaire. The questionnaire was prepared reviewing literature and consulting with medical research experts.

Data Analysis: All collected data were coding and input in SPSS-25 for further analysis. Both descriptive and inferential statistics done. Descriptive statistics included frequency distribution, percent, mean, standard deviation; graph, tables, figures and inferential statistics.

Results

In table-1 shows age distribution of the patients where most of the patients belong to 36-56 years age group 50%, followed by 45% cases belong to 15-35 years age group, 6.5% cases belong to 57-77 years age group and 1.5% cases belong to >77years age group. The following table is given below in detail:

In figure-1 shows gender distribution of the patients where maximum patients were male. The following figure is given below:

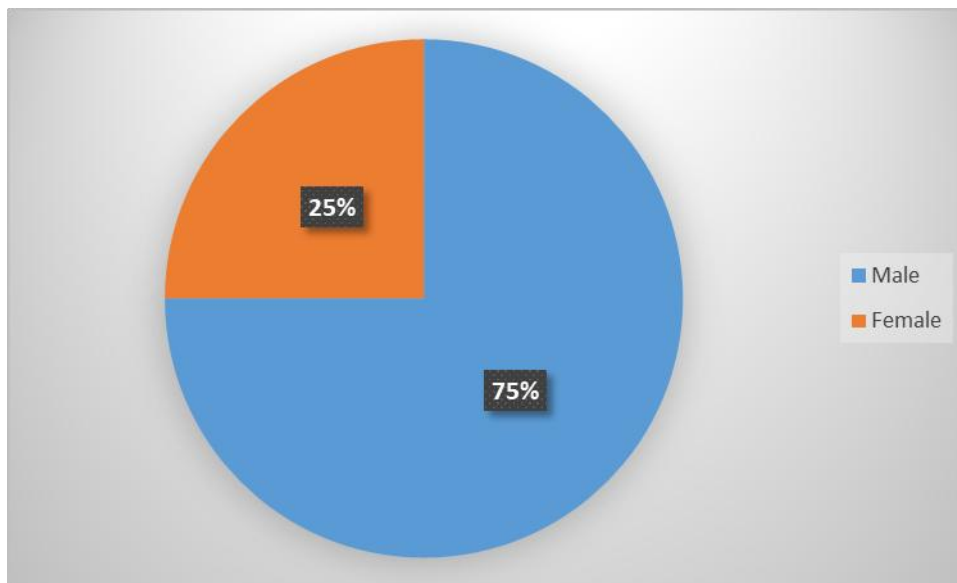


Figure-1: Gender distribution of the patients

In table-2 shows distribution of the patients according to prevalence of hypertension (HTN) where newly detected cases of HTN was 10% followed by 90% were known cases, control HTN

were 62%, uncontrolled HTN was 11% and 5% were systolic HTN. The following table is given below in detail:

Table-2: Distribution of the patients according to prevalence of hypertension (HTN)

HTN	%
Newly detected HTN	10%
Known case of HTN	90%
Controlled HTN	62%
Uncontrolled HTN	11%
Systolic HTN	5%

Multiple response was observed.

In table-3 shows distribution of ischemic heart disease according to ECG, 75% had myocardial

ischemia and 25% cases had old MI. The following table is given below in detail:

Table-3: Distribution of ischemic heart disease according to ECG where according to ECG

ECG	HTN group
Myocardial Ischemia	75%
Old MI	25%

In figure-2 shows distribution of patients according to BMI where 50% cases belong to overweight group followed by 40% cases had

normal BMI, .20% cases were under weight, 9.8% were obese. The following figure is given below in detail:

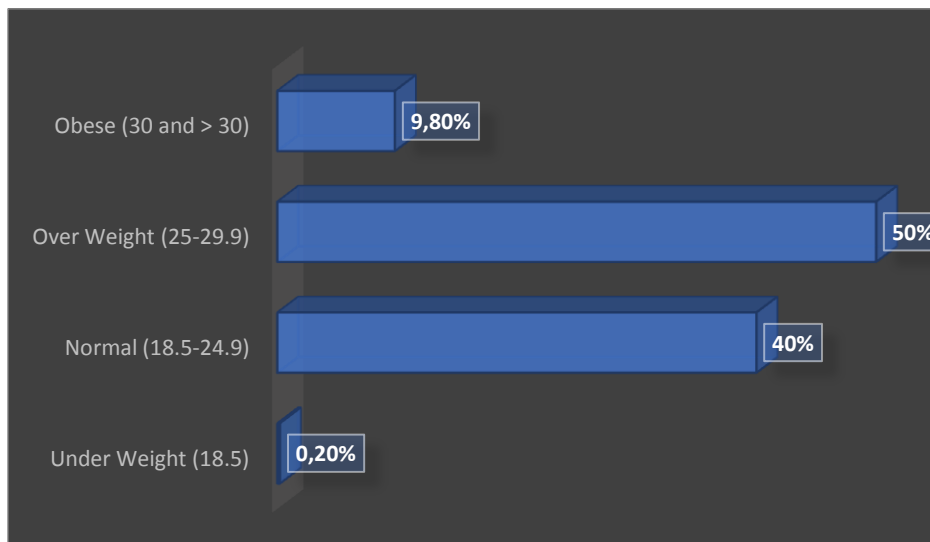


Figure-2: Distribution of patients according to BMI.

In figure-3 shows distribution of the patients according to hypertension where 45% had stage-1

hypertension and 55% had stage-2 hypertension. The following figure is given below in detail:

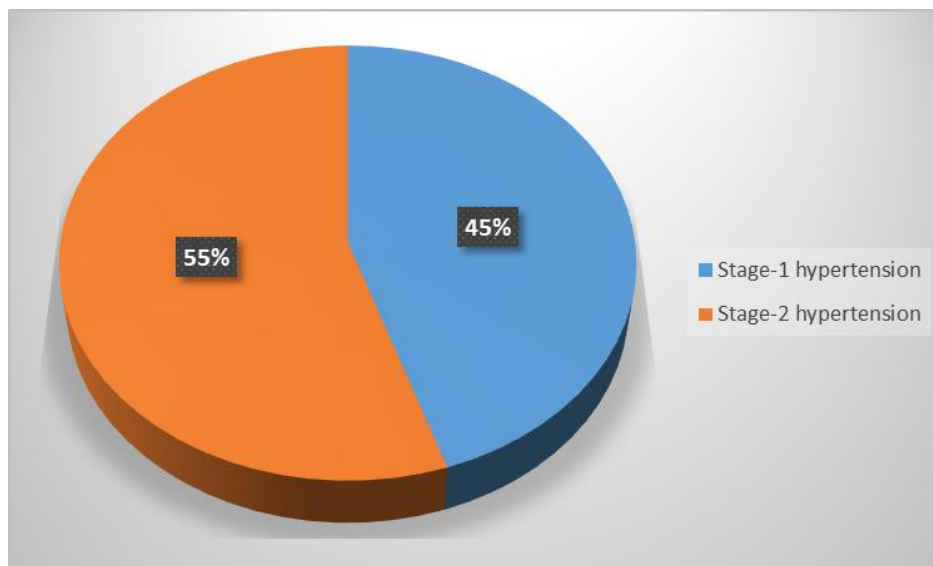


Figure-3: Distribution of the patients according to hypertension

In table-3 shows distribution of the patients according to lipid profile and glyceemic status where 50% had raised LDL and 58% had low

HDL. 61% had DM. The following table is given below in detail:

Table-3: Distribution of the patients according to lipid profile and glyceemic status

Lipid profile	%
Raised LDL	50%
Low HDL	58%
Raised TG	42%
Glyceemic status	%
DM	61%
Impaired glucose tolerance (IGT)	18%
Impaired fasting glycemia (IFG)	21%

In table-4 shows correlation among risk factors of IHD where there was a strong correlation was observed among IHD and raised LDL; 0.002, low

LDL; 0.001, over weight; 0.002, incidence of DM; 0.001. The following table is given below in detail:

Table-4: Correlation among risk factors of IHD

Risk factors	P value
Family H/o IHD positive	0.004
Gender:	
Male	0.005
Female	0.001
DM	0.001
Overweight	0.002
Tobacco Consumption	.506
Smoking	.320
Raised LDL	0.002
Low HDL	0.001
Raised TG	0.201

Discussion

High cholesterol prevalence (0.6% versus 1.3%) was substantially lower than projections in one research.¹⁵ We observed that 50% had increased LDL and 58% had reduced HDL in our research. 61% had high blood glucose fasting levels.

One research shows significant prevalence of CVD risk factors such as smoking (17.9%), pre-obese (29.9%) and pre-hypertension Data of the southern portion of the nation (79.9 percent). This study shows low prevalence of pre-obesity (15.2%), increased hypertension in stage 1 and stage 2 (39.2%, 26.8% and 26.8% respectively), as well as smoking (8.8%).¹⁶⁻¹⁷

In both research studies, the reasons for increased prevalence for pre-obesity and distinct hypertension categories compared to the current study may have happened as various age groups are explored. Study in India showed that hyper cholesterol and pre-hypertension and hypertension were greater in percentage compared to this study. Living and lifestyle disease are both CVDs. Around one-third of the people serving in the military services are in age groups (>30 years), who are more likely to acquire CVDs.¹⁷

In our research individuals of the same age group, pre-obese, high lipid profile level and hypertension status have been detected. The significant burden of pre-obese condition underscores the need for an overview, as proposed

for Asians by BMI for determining obesities, of the optimal weight for age parameters employed in the military. The IHD and elevated LDL have shown a strong link; 0.002, low LDL; 0.001 excess weight; 0.002, incidence of DM; 0.001.

Most of these disorders remain concealed and are not discovered until catastrophic occurrences such as acute coronary syndrome, stroke etc. arise. The immense burden of CVD risk requires frequent public health monitoring of the CVD risk factor instead of opportunistic screening.

Conclusion

From our result we can conclude that, the decreased levels of risk variables identified in this study mean that primary preventive actions are a success. However, situations such as pre-obesity, a relatively altered level of lipid profile and glycemic status require insights into medical examination standards, with revisions to obesity and hypertension recommendations aimed at tackling the disease in the bud.

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