

## Prevalence of Major Non- Communicable Diseases in a Tertiary Care Hospital

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### Abstract

**Background:** Non-communicable diseases (NCDs) are increasing trend globally and account for the majority of all new cases of morbidity and mortality. Previously, its prevalence was more in developed countries, but now it is increasing in low income settings. Early diagnosis, treatment and preventive measures will reduce the mortality, morbidity, and financial burden on families and community.

**Objectives:** The study was carried out in a tertiary care hospital to explore the incidence of common NCDs and whether there was differentiation in ages, sexes and residences among hospitalized patients.

**Methods:** A descriptive cross sectional type of observational study was done in a tertiary care hospital, Bangabandhu Sheikh Mujib Medical College Hospital (former Faridpur Medical College Hospital), Faridpur, Bangladesh from January 2019 to July 2019 for a period of 7 months. Patients were selected randomly in different adult medicine wards, including all sexes, races, and residences. Common NCDs included were cardiovascular diseases like hypertension (HTN), ischemic heart disease (IHD) and stroke; chronic respiratory diseases like COPD and asthma; diabetes mellitus (DM) and malignancy.

**Result:** A total of 1119 patients were hospitalized for different reasons; among them, 891 patients were diagnosed as NCDs (79.62%). In this study, male patients were more than females (63.41% vs. 36.59%), common age groups between 46 and 60 (33%) and the next age groups between 31 and 45 (26.26%); the mean age was 41.51. Younger people aged 60 years are affected more than the elderly. Rural patients were more than urban (64.54% vs. 35.46%). Common NCDs were stroke (25.58%), hypertension (18.40%), diabetes (12.0%), ischemic heart disease (9.20%), chronic respiratory diseases (6.95%), malignancy (3.36%) and other less common non-communicable diseases (24.47%).

**Conclusion:** Globally, the world is facing a growing burden of NCDs and it is a great challenge to face this upcoming situation. Measure should be taken, that how can we reduce the incidences, morbidity and mortality of those devastating diseases by prevention of their risk factors and early treatment.

CBMJ 2021 July: vol. 10 no. 02 P: 80-84

**Keywords:** Non-communicable diseases, Prevalence.

### Introduction

Non-communicable diseases (NCDs) are diseases that cannot be passed from person to person. It also known as chronic diseases, tend to be long-lasting and result from a combination of genetic, physiological, environmental, and behavioral factors. People of all age groups, regions and countries are affected by NCDs. The main types of NCDs are cardiovascular diseases (like hypertension, ischemic heart diseases and stroke), chronic obstructive airway diseases (like COPD and bronchial asthma), diabetes mellitus and cancers. These conditions are often

associated with the older population, but evidence shows that a great proportion is affected by the age between 30 and 59 years. NCDs disproportionately affect people in low and middle income countries. Like other low and middle-income countries, Bangladesh is experiencing a rapid rise in its ageing population and the burden of NCDs.<sup>1-3</sup>

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The proportion of death is due to NCDs in Bangladesh increased from 43.4% in 2000 to 66.9% in 2015.<sup>4</sup> This is a great challenge for our country to face this burden with our existing health care system. The economic burden of NCDs on the nation, families, and personal lives is unbearable, and it will be more serious in coming years because there are rapidly increasing risk factors for NCDs.<sup>5-7</sup> Overweight, smoking, physical inactivity, alcohol consumption, dyslipidemia, and low vegetable consumption were all common risk factors for developing NCDs among young adults in both urban and rural areas.<sup>8-10</sup> Recently, the government of Bangladesh has taken initiatives to combat the NCD situation through institutional and service delivery systems.<sup>11,12</sup> A dedicated NCD control unit was established in the Directorate General of Health Services (DGHS) and Ministry of Health and Family Welfare (MOHFW) in 2017.<sup>13</sup> In 2012, each Upazila Health Complex (UHCs) developed a new service center for control of common NCDs.<sup>14</sup> Though a national guideline has been established in Bangladesh for controlling NCDs, its implementation is weak.<sup>15</sup> An important way to control NCDs is to focus on reducing the risk factors associated with these diseases.

## Materials and Methods

A descriptive cross sectional type of observational study was done in a tertiary care hospital, Bangabandhu Sheikh Mujib Medical College Hospital (former Faridpur Medical College Hospital), Faridpur, Bangladesh from January 2019 to July 2019 for a period of 7 months. Patients admitted to different adult medicine wards were included as cases. All sexes, races and residencies were selected

randomly. Common NCDs such as hypertension, ischemic heart disease, stroke, diabetes mellitus, COPD, asthma and malignancy were selected as cases from all admitted patients. All new and old cases were included. After a detailed clinical history and thorough physical examination, the necessary laboratory tests were done to reach a clinical diagnosis. Previous medical records were also checked for evaluation. Patients with newly diagnosed hypertension had their blood pressure rechecked after a few minutes in resting condition in both arms with a validated sphygmomanometer. Diabetic patients were included who had a history of diabetes, on drug and in new cases with RBS or FBS or two hours after 75 gm glucose load or HbA1c level, either alone or in a combined parameter compatible with diabetes. Ischemic heart disease patients were selected by compatible clinical history, present or past ECG evidence and by cardiac biomarker. A CT scans or, in some cases, an MRI of the brain was used to diagnose a stroke. Other diseases were also diagnosed with compatible clinical history, physical examination and necessary laboratory investigations where needed. All the information was recorded on a fixed protocol. The collected data was classified, edited, and statistically analyzed using the SPSS computer system.

## Results

The major proportion of total admitted patients in the adult general medicine ward had non-communicable diseases (79.62%). Common age groups were between 46 and 60 (33%), followed by age groups between 31 and 45 (26.26%); the mean age was 41.51. Male patients outnumbered females (63.41% vs. 36.59%). Rural people are more affected than urban ones (64.54% vs. 35.46%) (Table I).

**Table 1: Demography of study**

<b>Numbers of patients(n=1119)</b>	
<b>Types of diseases</b>	<b>Numbers (%)</b>
Non-communicable diseases (NCDs)	891(79.62)
Other diseases	228(20.38)
<b>Age of patients of NCDs(n=891)</b>	
<b>Range of age (years)</b>	<b>No. of patients (%)</b>
• 15-30	165(18.51)
• 31-45	234(26.26)
• 46-60	301(33.78)
• 61-75	124(13.91)
• 76-90	67(7.51)
<b>Sex of patients (n=891)</b>	
Male	565(63.41)
Female	326(36.59)
<b>Residence (n=891)</b>	
Rural	575(64.54)
Urban	316(35.46)

Common NCDs were stroke, hypertension, diabetes, and ischemic heart diseases (25.58%, 18.41%, 12.0%, and 9.21%, respectively). Other non-communicable diseases were 24.47% (Table II).

**Table II: Non-communicable diseases (n=891)**

<b>Major NCDs</b>	<b>Numbers (%)</b>
• Stroke	228(25.58)
• Hypertension	164(18.41)
• Diabetes	107(12.0)
• IHD	82(9.21)
• COAD	62(6.95)
• Malignancy	30(3.36)
<b>Other NCDs</b>	218(24.47)

## Discussion

This was a hospital-based descriptive cross-sectional study with a sample size of 1119. Most of the admitted patients (79.62 %) had non-communicable diseases. Male patients outnumbered females in this study (63.41% vs. 36.59%). The most common age groups were between 46 and 60 (33%), followed by 31 to 45 (26.56%); the mean age was 41.51. Younger people aged 60 years are affected more than the elderly. Rural patients were more than urban (64.54% vs. 35.46%). Common NCDs were stroke (25.58%), hypertension (18.40%), diabetes (12.0%), ischemic heart disease (9.20%), chronic respiratory diseases (6.95%), malignancy (3.36%) and other less common non-communicable diseases (24.47%). Other NCDs were connective tissue diseases, osteoarthritis, hematological disorders (like iron deficiency anemia, aplastic anemia, ITP), different types of mood disorders, and neurological disorders (like headaches, epilepsy, Parkinson's disorder, and dementia).

In an Indian study, the prevalence of non-communicable diseases increases with age, rural people have more morbidity, and mortality is higher among males (63.4 percent).<sup>16</sup> In a Nepali study, the mean age was 61.12 years, the majority was female (63.41 percent) and resided in urban areas (67.4 percent).<sup>17</sup>

In a Bangladeshi study, the prevalence of hypertension was 18.6% in men and 20.7% in women. The prevalence of diabetes was 15.6% in men and 22.5% in women.<sup>8</sup> Blindness, cardiovascular diseases, RTA, COPD, and asthma, stroke, neoplasm, diabetes mellitus, and congenital were the most common causes of morbidity in an Indian study (25, 23, 21, 9.4, 8.7, 8.7, 4.8, and 0.3 percent, respectively).<sup>16</sup>

In a Nepali study, hospital based NCD prevalence was 31 percent, with the most common being COPD, cardiovascular diseases, diabetes mellitus, and cancer (43, 40, 12, and 5 percent, respectively).<sup>17</sup> A survey done in Bangladesh by WHO in 2018 found that 30% of people have cardiovascular diseases, 12% have cancers, 26% have communicable, maternal, perinatal, and nutritional conditions, 7% have injuries, 12% have other NCDs, 10% have chronic respiratory diseases, and 3% have diabetes. And NCDs are estimated to account for 67% of all deaths.<sup>18</sup>

Globally, there is rapid urbanization, industrialization, changing lifestyles, and rising survival rates, all of which contribute to an increase in the incidence of non-communicable diseases. Non-communicable diseases now exceed all communicable, nutritional, maternal, and perinatal related deaths worldwide.<sup>19</sup> This is now a global health threat. Deaths due to NCDs are now more common in low and middle income countries. According to WHO, over two-thirds (67%) of the people in Bangladesh die every year due to NCDs and related conditions, including stroke, diabetes, COPD, and mental health problems. Over the past 20 years, there has been a nine fold increase in deaths from NCDs.<sup>20</sup>

Rapid urbanization also changing human lifestyles, dietary patterns, and the use of vehicles rather than walking. Lack of exercise and stressful life events are increasing the incidences of NCDs globally. And its prevalence is increasing in rural areas rapidly. The majority of NCDs are preventable because they are caused by modifiable risk factors such as smoking, physical inactivity, being overweight, eating an unhealthy diet, air pollution, hypertension, and diabetes mellitus. So, avoidance of tobacco smoking, reduction in consuming junk foods, regular physical activity,

and moderation of alcohol use will reduce the incidence of NCDs. It has been estimated that if we can eliminate primary risk factors for NCDs, they will reduce 80% of the cases of heart disease, stroke, and type 2 DM, and 40% of the cases of cancer-related conditions. Therefore, interventions should be targeted towards reducing the main risk factors worldwide.

## Conclusion

People should be made aware of the risk factors for NCDs and their devastating health consequences for prevention. As we are a developing country, it is difficult to treat those devastating conditions as well as to prevent them. Our government and policymakers should take the necessary action to prevent the risk factors for those major NCDs to make our nation healthier. Furthermore, study is needed nationwide on a large scale for detection of risk factors for NCDs so that we can prevent them. If we cannot control this situation at present, it will be a great economic burden in the next century.

## Limitations

This is a hospital based study and all people of community were not included here. Risk factors, mortality and disability of NCDs were not seen in this study.

## Acknowledgement

Heartfelt thanks to all the doctors, nurses, and medical staff of that hospital for their best and kindest support in the collection of data for this study.

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