

Pattern of Patients visited at the Non-Communicable Disease Control (NCDC) corner at an Upazilla Health Complex in Chattogram, Bangladesh

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Abstract:

Background: Non-communicable diseases (NCDs) have emerged as a significant global health challenge, and a pressing public health concern in Bangladesh. The Non-Communicable Disease Control (NCDC) corners have been established in different upazilla health complexes throughout the country. Lohagara, being the southernmost upazilla of Chattogram district, plays a crucial role in addressing the growing burden of NCDs in the region. A comprehensive analysis of the patient population accessing healthcare services at the NCDC corner is essential to optimize the delivery of care and improve patient outcomes.

Materials & Methods: This descriptive cross-sectional study was conducted on the patients' records from the NCDC corner over 12 months. The patients were also interviewed. Data regarding demographic information, diagnoses, comorbidities were analysed.

Result: This study delves into the patterns of patients seeking healthcare services at the NCDC corner. Among the 3,316 patients, diabetes mellitus (DM) was predominant (68.9%), hypertension (15.4%) and ischemic heart disease (2.0%) were also notable. Combinations of these conditions highlighted the importance of integrated care models, where the incidence of DM with HTN was 8.6%. The study revealed

diverse occupational backgrounds, with retired male individuals forming a significant portion (46.34%), raising concerns about financial constraints. Notably, the group of 41-50 years showed the highest prevalence, followed by the age group of 31-40 years, indicating the urgency of interventions in early adulthood. Additionally, housekeepers constituted a large proportion (90.53%) of female patients, highlighting the need for targeted health education programs.

Conclusion: It is crucial for healthcare professionals to understand the patterns of patients presenting at the NCDC corner to improve the management and care of individuals with chronic illnesses. Findings in this research would provide valuable insights for shaping effective healthcare policies and interventions, optimizing resource allocation, and enhancing patient adherence to treatment protocols at the Upazilla Health Complex, Lohagara, Chattogram, Bangladesh.

Keyword: Non-Communicable Diseases (NCDs), Non-communicable disease control (NCDC) Corner, Upazilla health complex.

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Introduction:

Non-communicable diseases (NCDs) have emerged as a significant global health challenge, contributing to a substantial burden of morbidity and mortality. The major causes of global death and disability are NCDs, of which cardiovascular diseases (CVD), cancer, chronic respiratory diseases, and diabetes are most common¹. The number of deaths due to NCD is predicted to reach

52 million from 38 million globally between 2012 and 2030².

An estimated 85% of 15 million premature deaths occur due to the abovementioned NCDs in low- and middle-income countries (LMICs) worldwide every year including Bangladesh, where 572,600 (67%) estimated deaths caused by NCDs annually with 22% probable premature deaths^{1,3}. The prevalence of NCD has increased over the last ten years, and it is predicted to increase more as Bangladesh is passing through a growing stage of epidemiological transition⁴⁻⁷. Due to Urbanization and rapid growth in economy in Bangladesh in the previous decades, a large number of people are leading a more sedentary lifestyle influenced by the change in dietary habits, increased supply and demand for unhealthy processed food, and physical

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inactivity followed by irregularities in mealtimes, smoking, and alcohol consumption⁷⁻¹⁰. Moreover, there are metabolic risk factors that contribute to the development of NCDs, a considerable proportion of the population suffer from overweight (29.4%)¹¹, hypertension (26.2%)¹², and diabetes (9.2%)¹³ in Bangladesh.

Women are at an increased risk of developing NCD as they mostly experience a combination of multiple behavioral and metabolic risk factors^{14,15}. Globally, 65% of premature death in women occurs due to NCDs and majority of such death occurs in LMICs [16]. Evidence showed that between 1992 and 2015, the prevalence of diabetes has a threefold to fourfold increase, with a prediction to reach around 24% in men and 33.5% in women by 2030, with higher odds of multimorbidity than men, due to gender inequality^{17,18}. However, as women demonstrate fewer signs and symptoms of NCD, for instance, CVD, compared to men and get a lack of attention in case of disease prevention strategies, they are less likely to be identified or treated¹⁹.

A study among rural households of 14 districts showed that 3.4% of households annually fell into poverty due out of pocket spending for healthcare and that non-communicable diseases were the principal reason for the effect²⁰. NCD households are 85% more likely to sell assets or borrow from informal sources to finance treatment cost²¹.

An estimated budget of USD 133.0 million was allocated by the 4th Health, Population and Nutrition Sector Programme (HPNSP) of Bangladesh in NCDC operational plan from 2017 to 2022 to strengthen the early detection and management of NCD at the primary health care level²². NCD drugs were included in the essential drug list in 2016 and Bangladesh reviewed and updated the NCD services in the Essential service package (ESP)²³. Bangladesh, along with all UN member states committed to achieving SDGs including SDG 3 for the health and wellbeing of the people with the target to reduce premature deaths by one-third from NCDs²⁴.

In this circumstance of rising prevalence of various NCDs and related conditions, understanding the patterns of patients seeking healthcare services at OPD becomes paramount at upazilla level of the country. The NCDC corners have been established in different upazilla health complexes throughout the country. Therefore,

Lohagara, being the southernmost upazilla of Chattogram district, also plays a crucial role in addressing this growing burden of NCDs among 3,00,562 people in the region. This specialized unit aims to provide comprehensive care and management for individuals suffering from chronic illnesses. The findings of this study depicts the frequency of NCDs in this particular rural region. We can tailor strategies to enhance the quality of healthcare services, optimize resource allocation, and improve patient adherence to treatment protocols by understanding the challenges faced by healthcare professionals and analysing the demographic and occupational pattern of the patients.

Materials & Methods:

The research was conducted as a descriptive cross-sectional study. Patients of different age and gender used to visit the NCD on regular basis from July 2022 to June 2023.

The upazilla health complex is a 50-bedded hospital where approximately 700 patients visit at OPD daily. The NCD corner started its function here with full logistics and organised new setup since July of 2022. Around 70 to 80 patients visited at NCD daily. The healthcare stuff, including the physicians assigned for the NCD corner, took history and other relevant information from the patients during their visit. The information was noted in the well-designed register book kept at NCD corner from which data were collected on age, gender, occupation and diagnosis. IBM Statistical Package for the Social Sciences (SPSS) software 27 was used for the statistical procedure.

Ethical approval:

We obtained the ethical approval from the Ethical Review Committee, Chittagong Medical College, Chattogram.

Results:

During the study period of one year, total 3,316 patients were registered. Among them, 1,230 (37%) were male and 2,086 (63%) were female.

Mean age of the participants was 49.01 years (SD±13.09). Maximum patients (n=948, 28.56%) were between the age of 41 years to 50 years, followed by the age group 31-40 year which consist of 910 patients. Number of patients (n=30, 0.90%) were lost in the age group 81-90 year. Age group between 51 to 60 year consist of 25.28%

(n=838) patients, age group 61 to 70 years consist of 13.50% (n=448) patients and age group 71-80 year consist of 146 patients.

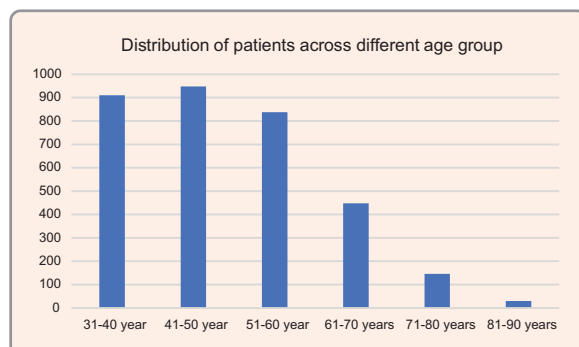


Figure-1: Distribution of patients across different age groups.

Among males (n=1,230), employees were 17.17% (n=211), farmers were 14.72 % (n=181); 9.11% patients (n=112) were engaged in various business, 7.32 % (n=90) patients were labourer, retired elderly patients were 46.34%, (n=572), drivers were 4.71% (n=58) patients, 0.49% patients (n=6) were in study.

Among female patients (n=2,086), home-makers were 90.53% (n=1,894), farmer were 2.06% (n=43), and 7.11 % (n=149) were engaged in different kinds of clerical jobs.

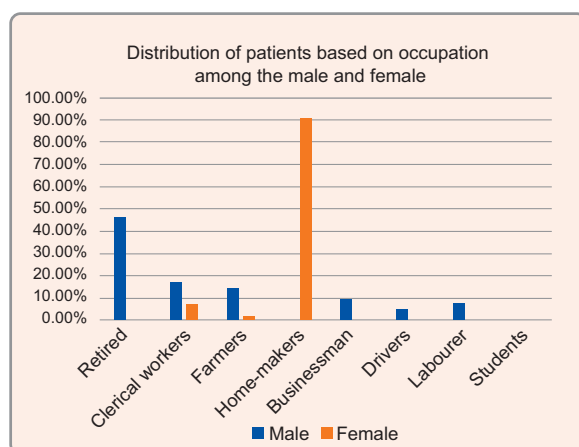


Figure-2: Distribution of patients based on occupation among male and female.

The study identified the following primary non-communicable diseases among the patients:

Diabetes Mellitus (DM) in 2,285 patients (68.9% of total cases), hypertension (HTN) in 512 patients (15.4% of

total cases), ischemic heart disease (IHD) in 66 patients (2% of total cases), chronic obstructive pulmonary disease (COPD) in 53 patients, (1.6% of total cases), chronic kidney disease (CKD) in 3 patients (0.1% of total cases).

Among the patients diagnosed with NCDs, the following combinations were observed:

DM with HTN in 287 patients (8.6% of total cases), DM with IHD in 17 patients (0.5% of total cases), HTN with IHD in 34 patients (1% of total cases), DM with HTN and IHD in 10 patients (0.3% of total cases), DM with COPD in 53 patients (1.6% of total cases), COPD with DM in 30 patients (0.9% of total cases), and others in 19 patients (0.6% of total cases).

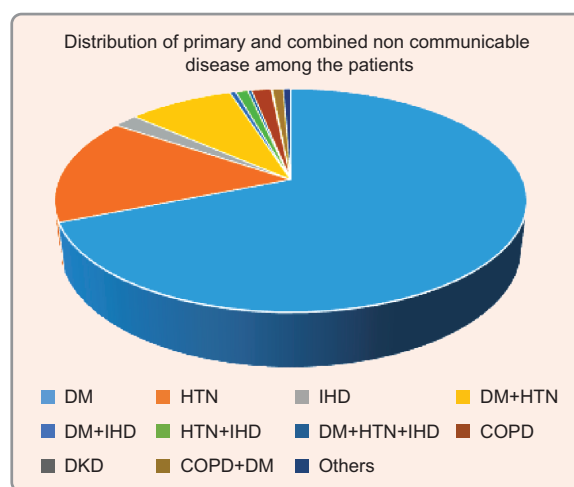


Figure-3: Distribution of primary and combined NCDs among the participants.

Discussion:

The findings of this study provide valuable insights into the frequency, patterns, and combinations of non-communicable diseases (NCDs) among patients attending the NCDC corner in the Upazilla Health Complex, Lohagara, Chattogram. Understanding the epidemiological landscape of NCDs is pivotal for devising effective preventive and management strategies.

In our study, mean age of the participants was 49.01 years (SD±13.09). Maximum patients (n=948, 28.56%) were between the age of 41 years to 50 years. In a similar study among Bangladeshi adults by Ali et al., mean age of the participants was 51.4 years (SD ±13.0)²⁵.

Highest concentration of patients in the 41-50 years age group in our study emphasizes the critical importance of early adulthood health interventions. Efforts focused on this age bracket can potentially curb the onset of several NCDs, promoting healthier lifestyles and reducing the burden on healthcare facilities. It also indicates that middle-aged adults are more susceptible to non-communicable diseases.

The distribution shows a decline in patient numbers in older age groups, especially beyond the age of 70 years, served by the NCDC corner. Alternatively, it indicates other factors such as reduced healthcare-seeking behavior in older adults or higher mortality rates in this age group due to the severity of diseases.

The number of the female patients was much higher than male in our study. Female preponderance was found in different NCDs in a few recent studies in Bangladesh²⁵⁻²⁷.

Diverse occupational backgrounds were found in patients seeking services at the NCDC corner. Majority of females and males were homemakers and retired, respectively, and financially dependent on others which is consistent with the findings of another study²⁸.

We found the frequency of hypertension was much lower than that of DM (15.4% vs 68.9%). Though, another study conducted in a different rural area of Bangladesh identified a strikingly high prevalence of hypertension (40%) among both sex groups²⁹. Also in another study conducted by Ali et al., the prevalence of hypertension was found higher than DM (29.55% vs 10.95%).

In our study, IHD was present in only 2% of total cases. IHD had frequencies of 1.8-3.4% in other studies^{30,31}.

Frequency of Chronic obstructive pulmonary disease (COPD) among the patients visited at NCD corner in our study was 1.6%, which was very similar to other study by Haque et al. (2%) among rural people³². Though in another survey Alam et al. found that the prevalence of COPD among rural people was 17.0% based on GOLD criteria³³.

Interestingly, in our study, patients with Chronic Kidney Disease (CKD) were only 0.1% of total cases. Though in a study among rural people, the prevalence of CKD was significantly high (22.0%) [34]. Such variations in prevalence of COPD and CKD among rural area could

be due to the fact that, our finding was only based on the patients visited at NCD corner of upazilla health complex. Moreover, patients might have not been informed of the treatment facilities available at NCDC at upazilla level. On the other hand, findings in other study included people randomly from the community. Similar explanation can be applied on the prevalence of other NCDs too. We did not find any similar study on pattern of patients at NCDs of other upazilla health complexes in Chattogram, and also in the country. So, relevant comparison was not possible.

Considering the combination of NCDs, prevalence of DM with HTN was 8.6% in our study. In a similar study in Chattogram, the prevalence of HTN with DM was 6.59%³⁵.

We observed that there was significant awareness in the community regarding the adequate supply of medicine from the government. As a result, patients were encouraged to visit NCD, specially for oral anti-Diabetic (OAD) and anti-hypertensive drugs. On the other hand, less availability of drugs for other NCDs like COPD, CKD probably discouraged them visiting at the OPD of NCD.

Healthcare strategies should consider the unique health needs of this age group, focusing on geriatric care and specialized interventions to improve their quality of life. While the current data shows a decline in patient numbers in older age groups, it is essential to anticipate the healthcare needs of an aging population in the future. Long-term planning should involve geriatric care, social support systems, and policies that cater to the healthcare requirements of an aging demographic.

Conclusion:

This study for a year at the NCDC corner at Lohagara upazilla health complex provided a comprehensive understanding of the NCD landscape in the studied community. Tailored interventions, encompassing health education, lifestyle modifications, and integrated care approaches, are imperative. Study of same kind at other Upazilla health complexes could be of help building awareness regarding NCDs. It will also guide the policy makers to ensure proper allocation of logistics, drugs and judicious referral.

Declaration of conflicting interest

We declare no potential conflicts of interests with respect to the authorship and/or publication of this article.

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