



Original Article

Knowledge of Non-Communicable Diseases and Their Associated Modifiable Risk Factors Among the Adult Rural People at Burichang, Cumilla, Bangladesh

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Abstract

Background: Non-communicable diseases (NCDs) are known as chronic diseases which are rising day by day. The results, disability and early mortality, are turning out to be the major issues for global health. Exposure to NCDs risk factors has an impact on all aspects of life, making it essential for health promotion that individuals need to be aware of non-communicable diseases and their risk factors. The objectives of the study to assess the knowledge of non-communicable diseases and their associated modifiable risk factors among the adult rural people at Burichang Upazila, Cumilla, Bangladesh. **Materials and methods:** The cross-sectional study was conducted from July to December 2023. A total of 309 adult people were selected by non-probability purposive sampling at Monipur village of Burichang Upazila under Cumilla District with ethical clearance from respective IERB. Data was collected by face-to-face interview with a semi-structured questionnaire and checklist. Data were analyzed according to the study objective through Statistical Package for Social Science (SPSS). Informed written consent was taken before data collection and ethical issues were maintained at different stages of this study. **Results:** Out of all participants, 184 (59.5%) were female and 125 (40.5%) were male, the mean (\pm SD) age of the participants was 38.81 ± 14.369 years and the highest frequency 38.5% was in the 18-30 years group. Among all the participants 245 (79.3%) were married and 89 (28.8%) completed their primary education. In our study, among all the participants, 171 (55.3%) had average knowledge, 99 (32.0%) had good knowledge and 39 (12.6%) had poor knowledge about non-communicable diseases. The study findings also showed that the level of knowledge about modifiable risk factors of non-communicable diseases, 170 (55.0%) had average knowledge, 111 (35.9%) had good knowledge, and 28 (9.1%) had poor knowledge. **Conclusion:** It can be concluded from our study that knowledge regarding non-communicable diseases and their modifiable risk factors was not satisfactory. The results of this study demonstrated the necessity of health education and interventions to raise knowledge about non-communicable diseases and their risk factors.

Key words: Risk factors, Knowledge, Non-communicable diseases.

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Introduction

Non-communicable diseases (NCDs), usually referred to as chronic diseases, generally persist for a long time and progress gradually. The main types of non-communicable diseases include cardiovascular diseases, diabetes, osteoporosis, obesity, cancers, and hypertension¹. Non-communicable diseases (NCDs) are responsible for a considerable portion of premature deaths in low- and middle-income countries and add to the global burden of morbidity and mortality². NCDs have a wide-ranging effect on health, which results in greater healthcare expenses³. According to statistics, four major forms of NCDs-cardiovascular diseases, diabetes mellitus, chronic respiratory conditions and cancer-affect every 4 in 5 people, and over 75% of

deaths are reported to occur only in low- and middle-income nations⁴.

The term 'NCD' refers to illnesses or problems that affect people over an extended period, have no known causes, and cannot be transmitted from one affected person to another⁵. With vast prolonged urbanization, globalization, industrialization with modernization, the price that the world is paying is a remarkable load of NCDs. It is also known as a chronic disease and often listed as a lifestyle disease⁶. Many factors, such as global trade and modern technology, stimulate growth and development in modern society have a double-edged effect on health because they both increase

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vulnerability to poor health by promoting sedentary behavior and unhealthy eating habits⁷.

Due to the rising burden of non-communicable diseases during the previous ten years, life expectancy has been drastically reduced⁸. The associated risk factors of NCDs include aging, unhealthy food, a sedentary lifestyle, physical inactivity, high blood pressure, hyperglycemia, hypercholesterolemia, and obesity⁹. These factors are highly prevalent and predispose NCDs early in life leading to premature mortality¹⁰. Along with the high frequency of risk factors, low- and middle-income nations face a number of other difficulties. These include socioeconomic conditions, cultural restrictions, healthcare system fragmentation, and obstacles to healthcare access¹¹. To address these issues, the World Health Organization (WHO) developed an action plan for the global strategy for the prevention and control of NCDs. Promoting research related to the prevention and control of NCDs among geographical units with a higher burden of NCDs was one of the overarching goals of that action plan¹².

Regarding risk factors, most of the NCDs are attributable to eight modifiable risk factors, and WHO has classified them into behavioral and biological risk factors¹³. These biological and behavioral risk factors include smoking and drinking, being physically inactive, being overweight or obese, consuming more fat and sodium, eating fewer fruits and vegetables, engaging in multiple risky behaviors, and having multiple chronic diseases¹⁴. The risk factors for many of these conditions are associated with lifestyle-associated environmental and genetic factors¹⁵. These risk factors have an 80% contribution in the development of NCDs. Non-communicable diseases have been the leading cause of fatality in the high-income world over the last five decades, and they are emerging as a leading cause of death in the low and middle-income world as well¹⁶.

In Bangladesh, there are 886,000 fatalities per year from NCDs, which is estimated to be 59% of all deaths. In Bangladesh, 20% of men and 32% of women have high blood pressure, and 48% of men smoke. 2015 saw 7.1 million cases of diabetes in Bangladesh; an additional 3.7 million cases may not be diagnosed. In 2015, diabetes was thought to be the cause of 129,000 fatalities¹⁷. Bangladesh is implementing a multifaceted program to control and prevent noncommunicable disease. WHO supported the Government of Bangladesh to adopt a multisectoral action plan for prevention and control of noncommunicable diseases, a strategy spanning from 2018 to 2025 and involving nearly 30 ministries and agencies¹⁸.

The proportional mortality rate due to Non-Communicable Diseases (NCDs) has been increasing day by day in Bangladesh². As a result, NCDs have been identified as one of the important public health problems in the country. So, the current cross-sectional study is designed to assess the knowledge of non-communicable diseases and their associated modifiable risk factors among adult rural people. The study's results may speed up the Bangladeshi government's ongoing NCD management program. The information and data collected could help identify some of the social obstacles to the effective execution of Bangladesh's rural NCD control programs.

Materials and Methods

This descriptive cross-sectional study was conducted in the department of community medicine, Eastern Medical College, Cumilla from July 2023 to December 2023. Samples were collected from Monipur village of Burichang Upazila under Cumilla district. The sampling technique was non-probability purposive sampling. Inclusion criteria of participants, who were aged 18 years or above and residing at Monipur village of Burichang Upazila under Cumilla District and who were given consent to participate in the study. Exclusion criteria for participants who were not available during the data collection period and who were not willing to participate in the study. A total of 309 participants were interviewed. A purposive type of non-probability sampling technique was adopted for this study. The privacy and confidentiality of every participant were maintained strictly. After getting informed written consent from every participant, one generally pre-tested semi-structured questionnaire and checklist were used to collect data. Collected data was analyzed using SPSS version 25. Data were expressed as mean±SD. Then the results were depicted in the forms of tables and figures.

Results

Table-I represents the socio-demographic traits of the participants. A total of 309 were interviewed. Most of the participants (38.5%) were from the age group 18-30 years (mean±SD 38.81±14.37 years). Majority of the participants were Muslim (91.9%) and most of the participants resided in pakka houses (48.9%). Most of the participants belong to single-family (53.7%) and nearly half of the participants' family average monthly income was between BDT 2,100-2,900.

Figure-1 showed that, among the participants, females were 184 (59.5%) and males were 125 (40.5%). Figure-2 illustrates the distribution of participants based on their educational qualifications. Among the participants, 89 (28.8%) completed their primary education, 78 (25.2%) were

secondary, 65 (21.0%) were illiterate, 60 (19.4%) completed their higher secondary education, 11 (3.6%) were graduates and 6 (1.9%) completed postgraduate education. In this study among the participants, 171 (55.3%) were homemakers, 56

(18.1%) were businessmen, 24 (7.8%) were day laborers, 18 (5.8 %) were farmers, 13 (4.2 %) were students and 6 (1.9%) were unemployed (Figure-3).

Table-I: Findings related to socio-demographic characteristics of participants (n=309)

Socio-demographic Characteristics	Frequency (n=309)	Percentage (%)
Age group (in years)		
18-30	119	38.5
31-45	105	34.0
46-60	58	18.8
>61	27	8.7
Religion		
Muslim	284	91.9
Hindu	25	8.1
Accommodation		
Kacha (Mud-built)	81	26.2
Pakka (Brick-built)	151	48.9
Semi pakka	77	24.9
Monthly family income (in BDT)		
<10,000	57	18.4
10,000-20,000	60	19.4
21,000-29,000	127	41.1
>30,000	65	21.0
Types of family		
Single-family	166	53.7
Joint family	143	46.3

Table-II: Findings related to information about the lifestyle of the participants (n=309)

Characteristics of lifestyle	Frequency (n=309)	Percentage (%)
Smoking habit		
Yes	52	16.8
Former smoker	23	7.4
No	234	75.7
Consume smokeless tobacco		
Yes	100	32.4
Former smokeless tobacco consumer	5	1.6
No	204	66
Body Mass Index (BMI) (kg/m²)		
Under weight (<18.5)	16	5.2
Normal weight (18.5-24.9)	158	51.1
Overweight (25-29.9)	81	26.2
Obese (>30)	54	17.5
Systolic Blood Pressure (mmHg)		
Normal (<120)	139	45.0
Pre-hypertension (120-139)	153	49.5
Stage 1 hypertension (140-159)	12	3.9
Stage 2 hypertension (≥160)	5	1.6
Diastolic Blood Pressure (mmHg)		
Normal (<80)	146	47.2
Pre-hypertension (80-89)	130	42.1
Stage 1 hypertension (90-99)	28	9.1
Stage 2 hypertension (≥100)	5	1.6

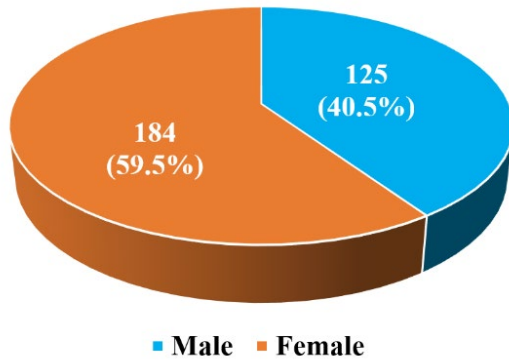


Figure-1: Distribution of the participants by gender (n=309)

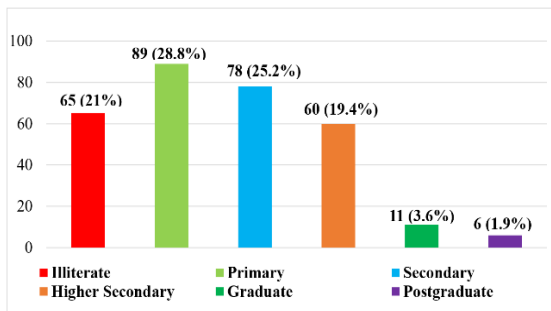


Figure-2: Distribution of participants by their educational qualification (n=309)

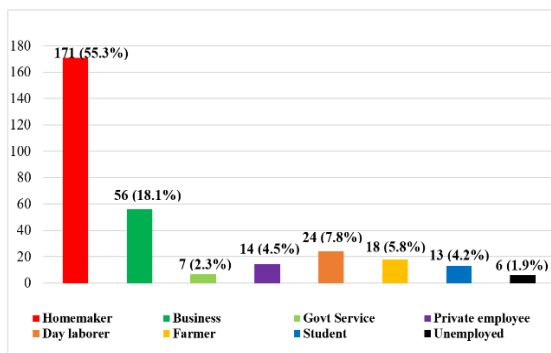


Figure-3: Distribution of participants by their occupation (n=309)

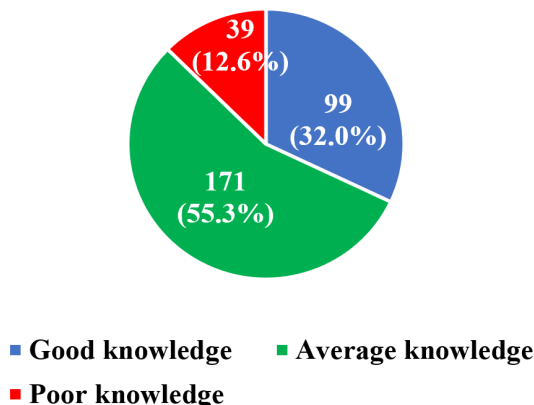


Figure-4: Distribution of participants by level of knowledge about non-communicable diseases (n=309)

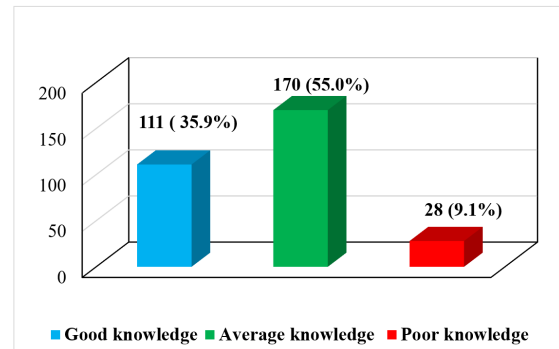


Figure-5: Distribution of participants by level of knowledge about modifiable risk factors of non-communicable diseases (n=309)

Distribution of participants by the level of knowledge about non-communicable diseases is shown in figure-4. Among all participants, by the level of knowledge about non-communicable diseases 171 (55.3%) participants had average knowledge followed by 99 (32.0%) had good knowledge and 39 (12.6%) had poor knowledge. The distribution of participants by the level of knowledge about modifiable risk factors of non-communicable diseases is depicted in figure-5. Among all participants, 170 (55.0%) participants had average knowledge followed by 111 (35.9%) had good knowledge and 28 (9.1%) had poor knowledge about modifiable risk factors of non-communicable diseases.

Table-II describes the information about the lifestyle of the participants. Among all participants. The majority of the participants were nonsmokers (75.5%) and more than half of the participants had not taken smokeless tobacco (66.0%). Most of the participants were in normal weight (51.1%). Half of the participants had systolic blood pressure in the Pre-hypertension state (49.5%) while (47.2%) of participants had diastolic Blood Pressure (mmHg) in the normal condition.

Discussion

The present study was conducted among 309 adult populations residing at Monipur village focusing on 4 age groups 18-30 years, 31-45 years, 46-60 years and more than 61 years. In this study, we found 119 (38.5%) participants belong to the 18-30 years age group. Similarly, another study reported that almost half of the participants belong to 30-40 years age group¹⁹.

Regarding the gender of the participants in this study, most of the participants 184 (59.5%) were female. In another study from India also found female participants were higher than male²⁰. In this study, most of the participants were Muslims 284 (91.9%). Similar observation was also observed in another study²¹. Regarding the educational level of the participants, this study revealed that the highest

89 (28.8%) participants completed their primary level education. Another study in Uganda reported that most of the participants completed their secondary level education²². As our study was conducted in a rural area most of the population completed only their primary level education.

In this study, half of the participants 171 (55.3%) occupation were homemakers. The findings in the present study agree with another study and showed that more than half of the participants were homemaker¹⁹. Regarding the Body Mass Index (BMI) of the participants, this study revealed that half of the participants were normal weight and 26.2% of participants were overweight. Nearly 17.5% and 5.2% were obese and underweight respectively. Similar results were observed in recent studies, where 13.9% and 18.1% were underweight and obese respectively. Almost half of the participants in their study was normal weight²³.

In the present study out of all participants, the pre-hypertension stage (systolic blood pressure) was 49.5% participants, and the pre-hypertension stage (diastolic blood pressure) was 42.1% participants. Similarly, another study in Saudi Arabia reported that 8.6% of participants were pre-hypertension stage (systolic blood pressure) and 4.3% were pre-hypertension stage (diastolic blood pressure)²⁴. Among 309 participants, it was found that 171 (55.3%) had average knowledge followed by 99 (32.0%) had good knowledge and 39 (12.6%) had poor knowledge about non-communicable diseases. On the other hand, another study in Sri Lanka reported that 43% of participants had poor knowledge about non-communicable diseases²⁵.

In the present study out of all participants, 170 (55.0%) had average knowledge followed by 111 (35.9%) had good knowledge and 28 (9.1%) had poor knowledge about modifiable risk factors of non-communicable diseases. In the previous study from India reported that 62% participants had average knowledge regarding modifiable risk factors for NCDs²⁶.

Conclusion

Non-communicable diseases (NCDs) have emerged as serious public health problems worldwide. This study concluded that among all participants, half of the participants had average knowledge about NCDs and their modifiable risk factors. It is recommended that health education should be geared up to encourage them to turn their knowledge into practice.

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Conflict of interest

The authors declared that they have no conflict of interest.

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