



Original Article

Awareness Regarding Non-Communicable Diseases and Their Prevention Among Adult Female of Rural Area

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Abstract

Background: The global burden of illness and mortality is increased by non-communicable diseases (NCDs), which account for a significant portion of early fatalities in developing countries. Health promotion necessitates people's knowledge of NCDs and prevention of these diseases. So, the study will find how well-informed adult females living in rural areas are about non-communicable diseases and prevention of these diseases. **Materials and Methods:** This descriptive cross-sectional study was conducted on Monipur village of Burichang Upazilla under Cumilla District from January 2025 to June 2025 with obtaining ethical clearance from IERB of Eastern Medical College. Data was collected by using pretested semi structured questionnaire by face-to-face interview and sample was collected purposively. After completion of data statistical analysis was done by SPSS version 25. **Results:** The mean age of the respondents was 38.92 ± 14.84 years, with the majority 126 (66.3%) belonging to the 18-40 year age group. Most of the respondents, 53 (27.9%), had finished primary school, and 162 (85.3%) were married. In this poll, 149 respondents or 78.4% of the total, stated that they believed the prevalence of non-communicable diseases was increasing. In terms of preventing NCDs, 79.5% of respondents supported adopting good eating habits, 59.5% opposing excessive fat intake, regular exercise (78.4%), quitting smoking (74.2%), and avoiding excess salt (69.5%). **Conclusion:** Addressing the knowledge gaps and promoting healthy behaviors, this study can contribute to improving the health and well-being of rural adult females and reducing the burden of NCDs in the community.

Keywords: Non-communicable diseases (NCDs), Prevention of NCD, Health education.

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Introduction

Non-communicable diseases (NCDs) are the world's most common cause of mortality and disability, consequently being extremely significant. The most common non-communicable diseases (NCDs) include cardiovascular diseases, diabetes mellitus, cancer, and chronic respiratory diseases. With their rising prevalence, these conditions are expected to impose an even greater burden in the near future¹. Only about 70 years back, the prime concern of diseases in a poor environment characterized by ill health systems. Many non-communicable diseases can be prevented by addressing their associated risk factors. The development and implementation of NCDs prevention policies in the developing countries like Bangladesh, is a multidimensional challenge².

In 2012 the expected total number of fatalities owing to NCDs in Bangladesh was over 886,000 which was approximately two-third of all deaths. The bulk of NCD fatalities happened in urban areas. Findings

emerging from various studies suggest that all-cause mortality and NCDs and their risk factors such as hypertension and abdominal obesity are significantly higher in urban areas than rural areas³.

Non-communicable diseases share common risk factors related to an unhealthy lifestyle like physical inactivity, unhealthy food behavior and cigarette smoking⁴. This may lead to the development of overweight and obesity, hyperglycemia, dyslipidemia and hypertension, all of which, and can interact with one another, further increasing the risk of ischemic heart disease and stroke⁵. Annually, tobacco (including second-hand smoke) and alcohol are linked to 7.2 million and 3.3 million deaths, respectively, with excessive salt intake, alcohol, and physical inactivity causing another 4.1 million and 1.6 million deaths⁶.

Globally, impact NCDs are increasing asymmetric higher in developing countries which threatens

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public health⁷. At the international, national, and local levels, comprehensive, effective, and multi-sectoral policies and strategies are required to deal with the burden of NCDs⁸ and already been recognized by the World Health Organization (WHO) in its 2013-2020 Action Plan for the Global Strategy for the Prevention and Control of NCDs⁹. The action plan has established six objectives for the prevention and control of NCDs. Although it has raised awareness about the growing burden of these diseases and the need for effective policy responses, its impact on the development and implementation of appropriate policies, particularly in developing countries-remains unclear¹⁰.

Non-communicable diseases (NCDs) comprise a significant number of premature deaths in low- and middle-income countries (LMICs) and remain a significant contributor to worldwide morbidity and mortality. NCDs have a far-ranging impact on health, which translates into the higher healthcare cost associated with it¹¹. Nearly 80% of deaths from non-communicable diseases (NCDs) occur in low- and middle-income countries, and approximately three-quarters of global NCD-related deaths occur after the age of 60¹². In Ethiopia, NCDs are estimated to account for about 42% of all deaths, with 27% classified as premature deaths occurring before the age of 70¹³.

Bangladesh is passing through a demographic transition and an epidemiological transition and currently has a double burden of diseases¹⁴. A recent critical appraisal by Biswas et al. suggests that NCD-related policies in Bangladesh are aligned with the World Health Organization's (WHO) 2013-2020 Action Plan for the Global Strategy for the Prevention and Control of NCDs, but they hardly translated into proper planning, implementation and monitoring¹⁵. Consequently, over the years Bangladesh had meager success in effectively addressing the growing burden of NCDs.

There is some evidence of collaborative efforts for NCD prevention and control through partnerships facilitated by UN agencies, other international organizations as well as non-governmental organizations (NGOs). To strengthen the healthcare system in Bangladesh, the government has undertaken several initiatives. Notably, as an innovative measure, NCD corners have been established in selected Upazila Health Complexes (UHCs) to provide dedicated NCD services¹⁶.

Materials and Methods

A descriptive type of cross-sectional study was conducted among adult residents of Monipur village of Burichang Upazilla under Cumilla District from January to June 2025 with ethical clearance from IERB of Eastern Medical College, Cumilla. A total

of 190 individuals participated in the study, and participants were selected using a non-probability purposive sampling technique. Participants who gave the consent, be at least eighteen years old, and reside in the chosen area, regardless of whether they had noncommunicable illnesses. Participants who did not agree to cooperate were excluded. To assess knowledge of chronic or non-communicable disease prevention, a self-administered questionnaire with the relevant factors was utilized. Age, religion, marital status, occupation, type of residence, educational level, family type, and family income were the sociodemographic characteristics of the study participants, and factors such as knowledge of particular NCDs (DM, HTN, stroke, and IHD), causes of NCDs, and preventative measures were included in the perception of the disease.

Height and weight were measured for each respondent to calculate body mass index (BMI) and classify participants as underweight (BMI <18.5 kg/m²), normal (BMI 18.5-24.9 kg/m²), overweight (BMI 25-29.9 kg/m²), or obese (BMI 30-39.9 kg/m²). Data was collected by using a pretested semi-structured questionnaire in a face-to-face interview with their consent. After completion of data collection, statistical analysis was executed using SPSS version 25. The chi-square test was used to determine the connection between variables, and a p-value of less than 0.05 was considered statistically significant. Each respondent's anonymity and privacy were rigorously upheld.

Results

In this study, among the 190 respondents, the mean age was 38.92 ± 14.84 years, with the majority 126 (66.3%) belonging to the 18-40 year age group and the maximum number of participants (186, 97.9%) were Muslims. Most of the (162, 85.3%) participants were married and housewives (175, 92.1%), and most of the participants' families (76, 40.0%) earned between 10,000 and 20,000 BDT each month, and the maximum number of participants, (90, 47.4%) resided in brick-built homes (Table-I). In total, there were 53 (27.9%) primary school pupils, 50 (26.3%) secondary school students, 32 (16.8%) higher school students, 5 (2.6%) graduates, and 50 (26.3%) illiterate students (Figure-1). The maximum respondents (164, 86.3%) knew about noncommunicable diseases (Figure-2).

Regarding knowledge of the increasing prevalence of non-communicable diseases, 149 (78.42%) respondents reported being aware, while the remaining 41 (21.56%) stated they were not aware (Figure-3). Nearly half of the respondents, 92 (48.4%), had a normal BMI, followed by 50 (26.3%) who were overweight, 34 (17.9%) obese, and 14 (7.4%) underweight (Figure-4). In response to the question on the causes of the non-communicable

diseases, respondents identified excess intake of carbohydrates and fats (144, 75.8%), sedentary lifestyle (150, 78.9%), smoking (145, 76.3%), low consumption of fruits & vegetables (133, 70.0%), excessive salt intake (129, 67.9%) and family history (135, 71.1%) as contributing factors (Table-II).

A healthy diet (151, 79.5%), avoiding too much fatty food (113, 59.5%), regular exercise (149, 78.4%), quitting smoking (141, 74.2%), and avoiding excess

salt (132, 69.5%) were the respondents preferred choices when asked how non-communicable illnesses may be prevented (Table-III). Additionally, there were statistically significant relationships between educational qualification and awareness regarding non-communicable diseases ($p < 0.001$). The study results also found that house type of participants and awareness regarding non-communicable diseases were significant relationships ($p = 0.02$) (Table-I).

Table-I: Socio Demographic Characteristics of the Respondents (n=190)

Variables	Frequency (%)	Have awareness about NCDs (n=164)	No awareness about NCDs (n=26)	χ2 value p-value
Age (years)				
18-40	126 (66.3%)	111 (67.7%)	15 (57.7%)	χ2=34.56 p=0.584 ^{ns}
41-60	46 (24.2%)	39 (23.8%)	07 (26.9%)	
>60	18 (9.4%)	14 (8.5%)	04 (15.4%)	
Religion				
Muslim	186 (97.9%)	160(97.6%)	26 (100%)	χ2=1.191 p=1.000 ^{ns}
Sanatan	04 (2.1%)	04(2.4%)	0 (0.0%)	
Marital status				
Married	162 (85.3)	139 (84.8%)	23 (88.5%)	χ2=3.885 p=0.274 ^{ns}
Unmarried	10 (5.3%)	10 (6.1%)	0 (0.0%)	
Divorce	02 (1.1%)	02 (1.2%)	0 (0.0%)	
Widow	16 (8.4%)	13 (7.9%)	03 (11.5%)	
Educational qualification				
No formal education	50 (26.3%)	33 (20.1%)	17 (65.4%)	χ2=25.61 p=<0.001 ^s
Primary	53 (27.9%)	50 (30.5%)	03 (11.6%)	
Secondary	50 (26.3%)	49 (29.9%)	01 (3.8%)	
Higher secondary	32 (16.8%)	28 (17.1%)	04 (15.4%)	
Graduate	05 (2.6%)	04 (2.4%)	01 (3.8%)	
Occupation				
Housewife	175 (92.1%)	151 (92.1%)	24 (92.4%)	χ2=7.283 p=0.122 ^{ns}
Business	04 (2.1%)	03 (1.8%)	01 (3.8%)	
Public job	01 (0.5%)	0 (0.0%)	01 (3.8%)	
Laborer	03 (1.6%)	03 (1.8%)	0 (0.0%)	
Students	07 (3.7%)	07 (4.3%)	0 (0.0%)	
Family income/month (taka)				
<5000	35 (18.4%)	28 (17.1%)	07 (26.9%)	χ2=2.316 p=0.510 ^{ns}
5000-10000	43 (22.6%)	39 (23.8%)	04 (15.4%)	
10000-20000	76 (40.0%)	67 (40.8%)	09 (34.6%)	
>20000	36 (18.9%)	30 (18.3%)	06 (23.1%)	
Type of residence				
Mud build	51 (26.8%)	38 (23.2%)	13 (50%)	χ2=7.568 p=0.02 ^s
Brick build	90 (47.4%)	81 (49.4%)	09 (34.6%)	
Semi furnished	49 (25.8%)	45 (27.4%)	04 (15.4%)	
Family type				
Nuclear family	106 (55.8%)	95 (57.9%)	11 (42.3%)	χ2=2.204 p=0.144 ^{ns}
Joint family	84 (44.2%)	69 (42.1%)	15 (57.7%)	

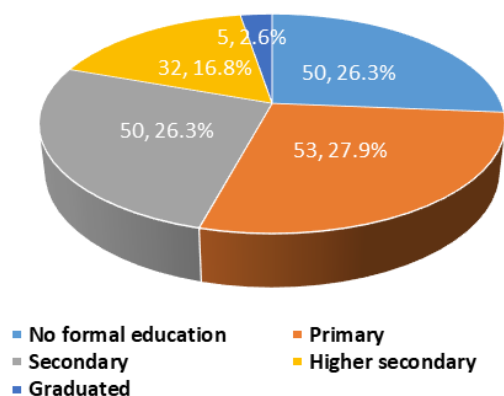


Figure-1: Distribution of Respondents According to Their Educational Background (n=190)

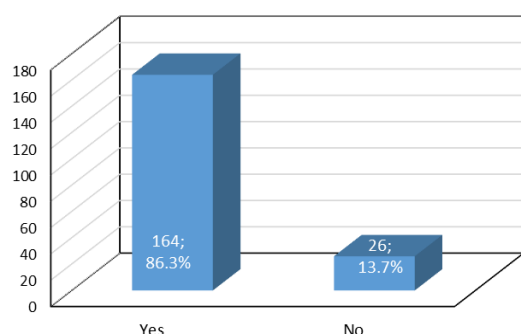


Figure-2: Respondents' Knowledge About Non-Communicable Diseases (n=190)

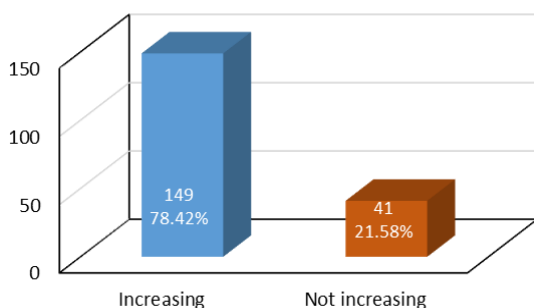


Figure-3: Respondents' awareness About the Increasing Prevalence of the Non-communicable Disease (n=190)

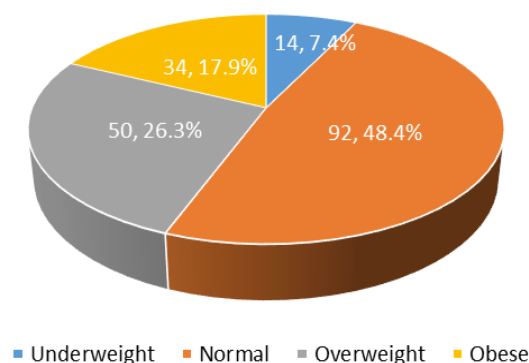


Figure-4: Distribution of Respondents According to Their BMI (n=190)

Table-II: Respondents Knowledge Regarding the Causes of Non-communicable Diseases (n=190)

Causes NCD	Frequency (n)	Percentage (%)
Excess carbohydrates and fats intake		
Yes	144	75.8
No	46	24.2
Sedentary lifestyle		
Yes	150	78.9
No	40	21.1
Smoking		
Yes	145	76.3
No	45	23.7
Less vegetables and fruits intake		
Yes	133	70.0
No	57	30.0
Excess salt intake		
Yes	129	67.9
No	61	32.1
Positive family history of NCD		
Yes	135	71.1
No	55	28.9

Table-III: Assessment of respondents' awareness regarding non-communicable disease prevention (n = 190)

Ways to preventing NCD	Frequency (n)	Percentage (%)
Healthy dietary habit		
Yes	151	79.5
No	39	20.5
Reducing consumption of heavy fatty food		
Yes	113	59.5
No	77	40.5
Regular exercise		
Yes	149	78.4
No	41	21.6
Avoiding smoking		
Yes	141	74.2
No	49	25.8
Avoiding extra salt		
Yes	132	69.5
No	58	30.5

Discussion

In this study, the mean age was 38.92 ± 14.84 years, with the majority 126 (66.3%) belonging to the 18-40 year age group. This finding is nearly similar to the findings of Nujhat et al who showed the mean age of their respondents to be 41.9 ± 15.7 years. According to religious status, mostly were Muslim. The same findings were noted by Islam et al¹⁷. The current study identified that 162 (85.3%) participants were married, which is nearly similar to the findings of Akter et al¹⁸.

Among the participants of this study, 175 (92.1%) of the respondents were housewives, and approximately 30% were primary level educated, whereas a similar study shows more than half (332, 51.3%) of the respondents were housewives, and over 40% were completed primary level education¹⁹. Our results showed that 45% of participants were overweight or obese, which is consistent with the findings of Alam et al.¹⁹ who reported that 40% of the rural population in Bangladesh was overweight or obese.

In our survey, 26 people (13.7%) had no knowledge of NCDs at all, while the remaining participants were knowledgeable about them. In the study by Alam et al.¹⁹, one-third of participants (35.3%) were completely unaware of NCDs or had only heard the term, 54% had limited knowledge, and the remaining respondents possessed varying levels of understanding about NCDs.

In response to what causes NCDs, the respondents mentioned intake of high CHO and fat 144(75.8%), adopting sedentary lifestyle 150(78.9%), smoking 145(76.3%), less intake of vegetables and fruits 133(70%), and intake excess salt 129(67.9%) along with family history 135(71.1%). Where a similar study was showed that, the respondents mentioned intake of carbohydrate-rich diet 351(55%), intake of too much fat and adopting sedentary life-style 440(68%), indulgence in smoking 442(68.2%), less intake of vegetables and fruits 372(57.4%), and used to taking additional salt 327(50.5%) along with family history of NCDs 286(44.1%)¹⁹. In terms of preventing chronic diseases, the majority supported regular exercise, adopting healthy dietary habits, avoiding excessively fatty foods, smoking cessation and reduced salt intake.

In this study educational qualification of respondents and awareness of non-communicable diseases was very significant relationship and the study's findings also revealed a significant correlation between participants' dwelling type and their knowledge of NCD. Awareness of NCDs had no significant correlation with age, religion, employment, family members, or monthly family income. Another study also found that those without formal or primary education and those from low-socioeconomic status households were more likely to have low NCD knowledge²⁰.

Limitations of study

The sample was collected purposively, so the study findings did not reflect the actual picture of the whole community. The study was conducted in a limited area and only females participated in the study. Thus, the study did not accurately represent the whole scenario. There is a possibility that

respondents may have provided inaccurate or misleading information.

Conclusion

The prevalence of non-communicable diseases has risen dramatically in recent years. The study findings show that rural women had varying level of awareness regarding non-communicable illnesses. The respondents' dwelling type and educational background were statistically significant. They also knew that such diseases were on the rise. About two-thirds of the populace knew how to prevent them. It is suggested that health education be created to inspire individuals to use what they have learned, even while their degree of practice in preventing these NCDs is not assessed.

Conflict of interest

The authors declared that they have no conflict of interests.

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