

## Prevalence of NCDs among Rural Households of Dhamrai Upazila, Dhaka

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Date of submission: 09.04.2016

Date of acceptance: 17.10.2016

### ABSTRACT

**Background:** The emerging pandemic of Non-Communicable Diseases (NCDs) creates a new frontier for health professionals globally. Bangladesh has been facing a dual burden of existing communicable and non-communicable diseases. The aim of this study was to find out the proportion of NCDs among the rural households.

**Material and Methods:** This descriptive cross sectional study was carried out among 552 respondents and 651 family members suffering from NCDs as respondents by purposive sampling technique from 13th to 15<sup>th</sup> December, 2015 in different villages of Dhamrai Upazila, Dhaka. Data were collected on a pretested questionnaire by face to face interview. Data were analyzed manually and by using computer.

**Results:** The study revealed that majority of the respondents 77% were Muslims by religion and 52% male, 48% female by sex. About 87% respondents were found within the age 15-55 years and mean age was  $38.71 \pm 1.73$  years. Most of them 73% were literate and only 27% were found illiterate. About 60% were involved in Business, service and 16%, 10%, 9% and 5% were Day Labourer, Garments workers, Farmers and Driver respectively. About 59% respondents monthly income were more than TK 9000. About 46% & 33% respondents found to have 3 & 4 number of family members respectively. The proportion of family members of the respondents suffering from NCDs was estimated to 31%. Among the sufferer 48.7% were male and 51.3% were female. About 71% were found within 21-60 years age group. Diabetes, Hypertension, COPD and CHD were found mostly among 33%, 54%, 26% & 11% of the respondents respectively. Regarding duration of suffering from NCDs 18%, 29%, 31% & 24% were suffering for 3-4 years from diabetes, Hypertension, COPD & CHD respectively. Moreover, 21% had other co-morbidities along with NCDs. Peptic Ulcer Disease, pain, Arthritis, Allergy, Ear infections & Disability were found as common co-morbidities among 49%, 47%, 19%, 12%, 11% & 9% of the respondents respectively.

**Conclusion:** Proportion of NCDs among the rural households are alarming and people are also suffering from various co-morbidities along with NCDs. The study findings demand the strategic plan for surveillance and prevention of NCDs in Bangladesh.

**Key Words :** Non-Communicable Diseases (NCDs), Rural Households, Co-morbidities

### Introduction

Non-communicable diseases have a considerable toll on individuals, societies and health systems. Located in South Asia, Bangladesh has a population of about 150 million and a per-capita health expenditure of US \$ 64 will not be sufficient enough to combat with this condition<sup>1</sup>.

Only about 70 years back, the prime concern of

physician was infectious diseases which were the leading cause of death for centuries. By the dawn of the third millennium, the entire world is drifting towards the non communicable diseases (NCDs). By 2020, it is predicted that these diseases will be causing seven out of every 10 deaths in developing countries where, the transition imposes more constraints to deal with the double burden of infective and non-infective

diseases in a poor environment characterized by illhealth systems. Many of the non communicable diseases can be prevented by tackling associated risk factors. The development and implementation of NCDs prevention polices in the developing countries like Bangladesh, is a multidimensional challenge.<sup>2</sup>

The world Health Report 2002 had illustrated that NCDs accounts for almost 60% of deaths and 46% of the global burden of disease. If present trends continue, by 2020, these diseases are expected to account for 73% of deaths and 60% of disease burden.<sup>3</sup>

NCDs are important cause of disease burden, morbidity and mortality. At least 25% of the deaths in primary and secondary government health facilities are caused by these diseases. Presently, Bangladesh does not have a community-based public health program for NCDs. Only hospital-based information, although poor, is available. The major limitations which are being faced for initiation of surveillance on NCDs include lack of advocacy, lack of logistic and other facilities as well as difficulties in the generating resources for newer initiatives.<sup>4</sup>

Globalization, unplanned urbanization and environmental and life style factors on a background of over population have been contributing significantly to increase burden of NCDs. It is estimated that by 2010, NCDs will be responsible for 59% of deaths, compared to 40% in 1990. Although the country is lacking a good surveillance system, the magnitude of NCDs is considered to be fairly high in Bangladesh. In 2000, top ten causes of death in Bangladesh included asthma/COPD, stroke, heart diseases, hypertension and diabetes.<sup>5</sup>

Conventionally NCDs include cardiovascular disease, stroke, diabetes, cancer and chronic respiratory diseases. However, our national plan includes other commonly prevalent non-communicable diseases or conditions like mental illnesses, injuries and blindness because of the country's requirements to be addressed through synchronized public health measures within a common strategic framework. Surveillance, prevention and management of injuries, mental illnesses and blindness could be incorporated in to this platform for a cost effective outcome.

NCD surveillance is a new endeavor in Bangladesh. Therefore, its plan of implementation needs to be simple and easily administrable. Systematic collection, analysis and interpretation of health data and the timely dissemination of this data to policymakers and

others are required to implement an effective surveillance system. WHO is pursuing surveillance as part of a global strategy for preventing and controlling NCDs. The WHO STEP wise approach to surveillance of NCD risk factors uses a standard survey instrument and a methodology that can be adapted to different country resource settings and help to build country capacity.<sup>6</sup>

Bangladesh, like many transitional nations, is straddling the demographic and epidemiological transition. In a review of twenty-three developing countries, Bangladesh was found to have the ninth highest rate of age-standardized mortality among the included countries due to chronic diseases, primarily cardiovascular diseases and diabetes<sup>7</sup>. Some 51% of deaths in Bangladesh are due to non-communicable diseases and other chronic health conditions<sup>8</sup>. There is no free or subsidized treatment for non-communicable diseases through the public health system in Bangladesh in which no cost the point of service and incentivized programmes exist for some communicable diseases and maternal and child health. Swedish International Development Cooperation Agency reports that there is an increasing demand for care for diabetes, heart disease and stress<sup>9</sup>. The means for prevention are established, and should be integrated within the public health system<sup>10</sup>.

There is therefore a need for further research on non-communicable diseases. The purpose of this study is to find out the proportion of NCDs among the rural households to comprise an effective prevention programme of NCDs by amplifying awareness of people about a perfect and healthy lifestyle.

### Methodology

This was a descriptive cross sectional study carried out in different villages of Dhamrai Upazila during the period 13th to 15th December, 2015 for data collection. Rural households during data collection period were the study population. Total size of the sample was 552 respondents and 651 family members suffering from NCD. It was purposive in nature. Duly pre-tested semi-structured questionnaire was the instrument for data collection. It was collected through face to face interview by 3rd year MBBS students (AKMMC -06) of Anwer Khan Modern Medical College, Dhanmondi, Dhaka with prior filling up a consent form and signed by the respondent as a part of ethical consideration. It was processed and analyzed manually and by using computer.

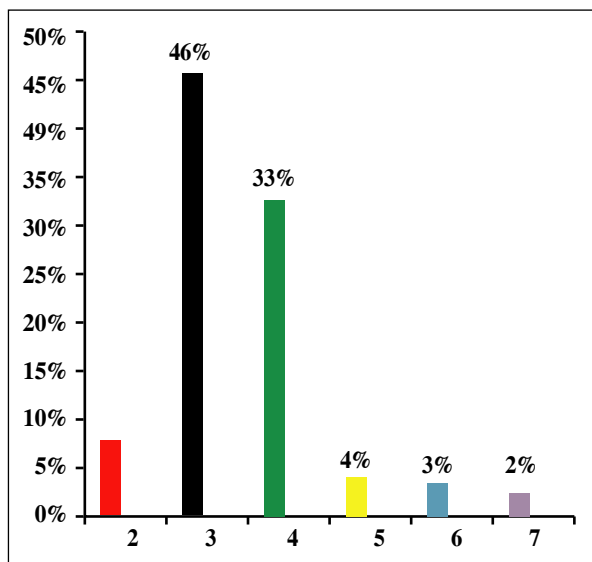
**Results**

**Table I:** Distribution of respondents by age & sex. (n = 795)

Age in years	Number of respondents	Sex	
15-25	100(18)	Male	287(52)
26-35	170(31)	Female	265(48)
36-45	106(19)	Total	552(100)
46-55	103(19)		
56-65	46(8)		
>66	27(5)		
Total	552(100)		

About 87% respondents were found within age of 15-55 years. Mean age : 39years SD : ± 1.73 with male 52% and female 48%.

(N.B: Figures in the parenthesis indicate percentage)



**Figure 1:** Simple Bar diagram showing distribution of respondents by number of family members

Figure 01 shows that about 8%, 46%, 33%, 4%, 3% & 2% respondents were found having 2, 3, 4, 5, 6 & 7 number of family members respectively.

Total population amongst 552 household : 2210

Total population affected by NCDs : 651

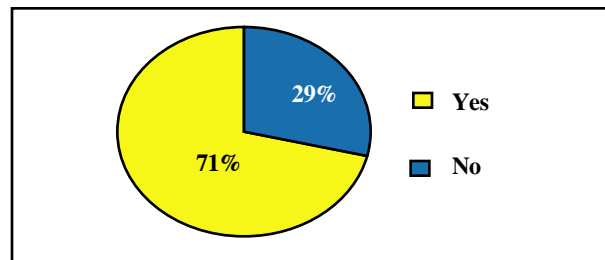
Proportion : 29%

**Table II:** Distribution of respondents family members suffering from NCDs by age and sex. (n = 651)

Age in yrs	Sex		Total number of respondents
	Male	Female	
1-20	35(5)	21(4)	56(9)
21-40	87(13)	113(18)	200(31)
41-60	125(19)	141(21)	266(40)
61-80	52(8)	33(5)	85(13)
81-100	18(3)	18(3)	36(6)
>100	5(7)	3(3)	8(1)
Total	322(48.7)	329(51.3)	651(100)

About 48.7% were male and 51.3% were female and 71% were found within 21-60 years of age group.

(N.B: Figures in the parenthesis indicate percentage)



**Figure 2:** Shows that About 29 % respondent's family members were suffering from NCDs.

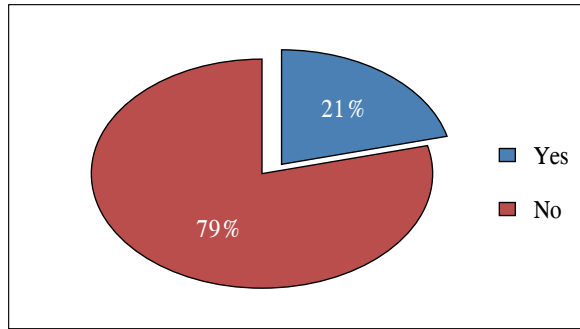
Figure 02 shows that About 29 % respondent's family members were suffering from NCDs.

**Table III:** Distribution of respondents by duration of NCDs. (n = 651)

Duration of NCDs (in yrs)	Diabetes	Hyper tension	COPD, Asthma	CHD	Cancer
<1	59(27)	47(13)	29(17)	14(20)	2( 50)
1-2	48(22)	124(35)	63(37)	30(43)	0
3-4	39(18)	104(29)	54(31)	17(24)	1(25)
5-6	37(17)	30(8)	10(6)	6(9)	1(25)
>6	35(16)	49(15)	16(9)	3(4)	0
Total	218(100)	354(100)	172(100)	70(100)	4(100)

About 18%, 29%, 31% & 24% were suffering for 3-4 years from Diabetes, Hypertension, COPD & CHD respectively.

(N.B: Figures in the parenthesis indicate percentage)



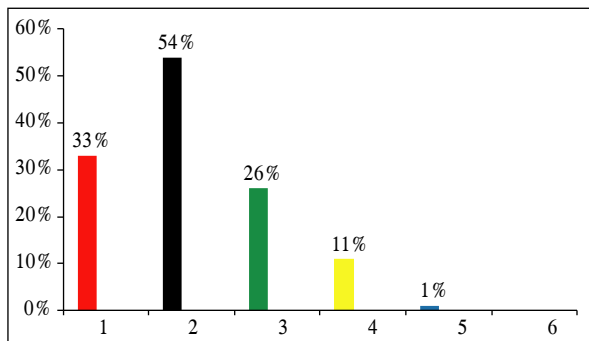
**Figure 03 :** Pie chart showing distribution of respondents by Co-morbidities

Figure 03 shows that about 21 % respondents had different co-morbidities along with NCDs

**Table IV:** Distribution of respondents by types of co-morbidities. (n = Multiple response)

Types of Co-morbidities	Number of respondents	Percentage
Peptic Ulcer Disease (PUD)	58	49
Disabilities	11	9
Allergy	14	12
Arthritis	22	19
Blindness	8	7
Ear infections	13	11
Pain	56	47
Renal stone	1	1
Others	5	4
Total	118	159

Peptic ulcer disease, Pain, Arthritis, Allergy, Ear infections & Disability were found as co-morbidities among 49%, 47%, 19%, 12%, 11% & 9% of the respondents.



**Figure 04:** Simple Bar diagram showing distribution of respondents by types of NCDs

Figure 04 shows that about 33%, 54%, 26%, 11% & 1% respondents were found suffering from Diabetes,

Hypertension, COPD- Asthma, CHD & Cancer respectively.

N.B: 1= Diabetes, 2= Hypertension, 3= COPD, Asthma, 4= CHD, 5= Cancer.

**Discussion**

This cross sectional study was done in a rural community of Dhamrai Upazila with an attempt to determine the proportion of non-communicable diseases (NCDs) among the rural households.

A total of 552 respondents were interviewed. Most people residing in the study area were Muslims 77% by religion, 52% were male and 48% were female by sex. Most of them 73% were literate and only 27% were found illiterate. About 60% were involved in Business, service and 16%, 10%, 9% and 5% were Day Labourer, Garments workers, Farmers and Driver respectively. About 59% respondents monthly income were more than TK 9000. About 46% & 33% respondents found to have 3 & 4 number of family members respectively.

The proportion of family members of the respondents suffering from NCDs was estimated to 31%. Among the sufferer 48.7% were male and 51.3% were female. About 71% were found within 21-60 years age group. Diabetes, Hypertension, COPD and CHD were found mostly among 33%, 54%, 26% & 11% of the respondents respectively. Regarding duration of suffering from NCDs 18%, 29%, 31% & 24% were suffering for 3-4 years from diabetes, Hypertension, COPD & CHD respectively. Moreover, 21% had other co-morbidities along with NCDs. Peptic Ulcer Disease, pain, Arthritis, Allergy, Ear infections & Disability were found as common co-morbidities among 49%, 47%, 19%, 12%, 11% & 9% of the respondents respectively.

**Conclusion**

Magnitude of NCDs among the rural households are alarming. Hypertension, Diabetes, COPD & CHD were the common NCDs. Peptic Ulcer Disease, Pain, Arthritis, Allergy, Ear infections & Disabilities were found as common co-morbidities along with NCDs.

## Recommendations

Considering the findings of the present study, there are following recommendations:

- Efforts needed to enhance knowledge and awareness related to healthy life style through motivation creating awareness
- Family physicians & teachers can act as role model towards positive health habits.
- An in depth large scale study on NCDs is needed to explore the magnitude or extent of the situation.

## Acknowledgement

It is our pleasure to acknowledge Principal & Vice-principal of Anwer Khan Modern Medical College to support in conducting this study. We also gratefully acknowledge Director of NIPSOM & his support staff at Dhamrai THC in providing accommodation & guidance during our stay at their premises. We are thankful for the support staff of Dhamrai THC as well. Thanks to our students of AKMMC-06 batch, for their hard work from the very beginning in conducting and implementing this study protocol and their active participation for data collection in particular. Last but not least the people of the study area are gratefully acknowledged as key informants.

**Conflict of Interest:** Authors declared that they have no conflict of interest.

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