

RESEARCH PAPER

Non-Communicable Diseases: Awareness among Secondary School Children

Md Mahfuzar Rahman^{1*}, Md Atiqur Rahman¹, Abu Kawser Sarker¹, Md Abu Rayhan Miah²

¹Department of Community Medicine, Anwer Khan Modern Medical College, Dhanmondi, Dhaka, Bangladesh; ²Health Services Division, Ministry of Health and Family Welfare, Dhaka, Bangladesh

Abstract

Background: Globally, two third of world's deaths are due to non communicable diseases (NCDs). Preventable risk factors of NCDs are associated with life style modification and behaviour pattern which are largely dependent on the practices adopted in younger age.

Objective: This was an exploratory type of cross-sectional study using mixed method (Quantitative and Qualitative) approach.

Methods: The study was conducted in randomly selected four schools in two divisions of the country in two randomly selected Upazilas. Data were generated using pretested structured questionnaire & by Focus Group Discussion (FGDs). This was an exploratory type of cross-sectional study using mixed method (Quantitative and Qualitative) approach.

Results: In this study about 54.0% respondents were found above 15 years of age with a mean of 14.1 years \pm 1.66. Among the respondents 58.04% were male and 41.96% were female. The study revealed that the respondents had family history of diabetes, hypertension, and use of tobacco among 40.2%, 44.5%, and 34.7% respectively. The respondents (79.9%) generally were aware about NCDs, however (20.1%) were unaware too. The various aspects of the level of knowledge on NCDs, risk factors and their information sources were agreed upon among by 60-85% respondents. More than 70.0% respondents were aware and agreed upon about the complications of NCDs as heart disease, stroke, blindness, paralysis, kidney disease and liver diseases in particular. In response to attitude towards prevention 65-80% respondents had the positive attitudes towards the different aspect of NCDs prevention. However, it was negative in regard to daily dietary inclusion of vegetables; homeopathic and ayurvedic medicine for NCDs treatment options to about 40-70% respondents respectively.

Conclusion: This study finding highlights the needs for developing strategies in building and implementing awareness among school children at large under existing school health programme of the country towards NCDs prevention and control.

Keywords: Non-communicable diseases, Risk factors, Sustainable Development Goals, School health programme

Introduction

Non-communicable diseases (NCDs) have emerged as serious public health problem worldwide. Generally it affects all the populations around the globe but mostly among low- and middle income populations in particular. As a consequences of economic transition there is a shift in the diseases spectrum from communicable diseases to non-communicable diseases (NCDs).¹ Cardiovascular diseases, diabetes mellitus, and stroke have emerged as major NCDs of public health importance in India, with high morbidity and mortality affecting the most economically

productive years of life making a challenge to society and the economy of the nation.² Currently, more than 35 million people die from NCDs each year worldwide representing nearly two third of world's deaths. Most of these deaths (>80%) are in low and middle income countries and occur before the age of 60.³ NCDs have some common risk factors such as tobacco use, unhealthy diet, physical inactivity, high alcohol consumption, raised blood pressure (BP), and excess body adiposity. The development of policies and programmes focusing on reducing the burden of these common risk factors are likely to make a substantial impact on mitigating the mortality and morbidity due to NCDs.⁴ The major and potentially preventable risk factors of NCDs are associated with lifestyle modification and behavior pattern which are largely depend on the practices adopted in younger age. Intermediate school children (adolescents) are known

*Correspondence: Prof. Dr. Md. Mahfuzar Rahman
Deptt. of Community Medicine
Anwer Khan Modern Medical College, Dhaka.
email: mahfuzarrahan26@yahoo.com
ORCID: 0000-0002-6282-7164

for experimentation and are vulnerable to adopt certain lifestyles which may predispose them to NCDs. The awareness and knowledge of adolescents about NCDs and their risk factors are an important part of population based prevention strategy. Assessing and appropriately disseminating knowledge of the modifiable risk factors at an early age are an essential preventive educational approach. The awareness levels in this age group could be used as a baseline on which health promotional strategies can be developed. The current cross sectional study is designed considering this context. The proportional mortality rate due to Non-Communicable Diseases (NCDs) has been increasing day by day in Bangladesh.⁵⁻⁹ As a result, NCDs have been identified as one of the important public health problems in the country. Major NCDs include heart diseases, stroke, diabetes, chronic respiratory diseases and cancers.^{9,10} They are caused by the top of genetic predisposition and age, some behavioural risk factors like unhealthy diet, tobacco use, physical inactivity, and excessive use of alcohol over a prolonged period.¹¹ It gradually mature to metabolic risk factors such as hypertension, impaired glucose tolerance, dyslipidaemia, and ultimately develop into full blown NCDs.¹²

Material and methods

This was an exploratory type of cross-sectional study using mixed method (Quantitative and Qualitative) approach. The study was conducted in the randomly selected four schools in two divisions (Dhaka and Sylhet) of the country in two randomly selected districts Dhaka and Moulavibazar (Dhamrai and Sreemongal Upazilas) having a total of four schools from class VIII-X. Secondary school children (class VIII-X) those willing to participate were considered as study population. The study period was for six months. Simple random sampling technique was used by lottery method in selecting divisions, districts, upazilas and schools respectively. Data were collected from 398 respondents through face to face interview using a pre-tested structured questionnaire with prior filling up a consent form and signed by the respondents. Four Focus Group Discussions (FGDs) were took place in four schools (One in each school) according to moderator's guide that consisted of 12-15 school children as respondents. After collecting data, it was checked for consistency, and cleaned, compiled, edited and analysed manually and by using appropriate computer programme. The statistical tests were done to analyse descriptive statistics with the mean, standard deviation. Data were presented in the form of tables and diagrams as appropriate. Interpretation of study findings were made by descriptive statistical tests.

Results

There were equal number (50.0%) of respondents in schools of each division. About 54.0% respondents were found above 15 years of age. Mean age: 14.1 ± 1.66 years (table-I). Among the respondents 58.0% were male and 41.9% were female (figure 1). In this study most of the respondents were Muslim. The study respondents were belongs to class VIII (43.9%), class IX (37.9%) and class X (18.1%) respectively (figure 2). Most of the respondents had the family history of diabetes, hypertension, and use of tobacco among 40.2%, 44.5%, and 34.7% respectively (table II). The various aspects of the level of knowledge on NCDs, risk factors and their information sources were agreed upon among by 60-85% respondents. However, the information sources on NCDs risk factors from friends were agreed to about 30% respondents only (table III). In response to attitude towards prevention 65-80% respondents had the positive attitudes towards the different aspect of NCDs prevention. However, it was negative in regard to daily dietary inclusion of vegetables, homeopathic, and ayurvedic medicine for NCDs treatment options to about 40-70% respondents respectively (table IV). As outcome of FGDs, it was found that about two third respondents indicates NCDs were the diseases of risk factors rather specific cause and had the knowledge of NCDs as a growing public health issues. More than two third respondents considered smoking as a major risk factor for NCDs and not good for health as well and nearly 80.0% respondents considered junk food as a risk factor for NCDs as well. On the other hand, two third respondents agreed upon about anxiety and stress as a major risk factor for NCDs too. On matter of daily physical activities more than two third respondents agreed upon its benefits in preventing NCDs. However, these issues were disagreed by one fourth of the respondents and regarding available information sources on NCDs risk factors, respondents mostly were agreed upon as electronic & print media, friend, teacher and doctors in particular. Heart, kidney diseases including stroke and paralysis were opined by two third of the respondents as the complications of NCDs and more than half of the respondents were in favor of taking green leafy vegetables and seasonal fruits. Moreover, regular physical activities and avoiding excess salt in diet were the favourable options among majority of the respondents and almost two third of the respondents were in favour of Allopathic medicine as better option for the treatment of NCDs.

Table I: Distribution of respondents by age (n= 398)

Age in years	No. of respondents	Percentage
12-13	95	23.9
14-15	88	22.1
>15	215	54.0
Total	398	100.0

About 54.0% respondents were found above 15 years of age.

Mean age: 14.1 years. SD: + 1.66

Table II: Distribution of respondents (multiple response) by family history of NCDs (n= 398)

Family history of NCDs	No. of respondents	Percentage
Diabetes	160	40.2
Hypertension	177	44.5
Obesity	64	16.1
Tobacco use	138	34.7
Cancer	12	03.0
Coronary Heart Disease (CHD)	53	13.30
Stroke	36	09.0

Most of the respondents had the family history of diabetes, hypertension, and use of tobacco among 40.2%, 44.5%, and 34.7% respectively.

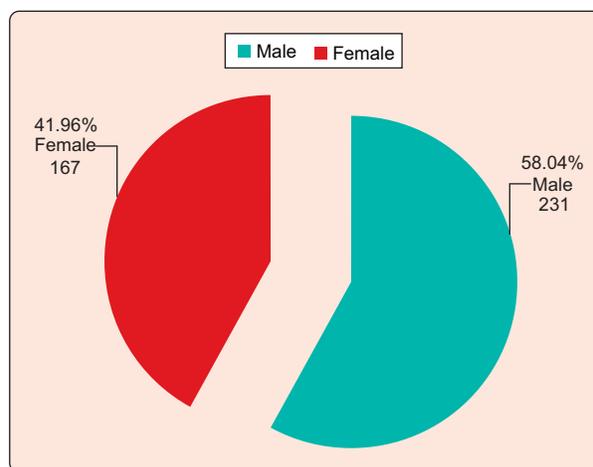


Figure 1: Distribution of respondents by sex (n=398)

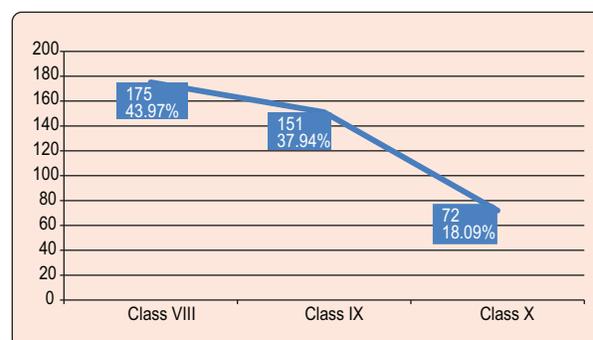


Figure 2: Distribution of respondents by level of education (n=398)

Table III: Distribution of respondents by level of knowledge on NCDs, risk factors and their information sources (n= 398)

Statements	SA	A	UD	D	SD
NCDs are the diseases of risk factors rather specific causes	48 (12.06)	228 (57.28)	68 (17.08)	27 (6.79)	27 (6.79)
Hypertension belongs to NCDs	94 (23.62)	188 (47.23)	62 (15.58)	26 (6.54)	28 (7.03)
Diabetes mellitus belongs to NCDs	99 (24.88)	195 (48.99)	56 (14.07)	32 (8.04)	16 (4.02)
Obesity belongs to NCDs	91 (22.86)	192 (48.24)	69 (17.33)	27 (6.79)	19 (4.78)
Cancer belongs to NCDs	83 (20.85)	171 (42.98)	63 (15.82)	47 (11.80)	34 (8.55)
Coronary heart disease belongs to NCDs	82 (20.60)	172 (43.21)	63 (15.83)	54 (13.57)	27 (6.79)

Table III: Continued

Statements	SA	A	UD	D	SD
Stroke belongs to NCDs	53 (13.31)	227 (57.03)	55 (13.82)	36 (9.05)	27 (6.79)
NCDs are becoming a major public health problem	85 (21.35)	210 (52.77)	55 (13.82)	32 (8.04)	16 (4.02)
Cigarette/berry is a risk factor for NCDs	250 (62.82)	92 (23.11)	32 (8.04)	20 (5.02)	04 (1.01)
Alcohol is a risk factor for NCDs	206 (51.76)	90 (22.61)	63 (15.83)	27 (6.79)	12 (3.01)
Obesity is a risk factor for NCDs	204 (51.25)	105 (26.38)	64 (16.08)	20 (5.03)	05 (1.26)
Junk food is a risk factor for NCDs	55 (13.81)	225 (56.53)	64 (16.08)	27 (6.79)	27 (6.79)
Anxiety is a risk factor for NCDs	52 (13.06)	220 (55.28)	57 (14.32)	45 (11.31)	24 (6.03)
Excess salt consumption is a risk factor for NCDs	36 (9.05)	208 (52.26)	63 (15.83)	69 (17.33)	22 (5.53)
Lack of physical activities is a risk factor for NCDs	82 (20.60)	172 (43.21)	63 (15.83)	54 (13.57)	27 (6.79)
Information on NCDs, risk factors from electronic media	84 (21.11)	172 (43.21)	63 (15.83)	52 (13.06)	27 (6.79)
Information on NCDs, risk factors from print media	213 (53.52)	32 (8.04)	63 (15.83)	68 (17.08)	22 (5.57)
Information on NCDs, risk factors from my friends	34 (8.85)	83 (20.85)	206 (51.76)	63 (15.83)	12 (3.01)
Information on NCDs, risk factors from teachers	239 (60.05)	95 (23.87)	33 (8.29)	25 (6.28)	06 (1.51)
Information on NCDs, risk factors from doctors	93 (23.37)	192 (48.24)	68 (17.08)	27 (6.79)	18 (4.52)
Information on NCDs, risk factors from parents	86 (21.60)	171 (42.98)	63 (15.83)	52 (13.06)	26 (6.53)
Information on NCDs, risk factors from other sources	85 (21.35)	210 (52.77)	55 (13.82)	32 (8.04)	16 (4.02)

N.B. Figures in the parenthesis indicate percentages

The various aspects of the level of knowledge on NCDs, risk factors and their information sources were agreed upon among by 60-85% respondents. However, the information sources on NCDs risk factors from friends were agreed to about 30% respondents only.

Table IV: Distribution of respondents by attitudes towards prevention of NCDs (n=398)

Attitude towards prevention of NCDs	Yes	No
Green leafy vegetables should be added in daily diet	246 (61.81)	152 (38.19)
Daily seasonal fruit intake can prevent NCDs	264 (66.33)	134 (33.67)
Avoiding excess salt intake prevent NCDs	253 (63.57)	145 (36.43)
Daily physical activity helps preventing NCDs	295 (74.12)	103 (25.88)
Regular medication is important for preventing NCDs	325 (81.66)	73 (18.34)
Life style change/modification can prevent occurrence of NCDs	264 (66.33)	134 (33.67)
Allopathic medicine is better option for the treatment of NCDs	261 (65.58)	137 (34.42)
Homeopathic medicine is better option for the treatment of NCDs	238 (59.80)	160 (40.20)
Ayurvedic medicine is better option for the treatment of NCDs	122 (30.65)	276 (69.35)

N.B. Figures in the parenthesis indicate percentages

65-80% respondents had the positive attitudes towards the different aspect of NCDs prevention. However, it was negative in regards to daily dietary inclusion of vegetables, homeopathic, and ayurvedic medicine for NCDs treatment options to about 40-70% respondents respectively.

Discussion

It was an exploratory type of cross-sectional study with mixed approach (Qualitative and Quantitative) among secondary school children from class VIII-X to assess the respondents' socio-demographic characteristics, level of knowledge on NCDs risk factors, awareness on complications as well as attitude towards its preventive measures in addition to the knowledge on source of information about NCDs. It

was revealed that about 54.0% respondents were above 15 years of age where mean age was 14.1 ± 1.66 years. The respondents 58.0% were male and 41.9% were female where mostly Muslim. The respondent's family members had the history of diabetes, hypertension, and use of tobacco mostly. As our people do not use community clinics and union level health facilities for their treatment of hypertension and diabetes although these were close to their home.

The health care institutions at union and ward level need to build capacity accordingly in addressing NCDs needs of the community. The respondents about one fifth were unaware about NCDs. Several WHO report indicates the major behavioral risk factors for NCDs are modifiable, metabolic factors are preventable and the NCDs are treatable to a large extent.^{13,14} In this study, the knowledge on NCDs, risk factors and their information sources were agreed upon by 60-85% respondents and majority were aware and agreed upon about the complications of NCDs as heart disease, stroke, blindness, paralysis, kidney disease and liver diseases in particular. Primary Health Care (PHC) system in Bangladesh can play an important role in prevention of diseases through public awareness, early detection, treatment and referral.¹⁷ The positive attitudes towards prevention on different aspects were among 65-80% respondents however, it was negative towards daily dietary inclusion of vegetables, homeopathic, and ayurvedic medicine for NCDs treatment options to about 40-70% respondents respectively. In regard to public awareness school health programme should have the opportunity engaging children and adolescents in healthy eating, regular physical activity which can lower their risk of developing NCDs. Schools play a critical role through establishing a supportive environment for such healthy behaviors.²⁰

Conclusion

Findings of this study suggest that there is a scope for improving awareness and knowledge of this group of children about NCDs and their risk factors as part of population based prevention strategies. The findings will also help policy makers towards development of awareness programmes necessary for implementation among school children at large to prevent NCDs related morbidity and mortality in contributing Sustainable Development Goals (SDGs) in improving quality of life from childhood.

As the present study revealed one fifth respondents were out of awareness on various issues of NCDs, therefore an immediate comprehensive NCDs awareness and health promotional programme would have been considered and developed on priority for the secondary school children through existing school health service of the country.

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