Original Article

KNOWLEDGE AND AWARENESS OF RURAL SCHOOL TEACHERS REGARDING RISK FACTORS OF COMMON NON-COMMUNICABLE DISEASES

Jahan A[1], Sultana H[2], Saha T[3], Shazu S[4], Akther A[5], Disa AN[6], Elora FTJ[7]

ABSTRACT

Background: Non-communicable diseases (NCDs) are currently a huge burden on the health situation. Non-communicable diseases kill 41 people each year, equivalent to 74% of all deaths globally. In Bangladesh, 67% of all deaths are caused by NCDs. Bangladesh's healthcare spending from 2000 to 2022 was $46. This study aimed to assess the knowledge and awareness level of rural school teachers about common risk factors of non-communicable diseases.

Methods: A descriptive type of cross-sectional study was conducted among rural school teachers of Shibganj Upazila, Bogura. A total of 334 rural school teachers were selected by purposive sampling technique. Data were collected using pre-tested semi-structured questionnaires and SPSS version 25 was used for data analysis. Frequency and percentage were used to describe the variables. Inferential statistics included Chi square test / Fisher's exact test to find out any significant association between two qualitative variables.

Results: The result of this study showed most of the respondents 149(44.6%) were 31-42 years old with the mean age of respondents being 42.26 years which ranged from 21-58 years. Female (51.5%) outnumbered male (48.5%). Most of the respondents 91.9%(n=334) had good knowledge about common risk factors of NCDs and among those who had good knowledge majority of them, 87.9% were aware. The association between the level of knowledge and the level of awareness of the respondents were found statistically not significant (p>0.05).

Conclusion: Since the majority of these risk factors are modifiable through behavioral changes, proper knowledge and awareness about common risk factors of NCDs in rural school teachers lead to reduce the burden of NCDs globally and help to prevent the development of NCDs from an early age of life of their students and rural community.

JOPSOM 2024; 43(1): 33-40
DOI: https://doi.org/10.3329/jopsom.v43i1.82423

KEYWORDS: Knowledge, Awareness, Non-Communicable Disease, Risk factors, Rural, School teachers

---

1. *Assistant Professor, Department of Public Health, Anwer Khan Modern University, Dhaka.*
2. *Head & Professor, Health Promotion & Health Education Department, National Institute of Preventive and Social Medicine (NIPSOM), Dhaka.*
3. *Medical Officer, Universal Medical College and Hospital, Dhaka.*
4. *Assistant Dental Surgeon, Upazilla Health Complex, Lalmohon, Bhola.*
5. *Lecturer, Department of Public Health, Anwer Khan Modern University, Dhaka.*
6. *Lecturer, Department of Periodontology and Oral Pathology, Rangpur Community Dental College.*
7. *Ex Lecturer, Biochemistry department, Enam Medical College, Dhaka.*

Correspondence: *Afrin Jahan, Assistant Professor, Department of Public Health, Anwer Khan Modern University, Dhaka. Mail ID: dr.afrin26@gmail.com*

INTRODUCTION

Non-communicable diseases (NCDs), also known as chronic diseases, are of long duration and result from a combination of genetic, physiological, environmental, and behavioral factors [1]. The major types of NCD are cardiovascular diseases, hypertension, diabetes mellitus, obesity, stroke, cancers, and chronic respiratory diseases [2]. NCDs are responsible for 74% of all death globally. People of all age groups are vulnerable to NCDs' risk factors. 85% of premature deaths occur in low- and middle-income countries due to NCDs [1]. More than 160 million people in Bangladesh are living with NCDs [3]. It is important to reduce one-third of premature mortality because it is a target of sustainable development goals by the United Nations by 2030. The most common NCDs risk factors are tobacco use, harmful use of alcohol, unhealthy diet, low fruit and vegetable consumption, high salt intake, physical inactivity, obesity, raised blood glucose, blood pressure and cholesterol [1].

NCDs are a major cause of the global burden of morbidity and mortality. Due to the wide-ranging effects, NCDs have on health, there is a higher cost of care connected with them [4]. Bangladesh's healthcare spending from 2000 to 2022 was $46 [5]. The burden of non-communicable diseases (NCDs) cannot be reduced without public knowledge and awareness of common risk factors. Community leaders, such as teachers, mosque imams, political figures, and health professionals, play a vital role in inspiring rural populations and acting as stakeholders. Rural school teachers with proper knowledge of NCD risk factors can educate students and community members, helping prevent these diseases at a primordial level, reducing illness, protecting future generations, and ensuring better survival rates. Preventive care is more cost-effective than curative care, as awareness and lifestyle modifications can prevent disease onset, lowering healthcare costs and disease burden. This study aims to assess rural school teachers' knowledge and awareness of NCD risk factors, guiding government efforts to strengthen public education and prevention initiatives.

METHODS

This study aimed to assess the knowledge and awareness of rural school teachers regarding the risk factors of non-communicable diseases (NCDs) through a descriptive cross-sectional design. Conducted in Shibganj Upazila, Bogura, Bangladesh, from January to December 2022, the study included 334 primary and high school teachers selected purposively based on specific inclusion criteria. Teachers voluntarily participated and provided informed consent, while those with serious illnesses or psychiatric conditions were excluded. Data collection was carried out through face-to-face interviews in Bangla using a pre-tested, semi-structured questionnaire. The tool was divided into four sections covering socio-demographics, knowledge of NCDs, awareness of risk factors, and information sources. Knowledge and awareness were scored based on correct responses, with cut-offs set at ≥60% to classify levels as "good" or "aware." A calculated sample size of 349 was determined using a prevalence rate of 35%, adjusted to 334 due to a 4% nonresponse rate. Sampling was purposive, targeting all eligible teachers from selected schools in the upazila. Ethical approvals were obtained from relevant authorities, including the Institutional Review Board, and participants were assured of confidentiality and the voluntary nature of their participation. Data were analyzed using SPSS version 25, employing descriptive statistics for frequency and percentage distributions, and inferential tests such as Fisher's exact test to identify associations. The study findings, presented in subsequent sections, offer insights into the socio-demographic characteristics of respondents, their knowledge and awareness levels, and the sources of information regarding NCDs. By identifying gaps and opportunities, this study highlights the potential role of rural teachers as crucial stakeholders in raising awareness and promoting lifestyle changes within their communities to prevent NCDs.

RESULTS

The socio-demographic characteristics of the respondents reveal that the majority were middle-aged (31-42 years) with a mean age of 42.26 years, evenly distributed by gender (51.5% female, 48.5% male) and predominantly Muslim (91.3%). Most respondents were married (95.8%), held advanced educational qualifications (43.4% completed master's degrees), and had moderate work experience, with 36.2% working for 11-20 years. The majority worked as assistant teachers (72.5%) and lived in pucca or semi-pucca houses (49.1% and 44.6%, respectively). Nuclear families were more common (63.2%), with family sizes predominantly ranging from 4-6 members (69.5%). Monthly family incomes were mostly between 21,000-40,000 taka (64.4%), reflecting a modest economic profile (Table 1).

Table 1. Socio-demographic characteristics of the respondents

Category	Sub-Category	Frequency	Percentage	Mean ± SD / Notes
Age (Years)	18-30	13	3.9	Mean: 42.26 ± 7.681 Range: 21-58
	31-42	149	44.6	
	43-54	105	31.4	
	>55	67	20.1	
Sex	Male	162	48.5	
	Female	172	51.5	
Religion	Muslim	305	91.3	
	Hindu	29	8.7	
Marital Status	Married	320	95.8	
	Unmarried	5	1.5	

	Divorced/Separated	2	0.6	
	Widow/Widower	7	2.1	
Educational Status	Secondary (S.S.C)	5	1.5	
	Higher Secondary (H.S.C)	31	9.3	
	Degree/Honors	115	34.4	
	Masters	145	43.4	
	Others (B.Ed., M.Ed., PTI)	38	11.4	
Work Duration (Years)	<10	115	34.4	
	11-20	121	36.2	
	21-30	63	18.9	
	>31	35	10.5	
Position in Service	Assistant Teacher	242	72.5	
	Head Teacher	92	27.5	
Type of House	Pucca	164	49.1	
	Semi-Pucca	149	44.6	
	Kutcha	21	6.3	
Family Type	Nuclear	211	63.2	
	Joint	123	36.8	
Family Members	<3	68	20.4	
	4-6	232	69.5	
	7-9	29	8.7	
	>9	5	1.5	
Monthly Family Income (Taka)	<20,000	38	11.4	
	21,000-40,000	215	64.4	
	41,000-60,000	57	17.1	
	>60,000	24	7.2	

The findings of this table reveal that while most respondents are aware of common NCDs like hypertension, diabetes, and stroke, and recognize key modifiable risk factors such as tobacco use (97.9%), excess salt (95.5%), and insufficient physical activity (74.3%), there are notable gaps in understanding. Less than half are aware of non-modifiable risk factors like age and family history (44.3%) or can distinguish between modifiable and non-modifiable risks (46.1%). Additionally, awareness of cardiovascular diseases is relatively low (54.2%) compared to other NCDs. These gaps highlight the need for targeted education campaigns to enhance comprehensive knowledge of NCD risk factors and prevention strategies (Table 2).

Table 2. Distribution of the respondents by knowledge regarding NCDs and its common risk factors (n=334)

Statements	Yes f (%)	No f (%)
1. Ever heard about NCDs	288 (86.2%)	46(13.8)
2. NCDs cannot be spread between people	288 (86.2%)	46(13.8)
3. NCDs are now common amongst Bangladeshis	271(81.1%)	63(18.9%)
4. Heard about hypertension	326(97.6%)	8(2.4%)
5. Heard about diabetes	322(96.4%)	12(3.6%)
6. Heard about obesity	298(89.2%)	36(10.8%)
7. Heard about stroke	322(96.4%)	12(3.6%)
8. Heard about cardiovascular disease	181(54.2%)	153(45.8%)
9. Heard about cancer	324(97%)	10(3%)
10. Heard about chronic respiratory disease	290(86.8%)	44(13.2%)
11. Heard about non-modifiable risk factors of NCDs	150(44.9%)	184(55.1%)
12. Age, sex and family history are the risk factors of NCDs cannot be modified	148(44.3%)	186(55.7%)
13. Heard about modifiable risk factors of NCDs	154(46.1%)	180(53.9%)
14. Tobacco use is a risk factor causes NCDs can be modified	304(91%)	30(9%)

15.Tobacco use (cigarettes, bidi, pipes, Zarda with supari, Sadapata, Gul, pan masala with tobacco) causes NCDs like hypertension, stroke, diabetes and also cancer	327(97.9%)	7(2.1%))
16.Intake of alcohol is a risk factor of NCDs	301(90.1%)	33(9.9%)
17.Insufficient physical activity causes NCDS	248(74.3%)	86(25.7%)
18.Excess salt in your diet causes NCDs like hypertension	319(95.5%)	15(4.5%)
19.Excess oil intake causes NCDs like obesity and cardiovascular disease	301(90.1%)	33(9.9%)
20.Excess Carbohydrate intake causes NCDs like diabetes (rice, bread, roti, potatoes)	303(90.7%)	31(9.3%)
21.Less intake of vegetables and fruits causes NCDs	244(73.1%)	90(26.9%)

It was found that among 334 respondents, majority of the respondents 307(91.9%) had good knowledge and only 27(8.1%) respondents had poor knowledge regarding common NCD risk factors (Table 3).

Table 3. Distribution of the respondent's according to their level of knowledge(n=334)

Level of knowledge	Frequency	Percentage
Poor knowledge	27	8.1
Good knowledge	307	91.9
Total	**334**	**100**

The study revealed that high awareness of major non-communicable diseases (NCDs) like cancer (99.1%) and diabetes (99.4%), with moderate awareness of cardiovascular diseases (58.4%). Most respondents view these diseases as public health problems (82.6%) and believe they are preventable (72.5%). Healthy behaviors like fruit and vegetable consumption (94.9%) and exercise (68%) are prevalent, though fast food (41.6%) and soft drink intake (55.7%) remain concerns. Awareness of key NCD risk factors such as tobacco (89.8%), alcohol (90.4%), and fatty diets (90.7%) is high, but recognition of passive smoking (70.7%) and early marriage (65.3%) is lower. Gaps in cholesterol monitoring (49.1%) and lifestyle practices suggest opportunities for targeted health interventions to enhance prevention efforts (Table 4).

Table 4. Distribution of the respondents by awareness regarding common risk factors of NCDs(n=334)

Statements	Yes f (%)	No f (%)
Heard about cancer	331(99.1%)	3(0.9%)
Heard about cardiovascular disease	195(58.4%)	139(41.6%)
Heard about diabetes	332(99.4%)	2(0.6%)
Cancer, Cardiovascular disease, diabetes are public health problems	276(82.6%)	58(17.4%)
Cancer, Cardiovascular disease, diabetes are preventable	242(72.5%)	92(27.5%)
Reuse cooking oil	66(19.8%)	268(80.2%)
Consumption of fast food	139(41.6%)	195(58.4%)
Consumption of fatty food	161(48.2%)	173(51.8%)
Consumption of soft drinks	186(55.7%)	148(44.3%)
Consumption fruits and vegetables	317(94.9%)	17(5.1%)
Performing exercise	227(68%)	107(32%)
Blood pressure had measured by a doctor or other health worker	302(90.4%)	32(9.6%)
Blood sugar (diabetes) level had measured by a doctor or other health worker	256(76.6%)	78(23.4%)
Cholesterol level (fat levels in your blood) had measured by a doctor or other health worker	164(49.1%)	170(50.9%)
Alcohol use causes NCDs	302(90.4%)	32(9.6%)
Tobacco use causes NCDs	300(89.8%)	34(10.2%)
Excess salt intake causes NCDs	293(87.7%)	41(12.3%)
Excessive anxiety causes NCDs	281(84.1%)	53(15.9%)
Early age at marriage causes NCDs	218(65.3%)	116(34.7%)

Fatty diet causes NCDs	303(90.7%)	31(9.3%)
Fast food consumption causes NCDs	299(89.5%)	35(10.5%)
Lack of exercise causes NCDs	276(82.6%)	58(17.4%)
Lack of sexual hygiene causes NCDs	223(66.8%)	111(33.2%)
Obesity causes NCDs	257(76.9%)	77(23.1%)
Passive smoking causes NCDs	236(70.7%)	98(29.3%)
Reuse of cooking oil causes NCDs	277(82.9%)	57(17.1%)
Smoking tobacco causes NCDs	298(89.2%)	36(10.8%)
Intake of soft drinks causes NCDs	284(85%)	50(15%)

The study found that among 334 respondents, majority of the respondents 293(87.7%) were aware and only 41(12.3%) were unaware regarding common non-communicable disease risk factors (Table 5).

Table 5. Distribution of the respondents by level of awareness(n=334)

Level of awareness	Frequency	Percentage
Aware	293	87.7
Unaware	41	12.3
Total	**334**	**100**

The study showed that the most common source of information was electronic media (TV & Radio), used by 37.4% of participants, followed by social media (Facebook, YouTube) at 35.3%. Health workers were the third most cited source (34.7%), while family, friends, and neighbors accounted for 25.4%. Print media (newspapers) was used by 15%, and advertising materials (banners, posters, billboards) were the least utilized at 6.3%. This indicates a preference for digital and electronic sources over traditional methods for accessing information (Table 6).

Table 6. Information related to the source of information about NCDs and its common risk factors

Sources of information	Frequency(f)	Percentage (%)
Health workers	116	34.7%
Family, friend and neighbor	85	25.4%
Electronic media (TV & Radio)	125	37.4%
Print media(newspaper)	50	15%
Advertise material (banner, poster, billboard)	21	6.3%
Social media (Facebook. YouTube)	118	35.3%
Total	**334**	**100**

The findings indicate that most participants were aware, regardless of their level of knowledge. Among those with poor knowledge, 85.2% were aware, while 87.9% of those with good knowledge were also aware. The statistical analysis (Fisher's exact test, p=0.429) shows no significant relationship between knowledge level and awareness. This suggests that awareness is not strongly linked to knowledge level (Table 7).

Table 7. Association between the level of knowledge and level of awareness regarding common NCDs risk factors

Level of knowledge	Level of awareness		Total	Statistical test (p-value)
	Aware f (%)	Unaware f (%)		
Poor knowledge	23(85.2%)	4(14.8%)	27(100%)	Fisher's exact test=0.758 p=0.429 **(p> 0.05)**
Good knowledge	270(87.9%)	37(12.1%)	307(100%)	
Total	**293(87.7%)**	**41(12.3%)**	**334(100%)**	

***Not significant**

DISCUSSION

Non-communicable diseases are the main factor in mortality and morbidity worldwide. These fatalities were reportedly connected to typical risk factors such as lifestyle choices that may be altered, like smoking, insufficient exercise, eating poorly balanced meals, etc. The present descriptive cross-sectional study was conducted to assess the level of knowledge and awareness of rural school teachers regarding common NCD risk factors in Bangladesh.

Findings related to sociodemographic Characteristics

Age: The study revealed a mean age of respondents at 42.26 (±7.681) years, ranging from 21-58 years. Approximately one-fourth of respondents were in the 31-42 and 43-54 age groups each. Similarly, a study in Puthia Upazila, Bangladesh, found the mean age of respondents to be 44.3 (±12.3) years [6].

Sex: Of the 334 respondents, 51.5% were female teachers, and 48.5% were male teachers. Most teachers were assistant teachers (72.5%). Comparatively, a study in Hong Kong also found more female (54.3%) than male (45.7%) teachers, with most being subject teachers (70.4%) [7].

Educational Status: The study reported that 43.4% of teachers had attained education up to the master's level, reflecting a higher educational status than the general community. In contrast, a study in rural India showed that more than half of the population had education below the primary level [8].

Religion: Among the respondents, 91% were Muslims and 9% were Hindus, aligning with Bangladesh's national religious demographics, where 91.04% adhere to Islam and 7.95% to Hinduism [9].

Findings related to knowledge about NCDs risk factors

The study found that 86.2% of respondents knew that NCDs are non-transmissible, and 81.1% recognized their prevalence in Bangladesh. Most respondents were knowledgeable about conditions like hypertension (97.6%), diabetes (96.4%), obesity (89.2%), stroke (96.4%), cancer (97%), and chronic respiratory disease (86.8%), but nearly half (45.8%) were unfamiliar with cardiovascular disease and terms like "modifiable" (53.9%) and "non-modifiable" (55.1%) risk factors. A majority identified key risk factors, including tobacco use (91%), alcohol consumption (90.1%), excess salt (95.5%), oil (90.1%), and carbohydrate intake (90.7%), insufficient physical activity (74.3%), and low fruit and vegetable consumption (73.1%), indicating strong overall knowledge among respondents.

A study revealed that 35.3% of respondents were unfamiliar with the term NCDs, 54% had limited knowledge, and only 10.7% were well-informed. About 50% identified ischemic heart disease, stroke, diabetes, hypertension, and hyperlipidemia as NCDs, while 54.2% to 68.2% linked chronic diseases to risk factors like excessive carbohydrate and fat intake, sedentary lifestyle, smoking, insufficient vegetable and fruit consumption, excessive salt intake, and family history [6]. Another study showed high awareness of smoking (77%) and alcohol (69.4%) as NCD risk factors [10]. The current study's respondents, being rural school teachers with higher education, demonstrated greater knowledge compared to adults and schoolchildren in the other studies.

The present study revealed that 91.9% of respondents demonstrated good knowledge (scoring >60%) of NCD risk factors, while only 8.1% had poor knowledge. This contrasts with a Sri Lankan study among adolescents, where only 42.9% achieved a similar knowledge score [11]. The higher knowledge level in the current study is attributed to the respondents being rural Bangladeshi teachers with greater educational attainment, compared to the adolescent participants in the Sri Lankan study.

Findings related to awareness about NCDs risk factors

The study found that 99.1% of respondents were aware of cancer, and 99.4% of diabetes, but 41.6% were unfamiliar with cardiovascular disease. Most respondents (82.6%) recognized cancer, cardiovascular disease, and diabetes as public health issues, with 72.5% acknowledging their preventability. Many respondents were aware of the risks of reusing cooking oil (80.2%), consuming fast food (58.4%), and eating fatty foods (51.8%), with 94.9% aware of the importance of fruits and vegetables in the diet. However, fewer respondents (55.7%) were aware of the risks of soft drink consumption. Regarding prevention, 90.4% knew about the importance of exercise, and 90.4% were aware of the risks of alcohol and tobacco use, while 87.7% recognized excess salt intake and 89.5% identified fast food consumption as contributors to NCDs. In total, 87.7% of respondents were aware of common NCD risk factors, and only 12.3% were unaware.

A study in Kerala, India, assessing schoolchildren's awareness of NCD risk factors found that most participants (84.8%) had limited knowledge, with only 0.8% having a good understanding of these risks. Few engaged in daily exercise, and only 6.1% recognized the three major NCDs as public health issues. Regarding preventability, 47.5% believed diabetes could be avoided [12]. In contrast, the present study, conducted among rural Bangladeshi teachers, revealed higher levels of awareness, likely due to the respondents' higher education. These findings highlight the importance of educating individuals

about lifestyle changes necessary for better health outcomes in the future.

The present study found that among 307 respondents with good knowledge, most (93.3%) were aged between 31 and 42 years, 90.1% were female, 92.4% had completed their masters, 92.6% were assistant teachers, and 93.0% had a family income between 21,000-40,000 Taka per month. In comparison, a study in Dhaka, Bangladesh, assessing NCD knowledge among urban school students, showed that only 12.6% of respondents with family incomes between 10,000-20,000 Taka and 30.1% with incomes between 20,000-40,000 Taka had strong knowledge [10]. These findings indicate that better education and higher family income were associated with higher levels of NCD knowledge.

The present study found an association between the level of knowledge and awareness regarding common NCD risk factors. Among the 27 respondents with poor knowledge, 85.2% were aware, and 14.8% were unaware. Among the 307 respondents with good knowledge, 87.9% were aware, and 12.1% were unaware. However, the association between knowledge and awareness was statistically not significant. Evaluating this relationship is important as it highlights the proportion of teachers familiar with non-communicable diseases.

Community leaders such as teachers, mosque imams, political figures, and health professionals play a vital role in rural areas by inspiring and influencing others. If these leaders are well-informed about non-communicable diseases (NCDs) and their risk factors, they can share their knowledge with students and community members, helping to increase awareness. This will motivate the community to better understand NCD risks, ultimately reducing the burden of these diseases and ensuring that the next generation is both protected from and informed about these health risks.

CONCLUSION

Majority of rural school teachers in Bangladesh possess good knowledge and awareness of NCDs and their risk factors. Approximately half of the participants were aware of non-modifiable risk factors like age, sex, and family history, while more than two-thirds identified modifiable risk factors such as tobacco use, alcohol intake, insufficient physical activity, excessive salt, oil, and carbohydrate consumption, and inadequate intake of fruits and vegetables. To address gaps in knowledge and enhance the role of rural school teachers in combating NCDs, the study recommends continuous health education, community engagement through initiatives like "khude doctor training programs", and mass awareness campaigns utilizing various media platforms. Training-of-trainers (TOT) programs for teachers are proposed to empower them as community health ambassadors. Additionally, a large-scale national study is suggested to assess teachers' awareness and inform future interventions. These measures aim to strengthen teachers' capacity and support broader public health efforts to prevent and manage NCDs in Bangladesh.

Competing interests: All the authors declared no competing interests.

Funding: This study did not receive any grants.

Acknowledgements: The authors are grateful to all the participants for their sincere participation.

REFERENCES

1. World Health Organization. Non-communicable diseases. 2022 Sep 16. Available from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases
2. Onagbiye SO, Tsolekile LP, Puoane T. Knowledge of non-communicable disease risk factors among community health workers in South Africa.
3. World Health Organization. Noncommunicable diseases country profiles. 2018 Sep 24. Available from: https://www.who.int/publications/i/item/9789241514620
4. Shirotriya AK, Batra K. Knowledge or awareness of non-communicable diseases and their associated risk factors among university students in Fiji: A cross-sectional study. Journal of Health and Social Sciences. 2022;7(1):99.
5. The World Bank. Bangladesh healthcare spending 2000-2022. Available from: https://www.macrotrends.net/countries/BGD/bangladesh/healthcare-spending
6. Alam ME, Amin MN, Haque MJ, Hasan F, Haldar MK, Yasmin N. Awareness of Rural People about Prevention of Non-Communicable Diseases. Ibrahim Cardiac Medical Journal. 2020;10(1-2):27-32.
7. Cheng NY, Wong MY. Knowledge and attitude of school teachers towards promoting healthy lifestyle to students. Health. 2015;7(01):119.
8. Niranjjan R, Arun Daniel J, Prasad T. Awareness level and associated factors for non-communicable disease screening among adults in rural Puducherry, India. International Journal of Medical Science and Public Health. 2020;9(2).
9. Islam MZ, Rahman MM, Moly MA. Knowledge about non-communicable diseases

among selected urban school students. Journal of Armed Forces Medical College, Bangladesh. 2019;15(1):90-3.
10. Gamage AU, Jayawardana PL. Knowledge of non-communicable diseases and practices related to healthy lifestyles among adolescents, in state schools of a selected educational division in Sri Lanka. BMC public health. 2018;18:1-9.
11. Divakaran B, Muttapillymyalil J, Sreedharan J, Shalini K. Lifestyle risk factors of non-communicable diseases: awareness among school children. Indian journal of cancer. 2010;47:S9-13.