

Knowledge and practice regarding COVID-19 prevention: A cross sectional study among the school going students (6-9 grade) in Bangladesh.

SLP Report

Name: Dechen Tshomo

Student ID: 22167019

18th Cohort

Concept Note for SLP

Supervisor: Dr. Mohiuddin Ahsanul Kabir Chowdhury

Email ID: makmohit1928@gmail.com

Mentor: Mushfiqur Rahman

Email ID: mushfiqur.rahman@bracu.ac.bd

Table of content

Abstract	Pg. No
1. Introduction	
1.1 Background	1
1.2 Literature review	2
1.3 Objectives	3
2. Methodology	
2.1 Study design and study site	3
2.2 Study population and sampling	3
2.3 Data collection and management	3
2.4 Statistical analysis plan	4
2.5 Ethical consideration	5
3. Results	
3.1 Socio-demographic characteristics	6
3.2 Knowledge on mode of transmission of COVID-19	7
3.3 Knowledge on prevention of COVID-19	8
4. Discussion	9
5. Recommendation and conclusion	10
6. References	11-12

Abstract

Background

Coronavirus disease (COVID-19) is a global pandemic which is caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). Sufficient and appropriate knowledge towards COVID-19 is significant in prevention and control of the pandemic. The level of knowledge varies from individual to individual and also depends on the geographical distribution of the people. There is significant association between the poor knowledge and practices of pandemic control strategies in low middle income countries. Thus, knowledge influences the control and prevention of COVID-19 pandemic.

Methods

This survey was conducted in 9 schools of Cox's bazar and Pekua, Bangladesh. There were a total of 1973 participants. The study includes students aged ≥ 10 years of age residing in Cox's bazar and Pekua. Convenient sampling approach was used to recruit the participants. It is a cross sectional study. Descriptive analysis, frequency and percentage and primary dataset were used for data analysis. The ethical clearance was obtained from the Institutional Review Board (IRB) of BRAC JGSPH, BRAC University.

Results

This survey was conducted in 9 schools of Cox's bazar and Pekua, Bangladesh. There were a total of 1973 participants. Most of the participants were aware of the mode of transmissions and preventive methods towards COVID-19 pandemic. Majority of the participants were female (59%, n=1173) and completed high school (46%). As for the mode of transmission more than 50% of the participants living in Cox's bazar and Pekua knew that COVID-19 transmission happens when a person come in contact with the breath of an infected person, when an infected person talks in front and close to a non-infected person, through droplets from coughing and sneezing, and through touching eyes, mouth and ear with unclean hands. As for the prevention methods towards COVID-19, majority of the participants from Cox's bazar and Pekua were aware that wearing mask prevents the COVID-19, washing hand, and covering mouth when sneezing, maintaining at least 3 ft distance from each other avoiding touching nose, ears and eyes, staying in home isolation when have even mild symptoms, and vaccination.

Conclusion

Majority of the participants have adequate knowledge on mode of transmission, however, less than 50% from both Cox's bazar and Pekua have reported that avoidance of crowded places is not required for the prevention of infection. As for the mode of transmission, the majority of the participants from both Cox's bazar and Pekua were not aware that the infection can be transmitted through air. Thus, there is further need for health education to enhance the knowledge of prevention towards COVID-19.

1. Introduction

1.1 Background

Coronavirus disease (COVID-19) is a global pandemic which is caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) (Bukata et al., 2022). As of 14th February, 2021 COVID-19 was reported to have affected 235 countries including Bangladesh with 628,346,704 confirmed cases as of 3rd November, 2022 worldwide and 6,573,968 deaths (WHO, 2022; Bukata et al., 2022). In Bangladesh, as of 2nd November, 2022 the total number of confirmed cases reported were 2,035,517 with 29,424 deaths (WHOa, 2022).

The impact of COVID-19 is experienced by all the races of people irrespective of their social, economic, age or gender differences. There are various preventive guidelines provided by the WHO on COVID-19. Some of the preventive methods are vaccination, maintaining social distance, wearing masks, living in a well-ventilated space, hand-washing practice and coughing or sneezing while covering your mouth (WHO, 2022). Irrespective of preventive methods, many people are still the victims of COVID-19 due to their lack of knowledge, poor attitude and practice.

Therefore, to decrease the increasing number of COVID-19 cases globally, these preventive methods should be strictly monitored and implemented across the globe especially among the vulnerable groups such as school going children. Children are vulnerable due to their weak immune systems which makes them more susceptible to infections. Moreover, they become highly vulnerable in schools compared to their houses due to poor infrastructure and crowded population which makes it difficult for them to practice preventive measures such as social distancing (Perera, 2021). This contributes to high transmission/spread of the infection in schools. Therefore, increasing the number of COVID-19 cases which could be fatal to some of the students. Several studies have been conducted in the field of knowledge, attitude and practice (KAP) on COVID-19 in Bangladesh. However, there are limited studies conducted on knowledge towards COVID-19 prevention and mode of transmission among school going students specifically focusing on 6-9 grade students in Bangladesh.

1.2 Literature review

Sufficient and appropriate knowledge towards COVID-19 is significant in prevention and control of the infection (Shrestha et al., 2021). The level of knowledge varies from individual to individual and it also depends on the geographical distribution of the people. Thus, it is significant to have a regular update on COVID-19 prevention to implement evidence-based interventions to address the COVID-19 pandemic especially among different groups of people residing in different geographical areas. In addition, one of the cross-sectional studies concluded that implementation of good practices is associated with social demographic factors such as age, place of residence, and knowledge about COVID-19 (Tien et al., 2021). Moreover, knowledge influences the good preventive practices in the response against COVID-19 pandemic (Nguyen et al., 2021). This indicates the importance of knowledge in controlling and preventing the COVID-19 infection. Furthermore, a study in India has reported that there is a significant association between the poor knowledge and practices of pandemic control strategies in low middle income countries (LMICS) (Rao et al., 2021). Therefore, appropriate and accurate knowledge is required to address the COVID-19 pandemic globally.

In Bangladesh, it was reported that the maximum population were less or not aware of COVID-19 during its early phase. (Islam et al., 2021). However, with the improvement of the effective health education programs, the country has witnessed the improvement of knowledge towards COVID-19 among the population (Banik et al., 2021). Nevertheless, it is important to analyze and understand whether the vulnerable group are aware of the pandemic or not to further enhance the health educational programs and COVID-19 prevention and control strategies.

One of the vulnerable groups of COVID-19 is school going children. Due to inadequate and unsafe school infrastructure, it is reported that the maintenance of health guidelines or preventive methods is difficult among the students in Bangladesh (Perera, 2021). Thus, they are also depicted as one of the concerning issues in Bangladesh as it threatens the increasing number of infections due to reopening of schools (Perera, 2021). Therefore, comprehensive data is required to analyze the knowledge on COVID-19 mode of transmission and prevention practices in the schools to comprehend the better infection's control in schools.

1.3 General objective

To investigate knowledge towards COVID-19 pandemic

Specific objectives

To assess the Knowledge on COVID-19 preventive method and mode of transmission.

CST PROGRAM

It is the intervention program which consists of distribution of mask, social and change communication activities, school management committee meeting, information sessions for the students at schools and madrasas, and also the establishment of handwashing stations. This project focuses on information sessions provided to school students and the establishment of handwashing stations. This intervention is further divided into two sections i.e mask distribution and social and behavior change communication activities. For the mask distribution, BRAC will procure and distribute reusable cloth mask to schools, religious institution and the community to increase the use of mask. For the social and behavior change communication, BRAC projects to deploy community mobilisers and volunteers to distribute the communication materials containing the relevant messages on mask usage, hand hygiene and social distancing. This project plans to cover total of 1.17 million people. The duration of this project will be from May 2022 - December 2022.

2. Methodology

2.1 Study design and study site

This survey was conducted in 9 schools of Cox's bazar and Pekua, Bangladesh. There were a total of 1973 participants. This study has utilized a quantitative approach with cross-sectional study design. The primary data collected and used.

2.2 Study participants and sampling

Study participants included students (6-9 grade) who were enrolled in the specific study schools for the past 1 year and were available during the data collection period. Students who are unable to respond/absent were excluded. In addition, students who are not part of BRAC CST intervention were also excluded. The schools were selected based on convenient sampling. All the students in grades 6-9 who were present during the data collection period in the selected schools were part of the study.

2.3 Data collection and Data quality assurance

The questionnaire used consisted of close-ended questions on socio-demographic characteristics, and knowledge information associated to COVID-19 mode of transmission and prevention. A total of four days were designated for the data collection. Research assistants were assigned in translating English questionnaires into Bengali during data collection. Filled questionnaires were checked daily for errors and incompleteness before data entry.

2.4 Data processing and analysis

After the completion of data collection, the submitted data was downloaded in Excel format and imported to STATA to check for completeness and inconsistencies. We analyzed the socio-demographic and knowledge on COVID-19 mode of transmission and prevention methods. Data were analyzed using STATA software version 17.0. Descriptive data using frequency were generated for this study on socio-demographic and knowledge on TB and dengue.

2.5 Ethical consideration

Ethical approval for the study was obtained from the Institutional Review Board (IRB) of BRAC JPGSPH, BRAC University. Written informed consent was taken from each respondent after explaining the study objectives, their voluntary participation in the study, and their right to withdraw from the study at any point. Interviews were conducted in schools. Anonymity and confidentiality were maintained at every stage of this study and the privacy of the respondents was ensured by collecting data anonymously.

3. Result

Table 1: Socio-demographic characteristics stratified by gender.

	Male N,%	Female N,%	Total N%
Age			
10-14	503 (39.7)	762 (60.2)	1265 (64.1)
15-18	234 (47.3)	259 (52.4)	494 (25.0)
Grade level			
Class 6	207 (45)	253 (55)	460 (23.3)
Class 7	232 (42.3)	316 (57.6)	548 (27.7)
Class 8	158 (34.4)	299 (65.2)	458 (23.2)
Class 9	198 (39.5)	303 (60.4)	501 (25.3)
Didn't respond	4 (66.6)	2 (33.3)	6 (0.3)
Upazila			
Cox's Bazar	184 (42)	251 (58)	436 (22)
Pekua	615 (40)	922 (60)	1537 (78)

	Male N,%	Female N,%	Total N%
School name			
Jalalabad Public School	16 (30.2)	37 (69.8)	53 (2.6)
Pokkhali Adarsha High School	52 (30.4)	119 (69.6)	171 (8.7)
Ishakhali Islamia Dakhil Madrasa	1 (50)	1 (50)	2 (.10)
PM Khali High School	115 (54.8)	94 (44.8)	210 (10.7)
Pekua Anwarul Ulum Alim Madrasa	9 (39.1)	14 (60.9)	23 (1.7)
Pekua Govt. GMC Institute	346 (50.7)	336 (49.3)	682 (34.6)
Toitong High School	104 (32.1)	220 (67.9)	324 (16.4)
Rajakhali Faijunnesa High School	156 (30.8)	351 (69.2)	507 (25.7)
Rajakhali Shundari Para Azgaria M U Dak	0 (0.0)	1 (100)	1 (.05)
Union			
PM Khali	115 (54.8)	94 (44.8)	210 (10.6)
Pokkhali	53 (30.6)	120 (69.4)	173 (8.8)
Jalalabad	16 (30.2)	37 (69.8)	53 (2.7)
Pekua	355 (50.4)	350 (49.6)	705 (35.8)
Taitong	104 (32.1)	220 (67.9)	324 (16.4)
Rajakhali	156 (30.7)	352 (69.3)	508 (25.8)
Father's education			
Never went to school	101 (50.5)	99 (49.5)	200 (10.1)
Till High school	289 (39)	458 (61)	747 (37.9)
Studied until college	54 (39.7)	82 (60.3)	136 (6.9)
Studied more than college	96 (43.6)	124 (56.4)	220 (11.2)
Students did not respond	51 (50.5)	50 (49.5)	101 (5.1)
I don't know	208 (36.7)	360 (63.4)	568 (28.8)
Mother's education			
Never went to school	81 (47.9)	88 (52.1)	169 (8.6)
Till High school	326 (37)	573 (64)	899 (45.6)
Studied until college	66 (42.3)	90 (57.7)	156 (7.9)
Studied more than college	72 (54.5)	60 (45.5)	132 (6.7)
Students did not respond	57 (45.6)	68 (54.4)	125 (6.3)
I don't know	197 (40.1)	294 (59.9)	491 (24.9)

Table 1 shows the socio-demographic information of the participants stratified by gender. This survey was conducted in 9 schools of Cox's bazar, Bangladesh. There were a total of 1973 participants. Maximum percentage (64%) of the participant's ages ranged from between 10-14 years compared to 15-18 (25%). Majority of the participants were female (59%) compared to male (41%). 25% (n=501) of the participants were from grade 9 and majority of them were from Pekua Govt. GMC Institute (35%, n=682). As for the union, a maximum of them are Pekua

members (35.8%, n=705). Educational status of father and mother indicates that the majority of them have at least completed high school (38%, n=747, 46%, n=899 consecutively).

Table 2. Knowledge on COVID-19, mode of transmission stratified by Upazila

Variables	Upazila			
	Cox's bazar		Pekua	
	No N,%	Yes N,%	No N,%	Yes N,%
Come in contact with the breath of an infected person	151 (35)	285 (65)	543 (36)	986 (64)
An infected person talks in front and close to a non-infected person	149 (33)	287 (66)	633 (41)	896 (59)
Droplets from coughing and sneezing	78 (18)	358 (82)	347 (23)	1182 (77)
Through handling contaminated money	236 (54)	200 (46)	825 (54)	704 (46)
Touching contaminated surfaces	283 (65)	153 (35)	960 (63)	569 (37)
Touching eyes, mouth and ear with unclean hands	93 (21)	343 (79)	454 (30)	1075 (70)
Through air	224 (51)	212 (49)	803 (52)	726 (48)
From another animal	367 (84)	69 (16)	1178 (77)	351 (23)

Table 2 shows the knowledge on mode of transmission of COVID-19 among the participants residing in Cox's bazar and Pekua. 65% of the participants living in Cox's bazar have responded that COVID-19 transmission happens when a person comes in contact with the breath of an infected person. 66% of them said that the infection transfer when an infected person talks in front and close to a non-infected person, through droplets from coughing and sneezing (82%), through handling contaminated money (46%), touching contaminated surfaces (35%), Touching eyes, mouth and ear with unclean hands (79%), Through air (49%) and from other animals (16%). In the case of the Pekua area, 64% of the participants have responded that covid 19 transmission happens when a person comes in contact with the breath of an infected person. 59% of them stated that the infection transfer when an infected person talks in front and close to a non-infected person, through droplets from coughing and sneezing (77%), through handling

contaminated money (46%), touching contaminated surfaces (37%), Touching eyes, mouth and ear with unclean hands (70%), Through air (48%) and from other animals (23%).

Table 3. Knowledge for the prevention of COVID-19 stratified by Upazila

Variables	Upazila			
	Cox's bazar		Pekua	
	No N,%	Yes N,%	No N,%	Yes N,%
Wearing mask	40 (9)	396 (91)	209 (14)	1320 (86)
Washing hands	57 (13)	379 (87)	340 (22)	1189 (78)
Maintaining at least 3 feet distance from each other	79 (18)	357 (82)	362 (24)	1167 (76)
Avoid crowded places	297 (68)	139 (32)	1004 (66)	525 (33)
Avoiding touching nose, ears and eyes	130 (30)	306 (70)	571 (37)	958 (63)
Covering mouth when sneezing	93 (21)	343 (79)	429 (28)	1100 (72)
Staying in home isolation when have even mild symptoms	216 (49)	220 (51)	842 (45)	687 (45)
Cleaning and disinfecting used surfaces regularly	280 (64)	156 (36)	1056 (69)	473 (31)
Vaccination	178 (41)	258 (59)	691 (45)	838 (55)

Table 3 shows the knowledge for the prevention of COVID-19 stratified by Upazila. 91% of participant residing in Cox's bazar responded that wearing mask prevents the COVID-19, washing hand (87%), avoiding of crowded places (32%), and covering mouth when sneezing (79%), maintaining at least 3 ft distance from each other (82%), avoiding touching nose, ears and eyes (70%), staying in home isolation when have even mild symptoms (51%), cleaning and disinfecting used surfaces regularly (36%), and vaccination (59%). On the other hand, 86% of participant residing in Pekua stated that wearing mask prevents the COVID-19, washing hand (78%), avoiding of crowded places (33%), and covering mouth when sneezing (72%), maintaining at least 3 ft distance from each other (76%), avoiding touching nose, ears and eyes

(63%), staying in home isolation when have even mild symptoms (45%), cleaning and disinfecting used surfaces regularly (31%), and vaccination (55%).

4. Discussion

This study discusses the findings on knowledge towards COVID-19 mode of transmission and prevention. This survey was conducted in 9 schools of Cox's bazar and Pekua, Bangladesh. There were a total of 1973 participants. Upazila is divided into two i.e Cox's bazar and Pekua.

In one of the studies, the study conducted on students reported that approximately 50% of the participants indicates high level of knowledge about COVID-19 guideline which includes prevention, mode of transmissions of the infection (Patwary et al., 2022). In our study, it was found that knowledge on mode of transmission High in both the regions. More than 50% of the participants living in Cox's bazar and Pekua knew that COVID-19 transmission happens when a person come in contact with the breath of an infected person, infection transfer when an infected person talks in front and close to a non-infected person, through droplets from coughing and sneezing, and through touching eyes, mouth and ear with unclean hands. As for the prevention methods towards COVID-19 majority of the participants from Cox's bazar and Pekua were aware that wearing mask prevents the COVID-19, washing hand, and covering mouth when sneezing, maintaining at least 3 ft distance from each other avoiding touching nose, ears and eyes, staying in home isolation when have even mild symptoms, and vaccination.

In another study which was conducted to explore the knowledge, attitude and practice of COVID-19 guidelines among the students in Bangladesh concludes that students had the lowest level of knowledge on 'maintaining 2 feet distance among one another is enough to prevent droplet transmission'(Kumar et al.,2021). This was also found in our study where the majority of the participants from both Cox's bazar (51%) and Pekua (52%) were not aware that the infection can be transmitted through air and significantly a smaller number of the participants were aware that avoiding crowded places and cleaning and disinfecting used surfaces regularly will prevent transmission of COVID-19.

5. Recommendation and conclusion

This study has highlighted the knowledge on COVID-19, mode of transmission and prevention among the students grade 6-9 in Cox's bazar and Pekua. Majority of the participants have adequate knowledge on mode of transmission and prevention methods, however, less than 50% from both Cox's bazar (32%) and Pekua (33%) have reported that avoidance of crowded places is not required for the prevention of infection. As for the mode of transmission, majority of the participants from both Cox's bazar and Pekua were not aware that the infection can be transmitted through air. Thus, there is further need of health education to enhance the knowledge of prevention towards COVID-19.

References

- WHOa. (2022). Bangladesh - WHO Coronavirus (COVID-19) Dashboard. <https://covid19.who.int/region/searo/country/in>
- WHOb. (2022). Coronavirus disease (COVID-19). https://www.who.int/health-topics/coronavirus#tab=tab_2
- Bukata, I. T., Dadi, L. S., Ayana, A. M., Mengistu, D., Yewal, D., Gizaw, T. S., & Woldesenbet, Y. M. (2022). Knowledge, Attitudes, and Practice Toward Prevention of COVID-19 Among Jimma Town Residents: A Community-Based Cross-Sectional Study. *Frontiers in Public Health*, 10.
- Perera, W. (2021). *Bangladeshi school reopenings threaten wave of COVID-19 infections among children*. World Socialist Web Site. <https://www.wsws.org/en/articles/2021/09/28/bang-s28.html>
- Shrestha, A., Thapa, T. B., Giri, M., Kumar, S., Dhobi, S., Thapa, H., ... & Rathaur, E. S. (2021). Knowledge and attitude on prevention of COVID-19 among community health workers in Nepal-a cross-sectional study. *BMC public health*, 21(1), 1-13.
- Tien, T. Q., Tuyet-Hanh, T. T., Linh, T. N. Q., Hai Phuc, H., & Van Nhu, H. (2021). Knowledge, Attitudes, and Practices Regarding COVID-19 prevention among Vietnamese Healthcare Workers in 2020. *SAGE Journal Health Services Insights*. <https://doi.org/10.1177/11786329211019225>
- Rao, K. D., Kaur, J., Peters, M. A., Kumar, N., & Nanda, P. (2021). Pandemic response in pluralistic health systems: a cross-sectional study of COVID-19 knowledge and practices among informal and formal primary care providers in Bihar, India. *BMJ open*, [J]11(4), e047334. <https://doi.org/10.1136/bmjopen-2020-047334>

- Nguyen, H. B., Nguyen, T., Tran, T., Vo, T., Tran, V. H., Do, T., Truong, Q. B., Nguyen, T. H., & Ly, L. K. (2021). Knowledge, Attitudes, Practices, and Related Factors Towards COVID-19 Prevention Among Patients at University Medical Center Ho Chi Minh City, Vietnam. *Risk management and healthcare policy*, 14, 2119–2132.[PubMed] <https://doi.org/10.2147/RMHP.S305959>
- Banik, R., Rahman, M., Sikder, M. T., Rahman, Q. M., & Pranta, M. (2021). Knowledge, attitudes, and practices related to the COVID-19 pandemic among Bangladeshi youth: a web-based cross-sectional analysis. *Journal of public health*, 1–11. Advance online publication. <https://doi.org/10.1007/s10389-020-01432-7>
- Patwary, M. M., Disha, A. S., Bardhan, M., Haque, M. Z., Kabir, M. P., Billah, S. M., ... & Shoib, S. (2022). Knowledge, Attitudes, and Practices Toward Coronavirus and Associated Anxiety Symptoms Among University Students: A Cross-Sectional Study During the Early Stages of the COVID-19 Pandemic in Bangladesh. *Frontiers in psychiatry*, 13.
- Islam, M.S., Siddique, A.B., Akter, R. et al. (2021). Knowledge, attitudes and perceptions towards COVID-19 vaccinations: a cross-sectional community survey in Bangladesh. *BMC Public Health* 21, 1851 (2021). <https://doi.org/10.1186/s12889-021-11880-9>
- Kumar, B., Pinky, S. D., & Nurudden, A. M. (2021). Knowledge, attitudes and practices towards COVID-19 guidelines among students in Bangladesh. *Social Sciences & Humanities Open*, 4(1), 100194.