Perception and Preventive Behaviour about COVID-19 Pandemic among the Members of a Selected Cantonment in Bangladesh

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Abstract

Introduction: Appropriate knowledge, attitude and practice against any infectious disease improve perception and consequently adopt preventive practices toward disease transmission. Good perception and preventive practice is the key to prevent infectious disease like COVID-19.

Objective: To assess the perception and protective behaviour against COVID-19 among the members of Shaheed Salahuddin Cantonment, Ghatail.

Materials and Methods: This cross-sectional study was conducted at Shaheed Salahuddin Cantonment from March 2022 to May 2022 among conveniently selected 1315 respondents. Data were collected through face-to-face interview using a pretested semi-structured questionnaire.

Results: The majority (79.8%) of the respondents were male, residing in the sainik line (72.3%) having monthly income of <15000 taka. Three-fourth of the respondents were lance corporal/sainik, 30.8% were currently married having secondary school certificate level of educational qualification. Study revealed that more than two-third (62.5%) respondents had moderate perception about COVID-19 and about 87.3% respondents showed good preventive behaviour. Preventive behaviour is significantly associated with male gender (x^2=2.49; p < .05), lower age group (<20 years) respondents (x^2=9.93, p < .05) who were qualified in secondary school certificate education (x^2=8.54, p<.05), married (x^2=4.97, p < .05), stayed in sainik line (x^2=9.19, p<.05) and in lance corporal/sainik respondents (x^2=13.12, df =4, p =.01)

Conclusion: Extensive health education program should be undertaken to create good perception and preventive behaviour among susceptible respondents like female gender, aged, unmarried respondents of Shaheed Salahuddin Cantonment.

Key-words: COVID-19, Perception, Preventive behaviour, Shaheed Salahuddin Cantonment, Health education.

Introduction

Since December 2019, world is experiencing the unprecedented pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which was first identified in Wuhan, China in 31 December 2019. It is highly contagious and transmitted from person to person through direct contact, infected surfaces, droplets, and fecal-oral contact, and the incubation period ranges from 2 to 14 days[1]. The symptoms of COVID-19 include fever (88%) and dry cough (68%). Less common symptoms include fatigue, productive/dry cough, anosmia, loss of taste, dyspnea, myalgia/arthralgia, sore throat, headache, chills, vomiting, hemoptysis, diarrhea, and rash[2]. As of 18 May 2022, more than 52.4 million cases of COVID-19 have been reported all over the world, resulting in almost 62,92,624 deaths; approximately 49.5 million people have recovered[3]. The virus was confirmed to have spread to Bangladesh in March 2020. The first three known cases were reported on 8 March 2020 by the country's Institute of Epidemiology Disease Control and Research (IEDCR). Since then, the pandemic has spread day by day over the whole nation and the number of affected people has been increasing[4]. Till today, a total of 1,953,081 cases detected in Bangladesh with 29,127 deaths and 1,899,897 cases recovered[3].

Health is one of the basic rights of human beings and is generally considered a personal duty. The Self-care ability of each person is highly affected by factors, such as age, lifestyle, health status, emotional status, and knowledge. Self-care is defined as activities and precautions which a person takes, to prevent or control infections. In most the infectious disease, self-hygiene is the cheapest and easiest way to prevent infections[1].

By the end of January 2020, WHO and the Centers for Disease Control and Prevention (CDC), published a series of recommendations to prevent the spread of COVID19 (1) After the detection of first case of COVID-19 cases on 8 March 2020, Bangladesh government responded very quickly for the prevention and spread of the disease. The governments form a technical committee which was composed of country's renowned specialist and other technical persons. The committee recommended various emergency health education campaigns like wearing face

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masks, washing hands with soap and water or alcohol-based hand sanitizers, and practicing social distancing[4]. During the initial days of the pandemic, lots of stigma and misinformation prevailed among the general populations which were mitigated by the timely launched campaigns that inevitably shaped the illness perception. Knowledge to reduce risks will improve perception and consequently adopt preventive practices toward disease transmission. Risk perception is defined as an individual's perceived susceptibility to a threat. Risk perceptions are frequently targeted in health behaviour change interventions. Perception toward COVID-19 may be adjusted along with the rapid change dynamics of the current scientific-based knowledge and policy imposed in public. Given the importance of risk perception in behaviour modification for disease control, it is critical to evaluate the perception and preventive behaviour regarding COVID-19. Coronavirus disease (COVID-19) is affecting different countries all over the world with great variation in infection rate and death ratio. Knowledge of the causative agent and the disease methods of transmission is important to develop effective control. It was previously shown that when people understand how the disease is transmitted and what the preventive considerations are; the virus spread decreases[5]. Hosen I et al. investigate a countrywide knowledge and preventive behaviour against COVID-19 during the initial days of the pandemic[6]. Rahaman MS et al conducted a knowledge, attitude and practiced (KAP) based study from 15 March 2020 to 15 April 2020 among urban and rural population of the country in order to design a prevention and control strategy for this infectious disease[7]. Similar study also conducted by various researcher in the country using both online platform and physical research whom revealed a varied response in terms of knowledge, attitude, perception and preventive behaviour. But so far it is learnt that no such research has been conducted in any of the cantonment of Bangladesh army. This study aimed to assess the knowledge on the perception and preventive behaviour toward COVID-19 among the members of Shaheed Salahuddin Cantonment, Ghatail.

Materials and Methods

This cross-sectional study was conducted among conveniently selected 1315 military and civilian employee of Shaheed Salahuddin Cantonment, Ghatail, Tangail from March 2022 to May 2022 with an aimed to assess the perception and protective behaviour against COVID-19. The members irrespective of age and sex and willing to participate voluntarily were included in the study. Ethical clearance was obtained from the competent authority of Shaheed Salahuddin Cantonment. Data were collected from the respondents through face-to-face interview using a semi-structured questionnaire adopted and customized from the questionnaire previously used by Salawati L et al[8]. The questionnaire includes perception, protective behaviour towards COVID-19 and sociodemographic information. To assess the level of perception of the respondents, 11 questions were included to encompass individual perception of susceptibility, benefit, barriers, self-efficacy, and threats toward COVID-19. The question of perception was given a score of 0 for disagreement responses (very disagree and disagree) and a score of 1 for agreement responses (Agree and very Agree). The scores were summed to a total score ranging from 0 to 11 and subsequently categorized into three groups, 0–4, 5–8 and 9–11 i.e., low, moderate and high perception, based on a simple categorization class. Preventive behaviour was assessed by a 12-question questionnaire adopted from the COVID-19 preventive strategies by the WHO which was previously used by Salawati L et al[8]. Each question was given a score of 0 for 'never', 1 for 'rare', 2 for 'frequent', and 3 for 'always' responses. The scores were summed to a total score ranging from 0 to 36 and subsequently categorized into two groups, <18 and ≥18, which can be interpreted as poor and good preventive behaviour, respectively, based on a simple categorization class[8]. Cronbach's Alpha (α) for the perception and protective behaviour response were 0.72 and 0.63 respectively. Data processing and analyses were performed using the IBM Statistical Package for Social Sciences (SPSS) version 23 for Windows. Frequencies, percentage, mean and standard deviation (SD) were used for descriptive statistics. Pearson's chi-square test was used to examine the associations between independent and dependent variables. A two-tailed $p < .05$ was considered statistically significant.

Results

Out of 1315 respondents, around three-fourth (79.8%) were male and rest 20.2% were female. The majority (46.6%) were in the age group <20 years followed by 29.1% belonged to the age group 21-30 years and the mean (SD) age of the respondents was 25.63 (9.44). Of all, 30.8% were currently married, 55.8% completed secondary school certificate level of education and only 14.1% were currently smoker or ex-smoker. More than two-third (72.3%) were resided in the sainik line and almost half (46.8%) of the respondents had monthly family income <15000 Taka with an average (SD) monthly family income of 21596.96 (12468.48) taka. In regards to the rank of the respondents, three-fourth belonged to Lance Corporal/Sainik which was followed (16.0%) by civilian employee.

Responses to the perception statement showed a varied response to each statement among which several statements worth highlighting. About three-fourth (86.2%) of the respondents agreed to the statement "We should not afraid to interact with COVID-19 patients as long as we keep our distance and wear mask". About 82.8% of the respondents disagreed with the statement "Coronavirus is not contagious during a conversation" (Table–I).

Table-I: Individual perception of the respondents (n=1315)

No	Perception	Agreement, n (%)	Disagreement, n (%)
1	COVID-19 is not a dangerous disease and similar to the usual influenza	487 (37.0)	828 (63.0)
2	Coronavirus may survive outside the human body for a couple of hours	862 (65.6)	453 (34.4)
3	Coronavirus is not contagious during a conversation	226 (17.2)	1089 (82.8)
4	Only those with symptoms who can transmit coronavirus	705 (53.6)	610 (46.4)
5	Healthy people do not need to wear mask	220 (16.7)	1095 (83.3)
6	We should not afraid to interact with COVID-19 patients as long as we keep our distance and wear mask	1133 (86.2)	182 (13.8)
7	The deaths of people who suffer from chronic disease(s) are not related to coronavirus infection	898 (68.3)	417 (31.7)
8	Children are less susceptible to coronavirus	731 (55.6)	584 (44.4)
9	New normal means returning to the pre-pandemic habits	449 (34.1)	866 (65.9)
10	Restriction of mobility from endemic areas may diminish the transmissibility of coronavirus	1119 (85.1)	196 (14.9)
11	Self-isolation is not needed in asymptomatic COVID-19 cases	512 (38.9)	803 (61.1)

In regards to the responses to the preventive behaviour statement, around 84.5% of the respondents answered 'frequent' and 'always' to the statement of 'I wash my hands with soap after touching unknown objects', and more than 95% of respondents to 'I wear a mask in public places (markets, terminals, places of worship, etc.)'(Table-II).

Table-II: Individual preventive behaviour of the Respondents (n=1315)

No	Preventive behaviour	Never, n (%)	Rare, n (%)	Frequent, n (%)	Always, n (%)
1	I wash my hands with soap after touching unknown objects	2 (0.2)	201 (15.3)	191 (14.5)	921 (70.0)
2	I change clothes after going outside	7 (0.5)	125 (9.5)	183 (13.9)	1000 (76.0)
3	I bring my own personal equipment (cutlery, stationery, worship tools, etc.) when I go to public places	243 (18.5)	326 (24.8)	170 (12.9)	576 (43.8)
4	I wear a mask in public places (markets, terminals, places of worship, etc.)	20 (1.5)	37 (2.8)	84 (6.4)	1174 (89.3)
5	I maintain a minimum distance of 1 meter from other people	110 (8.4)	230 (17.5)	420 (31.9)	555 (42.2)
6	I attend an event that gathered a lot of people	463 (35.2)	574 (43.7)	240 (18.3)	38 (2.9)
7	I use public facilities (public transportation, malls, or tourist attractions)	408 (31.0)	672 (51.1)	93 (7.1)	142 (10.8)
8	I keep my distance from elderly	409 (31.1)	333(25.3)	252 (19.2)	321 (24.4)
9	I avoid taking my children to crowded places	454 (34.5)	335 (25.5)	161 (12.2)	365 (27.8)
10	I limit traveling outside the region	248 (18.9)	486 (37.0)	268 (20.4)	313 (23.8)
11	I do self-isolation when a neighbor or family is infected with COVID-19	454 (34.5)	149 (11.3)	177 (13.5)	535 (40.7)
12	I help the health workers to monitor if a neighbor or family is infected with COVID-19	48 (3.7)	145 (11.0)	182 (13.8)	940 (71.5)

Distribution of perception and protective behaviour score is shown in Table-III. It was revealed that more than two-third (62.5%) respondents had moderate perception about COVID-19 and about 87.3% respondents showed good preventive behaviour (Table-III).

Table-III: Distribution of Perception and Protective Behaviour Score among the Respondents (n=1315)

	Frequency	Percent
Perception Score		
High	135	10.3
Moderate	767	58.3
Low	413	31.4
Preventive behaviour score		
Poor	167	12.7
Good	1148	87.3

Preventive behaviour is significantly associated with male gender (x^2= 2.49; p < .05), lower age group (<20 years) respondents (x^2= 9.93, p < .05) who were qualified in secondary school certificate education (x^2= 8.54, p < .05), married (x^2= 4.97, p < .05), stayed in sainik line (x^2= 9.19, p < .05) and in lance corporal/sainik respondents (x^2= 13.12, df =4, p = .01*) (Table–IV).

Table-IV: Association between preventive behaviour with sociodemographic characteristics of the respondents **(n=1315)**

Attributes	Category of Preventive Behaviour		Significance
	Poor	**Good**	
Sex of the respondents			
Male	141 (10.7%)	909 (69.1%)	$\chi^2 = 2.49$ df = 1 p = 0.05*
Female	26 (2.0%)	239 (18.2%)	
Age group			
<20	71 (5.4%)	542 (41.2%)	$\chi^2 = 9.93$ df = 3 0.019*
21-30	65 (4.9%)	318 (24.2%)	
31-40	14 (1.1%)	149 (11.3%)	
>41	17 (1.3%)	139 (10.6%)	
Educational qualification			
Up to Class Eight	6 (0.5%)	120 (9.1%)	$\chi^2 = 8.54$ df = 3 0.036*
Up to SSC	95 (7.2%)	639 (48.6%)	
Up to HSC	55 (4.2%)	325 (24.7%)	
Graduate and above	11 (0.8%)	64 (4.0%)	
Religion			
Islam	147 (11.2%)	1023 (77.8%)	$\chi^2 = 0.176$ df =1 0.675
Hindu	20 (1.5%)	125 (9.5%)	
Marital status			
Married	39 (3.0%)	366 (27.8%)	$\chi^2 = 4.97$ df =1 0.026*
Unmarried	128 (9.7%)	782 (59.5%)	
Monthly income			
<15000	89 (6.8%)	527 (40.1%)	$\chi^2 = 3.256$ df = 3 0.354
15001-30000	53 (4.0%)	429 (32.6%)	
30001-45000	16 (1.2%)	126 (9.6%)	
>45001	9 (0.7%)	66 (5.0%)	
Place of residence			
Inside Cantonment	13 (1.0%)	101 (7.7%)	$\chi^2 = 9.192$ df = 2 0.010*
Outside cantonment	18 (1.4%)	232 (17.6%)	
Sainik Line	136 (10.3%)	815 (62.0%)	
Smoking habit			
Non-Smoker	148 (11.3%)	982 (74.7%)	$\chi^2 = 3.244$ df = 2 0.198
Ex-smoker	9 (0.7%)	49 (3.7%)	
Smoker	10 (0.8%)	117 (8.9%)	
History of chronic disease			
Yes	6 (0.5%)	55 (4.2%)	$\chi^2 = 0.473$ df = 1 0.492
No	161 (12.2%)	1093 (83.1%)	
Service type			
AFNS	7 (0.5%)	25 (1.9%)	$\chi^2 = 13.125$ df = 4 0.010*
JCO	6 (0.5%)	45 (3.4%)	
NCO	11 (0.8%)	64 (4.9%)	
Lance Corporal/Sainik	131 (10.0%)	815 (62.0%)	
Civilian	12 (0.9%)	199 (15.1%)	
Perception score			
High	55 (4.2%)	358 (27.2%)	$\chi^2 = 4.942$ df = 2 0.05*
Moderate	103 (7.8%)	664 (50.5%)	
Low	9 (0.7%)	126 (9.6%)	

Discussion

Though Bangladesh has confirmed the first case of COVID-19 infection in 08 March 2020, Ghatail cantonment confirmed its first case on June 2020. Due to its outstanding protective and preventive measures, the cantonment could withhold the case for about >3 months. The cantonment is located at the central part of the country having a 50 km distance from the Tangail main town. As part of the country wide spread of the disease, the cantonment also experienced an upsurge. At the same time the cantonment authority tried to contain the disease by imposing various protective and preventive measures. The study was conducted in this cantonment where several military units along with two training centers are located and for that the socio-demographic characteristics among the respondents were similar to the existing rules and regulation of armed forces but somehow different from the national average in many cases.

In this study, more than two-third (68.6%) of the respondents scores >5 i.e., moderate to good perception along with very good (87.3%) preventive behaviour against COVID-19 which is almost similar to study conducted by Salawati L et al[8] and Alahd al et al[9] but dissimilar to the findings of the study conducted by Gutu B et al[10], this dissimilarity may be due to the regional variation or study design. Rahman MS et al revealed in their study with poor preventive behaviour against COVID-19 which is also dissimilar to these findings. It may be due to the fact that their study was conducted at the initial days of the pandemic when most of the information related to COVID-19 was incomplete and with lots of stigma[7].

This study revealed that overall perception towards COVID-19 was positive and uniform towards the natural course and clinical features of the disease. In the present study, majority of the respondents possess good perception regarding the survival ability, transmissibility and severity of the infection. This finding is similar to the study conducted by Salawati L et al[8]. In regards to the perception about COVID-19, this study revealed that most of the respondents agreed that COVID-19 is a dangerous disease which is similar to the study conducted by Salawati L et al[8], Honarvar B et al[11], Zhong Y et al[12] But this study also revealed some misconception about the COVID-19 like about half of the respondents disagreed about wearing of mask by the health people which is wrong. Similarly, in regards to the returning to the new normal life, majority of the respondents opined that it means returning to the pre-pandemic life which is also wrong. This finding similar to the findings of the study conducted by Salawati L et al[8]. This study also revealed poor perception regarding the self-isolation of the asymptomatic COVID-19 cases as more than two-third of the respondents disagree with statement which is essentially wrong.

This study revealed a good (87.3%) preventive behaviour against COVID-19. Respondents of the study showed very good preventive practice like washing hands with soap, change cloths after going outside, wear mask in public place, maintaining a minimum distance from other people etc. These findings are similar to the study conducted by Salawati L et al[8] and Haque T et al[13]. In this study, we found that about 96% of the respondents wear mask in public place, 74.1% maintain a minimum distance of 1 meter from other people, 84.5% washes hand with soap which is consistent with the study conducted by the statistical bureau of Indonesia[14] but much higher from the study conducted by MacIntyreet al[15]. This study also revealed that 82.1% respondents avoid public facilities, 60% avoid crowded place which is similar to the findings of the study conducted by Muslih M et al[16], Honarvar B et al[11], but much lower than the findings of the study conducted by Zhong BL et al[17] and Ferdous MZ et al[18]. This variation could be related to differences across study settings, including population diversity, level of awareness, access to protective equipment, impact of the pandemic, and survey period.

In this study it was revealed that male gender showed significantly ($p < .05$) good preventive behaviour than female ($\chi^2 = 2.49$) which is consistent with the findings of Zhong BL et al[17] but dissimilar with the findings of the study conducted by Salawati L et al[8] and Rahman MS et al[7]. This gender difference also revealed in another study conducted by Galasso V et al[19]. This study also revealed a significantly ($< .05$) good preventive practice among the lower age grouped respondents which is similar to the study conducted by Rahman MS et al[7]. We also revealed that secondary school certificate qualified respondents had good preventive behaviour than other educationally qualified respondents which is dissimilar with the study findings conducted by Rahman MS et al[7]. In regards to the marital status, we revealed that married respondents were significantly ($p < .05$) used to follow the preventive behaviour against COVID-19 than the unmarried respondents. We also revealed that respondents stayed at the sainik line were significantly ($p < .05$) used protective behaviour than other place of residence which may be due to the fact that in sainik line more no of persons stayed in a small place which creates awareness among them to follow the protective behaviour against COVID-19. In this study, it was also revealed that lance corporal/sainik respondents significantly ($p < .05$) used to follow the protective behaviour that the other respondents.

Conclusion

The overall perception and preventive behaviour in the study is encouraging and emphasize the inception of health education program to create more awareness among the members of the cantonment. Proper health education program will help to mitigate the stigma and misinformation about COVID-19 infection. It is essential to impose more emphasis about the preventive behaviour against COVID-19 among the female gender, unmarried having less monthly income and staying at the sainik line of Shaheed Salahuddin Cantonment.

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