



Research article

COVID-19: psychological effects on a COVID-19 quarantined population in Bangladesh



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ABSTRACT

Background: It had been seven months since the first confirmed case (8th March, 2020) of COVID-19 in Bangladesh and people have now got a more complete picture of the extent of the pandemic. Therefore, it is time to evaluate the effects of COVID-19 on mental health. The current population-based study aimed to assess the prevalence of depression and PTSD of the quarantined people in Bangladesh during COVID-19 outbreak.

Methods: A total of 5792 individuals comprised the population of this study. Subjects were respondents to an online questionnaire that was administered through social media. The questionnaire included questions on personal information, quarantine related knowledge, items of the Impact of Event Scale-Revised (IES-R) and the Center for Epidemiologic Studies–Depression (CES-D) scale. Data were collected and analyzed by regression utilizing a using IBM SPSS-22 (Statistical Package for Social Science, Chicago, IL, USA).

Results: The most post-traumatic stress disorder (PTSD) symptoms had on the male (n = 1392, 75.7%) who had institutional quarantine. The most depression symptoms were on the female (n = 920, 72.8%) whose income was more than 75000 takas in Bangladeshi currency. 81.8% of respondents had PTSD and their scores ≥ 24 in the IES-R scale. On the other hand, the respondent's income was 40000–74999 takas in Bangladesh currency had more PTSD symptoms and the odd ratio 19.3 (95% CI: 12.5–27.3), adjusted odds ratio 22.9 (95% CI: 15.6–32.4), after adjusting all personal variables. 85.9% respondents scored $16 \leq$ in the CES-D scale, meaning they were depressed. The respondents whose education level grade 10 were most depressed and the odd ratio of 3.8 (95% CI: 3.1–4.65), adjusted odds ratio of 13.19 (95% CI: 9.88–17.62) after adjusting all personal variables.

Conclusions: The prevalence of depression and PTSD of the quarantined people higher than that of the affected group during the outbreak of COVID-19 in Bangladesh. If the administration and health care workers become conscious of such results, actions and policies can be taken to improve the consequential sufferings.

1. Introduction

According to the Ministry of Public Administration Bangladesh, on 16 March the Ministry of Education of Bangladesh had announced that all educational institutions will be closed till March 31. On 19 March, the first lockdown in Bangladesh was carried out at Shibchar in Madaripur district. In 22 March, The Higher Secondary School Certificate exam (grade 12), which was scheduled to start on April 1, had been suspended until further notice (Wikipedia, 2020). On 23 March, to curb the spread of coronavirus, the administration announced the shutting down of every

government and private sectors from March 26 to April 4 (Wikipedia, 2020). Merely urgent situation services such as rule enforcement and healthcare services were excluded from this declaration (Wikipedia, 2020). It was in addition announced that armed forces would be deployed on March 24 to avoid the extent of the coronavirus (Wikipedia, 2020). On 24 March, the administration announced a 10-day ban on all traveler journeys by all kinds of vehicles from March 26 to April 4 (Wikipedia, 2020). The administration had deployed armed forces, together with the police and army, to continue physical distance and quarantine measures (Wikipedia, 2020). On 26 March, Bangladesh

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experienced its 50th Independence Day on a partial level as the administration had disregarded all community rallies to avoid the increase of the coronavirus (Wikipedia, 2020). The administration made the declaration on the 1st day of a 10-day lockdown all things to increase the coronavirus infection. On 27 March, Biman Bangladesh announced the postponement of all domestic and worldwide flights from March 30 to April 6 (Wikipedia, 2020). On April 2 and April 3, when the preliminary 10-day extended lockdown deadlines was regarding to end, all factory or garments workers began to come to their work place (such as Dhaka, Narayanganj, Gazipur and Chittagong) ignoring the danger and spread (Anwar et al., 2020). Later on, announced the extension of the countrywide lockdown, leaving it in effect until April 25, and these workers from countrywide had to go back to their homes (Anwar et al., 2020). It further announced on April 9, about 60 regions of the country and partially of Dhaka city had been locally specialized in lockdown to combat the spread of coronavirus (Anwar et al., 2020). Special lockdown was applied in the southern district of Cox's Bazar, where many Rohingya refugees live (Anwar et al., 2020). In 18 April, more than one lakh people disobeyed lockdown order and concentrate the interment of a superior Islamist leader in Brahmanbaria district. Police forces were not capable of managing the mass (Wikipedia, 2020). On 20 April, Bangladesh Bank announced a refinancing fund of 30 billion in Bangladeshi currency for low-salary professionals who were mostly harmed by COVID-19 (Wikipedia, 2020). On 24 April, lockdown extended until 6th May. In 4 May, the lockdown was extended from May 6 to May 16 and the shopping complex has been decided to be open from 10 Ante Meridieum to 4 Post Meridieum on the occasion of the Muslim Festival from May 10, everyone had to stay in their place and intercity vehicles were restricted. On 15 May, the lockdown was extended to May 30. At first, the government said that no one can go to the village during Eid but later it was said anyone can go home only by private car. From June 1 to June 15, all sectors were limited to open, but health protection must be maintained. Elderly, sick people, pregnant women were instructed not to join the office and start intercity and public transport. 15 June divided the zone wise (red, yellow, green) side according to the prevalence of coronavirus infection but it could not highly influence the coronavirus infection (Administration, 2020).

In January 2020, the World Health Organization (WHO) acknowledged that the novel coronavirus (COVID-19) is the 6th public health tragedy of a global section (World Health Organization, 2020a; Ripon et al., 2020b). COVID-19 was formally confirmed as a pandemic by WHO on 11 March 2020 (World Health organization, 2020b; Ripon et al., 2020b). 391586 people have been exposed COVID-19 in Bangladesh up to 21th October (Institute of Epidemiology, Disease Control and Research, 2020). COVID-19 pandemic causes fear and psychological troubles for the community (Bao et al., 2020; Xu et al., 2020; Ripon et al., 2020b). Mental penalty of COVID-19 can be serious (Tang et al., 2020; Ripon et al., 2020b) for a quarantined population. It was expected that 30–50% of the people exaggerated by this disaster and suffered from a variety of emotional crises (Dutheil et al., 2020; Ripon et al., 2020b). Prominent crises included a variety of delirium, psychosis, and even suicide from anxiety, depression, panic attacks, somatic symptoms, and PTSD. Also, quarantined personnel may possibly be familiar with guilt, shame or stigma. Elevated levels of mental suffering amongst those who had endured extended periods of quarantine occasion were expected to be connected with an enlarged scenario of PTSD and connected to depressive symptoms (Ho et al., 2020; Ripon et al., 2020b). Even due to stigma and depression, suicidal cases happened in Bangladesh (Dhaka Tribune, 2020; Ripon et al., 2020b). Supervision patients with cruel psychiatric disorders who had suspected or confirmed COVID-19 had formed a main logistical test (Xiang et al., 2020; Ripon et al., 2020b). PTSD is similar to the subsequent tsunami of the SARS-Cov-2 pandemic (Ripon et al., 2020b). Individuals who suffer from PTSD were at better danger of death by suicidal ideation, suicide attempts, and to commit suicide (Dutheil et al., 2020; Şahin et al., 2020). The occurrence of trauma could lead to severe stress disorders and eventually the

development of traumatic stress disorders (Nicole and Sheridan, 2020). However, there were a few research articles on the mental shock of quarantine on COVID-19 on the common people in Bangladesh. This study was the first psychological shock in the general population in Bangladesh within the 5 days after the end of 14 days quarantine. Mental interventions that decrease anxiety and progress sleep period that can be prioritized in the most affected areas (Wang et al., 2020). Mental health monitoring, early identification of at-risk individuals and handling regardless of financial constraints are essential to explanatory chronic crises (DePierroa et al., 2020). This study aimed to establish the prevalence of PTSD and depression symptoms among the quarantined population. The result may help the government and policymakers for the psychological wellbeing of the country.

2. Materials and methods

2.1. Description of quarantine in Bangladesh

From the onset of the pandemic of COVID-19 in Bangladesh and until October 19, 2020; 504230 people were instructed to stay in obligatory quarantine and not to go away from the quarantine position (World Health Organization, 2020c). They were told to wash their hands repeatedly, to dress in masks while they felt any complexity with inhalation, and were told to contact the nearest hospital (Ripon et al., 2020b). Instructions included that if a person's occurrence is shortness of inhalation, chest ache, and loss of smell as severe level – then, they ought to look for instantaneous health check consideration. If the symptoms were mild to low, they were instructed to handle it at home, as being a self-quarantine (Ripon et al., 2020b). Generally, it became known that symptoms arise in 5–6 days if one is infected and it can take up to 14 days.

2.2. Study population and survey instrument

Bangladeshi citizens (infected by coronavirus and diagnoses on the basis of oropharyngeal and nasopharyngeal swab samples by RT-PCR) who were 18 years of age and above and were in quarantine then went home with cure during the COVID-19 were eligible participants in this study. The 1st line of the questionnaire indicate that “If you infected by coronavirus and diagnoses on the basis of oropharyngeal and nasopharyngeal swab samples by RT-PCR and maintain 14 days of quarantine, you can fill up the survey” and they had to need their lab test form number. Contribution in the study was unpaid – as the study tool was applied via social media (like Instagram, Facebook and LinkedIn networks). A number of respondents who did not complete the 10th grade or below of education, or without a job were excluded in this study. A total of 5792 respondents including individuals infected by coronavirus responded to the administered questionnaire online. The administered study questionnaire was in a form of 64 questions. It was conducted in the Bangla Language and was available online between the 10th to the 29th of May 2020. It was projected that the survey takes more than 15 min to complete. The study ethically approved by Biosafety Biosecurity and Ethical Committee of Jahangirnagar University, Bangladesh. Online informed consent was provided before survey participation, and the online consent form included purpose of the study, data confidentiality, rights of participation, and the right to withdraw from the study at anytime. Questions were to gather demographic information of participants, were related to quarantine information, and to evaluate the psychological effects (Depression and PTSD) via valid scales IES-R (Weiss, 2015) and CES-D.

2.3. Assessment of psychological impact

The psychological impacts of quarantined persons were evaluated with validated IES-R (Weiss, 2015) and CES-D (Radloff, 1977) scales. The IES-R was a self-report calculated to evaluate present suffering ensuing

from a traumatic occasion and composed of 22 items, every with a Likert rating scale from 0 to 4 (Hull, 2005). The highest score was 88. In the IES-R scale, score ≥ 20 was posttraumatic stress disorder (PTSD) and also associated with diagnostic psychiatric interviews. The CES-D was a measure of depressive symptoms composed of 20 self-report questions, every with a Likert rating scale from 0 to 3 (Hull, 2005) and the highest score of 60 (Radloff, 1977). The person who scores ≥ 16 in CES-D scale would have depressive symptoms, related in severity to the levels experiential amongst depressed patients (Radloff, 1977; Weiss, 2015; Hull, 2005).

2.4. Statistical analysis

The main result of the study was to assess the occurrence of PTSD and depressive symptoms in quarantined persons and assessing the relationship with personal variables. Regressions were used to find univariate and multivariate associations in the results. Psychologically, a score $20 \leq$ in IES-R scale was used to estimation the occurrence of PTSD symptoms (Weiss, 2015; Hull, 2005) and the score of $16 \leq$ in CES-D scale was used to estimation the occurrence of depressive symptoms (Radloff, 1977; Hull, 2005). The independent variables were age, income, educational status, marital status, type of quarantine, gender. A p -value of < 0.05 was measured to be considerable for all analysis in this study.

3. Results

Depression mostly prevalence among the age of more than 55 (89.5%), income more than 75000 taka in Bangladesh currency (91.1%), education level grade 12 or more (81.2%), single marital status (84.9%), female (87.1%) and institutional quarantined person (87.1%). And PTSD is on the age more than 55 (88.1%), income 40000 to 74999 taka in Bangladesh currency (100%), education level grade 10 (94.3%), single marital status (85.2%), male (89.8%) and institutional quarantined people (94%). It indicates that age more than 55 years, single marital status, institutional quarantined person had prevalence both depression and PTSD (Tables 1 and 2). PTSD was mostly prevalence among the male and depression on female. The most PTSD symptoms were on the male (among male) ($n = 1392$, 75.7%) who had institutional quarantine. The

most depression symptoms were on the female (among female) ($n = 920$, 72.8%) whose income was more than 75000 takas in Bangladeshi currency (Table 3).

3.1. Demographic and description in quarantine people

The survey was occurring by 5792 respondents and in the meantime in Bangladesh 304330 respondents were placed in quarantine (home and institutional) (World Health Organization, 2020c). All participants filled the survey questionnaire within 5 days from the end of quarantine. Depression and PTSD were mostly prevalence those who 31–45 years old ($n = 1883$, 32.5%); income 20000 to 39999 taka (Bangladeshi currency) ($n = 2208$, 38.1%); education status was grade 12 or more ($n = 3704$, 61.9%); unmarried or single ($n = 3128$, 54%); being placed into home quarantine ($n = 3952$, 68.2%) (Table 3). The duration of quarantine was 14 days.

3.2. Psychological impact of quarantine

81.8% respondents Scored ≥ 24 in the IES-R scale. Among them, 43.8% respondents score was $37 \leq$ that means their immune systems function was suppressed; 20% respondents score was 34–37, had a probable diagnosis of PTSD. 24.3% respondents score 24 to 34 that mean they had PTSD a clinical concern. On the other hand, the respondent's income was 40000–74999 takas in Bangladesh currency had more PTSD symptoms. The odd ratio 19.3 (95% CI: 12.5–27.3) and adjusted odds ratio 22.9 (15.6–32.4) after adjusting all personal variables (Table 2). 85.9% respondents scored $16 \leq$ in the CES-D scale, meaning they were depressed. The respondents whose education level grade 10 were most depressed. The odd ratio 3.8 (95% CI: 3.1 to 4.65) and adjusted odds ratio 13.19 (95% CI: 9.875 to 17.62) after adjusting all personal variables (Table 1).

3.3. Sources of information for coronavirus control

The quarantined persons have learned the information for coronavirus control procedures from the following sources: health-related websites (12%), social media (55%), health care providers (7%), google

Table 1. Association with personal variable and depression (P value < 0.05).

Variable	Prevalence of depression (%)	Unadjusted OR (95% confidential interval)	Adjusted OR (95% confidential interval)
Age			
18–30 years	80%	0.47 (0.37–0.6)	0.57 (0.44–0.74)
31–45 years	85.1%	0.67 (0.53–0.84)	0.77 (0.61–0.98)
46–55 years	87.8%	0.84 (0.67–1.07)	0.91 (0.71–1.17)
More than 55 years	89.5%	Reference	Reference
Income (Bangladeshi currency)			
less than 20000 taka	84.7%	0.54 (0.42–0.68)	0.11 (0.08–0.16)
20000 to 39999 taka	83.7%	0.5 (0.4–0.63)	0.07 (0.05–1.01)
40000 to 74999 taka	86.1%	0.6 (0.46–0.8)	0.75 (0.56–1)
More than 75000 taka	91.1%	Reference	Reference
Education status			
Grade 10	94.3%	3.8 (3.1–4.65)	13.19 (9.88–17.62)
Grade 12 or more	81.2%	Reference	Reference
Marital status			
Married	87.1%	1.2 (1.03–1.39)	0.36 (0.28–0.46)
Single	84.9%	Reference	Reference
Gender			
Male	84%	1.28 (1.11–1.49)	0.75 (0.61–0.928)
Female	87.1%	Reference	Reference
Types of quarantine			
Home Quarantine	85.2%	Reference	Reference
Institutional Quarantine	87.4%	1.2 (1.02–1.42)	0.37 (2.72–0.49)

Table 2. Association with personal variable and PTSD (P value < 0.05).

Variable	Prevalence of PTSD (%)	Unadjusted OR (95% confidential interval)	Adjusted OR (95% confidential interval)
Age			
18–30 years	88.8%	1.07 (0.82–1.4)	1.34 (1.02–1.78)
31–45 years	88.1%	1 (0.8–1.25)	1 (0.76–1.23)
46–55 years	87.8%	1 (0.7–1.21)	1 (0.75–1.22)
More than 55 years	88.1%	Reference	Reference
Income (Bangladeshi currency)			
Less than 20000 taka	77.2%	0.73 (0.61–0.88)	1.81 (1.26–2.6)
20000 to 39999 taka	94.6%	3.74 (2.97–4.74)	7.59 (5.07–11.37)
40000 to 74999 taka	100%	19.3 (12.5–27.3)	22.9 (15.6–32.4)
More than 75000 taka	82.3%	Reference	Reference
Education			
Grade 10	94.3%	2.97 (2.42–3.65)	2.09 (1.64–2.66)
Grade 12 or more	84.7%	Reference	Reference
Marital status			
Married	76.6%	1.9 (1.63–3.35)	1.76 (1.3–2.4)
Single	85.2%	Reference	Reference
Gender			
Male	89.8%	0.76 (0.65–0.91)	1.98 (1.58–2.46)
Female	87.1%	Reference	Reference
Types of quarantine			
Home Quarantine	85.4%	Reference	Reference
Institutional Quarantine	94%	2.63 (2.13–3.25)	3.52 (2.61–4.74)

Table 3. The prevalence of personal variable, depression and PTSD.

Variables	Prevalence	female (Prevalence)		male (prevalence)	
		PTSD	Depression	PTSD	Depression
Age					
18 to 30	1000 (17.3%)	560 (56%)	536 (53.6%)	328 (32.8%)	264 (26.4%)
31 to 45	1880 (32.5%)	1080 (57.4%)	960 (51.1%)	648 (34.5%)	640 (34.1%)
46 to 55	1768 (30.1%)	920 (52%)	968 (54.8%)	632 (35.7%)	584 (33%)
More than 55	1144 (19.8%)	640 (56%)	664 (58%)	368 (32.2%)	360 (31.5%)
Income (Bangladeshi currency)					
Less than 20000 taka	1512 (26.1%)	1048 (69.3%)	1008 (66.67%)	120 (7.9%)	232 (15.3%)
20000 to 39999 taka	2208 (38.1%)	928 (42%)	968 (43.8%)	1160 (52.5%)	920 (41.67%)
40000 to 74999 taka	808 (13.5%)	344 (42.6%)	232 (28.7%)	464 (57.4%)	464 (57.4%)
More than 75000 taka	1264 (21.8)	808 (63.9%)	920 (72.8%)	232 (18.4%)	232 (18.4%)
Education					
Grade 10	2088 (38.1%)	1272 (60.9%)	1392 (66.67%)	696 (33.33%)	576 (27.6%)
Grade 12 or more	3704 (61.9%)	1856 (42.8%)	1736 (46.9%)	1280 (34.6%)	1272 (34.3%)
Marital status					
Married	2664 (46%)	1512 (56.8%)	1392 (52.3%)	928 (34.8%)	928 (34.8%)
Single	3128 (54%)	1616 (51.7%)	1736 (55.5%)	1048 (33.5%)	920 (29.4%)
Types of quarantine					
Institutional Quarantine	1840 (31.8%)	336 (18.3%)	336 (18.3%)	1392 (75.7%)	1272 (69.1%)
Home Quarantine	3952 (68.2%)	2792 (71%)	2792 (71%)	584 (14.78%)	576 (14.6%)

searching (20%) and others (5%). During the COVID-19 outbreak, more than 40 % of the participants thought that they did not receive enough information about quarantine and they remained safe 0.67 times from those who received enough information [calculated OR: 0.67 (95% CI: 0.43–1.1)]. That means those who received information were at risk of psychological distress. Information on behalf of the home illness manage procedures, 35% weren't tell by whom they be capable of get in touch with in the time of quarantine; 45% did not get specific instructions at the time of changing worn masks, and 60% didn't get information on the utilize and sterilization of individual used objects; 80% were not given specific information for use and disinfection of the mobile phone. The

resource of information for quarantine prejudiced the considerate of the rationale for quarantine. Individuals who be informed through the social medium or government hotlines were be additional probable to realize the rationale for quarantine than individuals who were be notify through public health personnel ($p = 0.01$). Income and age had influenced understanding the reason for quarantine. The quarantined person, who did not think that they were well-informed about the quarantine were very angry, information on quarantine was incomplete and frustrated that it was difficult to contact a healthcare professional. As well as they did not get required support, worried regarding the required information on the mode of spread and diagnosis of COVID-19.

3.4. Adherence to disease handles procedures

In presence of family member, 55% (n = 3186) of quarantined persons wore masks and their family members remained safe 1.22 times from those who did not wear masks [calculated OR: 1.22 (95% CI: 0.89–1.78)]. 58% (n = 3360) remained inside their house for the time of the quarantine period. 33% of the quarantined people did not monitor their body temperatures as recommended: 36% respondent increased washing hands frequently, 63% of respondents changing their food habits.

4. Discussion

By way of the novel coronavirus (COVID-19) pandemic, numerous communities were instructed to wait at home as a preventive measure for not catching the virus (Ripon et al., 2020b). The same measure was imposed in Bangladesh, where people were in self and mandatory quarantine for 14 days. The freedom of the quarantined person was restricted to control transmissible diseases. PTSD and depression were considerable differences between quarantined groups and non-quarantined groups (Wu et al., 2020a, b). It impacts more physiological and psychological problems on the quarantined person. Quarantine events were constantly connected with unenthusiastic psychosocial outcomes (depressive symptoms, posttraumatic stress disorders) (Röhr et al., 2020). Involved in quarantined person fatigue, isolation from family members, anxiety, boredom, insomnia, frustration, stress, low mood, boredom, insomnia, PTSD, anger, sensory fatigue, fear, anxiety, sadness, guilt, poor concentration at work and sensitive disturbances at work. The most predictable of the symptoms of a quarantined person were depression and PTSD. They were affected by the duration of segregation, fear of infection, frustration and monotony, inadequate supply, inadequate information. After quarantine they had financial problems and stigma. Financial and stigma can lead to suicide (Bhuiyan et al., 2020). PTSD is closely related to depression. This study was conducted at the first peak of the pandemic. In Bangladesh, the mid peak of the pandemic, a study assessed the Depression and PTSD for the quarantined people in Bangladesh. That study indicates quarantine people involved in psychological distress (depression and PTSD). And due to these psychological distresses quarantined population took some nutritional misconceptions and these misconceptions had an association with depression (24%) but not with PTSD (35%) (Ripon et al., 2020a). Understanding the prevalence and influencing factors of depression and PTSD symptoms in quarantined individuals was crucial (Brooks et al., 2020). Previous study suggested that depression and PTSD were more common in women (Horesh et al., 2015). This study shows that women were more depressed and males had more PTSD. The psychological effects on the Bangladeshi public may vary depending on many variables like age, gender, income, place of quarantine, marital status, and education. PTSD mostly varied by income and marital status and depression varied age and education (Table 1 and 2). Previous epidemic, the psychology of quarantined persons study showed that these variables can influence psychology (Taylor et al., 2008). After the Rana Plaza building collapse in Bangladesh where high rates of depression and anxiety, as well as PTSD and moral injury, were observed (Fitch et al., 2015; Pappa et al., 2020).

PTSD is considered as an anxiety disorder characterized by avoiding stimuli associated with a traumatic event, reexperiencing the trauma, and hyperarousal, such as increased vigilance (Guze, 1994; Hull, 2005). PTSD can develop after a traumatic event which involves a life-threatening component and improvement of PTSD can be improved if the trauma is supposed as an individual physical attack (Breslau et al., 1998; Hull, 2005). The symptom of PTSD and the quarantine time spent had an association. The symptom of PTSD increased when the time quarantine was increased. This result may suggest that quarantine itself

or disclosure to someone with coronavirus may appear like a personalized trauma. Psychological trauma may be one way in which the prevalence of coronavirus affects long-standing physical condition and the resulting trauma may be related to upcoming awareness and risk alertness (Lei and Klopach, 2020). It was an urgent problem for Disease-synthesis mechanisms (quarantine, isolation, ventilation) (Worsham et al., 2020; Sprang and Silman, 2013). Lebanese quarantine began to give birth to PTSD symptomatology after the 14 days, which worsened in the 28 days of quarantine (Fawaz and Samaha, 2020). Young people and women, uncertain about possible coronavirus infections, and the superior risk of direct contact with coronavirus infectious victims were at risk for these mental suffering (Casagrandea et al., 2020). In Bangladesh depression mostly prevailed at the age of 31–45 and PTSD at the age more than 55. Finally, evidence had been found of a significant association between coronavirus infection related PTSD symptoms and psychological distress. Religious leaders also were at risk of psychological trauma during this pandemic (Greene et al., 2020). And anxiety correlated with depression (Elhaiabc et al., 2020). PTSD and depression were 2.7% and 9.0%, respectively among Chinese students (Tang et al., 2020). In Italy, due to quarantine, 41.6% reported high depression, and 6.6% reported PTSD symptomatology associated with COVID-19 (Casagrandea et al., 2020). But in Bangladesh it was like a second tsunami, the PTSD and depressed symptoms for quarantine people in this study respectively 75.7% and 85.9%. The presence of more PTSD symptoms in a person's experience to somebody with a identification of coronavirus infection, compared to people who didn't have this individual association might point out a more supposed individual-risk group. A few participants who were suspected to coronavirus for nearest somebody who died of COVID-19 can give details of the association between this cluster and more psychological distress. This universal fear was also reflected in the extensive media reporting, which was intense and disturbing, most important to an enormous community response. Offering to watch, read or listen to news related to COVID-19 may cause people depression and PTSD; and seeking updated or more authentic scientific information merely from trusted sources at least once or twice in a day at specific times (Fekih-Romdhane et al., 2020) increase this. More time was spent in the media to cover the news and updates of the recent global pandemic outbreak of COVID-19. Coverage included more discussions on quarantines and how to develop adherence to control of the infection. The health effect of the quarantined person was a focus in this analysis. It was important to recognize the experience of quarantine concern and had better understanding their quarantine needs of individuals. To realize these needs was important if quarantine is effective in scheming infection policy. The psychological effects of the quarantined person had not been methodically attempted before in Bangladesh. This study showed that a part of quarantined people were symptoms of anxiety and PTSD as calculated by validated scales, but it was insufficient to confirm diagnosis. To make confirmations of diagnoses, structured diagnostic interviews were needed. The presence of PTSD and depressive symptoms were highly correlated. Outbreaks appear to be exacerbated during COVID-19. The hard work of persons and governments to get better wellbeing literacy could make a significant contribution to COVID-19 infection control and management (Nguyen et al., 2020). Cognitive processing therapy is a trauma-centric, scientifically proven management that can be effective for post-traumatic stress disorder through personal contact or by means of telehealth (Moring et al., 2020). Depression and PTSD, both were generally clinically established as a cluster of symptoms which last for ≥ 6 months.

The psychological effect of quarantine period challenge had continued as the biggest challenge. This will be the second epidemic of psychological problems in the second half of 2020. Taking action at the end of quarantine can reduce the effects. In that second triage phase, a quarantined person who was not physically harmed received psychological help and was examined for symptoms requiring subsequent

traumatic treatment. In this situation, WHO proposes protocols such as Recent and Grouped Traumatic Episode Protocols (World Economic Forum, 2020). Any kind of epidemic had to face two approaches: one for the treatment of the infected and the other the treatment of trauma invisible. Although the treatment of COVID-19 was going on but for the second one we do not do anything (psychological) that will have to face contained by three to six months following the conclusion of the quarantine episode (World Economic Forum, 2020). On that occasion, we require the entire capable agencies to assist the global financial system improve. In that situation, it could be neglectable for the Bangladesh government. No individual of quarantined persons was given psychological support for COVID-19 infection in Bangladesh. This study was at the time of the climax of COVID-19 pandemic. Longitudinal reports on psychology of quarantined populations will be cooperative to the path of transformation in the level of depression and PTSD at different stages of the pandemic (Li et al., 2020). The economic trouble caused by the extensive quarantine period, was one of the principal stressors connected to anxiety, depression and PTSD (McIntyre and Lee, 2020). In addition to mental interventions, economic support like salary subsidies, tariff breaks, and increased loan repayments can assist decrease public anxiety, depression and PTSD (Case, 2020).

5. Conclusion

We determined the association and prevalence of PTSD and depressive symptoms among the quarantined population in this study. COVID-19 had shown to cause stress in quarantined persons. We believe that it was probably due to illness and that it seems to interfere with long-term activities. A healthy dietary pattern for the quarantined population should be created and followed on a national or regional basis, which will ensure that the body has all the functional immunity without any hesitation in consuming water, fruit variety vegetables, moderate amounts of animal source food, minimally processed meats and products. Un-healthy diets, primary to overweight and obesity are primary causes of sick health and create persons vulnerable to various non-communicable diseases such as diabetes, cardiovascular disease, cancer, and chronic respiratory diseases. Public with non-communicable diseases were at a sensitive threat of suitable strictly sick with COVID-19. Numerous public in times of high-stress used foods elevated in fat, sugar, and salt for relief which can guide overeating and weight gain. Faced with mental crisis symptoms and doubt it was usual to be tempted by tales of phenomenon foods. Food protection was essential to limit both the spread of COVID-19 and experience to other illnesses. Recommended behaviors by government (social distance, hand washing with soap earlier than and following grocery shopping, management, preparing and consuming food) and keeping away from panic purchasing and taking pleasure in home-cooked meals without any doughy food can protect from COVID-19. Public with PTSD may help from trying self-help approaches. Having sources of community support is significant to them. Some people may necessitate specialized assistance. There were major emotional distresses that are experiential to be emerging in our quarantined person. We trust that they will be the majority expected to reason illness and obstruct with long-term performance. An identical investigation tool of the scale of psychological responses to the quarantine ought to be developed for future study.

6. Limitations of the study and acknowledgements

As the study survey was conducted online through social media, respondents to our questionnaire were only those who had access to the internet. This makes a certain segment of society in Bangladesh; thus, subjects of this study do not represent all sectors of the population in the country. Also, we have overlooked including a question about the geographical location of each respondent within the country. We hope that such limitations and other aspects that may have been missed in this study will be included in future work.

Declarations

Author contribution statement

R. K. Ripon, S. S. Mim: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

A. E. Puente, S. Hossain, Md. M. H. Babor, S. A. Sohan, N. Islam: Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data.

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Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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