COVID-19 and Mental Health Impacts in Bangladesh: A Review of Empirical Evidence

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Abstract:

The novel corona virus is one of the worst nightmares mankind is facing, across the world, in current days. The countrywide repeated lockdowns and restricted movements to combat the COVID-19 pandemic tremendously stroke the mental health and well-being of people. A critical appraisal synthesis method was utilized to direct this review study based on quantitative and qualitative empirical evidence. Content analysis was also adopted to integrate ideas, and then link those ideas consistently to produce factual information for each specific domain. Mental health impacts, caused by COVID-19-related risk perception and associated countrywide lockdowns, mobility restrictions, institutional closures, and incapacities of healthcare systems, have been mirrored in people irrespective of their age, gender, educational status, and social class. As the COVID-19 continues to evolve, allowing different phases of transmission, people may be tremendously burdened by developing higher stress levels, anxiety, and symptoms of depression more than the normal periods of life. Specific interventions were suggested for people of multifaceted spectrums to cope with the immediate and prolonged mental health impacts. This review study sets to assess the association between COVID 19 and mental health impacts, specifically anxiety, stress and depression of the people in Bangladesh.

Keywords: COVID-19, mental health, pandemic, health impacts, review, and Bangladesh

INTRODUCTION

The novel corona virus is one of the worst nightmares mankind is facing, across the world, in current days. This new virus, also known as COVID-19 was first reported in Wuhan City, Hubei Province, China in the latter part of 2019 (Li et al., 2020; Huang et al., 2020). The COVID-19 has affected many parts of the world within few months. The World Health Organization (WHO) declared COVID-19 as a global pandemic on March 11, 2020 (Kapasia et al., 2020). According to the WHO (2021), the number of confirmed cases is 164,523,894 while the confirmed deaths rose to 3,412,032. It has also spread in 223 countries, areas, or territories with active cases around the world as of 20 May 2021. Unlike many developing nations, developed countries have struggled against this infectious disease (Zhou et al., 2020). Moreover, South Asian (SA) countries are scared of the Indian double mutant COVID variant because India undergoes a surge of second wave COVID-19 transmission. Currently, the Indian variant has been detected in people in 44 countries including Bangladesh and Nepal (Deutsche Welle, 2021; BBC, 2021; The Daily Star, 2021). Due to cross migration for business, tourism and family purposes, the corona virus continues to surge across borders and peaks in many parts of Bangladesh and Nepal. Indian variants have been partly blamed for the growing corona cases in neighboring countries in SA (BBC, 2021).

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Bangladesh, a densely populated country guarantees approximately 170 million people with limited healthcare resources and medical logistics. Similar to other countries, COVID-19 has overthrown its net in every corner of Bangladesh. On March 8, 2020, the first confirmed case was officially reported (Islam et al., 2020; Paul, 2020). The Institute of Epidemiology, Disease Control and Research of Bangladesh (2020) confirmed 785,194 confirmed cases and 12,284 deaths as of 21 May 2021. People have suffered a lot due to fragile healthcare conditions. Those notable drawbacks initially involved poor testing facilities, lack of testing kits, inadequate social distancing measures, and unskilled healthcare staff in hospitals (Dhaka Tribune, 2020; Molla, 2020; Sujan & Hasan, 2020). Unlike physical burdens, COVID-19 affects the mental health of the general population. Apparently, people concentrate on physical health, ignoring mental health conditions. Thus, the balance of psychological factors, such as anxiety, stress, and depression, becomes excruciatingly dismantled. These mental conditions promote panic attacks, insomnia, trauma, Post Traumatic Stress Disorders (PTSDs), abnormal behavior, and can even trigger suicidal thoughts in people (Mamun & Griffiths, 2020b; Bhuiyan et al., 2020).

The countrywide repeated lockdowns for the COVID-19 pandemic tremendously stroke the state of mental health and well being of people. Firstly, a strict lockdown appeared on the scene on March 23, 2020, and it was reiterated to be extended to district levels in Bangladesh. As the corona virus continues to accelerate confirmed cases and deaths, the state restricts to operate private and public offices, educational institutions, industries, social gathering places, and routes of public transportation (Banna et al., 2020). Due to home quarantine and restricted movement, COVID-19 has severely influenced people's daily life, including income generating activities both in rural and urban areas. As human beings generally interact with each other, repeated restrictions and strict quarantine policies paralyzed the state of physical movements and social contacts for long time. Consequently, people have apparently experienced loneliness, isolation and out of sight, which have been shown to be correlated with developing anxiety, stress, and distress. These psychological health outcomes eventually exert pressure on promoting substance-use, crime, and suicidal ideation, which may lead to death (Ali et al., 2020; Galea et al., 2020; Jahan et al., 2020; Mamun & Griffiths, 2020b; Bhuiyan et al., 2020). The second wave of corona virus transmission is on board; the mental health condition of people deteriorates more than ever due to lockdown periods that started on April 5, 2021 (BBC, 2021).

Millions of people around the world undergo a great burden of physical and psychological resilience caused by COVID-19; hence, these circumstances produced an incredible uncertainty to resume normalcy in real life. The physical state of people, health and immunological stability, correlates with their mental state (Banna et al., 2020; Naser et al., 2020; Islam et al., 2020). People became significantly exposed to mental health disturbance as intermittent lockdowns and physical distancing proved to be recurring public health instruments to minimize new cases (Bhuiyan et al., 2020; Mamun & Griffiths, 2020b; Mamun et al., 2020a; 2020b; Kissler et al., 2020; Hamadani et al., 2020). Staying at home, unemployment, poverty, isolation, dropout from education, absence of safety issues, fear of infection, and limited fundamental rights affected the mental health of people, which is higher than usual rates during this pandemic period (Ahmed et al., 2020a; Banna et al., 2020; Faisal et al., 2020). As repeated restrictions on population's mobility and stay-at-home orders become institutionalized, poor and older people endure mental stress caused by job loss and educational discontinuity. On the other hand, some women suffer harassment, rape, and abusive behavior during lockdown periods (Bodrud-Doza et al., 2020; Yang et al., 2020; Chen et al., 2020). Unlike the global focus on mental health, only a few studies concentrated on COVID-19 and mental health conditions in Bangladesh. Thus, the purpose of this review study aims to assess the association between COVID 19 and mental health impacts, specifically anxiety, stress, and depression among the people of Bangladesh.

Research Questions

The overall purpose of this review paper sought to evaluate the association between COVID-19 and its mental health impacts in Bangladesh. The current review paper was guided by the following research questions:
1) How do mental health impacts differ in the general population across demographic and socio-economic strata during the COVID-19 period?
2) What possible COVID-19 risk factors affect mental health?
3) What potential measures may be suggested in minimizing the mental health impact of COVID-19?

METHODS

A critical appraisal synthesis method was utilized to direct this review study based on quantitative and qualitative empirical evidence. A summary of existing literature based on COVID-19-related mental health impacts was fine tuned for qualitative synthesis by integrating scattered ideas into domains. Content analysis was also adopted to integrate ideas, and then consistently linked those ideas to produce factual information for each specific domain. A constant comparison technique was applied to compare and contrast associated concepts and ideas to frame each concrete domain. Firstly, demographic profile domain includes age and gender specific variations as well as geographical or structural disparities to continue on explaining mental health impacts. Secondly, SES domain is restricted to socio-economic variations and associated mental health burdens. Thirdly, risk factors domain involves the risky perceptions caused by the COVID-19 pandemic, which then helped analyze mental health troubles. Finally, suggested measures domain demonstrates different initiatives and interventions to minimize mental health burdens.
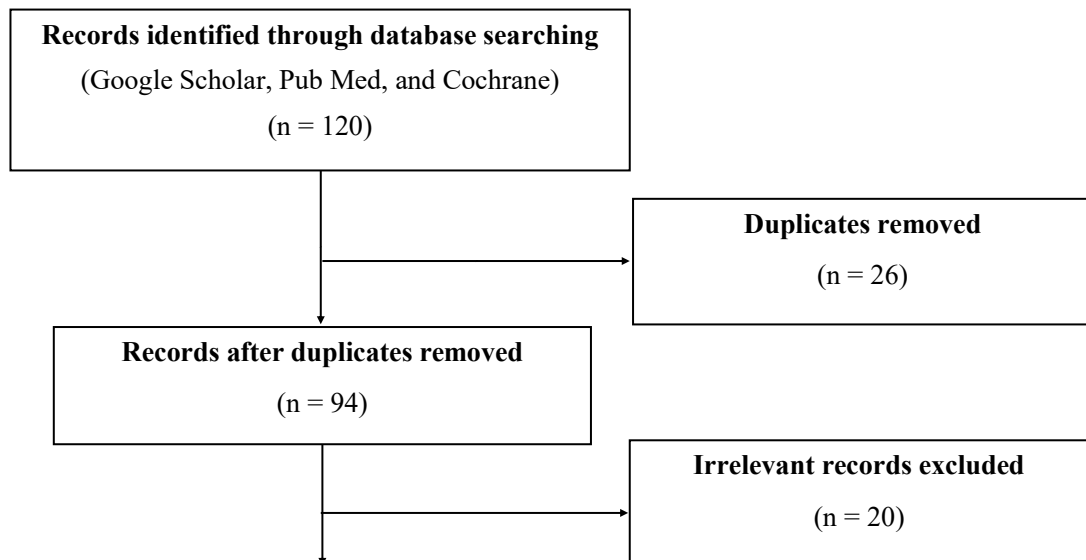
Search Strategies and Techniques

We searched three electronic databases, such as Google Scholar, PubMed, and Cochrane, and got 120 papers related to COVID-19 and mental health-associated impacts. The keywords used for this review paper were: "COVID-19" or "Coronavirus"; "Mental Health" or "Anxiety"; "Stress" or "Depression"; and "Bangladesh". These key words were repeatedly utilized to select the desired academic articles.

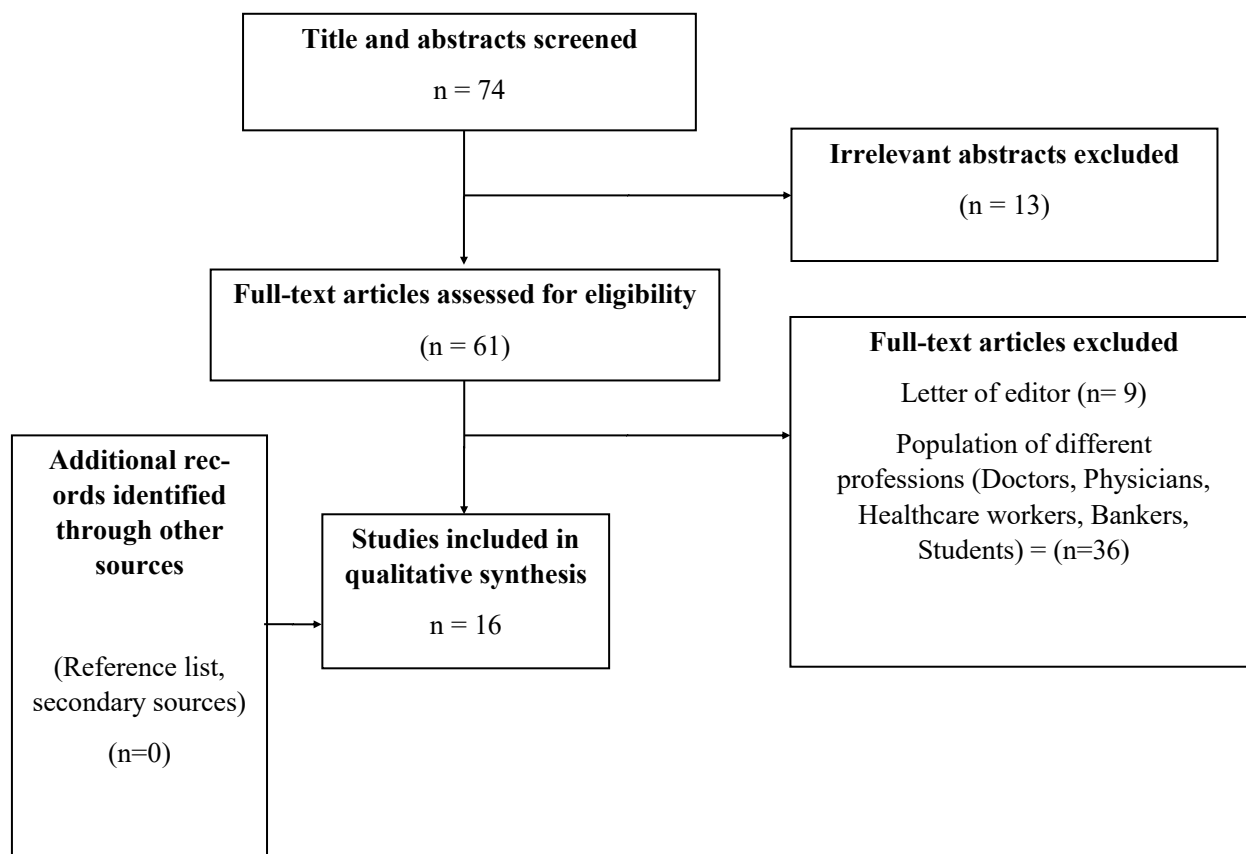*Eligibility Criteria*

The original academic articles published in peer reviewed journals were incorporated for review purposes. No review or systematic review papers were included. Only electronically accessed full papers written in English, published between April 2020 and March 2021, were reviewed for this study. Mental health impacts of the three attributes (i.e., anxiety, stress, and depression) were also scoped.

Exclusion Criteria

We searched three electronic databases and found 120 papers for initial screening. After disregarding 26 duplicates, we had 94 papers left for further investigation. Out of these 94 papers, the exclusion criteria involved 20 irrelevant records, 13 irrelevant abstracts, and 45 inappropriate full-text articles. By subtracting the 78 excluded papers from 94, 16 papers were finalized for review purposes followed by Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) extension for Scoping Reviews (PRISMA-ScR) (see Figure 1).

Records identified through database searching
(Google Scholar, Pub Med, and Cochrane)
(n = 120)

Duplicates removed
(n = 26)

Records after duplicates removed
(n = 94)

Irrelevant records excluded
(n = 20)

Figure 1: A Schematic Representation of the Process of Searching, Screening and Finalizing Papers according to PRISMA-ScR

PRISMA = *Preferred Reporting Items for Systematic Reviews and Meta-Analysis*
PRISMA-ScR= *PRISMA Extension for Scoping Reviews (PRISMA-ScR)*

Study Design and Target Population

A detailed plan of each study included for the current review paper is showed in Table 1 in order to provide information about the duration of survey, the size of sample, target population, and approached methods.

Table I: Summary of research design for selected papers

No	Study	Sample Size (N)	Target Population	Methods
1	Hamadani et al., 2020	242	Women	Quantitative
2	Mamun et al., 2021	10,067	General population	Quantitative
3	Marzo et al., 2021	503	Adults	Quantitative
4	Shammi et al., 2020	1066	General population	Quantitative
5	Islam et al., 2021	1002	General population	Quantitative

6	Islam et al., 2020	340	General population	Quantitative
7	Islam et al., 2020	1311	Community-dwelling individuals	Quantitative
8	Begum et al., 2021	1427	General population	Quantitative
9	Hasan et al., 2020	74	Patients	Quantitative
10	Ahmed et al., 2020	500	General population	Quantitative
11	Mina et al., 2021	153	Patients	Quantitative
12	Hossain et al., 2020	880	General population	Quantitative
13	Banna et al., 2020	1,427	Adult population	Quantitative
14	Paul et al., 2021	576	General population	Mixed method
15	Ali et al., 2020	1404	General population	Quantitative
16	Rahman et al., 2020	614	General population	Quantitative

RESULTS

Age and Gender-Specific Disaggregation and Mental Health Impacts

The COVID-19 has affected the mental health and well-being of people. However, the severity of mental health becomes more evident asymmetrically across age and gender. During the ongoing pandemic period, early youths (18-21, 18-30) suffered from higher depression and anxiety compared with late youths (31-40) and adults (40+) (Rahman et al., 2020; Hossain et al., 2020; Ahmed et al., 2020; Marzo et al., 2021). On another note, around 50% of adults experienced poor mental health and developed mild to severe depression (Ali et al., 2020; Ahmed et al., 2020; Marzo et al., 2021). Likewise, approximately 50% of the people who got infected with COVID-19 had moderate to severe levels of depression (Hasan et al., 2020; Islam et al., 2021).

Women were found to be at a higher risk of mental health complications (Rahman et al., 2020; Ali et al., 2020; Islam et al., 2021; Marzo et al., 2021). Due to COVID-19, women showed more symptoms of depression and anxiety during lockdown periods (Hamadani et al., 2020; Yeasmin et al., 2020; Islam et al., 2020; Banna et al., 2020; Hossain et al., 2020). Moreover, women and married individuals demonstrated mild to severe depression disorders (Ali et al., 2020; Islam et al., 2021; Marzo et al., 2021) and showed more symptoms of anxiety, stress, and distress. On the other hand, male members scored lower in each of these psychological health outcomes (Hossain et al., 2020; Banna et al., 2020; Rahman et al., 2020).

Geographical or Structural Variations and Mental Health Prevalence

Compared to districts with no detected or less cases, high depression was reported in most COVID-19-prone regions such as Dhaka, adjacent districts of Dhaka, and coastal areas in Bangladesh (Mamun et al., 2021). Alternatively, mild to moderate distress and severe distress were found to be higher in Chattogram/Sylhet and Barishal/Khulna divisions compared to other regions in Bangladesh (Marzo et al., 2020). Few northern districts reported elevated levels of depression and suicidal ideation as of mid-April, 2020 (Mamun et al., 2021). Residents outside Dhaka had lower anxiety levels compared to people from Dhaka (Rahman et al., 2020).

Socio-economic Status (SES) Disparities and Mental Health Outcomes

People of multifaceted socio-economic spectrums experience COVID-19-related mental health effects differently. People who attained high educational level, such as a Master's or a Doctorate degree, showed mild to extreme levels of stress compared to those who belonged to higher secondary or undergraduate education (Begum et al., 2021). In contrast, several studies postulated a different version. For instance, higher secondary participants were more likely to develop depression, anxiety and stress symptoms than graduates (Ahmed et al., 2020; Banna et al., 2020).

Business community, day laborers, industry workers, unemployed people were found to have experienced poor mental health (Ali et al., 2020; Paul et al., 2020). Alternatively, university students and part time job holders remained significantly associated with higher depression, anxiety, and stress scores compared to employees (Rahman et al., 2021). Additionally, poor family income, loan from family or friends and unemployment status were positively associated with high stress levels and symptoms of depression during COVID-19 periods (Banna et al., 2020; Paul et al., 2020; Islam et al., 2021). People who showed satisfaction and confidence about their current living place and society experienced less mental health complications than others during the ongoing pandemic periods (Rahman et al., 2021). Moreover, economic hardships, disrupted formal education, future career plans, forced lockdowns without managing basic needs, weak governance, inadequate healthcare facilities, and logistics showed association with stress of people during COVID-19 periods (Islam et al., 2020).

Corona Infection Risks and Mental Health Burdens

Perceived severity about corona infection affects the mental well-being of people. Perception about disrupted life events caused by the pandemic, predictions of a worsening situation, existing mental health conditions, poor health status, COVID-19-persistent symptoms, COVID-19-reinfection, fear and uncertainty of the health care system capacities were found to have been significantly associated with poor mental health outcomes during pandemic periods (Banna et al., 2020; Shammi et al., 2020; Islam et al., 2021). The COVID-19-like symptoms are a great risk factor, which produced more mental health difficulties. People who were exposed to COVID-19-like symptoms demonstrated mild to severe levels of stress and depressive disorders compared to asymptomatic people (Begum et al., 2021).

Fragile healthcare systems with poor management, climate change vulnerability, potential dengue outbreak, low test rates, weak medical facilities, weakness in planning, and the implementation of COVID-19 response strategies by the GoB were perceived as the barriers linked to accelerating stress (Shammi et al., 2020). Additionally, exposure to electronic media news coverage about COVID-19, such as new cases of corona virus, sleep disturbance, fear of contracting of the virus in family members or relatives, and inadequate testing capacities that undermine actual cases, also stimulates stress at an individual level (Shammi et al., 2020; Islam et al., 2020). The substantial cumulative mental health outcomes propagated by stress levels demonstrated suicidal ideation during pandemic periods (Mamun et al., 2020; Islam et al., 2020). People who are exposed to social media for long periods of time or those who had fair or bad health conditions carried more anxiety than those who had a reasonable time for social media or better health status (Hossain et al., 2020). However, people who considered the worst from the crisis have not [yet] experienced higher anxiety symptoms compared to those who did not perceive the COVID-19 pandemic as a major problem. Similarly, people who believed that those who were exposed to chronic physical health conditions experienced mental crisis and developed more symptoms of depression than those who stated COVID-19 has a 'somewhat' negative impact (Banna et al., 2020).

Interventions for Mental Health and Well-being

Appropriate interventions to supervise mental health and well-being were substantiated by researchers (Hamadani et al., 2020; Islam et al., 2021; Mamun et al., 2021). Epidemiological monitoring, screening, and referral were the substantial attempts to minimize psychological distress among adult population (Marzo et al., 2021). Telephone-based counseling, building guidelines, and creating psychological support programs for different institutions and workplaces attributed to the mental health and well-being of people (Ahmed et al., 2020). E-health or tele-psychiatry services, virtual awareness programs for primary mental healthcare such as depression management during periods of spatial distancing (Begum et al., 2021; Islam et al., 2021), community counseling, proper risk communication, dependable risk communication, multi-sectoral taskforce building, and good governance (Shammi et al., 2020) aided with overcoming mental health crisis.

Additionally, COVID-19 posed psychosocial risks to the well-being of women across economic strata; as such, support was recommended for all, including the deprived ones (Hamadani et al., 2020). In addition, strategic psychological support and adequate access to mental health services were also suggested for women and the younger population (Mamun et al., 2021). Also, public risk communication remained targeted for elderly people, children, children with special needs, and disabled people (Shammi et al., 2020; Rahman et al., 2020; Islam et al., 2020). The decentralization of medical systems, including an increase in COVID-19 testing labs and sample collection booths, was recommended (Begum et al 2021). Moreover, government assistance is urgently required (Paul et al., 2020), and the government's direct monitoring of the pandemic is important to control social media and electronic media-based misinformation (Hossain et al., 2020).

DISCUSSION

The integration of socioeconomic and physical health risks with mental well-being is firmly established worldwide during pandemic periods. Bangladesh is not an exception, the country has struggled with second wave COVID-19 transmission followed by repeated lockdowns and restricted movements. The finding of this study showed that early youths, aged between 18 and 30, experienced more depressive and anxiety symptoms than late youths and adults who are 31 and above. Other studies reported that the youth showed higher depressive symptoms, which is consistent with this review study. Contrary to current review findings, adults experienced more symptoms of anxiety (Mahase, 2020; Wang et al., 2020b). This may be due to COVID-19-related deaths, which accelerated more symptoms of anxiety for adults than in youths. The situation may reverse in the course of second wave transmission. The youth contracted the virus more than the adults, but had a lower death rate like before.

Women showed more symptoms of anxiety, stress, and depression than men during lockdown periods or beyond. Other study results consistently concurred that women and female health workers experienced lower mental health scores throughout pandemic periods, specifically more anxiety, stress, and depressive symptoms (Lai et al., 2020; Zhang et al., 2020; Skapinakis et al., 2020; Limcaoco et al., 2020; Mazza et al., 2020; Wang et al., 2020a). Thus, the opposite relationship between stress and gender was observed (Kazmi et al., 2020; Shelvin et al., 2020). Findings also disagreed with previous studies conducted before COVID-19 where women demonstrated significantly higher mental well-being compared to their male counterparts (Murray et al., 2017). However, one study showed no relationship between stress and gender (Zhang & Ma, 2020).

A regional survey conducted by UN Women Regional Office for Asia and the Pacific (2020) warned that COVID-19 could cause gendered imbalance in many countries in the region. One explanation to reveal the underlying burdens could be associated with food insecurity, financial inadequacy, domestic violence, intimate partner violence, and preceding medical conditions. Geographically, the prevalence of COVID-19 was reported differently across the country. High depression and mild to severe distress were found as the psychological health outcomes in people in Dhaka and its adjacent districts and coastal districts. Conversely, population density, close contacts, inadequate contact tracing, fear of losing job, and getting back in rural origins may affect people's mental health in central and coastal cities.

The uneven distribution of socioeconomic incentives was aggravated by COVID-19. Due to COVID-19 related restrictions, around ten million was marginalized caused by inadequate job opportunities and wages in Bangladesh (Ibrahim et al., 2020). Previous studies reasonably argued that poor and underserved people substantially underwent economic instability for infectious disease outbreak (Gumber & Bulsari, 2020; Barnett-Howell & Mubarak, 2020). Our review results showed that different socioeconomic burdens, such as poor family income, unemployment status, disrupted formal education, future career plan, and forced lockdown were associated with higher stress and depressive symptoms. Some people with higher educational attainment, such as a master's degree, are reported to develop depression, anxiety and stress. The practicalities may involve fear of academic life disruption, financial constraints for education, job insecurity, unemployment, and promotion uncertainty, which stimulates mental instability for educated people. Accordingly, poverty, economic recession, and unemployment conditions affected the mental well-being of people and increased suicidal ideation and cases (Oyesanya et al., 2015; Mucci et al., 2016; Rafi et al., 2019). South Asian countries, including Bangladesh, experienced an increase in suicidal cases (Bhuiyan et al., 2020; Mamun & Ullah, 2020; Dsouza et al., 2020). Thus, it is evident that socioeconomic crisis related to unemployment, job uncertainty, academic education and career disruption and wage reduction may potentially damage mental well-being, leading to suicidal cases in Bangladesh.

Currently, COVID-19 is not only an epidemiological crisis; but it is also a psychological one (Ahmed et al., 2020). Results also demonstrate people's risk perception and risk appraisal about the severity of COVID-19 and COVID-19 symptoms; and other persistent symptoms and re-infection fear to stimulate stress at individual level. These results are consistently agreed to the study findings from USA, Italy, Belgium and The Netherlands (KFF, 2020; Carfi et al., 2020; Goertz et al., 2020). The COVID-19 risk perception is determined by knowledge or awareness at an individual level. An individual's understanding is indisputably guided by their socio-economic and educational backgrounds. However, the reality appears different in a macro context. This is evident in people who are exposed to electronic and social media where they receive updates about corona infection outbreak and the resulting after effects. These effects could build either positive or negative reactions about COVID-19. The cumulative negativity about corona infection may potentially destroy one's mental stability during pandemic periods.

Predictions about the comparatively worsening condition, fragile healthcare systems, government response strategy, inadequate medical facilities, and inefficiency of existing healthcare systems were associated with poor mental health in pandemic periods. Similar findings were also found in Bangladesh and USA (Siddika & Islam, 2020; KFF, 2020). However, people could possibly lose their interest on existing healthcare system capacities and medical logistics, which eventually affect their mental well-being. This paper showed that COVID-19 targeted multi-pluralistic interventions, which involves central monitoring and surveillance system, designing mental well-being guidelines, activating dependable risk communication sources, and maintaining central mental health database to facilitate strategic psychological support for the people of multifaceted backgrounds. The multi-sectoral taskforce, government officials, health workers, and people from relevant organizations, was suggested for tracing underprivileged people, vulnerable communities, children with special needs, and people with disabilities to secure mental health support during pandemic periods. Moreover, tele-psychiatry services, virtual awareness building programs, reliable media news reports regarding new confirmed cases, and institutional electronic counseling and online counseling at a community level were prioritized to reduce stress and depressive symptoms in people.

The Way Forward

A national level steering committee of multi-faceted professionals involving multi-layered teams to supervise and monitor trends, predictors, and prolonged substantial consequences of mental health impacts can be built. The incumbent responsibilities of the central steering committee will include mentoring and instructing every team concerned to strengthen coordination and cooperation to facilitate their concerned activities at a macro level. A series of workshops at a national level to minimize the mental health crisis caused by COVID-19 may be organized with the supervision of the aforementioned expert panels in order to convey appropriate anxiety, stress, and depression management messages for the general public through online and offline strategies.

Since a portion of the population does not have access to internet or electronic media connection, short message services with basic tips on mental well-being management, through the use of mobile phones, may be an effective tool to reach people in remote areas. A 24/7 psychological counseling service may also be administered to everyone, including students, to reduce mental pressure and promote mental well-being support.

CONCLUSION

Bangladesh is experiencing the second wave transmission of the world's second deadliest pandemic that this century has ever witnessed (Washington Post, 2020). Mental health impacts caused by COVID-19-related risk perception and associated countrywide lockdowns, mobility restrictions, institutional closures, and inefficiency of healthcare systems influence people irrespective of their age, gender, educational status, and social class. As the COVID-19 continues to evolve, allowing different phases of transmission, people may be tremendously burdened with higher levels of stress, anxiety, and depressive symptoms more than the normal periods of life. Interventions targeted to minimize immediate and prolonged mental health repercussions should involve the formation of a nationwide steering panel committee comprised of healthcare workforces, medical doctors, public health experts, psychiatrists, sociologists, and administrative people who will coordinate with operating central monitoring and surveillance teams, instruct online based counseling teams, guide people engaged in producing handouts for mental health awareness, and manage electronic media to remain neutral and disseminate accurate news reports across the country.

DECLARATION OF CONFLICTING INTERESTS

The authors declare that there is no potential conflict of interest.

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