

MENTAL HEALTH AND PSYCHOLOGICAL DISTRESS AMONG COVID-19 FRONTLINE WORKERS

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Abstract

Covid-19 has caused significant distress around the globe. Apart from the evident physical symptoms in infected cases, it has caused serious damage to public mental health. The current research is an attempt to explore mental health and psychological distress of the Covid-19 frontline workers. One hundred and seventy-seven Covid frontline workers (88 male and 89 female) were asked to complete a questionnaire with questions about symptoms of depression, anxiety, stress, and mental health. The questionnaire included Depression, Anxiety and Stress Scales (DASS-21) and the Bangla version of the General Health Questionnaire (GHQ-12). The results revealed that mental health was negatively correlated with stress, anxiety, and depression. Both male and female frontline workers reported mild to moderate levels of depression, anxiety, and stress. Females reported significantly higher stress than males. However, frontline workers from different professions did not differ significantly on depression, anxiety, stress, and mental health. The findings point to develop strategy to support the mental health of frontline workers including designing psychological support and resilience-building interventions based on risk factors.

Introduction

Covid-19, commonly known as the novel Coronavirus is believed to have originated from a wet market in Wuhan, China, and has spread worldwide, resulting in a large number of hospitalizations and deaths⁽¹⁾. The outbreak of the Covid-19 pandemic in March 2020 saturated the capacity of the worldwide healthcare system and forced organizational changes at all levels of care to adapt to the changing conditions⁽²⁾. There was an important and abrupt change in the working conditions of primary care staff to meet new requirements, with the workforce having to tolerate uncertainties, organizational shortcomings, and a shortage of protective equipment. Overload and changes in working conditions, facing new and unfamiliar situations, lack of resources, fear of contagion, or fear of infecting family members generated significant stress in healthcare professionals as well as other professionals who were providing frontline services.

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In times of epidemic, people tend to experience fear of getting infected with the virus/disease resulting in depression, anxiety, stress etc.⁽³⁾. Depression is viewed as a state of disinterest in daily activities. Stress can be explained as a feeling of emotional and physical tension which arises from any event that threatens our homeostasis⁽⁴⁾. On the other hand, the fear of the unknown is termed as anxiety which is the body's natural response to stress⁽⁵⁾. It is surmised that people facing a pandemic with no vaccination would result in fear of the unknown (in this case, the coronavirus) making them anxious, stressed and depressed. Psychological distress refers to non-specific symptoms of stress, anxiety and depression. High levels of psychological distress are indicative of compromised mental health and may reflect common mental disorders, like depressive and anxiety disorders⁽⁶⁾.

The World Health Organization includes realizing one's potential, the ability to cope with normal life stresses and community contributions as core components of mental health⁽⁷⁾. It has issued public interest guidelines to address psychological issues that may arise during the Covid-19 pandemic⁽⁸⁾. A study by Wang et al.⁽¹⁾ reported severe psychological distress (anxiety, stress, and depression) during Covid-19 among Chinese nationals. Similarly, another research on Chinese nationals found psychological distress such as stress, anxiety, and depression quite common and hence, alarming⁽⁹⁾. Evidently, people's mental health was badly affected during pandemics such as SARS⁽¹⁰⁾.

Frontline workers are identified as a subcategory of essential workers in occupation groups where a large majority of workers (over 70%) cannot feasibly work from home⁽¹¹⁾. Frontline workers include, but are not limited to, healthcare workers, protective service workers (e.g., police), cashiers in grocery and general merchandise stores, production and food processing workers, janitors and maintenance workers, agricultural workers, truck drivers, and educators⁽¹¹⁾. Healthcare providers (HCPs) are directly involved in the diagnosis, treatment, and care of patients and previous studies showed that they had a higher chance of developing mental illnesses like depression, fear, anxiety, stress, trauma etc. because of contagion and infection fear of themselves and their family members^(12,13). Hasan, et al.⁽¹⁴⁾ revealed that, in terms of standardized Hospital Anxiety and Depression Scale cut-off points, the prevalence of anxiety and depressive symptoms among physicians was 67.72 and 48.5%, respectively.

At the early phase of this epidemic in Bangladesh, around 11% of the total infection was found among health workers, alarmingly reported by the Bangladesh Medical Association (BMA)⁽¹⁵⁾. Nurses, midwives, community health workers, doctors, pharmacists, therapists, and other frontline health workers give direct treatment to their communities. Also, who serve the nation like Police, Border Guard Bangladesh (BGB), Rapid Action Battalion (RAB), Bangladesh Army, Bangladesh Ansar and VDP, Bankers, Psychologists etc. are being considered Covid-19 Frontline workers in Bangladesh. These frontline fighters are additionally confronting numerous challenges, including psychological distress⁽¹⁶⁾. Moreover, without proper safety measures, the frontline workers were also in dilemma whether to continue the job. In some cases, such decision

made them fall into the state of partial unemployment which may aggravate mental suffering during the crisis period⁽¹⁷⁾.

An earlier study found that differences in symptoms by sex, age, and HCW role, with female, younger-aged, frontline workers, and non-physician workers being affected more than other subgroups⁽¹⁸⁾. In a study conducted among Bangladeshi people at the initial stage of the pandemic, it had been revealed that 37.3% of participants had generalized anxiety disorder⁽¹⁹⁾. Furthermore, a study conducted among Bangladeshi home-quarantined students showed that 46.92% had depression, 33.28% had anxiety, and 28.5% had stress⁽¹²⁾. There is much evidence that many individuals during the Covid-19 pandemic developed psychiatric symptoms, such as anxiety, stress, panic attacks, sleep problems, depression, and even self-harm⁽¹⁹⁻²¹⁾. To the best of our knowledge, distress experienced (depression, anxiety and stress) by people during Covid-19 has not been explored altogether so far in Bangladesh. Thus, the present research is an attempt to fill this gap so that effective mental health management can be planned by practitioners and policymakers. The major objectives of the present study were to: (i) To investigate whether there is any gender difference in mental health and psychological distress of the Covid-19 frontline workers. (ii) To investigate the association between mental health and psychological distress of the Covid-19 frontline workers. (iii) To investigate whether there is any difference among different professional groups of the Covid-19 frontline workers in mental health and psychological distress.

Materials and Methods

The study was conducted from March 2022 to April 2022 using a cross-sectional study design. A standard data collection procedure was followed to collect the data from the respondents in this study. The sample of the present study consisted of 177 adult Covid-19 frontline workers from around Bangladesh. The second author went to different 5 districts to collect data. The sample was selected employing purposive sampling technique with the help of volunteers recruited by the author. The inclusion criteria for the study participants were: a) Age: ≥ 18 years of age; b) Work experience as a Covid-19 frontline worker for at least 6 consecutive months.

After the establishment of rapport with the respondents, written consent was taken from all the participants before they answered the questions. After collecting the questionnaires from the participants, each questionnaire was checked to find out whether there is any omission or not. If any omission was found the respective respondent was requested to fill it up. The data was analyzed with the help of SPSS v. 21. Descriptive statistics (mean & standard deviation), t-test, MANOVA, Correlation and Regression analysis were carried out to make inferences. The following assumptions are relevant here:

1. Levene's test confirmed the equality of variances.
2. Multivariate normality is demonstrated as residuals are normally distributed.

3. Multicollinearity among the variables of interest is shown to be absent through testing the Variance Inflation Factor (VIF).

Measures

Demographics: Items related to sex, occupation, history of being affected by Covid-19, Covid-19 vaccination status etc. were asked along with psychometric measures.

Bangla scale of General Health Questionnaire (GHQ): The Bangla version of General Health Questionnaire (GHQ-12), adapted by Sorcar and Rahman⁽²²⁾, was used to measure mental health of the participants. GHQ-12 originally developed by Goldberg⁽²³⁾ was designed to detect minor psychiatric disorders in community and primary healthcare settings. The 12-item GHQ was derived from 60 items from the original version. The answering pattern of the original GHQ-12 was 'less than usual' or 'more than usual' format. But, in Bangla version this scoring system had to be changed because of its linguistic difficulties. Sorcar and Rahman⁽²²⁾ adapted a new Likert-type scoring system in which true-keyed items (all positively worded items) of their questionnaire weights of 0, 1, 2 and 3 were assigned 'not at all', 'somewhat', 'to a considerable extent' and 'to a great extent' respectively. The scoring for the false-keyed items was reversed. Questions no. 2, 5, 6, 9, 10, and 11 are the reverse. The possible range of scores is 0-36. The higher the score the better the mental health.

Bangla version of Depression Anxiety Stress Scales (DASS 21): The DASS 21⁽²⁴⁾ is a widely used self-report instrument for screening depression, anxiety, and stress. The scale includes 21 items divided evenly into 3 sub-scales of stress, anxiety and depression with 7 items, and scored on a four-point Likert scale ranging from 0 ("never") to 3 ("always"). The sub-scale of stress consists of questions 1, 6, 8, 11, 12, 14 and 18, and the cut-off scores were: normal (0–14), mild stress (15–18), moderate stress (19–25), severe stress (26–33), and extremely severe stress (34 and above). The sub-scale of anxiety consists of questions 2, 4, 7, 9, 15, 19, and 20, and the cut-off scores were: normal (0–7), mild anxiety (8–9), moderate anxiety (10–14), severe anxiety (15–19), and extremely severe anxiety (20 and above). The sub-scale of depression consists of questions 3, 5, 10, 13, 16, 17 and 21, and the cut-off scores were: normal (0–9), mild depression (10–13), moderate depression (14–20), severe depression (21–27), and extremely severe depression (28 and above). Scores on the DASS-21 is needed to be multiplied by 2 to calculate the final score. In the present study, we used the validated Bangla version of the DASS-21⁽²⁵⁾. In this study, Cronbach's alpha for the depression, anxiety, and stress subscales were 0.89, 0.85, and 0.86, respectively, and the overall DASS-21 scale was found to have excellent reliability (Cronbach's alpha = 0.87).

Results and Discussion

Of the total participants, 88 were males, 89 were females. The mean age of the participants was found to be 29.27 years. The number and percentage of the respondents from different occupations is shown in Table 1. From the sample, 43 were health

professionals (doctors and nurses), 26 were bankers, 29 were mental health professionals, while the remaining 79 were law enforcement agents (i.e., Police, Bangladesh Army, Bangladesh Ansar and VDP).

Table 1. Descriptive statistics of the respondents (n = 177).

Occupation	Frequency (f)	Percentage (%)
Doctor	20	11.30
Nurse	23	13
Professional Psychologist	29	16.38
Banker	26	14.69
Police	32	18.08
Army	26	14.69
Ansar and VDP	21	11.86

Table 2 represents that, the score of mental health of the participants is above average for both males (M = 20.59, SD = 4.86) and females (M = 20.68, SD = 5.33), depression level is mild (M=12.52, SD = 8.11) for male and moderate for female (M = 14.45, SD = 8.54), anxiety level is moderate for both male (M=11.89, SD = 8.60) and female (M=11.48, SD = 8.29) and stress level is mild both male (M = 15.20, SD = 8.67) and female (M = 18.43, SD = 7.81) of the participants according to the scales. The mean values of females were found to be higher than males except for the mean value of anxiety. Males and females did not differ significantly on general health (t = -0.12, p=0.90), anxiety (t=0.32, p=0.75), and depression (t = -1.54, p=0.13). However, a significant difference between males and females was found only in stress (t = -2.59, p = 0.01).

Table 2. Gender differences in the major study variables.

Variable	Sex	N	Mean	SD	t	Sig.
GHQ-12	Male	88	20.59	4.86	-.12	.90
	Female	89	20.68	5.33		
Depression	Male	88	12.52	8.11	-1.54	.13
	Female	89	14.45	8.54		
Anxiety	Male	88	11.89	8.60	.32	.75
	Female	89	11.48	8.29		
Stress	Male	88	15.20	8.67	-2.59	.01
	Female	89	18.43	7.81		

In most countries studied, compared to male, female frontline workers experienced greater levels of anxiety, depression, and stress during the Covid-19 pandemic. However, the trend was not similar across all countries. For example, in a study in Greece, over half of nurses reported experiencing moderate to high levels of stress during Covid-19, but there was no difference in stress levels between men and women nurses⁽²⁶⁾. In terms of anxiety and depression, separate studies in China, Turkey, France, and Mali during Covid-19 exhibited that women health workers experience higher levels of depression and anxiety symptoms, compared to men⁽²⁷⁻³¹⁾. In Ireland, women healthcare workers reported higher levels of anxiety symptoms during Covid-19 compared to men, but there was no significant gender difference in depressive symptoms⁽³²⁾. Regarding stress, separate studies in Turkey and India found that women healthcare workers experienced greater stress levels during Covid-19⁽³³⁻³⁴⁾.

The high mental health toll among women healthcare workers can partially be explained by their fear of contracting the virus and transmitting it to family and friends⁽²⁷⁾. This fear is heightened by their caregiving roles, and uncertainties about the virus⁽²⁷⁾. Due to fear of transmitting the virus, women healthcare workers may avoid interacting with family and friends beyond their household, leading to isolation, which further increases their risk of mental ill-health. In China, nurses who were concerned about others contracting the disease avoided contact with social networks and experienced higher levels of anxiety and depression⁽²⁸⁾. In some instances, women may not be able to avoid contact with their families, due to care responsibilities at home. This could lead to feelings of guilt for potentially placing loved ones at risk of infection⁽³⁵⁾.

Table 3 indicates the correlation between stress, anxiety, depression, and mental health. All the correlation coefficients were found to be significant. All three aspects of psychological distress (stress, anxiety and depression) shared a highly significant positive correlation with each other. The correlation coefficients between stress and anxiety and stress and depression were found to be .63 and .71. However, between anxiety and depression, the correlation coefficient was found to be .74. As far as mental health was concerned, it shared a moderate but significant negative correlation with stress ($r = -.48$), anxiety ($r = -.42$), and depression ($r = -.50$).

Table 3. Correlations between the major study variables.

Variables	1	2	3
1. 1. Depression			
2. 2. Anxiety	.74**		
3. 3. Stress	.71**	.63**	
4. 4. GHQ-12	-.50**	-.42**	-.48**

** . $p < 0.01$ level (2-tailed).

The moderate correlation coefficient between mental health and psychological distress (depression, anxiety and stress) complemented the findings of distress among the frontline workers. The correlation coefficient signifies that mental health depends on the psychological distress (depression, anxiety and stress) that the frontline workers experience. In fact, it can be suggested that people with good mental health may have resilience as a protective factor⁽³⁶⁾, thus, making them less prone to psychological distress.

Table 4. Differences in major study variables among different professionals.

Variable	Groups	N	MS	F	Sig.
GHQ-12	Health professionals	43	16.05	.62	.61
	Mental health professionals	29			
	Banker	26			
Depression	Law enforcement agents	79	40.93	.58	.63
	Health professionals	43			
	Mental health professionals	29			
	Banker	26			
Anxiety	Law enforcement agents	79	87.54	1.24	.30
	Health professionals	43			
	Mental health professionals	29			
	Banker	26			
Stress	Law enforcement agents	79	171.86	2.50	.06
	Mental health professionals	29			
	Banker	26			

Table 4 indicates group differences of different professionals on mental health, depression, stress, and anxiety. No significant group difference was found on the mental health scores ($F = .62, p = .61$), depression scores ($F = .58, p = .63$), anxiety scores ($F = 1.24, p = .30$) and stress scores ($F = 2.50, p = .06$) among different professional groups. This could be because the lockdown and fear of getting infected with Covid-19 were so pervasive that similar experiences of distress are evident irrespective of the profession of the frontline workers.

Implications for research and practice: The present study is a frontrunner in exploring levels of mental health, anxiety, stress, and depression in the frontline workers of Bangladeshi population. This study found that different types of frontline workers experienced psychological distress in the context of the Covid-19 pandemic. Given this

situation, establishing strategies and interventions for psychological support and resilience building of frontline workers is highly relevant, taking into account the risk factors identified and tailoring the interventions accordingly. Proactive systems should be established to assess and monitor the psychological well-being of different professional groups in primary care and facilitate their access to psychological help. Additionally, interventions should be conducted to promote resilience, as it is a modifiable factor⁽³⁶⁾, implementing strategies focused on self-care and changes in the organization and work environment.

Although the research might make significant contributions and can be used by the government and other agencies to tackle the adverse psychological effects of Covid-19 and lockdown, it has some limitations. Firstly, the size of the sample in some groups was quite small which may not have been representative of all frontline workers in Bangladesh. The study could have been strengthened by overcoming a few limitations. For instance, it was not possible to obtain a detailed picture of the activities of the Bangladeshi Covid-19 frontline workers. The respondents of the present study have been selected from only some districts in Bangladesh. Longitudinal studies are necessary to assess the evolution of the psychological impact of the pandemic over time and to identify the factors that determine or can predict this evolution.

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