

Stresses and consequences among physicians of Bangladesh during COVID-19 pandemic: an assessment of experience and perception.

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Abstract

Background: Health providers working in non-COVID hospitals in Bangladesh may be at an increased risk of infection with the new coronavirus, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) compared to health providers working in COVID-dedicated hospitals due to lower health security measures. Consequently, health practitioners working at such hospitals may be the most vulnerable health group to stress-related problems and mental illness. To our knowledge, there is no study assessing stress-related problems in this particular population and how this group compares to those working in COVID-dedicated units in terms of pandemic-related stress.

Methods: An online survey was carried out among 247 medical doctors from Bangladesh (101 females and 146 males). We report descriptive statistics and several group comparisons.

Results: The overall stress level among participants was moderated. There were no statistically significant differences in pandemic-related stress between those working in COVID units and those working in regular units. Most participants knew both co-workers and people close to them who had tested positive for SARS-CoV-2. Half of the participants knew someone close to them who had died from COVID-19 and 24.7% had got infected themselves.

Conclusions: Medical doctors working in Bangladesh experience significant pandemic-related stress regardless of whether they work in COVID-dedicated units or regular units. Our data highlights the importance of detecting stress in health professionals and developing strategies that aim at reducing the same.

Introduction

The pandemic of Coronavirus Disease 2019 (COVID-19) has put many national healthcare systems to intensive pressure, compromising the well-being of healthcare providers. Medical doctors and other health professionals working in non-COVID hospitals in Bangladesh may be at an increased risk of infection with the new coronavirus, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), compared to health providers working in COVID-dedicated hospitals due to lower health security measures. Consequently, health practitioners working at such hospitals may be the most vulnerable health group to stress-related problems and mental illness.

While the most obvious effects of COVID-19 on individuals are physical, the mental health of both infected and non-infected appears to be on the decline since the start of the pandemic. For instance, fear of COVID-19 in the general population has been associated with several mental problems, including, anxiety, depression, phobia, and insomnia¹⁻³. Health providers perceive a great risk-to-self due to exposure to patients who may be infected, which adds further stress⁴. Additional issues, such as the shortage of personal protective equipment can further increase work-related stress⁵.

Research from previous epidemics and pandemics, such as the SARS outbreak in 2003, the MERS epidemic in 2012, and the Ebola outbreak in Africa shows that health professionals often experience several types of psychological morbidities, including trauma⁶, which correlates with suicide⁷. The negative effects of stress on mental health appears to be irrespective of whether the health providers work directly with infected patients⁸.

A recent study showed that frontline doctors in Bangladesh show significant psychological symptoms as a result of the pandemic⁹. More specifically, the study found 36.5% of the doctors had anxiety, 38.4% had depression, 18.6% had insomnia, and 31.9% has significant fears concerning COVID-19. A multinomial logistic regression in the same study found that inadequate resources in the workplace where the most significant predictors for all psychological outcomes.

These data highlight the importance of detecting stress in health professionals and developing strategies that aim at reducing the same. Evidence suggests health practitioners are especially vulnerable to mental illness during pandemics¹⁻³ and COVID-19 is no different. A study conducted in Bangladesh confirms previous findings conducted in other countries during the COVID-19 pandemic⁹; however, the reviewed study was conducted on a sample of frontline doctors. To our knowledge, there is no study assessing stress-related problems in health practitioners working in non-COVID hospitals. The present study aims at addressing this issue by assessing COVID-related stress symptoms in both health practitioners working in non-COVID hospitals and those working in COVID-dedicated unit and comparing these two groups in terms of pandemic-related stress.

Methods

Participants and Procedure

An online survey was carried among 247 medical doctors (101 females and 146 males) working at different clinical settings in Bangladesh through the Google Forms. The link was circulated through e-mail, SMS, and WhatsApp. Dataset was analyzed through descriptive statistics and group mean comparisons.

Study Measures

The questionnaire consisted of 35 questions and the participants were informed about the objects of the study before taking the survey. The questionnaire consisted of three types of questions: demographic questions, COVID-events questions, and pandemic-related stress questions. Demographic questions were used to collect data on age, gender, and workplace (location and type of hospital-COVID or non-COVID). COVID-events questions collected data on coronavirus infection events at the professional, family, and individual level. The pandemic-related stress questions consisted of 24 five-points Likert scale questions that were used to collect data on physical symptoms, mental symptoms, work-related stressors, social-related stressors, and professional/academic-related stressors.

The answer to each Likert scale question received a score from 1 to 5, where 1 corresponds to selecting the first option (“not at all”), 2 corresponds to selecting the second option (“mildly”), 3 corresponded to selecting the third option (“moderately”), 4 corresponded to selecting the fourth answer (“highly”), and 5 corresponded to selecting the fifth option (“extremely”). A lower score indicates a lower level of COVID-19-related stress and a higher score indicates the presence of a higher level of stressors and their consequence resulting from the pandemic. The data were analyzed with SPSS v. 26 ¹⁰.

Ethics

Participants provided their consent before taking the survey and their identity remained anonymous. Participants completed the survey two times and were allowed to terminate at any time their desired.

Results

Reliability Analysis

An analysis of the internal consistency of the Likert scale questionnaire showed a Cronbach's alpha, of .890 which indicates a very high level of internal consistency for this scale with this specific sample.

Reliability Statistics	
Cronbach's Alpha	N of Items
.890	24

Sociodemographic Characteristics

Of the total number of participants, 101(40.9%) were females and 146 (59.1%) were males. The average age of the participants was 41.7. Of the persons who took the questionnaire, 72 (29.1%) participants worked in COVID-dedicated units and 175 (70.09%) worked non-COVID units. [Table 1](#) provides some statistics about the participants' occupation.

Table 1. Participants' Occupation

Occupation:		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Autonomous hospital	22	8.9	8.9	8.9
	Civil Surgeon Office	1	.4	.4	9.3
	CMH	1	.4	.4	9.7
	Corporate Hospital	19	7.7	7.7	17.4
	Development Agency	1	.4	.4	17.8
	Government hospital	27	10.9	10.9	28.7
	Government job	1	.4	.4	29.1
	Government Medical College	82	33.2	33.2	62.3
	Lien	1	.4	.4	62.8
	marie stops (oncall)	1	.4	.4	63.2
	marrie stops(on call)	1	.4	.4	63.6
	Medical University	7	2.8	2.8	66.4
	Private clinic	8	3.2	3.2	69.6
	Private Medical College	48	19.4	19.4	89.1
	Private practice	21	8.5	8.5	97.6
	Scarborough general hospital, Toronto	1	.4	.4	98.0
	Study break	1	.4	.4	98.4
	UN	1	.4	.4	98.8
	UN Agency	1	.4	.4	99.2
	UNFPA	1	.4	.4	99.6
	WHO	1	.4	.4	100.0
	Total	247	100.0	100.0	

COVID Events

Of the total number of participants, 61 (24.7%) reported to have tested positive for COVID-19, 126 (51%) tested negative, and as much as 60 (24.3%) participants have not been tested. A significant number of

participants, 180, (72.9%) knew someone close to them who had tested positive for COVID-19 and 212 (85.8%) knew someone from their workplace who tested positive for the disease. 125 (50.6%) participants knew someone close to them who had died from COVID-19.

While we assumed medical doctors working in regular units are at a higher risk of infection with SARS-CoV-2 compared to medical doctors working in COVID-dedicated units, our sample showed no such differences, as shown below (Table 2).

Table 2. Answers to the Question "Have you tested positive for Covid-19?"						
Do you work in Covid dedicated unit?			Frequency	Percent	Valid Percent	Cumulative Percent
No	Valid	No	87	49.7	49.7	49.7
		Not tested	48	27.4	27.4	77.1
		Yes	40	22.9	22.9	100.0
		Total	175	100.0	100.0	
Yes	Valid	No	39	54.2	54.2	54.2
		Not tested	12	16.7	16.7	70.8
		Yes	21	29.2	29.2	100.0
		Total	72	100.0	100.0	

Participants' Physical and Mental Health

All Likert scale answers were combined into a single stress variable. Descriptive statistics indicated a moderate pandemic-related stress level ($M = 3.32$, $SD = .61$). A t-Student test was performed to assess whether a significant difference in pandemic-related stress exists between individuals who work in COVID-19 unit and those who work in regular units. The analysis did not find a statistically significant difference between the two groups ($t_{245} = .244$, $p = .807$).

Three other t-Student tests were conducted to test whether there was a statistically significant difference in pandemic-related stress between 1) those who had tested positive for COVID-19 and those who had not 2) those who knew a close individual who had tested positive for COVID-19 and those who did not 3) those who knew someone close to them who had died from COVID-19 and those who did not, and 4) those who knew someone at work who got infected with the new coronavirus and those who did not.

Table 3 summarizes our main findings.

Table 3. Group Differences in Pandemic-Related Stress

Group	Significance Level(C.I = .95)
Individuals who had tested positive for COVID-19 and those who had not	2.37
Those who knew a closed individual who had tested positive for COVID-19 and those who did not	1.53
Those who knew someone close to them who had died from COVID-19 and those who did not	7.66
Those who knew someone at work who got infected with the new coronavirus and those who did not	2.57

As shown in the table, the analyses found no statistically significant differences in pandemic-related stress between the compared groups.

Discussion And Conclusion

Healthcare providers, given the nature of their work, are exposed to the effects of the COVID-19 pandemic, whether physical or psychological, like few other groups.

To our knowledge, there is no previous study assessing stress-related problems in health practitioners working in non-COVID hospitals. The present study aimed at addressing this issue by assessing COVID-related stress symptoms in health practitioners working in both COVID and non-COVID hospitals and to compare these two groups in terms of pandemic-related stress.

We assumed that health providers working in non-COVID hospitals in Bangladesh may be at an increased risk of infection with SARS-CoV-2, compared to health providers working in COVID-dedicated hospitals due to lower health security measures; our analysis found no such difference. Not surprisingly, the analyses showed no statistically significant differences between health providers working in COVID-dedicated units and those working in regular units in pandemic-related stress, which is consisted with a previous study showing that the negative effects of stress on mental health appear to be irrespective of whether the health providers work directly with infected patients⁸.

At the group level, the stress level was found to be moderate, which is consisted with previous studies which have shown that, during pandemics, health professionals are at risk of significant psychological problems^{1-6,9}. The present study highlights the importance of detecting stress in health professionals and developing strategies that aim at reducing the same, regardless of whether they are working in COVID-dedicated units or regular units.

Based on our sample, many medical doctors in Bangladesh get infected with SARS-CoV-2, most know both co-workers and close family members who have been infected with the virus and many have experienced the death of someone close to them as a result of COVID-19. The fact many health providers did not even get tested arguably adds additional work-related stress and may highlight the limited resources available to protect both the physical and mental health of medical doctors.

The COVID-19 pandemic has highlighted the flaws and limitations that characterize different medical systems all over the world. While it remains to be seen whether this experience will motivate policymakers to improve the existing health systems, we hope that this study contributes to our understanding of the effects of pandemics on medical doctors' physical and mental health and the factors that contribute to these variables in specific health environments.

Declarations

Acknowledgements: None

Author contributions: All the authors designed the study, performed the experiments, analyzed the data and wrote the manuscript.

Conflict of interest statement: The authors have declared that no competing interests exist.

Ethics statement

The study was approved by the Ethics Committee of South Point Hospital (No. Admn/SPH/201/2020).

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Data availability statement

The datasets generated during and/or analyzed during the current study are available at <https://doi.org/10.6084/m9.figshare.13550024>

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