



## **COVID-19 Emergency: Faux Healthcare Service Causes Distress and Life Dissatisfaction**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author AB contributed in the conceptualization, investigation, developing methodology, performing formal analysis, original writing and review and editing. Author VB arranged resources, and also contributed in the visualization along with writing parts. Author MKIJ was completely responsible for the data collection procedures, developing and finalized the database for the formal analysis of the study. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Background and Aims:** In Bangladesh, a significant number of individuals experienced a faux coronavirus test, especially at the profit oriented private hospitals or clinics during the COVID-19 emergency. Therefore, the prime purpose of the study was to investigate the impact of healthcare service faux pas on the mental health of Bangladeshi people during the COVID-19 pandemic. Additionally, the current study even explored the changes in life satisfaction of Bangladeshi individuals due to the faux SARS-CoV-2 tests in the country. Moreover, the study also dealt with the satisfaction of the people on the healthcare service during the COVID-19 emergency in Bangladesh.

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**Study Design:** The current research was conducted as a descriptive and bi-monthly cross-sectional study and used the snowball sampling technique to collect the survey data in Bangladesh.

**Place and Duration of Study:** This study was employed in Dhaka division and Comilla division of Bangladesh between June and July in 2020.

**Methodology:** In this study, we surveyed 393 Bangladeshi individuals from two divisions of the country. We measured mental & physical health (SF12), depression (PHQ2), anxiety (GAD2), distress (K6), life satisfaction and overall satisfaction on healthcare service. Survey data was analyzed on STATA platform to find the study findings.

**Results:** This research found that Bangladeshi people experienced lower levels of mental and physical health conditions with the mean (STD) values of 23.1 (6.9) and 37.2 (9.1) respectively. Among the study participants, female individuals (60.05%) were mostly dissatisfied with the COVID-19 emergency healthcare service and dealt with more severe mental and physical disorders than male persons (39.95%) in the country. In this perspective, the study explored a dramatic increase in the mental stress and steady decline in life satisfaction of Bangladeshi individuals due to the false COVID-19 test certificates. Therefore, most of them had to go through multiple coronavirus tests to confirm the infected status. Additionally, participants visited at private hospitals for SARS-CoV-2 emergency support had higher levels of distress and dissatisfaction on the private healthcare services. Finally, the study found literally poor life satisfaction among all participants.

**Conclusion:** The study found mental distress and life dissatisfaction caused by a private healthcare service faux pas in Bangladesh. So, this study suggests that a surge in the private healthcare service faux pas during or post coronavirus pandemic needs sustainable policy standards by the Government and nongovernment concerns. Fruitfully, the proper implementation of new policies especially for the private healthcare organizations is indeed essential to ensure a stress free healthy healthcare environment as well as higher life satisfaction for every individual in the country.

*Keywords: Mental and physical health; COVID-19; distress; life satisfaction; healthcare service faux pas; Bangladesh.*

## 1. INTRODUCTION

In Bangladesh, the COVID-19 pandemic has dreadfully hit the healthcare industry [1]. The whole health care system is now broken down to control the SARS-CoV-2 pandemic patient management in the country [1,2]. In this situation, some profit oriented private hospitals are doing unethical healthcare practices, though few of them are punished by the country law [2,3,4]. Even though some hospitals were sealed by the Government administration but still it has not been stopped yet [3,4]. The most common unethical as well as illegal health care service found through this study is making false 2019-nCoV test certificates (making reports without testing the blood samples) [2,3,4]. The current study discovered that few hospitals collected blood samples with SARS-CoV-2 test fees from many visitors and prepared the reports by a couple of days [4]. Unfortunately, most of these reports were found as faux-test certificates, stated by the study attendants. The similar statement was even broadcasted by the international media [3,4]. As a result, many people who visited profit oriented hospitals

for COVID-19 test were still unsure whether they yet infected or not. Therefore, they had been suffering from extreme levels of mental distress with life dissatisfaction.

In the mid of the second quarter of the year, the news regarding the faux 2019-nCoV test certificates was broadcasted through visual media channels of the country [1,3]. This issue now not only remains inside of the country but also spread out internationally, for example news came out on Italian media, Japanese media and other international news media [2,3,4,5]. This problem became worse when fake positive reports claimed many young lives [5,6]. Many individuals were committed suicide due to the fear of sufferings [5,6]. The current study explored that many visitors were tested for COVID-19 status at the different hospitals (private hospitals and public hospitals) at the same time period but the final reports were dissimilar. At this point, the mental stress with confusion developed among them. Therefore, they again went through another second/third round test to confirm SARS-CoV-2 status. In doing so, mental and

financial constraints were dramatically spiked up [4,6,7].

Several local news and visual media disclosed that many profit oriented private hospitals had collected blood samples of the visitors and charged higher test fees for coronavirus tests but didn't deliver the test certificates or confirmation even after a couple of months [3]. This kind of healthcare service is completely unethical and illegal by the country law and perhaps in the other countries too. Doing such unethical healthcare service during a social crisis badly affected the mental and physical health of the people in the country. Furthermore, individuals were also experiencing financial constraints due to much higher healthcare expenses [1,3,4]. Therefore, their life satisfaction has significantly declined [7]. Although the Bangladeshi healthcare management has been unconditionally working to fight against COVID-19 and trying to provide better service but unfortunately this aspect is darkened caused by few money making as well as unethical hospital owners. Therefore, the current study was conducted to evaluate the people's physical health, mental health, satisfaction on the overall healthcare service and life satisfaction during the SARS-CoV-2 pandemic in Bangladesh.

## 2. MATERIALS AND METHODS

### 2.1 Study Method and Sampling

The two months cross sectional survey was conducted during the SARS-CoV-2 outbreak in Bangladesh in the year of 2020. In the current study, we used the snowball sampling technique to collect the survey data.

### 2.2 Sample Size and Survey Zone

In this study approximately 487 Bangladeshi participants filled the survey questionnaire but only three hundred and ninety three ( $\sum n = 393$  of the study) of them were fully completed and usable. The survey zone of the study was limited to Dhaka division and Comilla division of Bangladesh.

### 2.3 Survey Duration

During the 2019-nCoV outbreaks in Bangladesh, we administered the survey from June to July in 2020. The survey questionnaire was available both online and offline. In the beginning of the

survey, the SARS-CoV-2 infected cases were above 122K whereas the total active cases were around 237661 individuals by the end of July in the country (source: Wikipedia).

### 2.4 Survey Instrument

To employ the survey, we developed the structured questionnaire including all study measurements. Then, the questionnaire was translated from English into Bangla language by following the back translation method. Furthermore, the translated version was tested by few academic experts to measure its reliability. After that, the Bangla translated version was used to conduct the original survey.

### 2.5 Data Collection Techniques and Respondents

In this study, firstly we collected the list of individuals (who visited hospitals for second time COVID-19 tests) from different medical hospitals in Dhaka and Comilla. The list consisted of gender, coronavirus test number (1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> times or more with positive/negative status), district name, mobile number and email. Then, in the first phase, we emailed the survey questionnaire link with consent to the selected respondents (selection measures described in the 'Inclusion Criteria'). After one week, we again sent them mobile SMS (included consent and survey questionnaire links) to increase the respondent's feedback. In the second phase around two weeks later, we pasted up a survey notice (the printed copy of questionnaire link) on the outdoor information board in the clinics and hospitals to reach the participants. Thus, we gathered the survey data. Furthermore, the participants of the study were all Bangladeshi people and living in Dhaka or Comilla division in Bangladesh.

### 2.6 Measurements

The survey questions were comprised with the study measurements i.e. life satisfaction [7], mental health (SF-12) [7,8,9], physical health (SF-12) [7,8,9], depression (PHQ-2) [10], anxiety (GAD-2) [11], distress (K6) [12], satisfaction on healthcare service [13]. The participants also filled their demographic facts (age, gender, marital status, education), other healthcare facts (infected by 2019-nCoV or not, blood testing place, FTICR status).

## 2.7 Inclusion Criteria

Participants living in Dhaka or Comilla division in Bangladesh experienced faux healthcare service (such as false test reports) that related to coronavirus tests or had to go through coronavirus tests twice/more because of test-report authentication or passed/passing through any mental health disorder due to fake SARS-CoV-2 test certificates were included in the current study.

## 2.8 Exclusion Criteria

Participants who had any surgery records within the current year and were suffering from other long-term major diseases (such as Blood cancer, Trauma) were excluded from the current study.

## 2.9 Statistical Tools

In this study, we developed a macro coded MS Excel database for arranging survey data (primary source). Then, the accumulated primary data was analyzed on STATA (15.0) platform to find the study outcomes.

## 3. RESULTS

The findings of the study (Table 1) showed that around 60.05% female (n=236) attendants were experienced high levels of mental health (SF-12) disorder ( $\beta=0.119$ ,  $p<0.01$ , 95% CI 0.075 to 2.114) or physical health problems ( $\beta=0.181$ ,  $p<0.05$ , 95% CI 0.052 to 1.983) compared to 39.95% male (n=157). The results of the current study statistically indicated that the compressive value of SK-12 (MH or Mental Health) was 23.1:6.9, lower than recent studies [14,15]. The compressive value of other risk indicators, PH or physical health (SK-12) was found as 37.2 (9.1), even lower than the same studies of above mentioned 50.1 (8.5), and 42.3 (11.4) [14,15].

By age category, the higher age group had anxiety, which was significantly positive ( $\beta=0.062$ ,  $p<0.05$ , 95% CI 0.011 to 2.278). Among the study participants, 48.09% of them (n=189) were first age group (21-30 years old). In the study, we found that 45.04% of participants were single while the rest of all were married. The results showed that married with children and single attendants had higher levels of mental distress than only married couples ( $\beta= -0.227$ ,  $p<0.05$ , 95% CI -0.023 to -1.896). The results also depicted that participants with higher education level experienced less distress ( $\beta= -0.067$ , 95% CI -0.032 to -1.954) and physical health disorder

( $\beta=0.091$ , 95% CI 0.047 to 1.185) that was statistically significant at  $p<0.05$  level. Furthermore, we also found that attendants visited at private hospitals for coronavirus test had moderate to severe levels of mental health disorder ( $\beta=0.271$ ,  $p<0.01$ , 95% CI 0.031 to 3.523) as well as physical health disorder ( $\beta=0.506$ ,  $p<0.05$ , 95% CI 0.033 to 2.682) whereas participants went at public hospitals for COVID-19 test had less mental health problems.

As seen in the results in Table 2, around 32.06% of participants (n=126) were the victims of faux coronavirus tests in the country. Specifically, their first coronavirus test report was false. Therefore, they were more distressed, exactly mental health ( $\beta=0.452$ ,  $p<0.01$ , 95% CI 0.061 to 4.395) and physical health ( $\beta=0.392$ ,  $p<0.05$ , 95% CI 0.058 to 3.153) problems. The frequency statistics (Table 2) described the results of two different situations, stately 2019-nCoV test status by faux-report (Table 2, a) and genuine-report (Table 2, b). According to the sample feedback, the SARS-CoV-2 test certificates of 37.70% participants (n=148) were found positive based on faux-reports, which later reduced to 5.85% (n=23) by the evaluation of genuine-tests. Furthermore, 64.89% of total attendants (n=255) weren't confirmed about their coronavirus test status because some of them were waiting for test-reports or in the test queue. So, the life satisfaction was dramatically dropped among the participants infected or not confirmed by COVID-19, compared to the participants weren't infected ( $\beta= -1.791$ ,  $p<0.05$ , 95% CI -0.256 to -5.098).

The results of Table 3 depicted the statistical summary of changes in mental health, healthcare satisfaction and life satisfaction caused by unethical healthcare service during the 2019-nCoV emergency in Bangladesh. The findings described that female participants were mostly dissatisfied with healthcare service during SARS-CoV-2 emergency ( $\beta=0.162$ ,  $p<0.05$ , 95% CI 0.027 to 1.976) than male respondents in the country. Eventually, female participants of the study might be experienced healthcare service problems such as proper guiding at the service premises, fear to be infected at the hospital area or on the way to hospital or other places, unexpected rushing or violation of social distance at blood sample collecting booth, faux 2019-nCoV test certificates and so on [3,4]. Therefore, these could be reasons which is why the life satisfaction declined among female individuals ( $\beta=0.147$ ,  $p<0.05$ , 95% CI 0.019 to 1.642) during the coronavirus pandemic in Bangladesh.

**Table 1. Descriptive regression results of mental and physical health (SF-12) of the study**

Variables	n	(%)	MH $\beta$ , LCI-UCI (95%)	Depression $\beta$ , LCI-UCI (95%)	Anxiety $\beta$ , LCI-UCI (95%)	Distress $\beta$ , LCI-UCI (95%)	PH $\beta$ , LCI-UCI (95%)
Mean (STD.)			23.1 (6.9)	-	-	-	37.2 (9.1)
Sample size	n=393						
<b>Gender</b>							
Male	157	39.95%	<b>Reference group</b>				
Female	236	60.05%	0.119** (0.075; 2.114)	0.043 (-0.016; 1.026)	0.028 (-0.019; 0.621)	0.162* (0.027; 1.825)	0.181* (0.052; 1.983)
<b>Marital status</b>							
Single	177	45.04%	<b>Reference group</b>				
Married with child	129	32.82%	-0.184* (-0.093; -1.454)	-0.084 (-0.026; 0.511)	0.155 (-0.091; 0.303)	-0.227* (-0.023; -1.896)	-0.171* (-0.045; -2.997)
Married without child	87	22.14%					
<b>Age</b>							
21-30 years old	189	48.09%	<b>Reference group</b>				
31-40 years old	92	23.41%	0.233* (0.104; 2.759)	-0.106 (-0.015; 0.099)	0.062* (0.011; 2.278)	0.043 (-0.017; 0.193)	-0.129 (-0.024; 1.068)
41-50 years old	67	17.05%					
51-60 years old	39	9.92%					
Over 60 years old	6	1.53%					
<b>Education level</b>							
Higher secondary level	29	7.38%	0.082 (-0.013; 1.296)	-0.187 (-0.024; 0.789)	0.031 (-0.019; 1.237)	-0.067* (-0.032; -1.954)	-0.091* (-0.047; -1.185)
2-year diploma	57	14.50%					
2-year college degree	69	17.56%					
Graduated or studying	Bachelor degree	163	41.48%				
	Master degree	72	18.32%				
	Doctoral degree	3	0.76%				
<b>Blood testing place (first time)</b>							
At public hospital	152	38.68%	<b>Reference group</b>				
At private hospital	241	61.32%	0.271** (0.031; 3.523)	0.245 (0.092; 3.277)	0.073 (-0.029; 0.561)	0.290** (0.076; 4.631)	0.506 (0.033; 2.682)
<b>FCTR status</b>							
No	267	67.94%	<b>Reference group</b>				
Yes	126	32.06%	0.452** (0.061; 4.395)	0.151 (-0.082; 0.946)	0.119 (0.046; 2.017)	0.138** (0.087; 2.231)	0.392 (0.058; 3.153)

Note: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001; FCTR: False COVID-19 test-report; MH: Mental health; PH: Physical health; Scale: SF-12 for mental and physical health; GAD-2 for anxiety; PHQ-2 for depression; and K6 for distress.

**Table 2. The faux coronavirus test causes change in MH, PH, LS**

Variables	(a) n (%)	(b) n (%)	MH $\beta$ , LCI-UCI (95%)	Depression $\beta$ , LCI-UCI (95%)	LS $\beta$ , LCI-UCI (95%)	PH $\beta$ , LCI-UCI (95%)
<b>Infected status by COVID-19 test report(s)</b>						
Not infected	245 (62.30%)	115 (29.26%)	<b>Reference group</b>			
Not confirmed*	-	255 (64.89%)	0.436 (0.188; 5.512)	0.093 (0.035; 2.179)	-1.791 (-0.256; -5.098)	0.191 (-0.069; 4.112)
Infected	148 (37.70%)	23 (5.85%)				

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ; MH: Mental health; PH: Physical health; LS: Life satisfaction; (a): Infected by COVID-19 status by faux test-report; (b): Infected by COVID-19 status by genuine test-report; Not confirmed: This group was waiting for further test-report or in the test queue.

**Table 3. The impacts of healthcare service on the healthcare satisfaction and life satisfaction**

Variables	n	(%)	S1 $\beta$ , LCI-UCI (95%)	S2 $\beta$ , LCI-UCI (95%)
<b>Gender</b>				
Female	236	60.05%	<b>Reference group</b>	
Male	157	39.95%	0.162 (0.027; 1.976)	0.147 (0.019; 1.642)
<b>Marital status</b>				
Single	177	45.04%	<b>Reference group</b>	
Married with child	129	32.82%	0.058 (-0.021; 1.489)	0.115 (0.036; 2.352)
Married without child	87	22.14%		
<b>Age</b>				
21-30 years old	189	48.09%	<b>Reference group</b>	
31-40 years old	92	23.41%	0.046 (-0.035; 0.894)	-0.138 (-0.012; -2.079)
41-50 years old	67	17.05%		
51-60 years old	39	9.92%		
Over 60 years old	6	1.53%		
<b>COVID-19 healthcare services</b>				
At public hospital	152	38.68%	<b>Reference group</b>	
At private hospital	241	61.32%	-0.358 (-0.045; -2.703)	-0.549 (-0.096; -3.995)

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ; S1: Overall satisfaction on COVID-19 healthcare service (such as blood sample collecting booth and COVID-19 test certificate- authentication); S2: Life satisfaction.

Next, the current study found that life satisfaction was comparatively higher in the married without child group than single or married with child groups ( $\beta = 0.115$ ,  $p < 0.01$ , 95% CI 0.036 to 2.352). The similar results were found among the married people in the previous studies [5,14,15]. By age group, the higher age group had the lowest life satisfaction ( $\beta = -0.138$ ,  $p < 0.05$ , 95% CI -0.012 to -2.079) compared to other age groups in the study. By the healthcare service, the participants visited at the private hospitals were mostly dissatisfied with the overall healthcare service ( $\beta = -0.358$ ,  $p < 0.01$ , 95% CI -

0.045 to -2.703) and even had lower levels of life satisfaction ( $\beta = -0.549$ ,  $p < 0.01$ , 95% CI -0.096 to -3.995) during the SARS-CoV-2 emergency in Bangladesh.

#### 4. DISCUSSION

The high standard healthcare system is required to ensure better healthcare service for every individual in any country. This standard or policy should be implemented equally in the private and public healthcare sectors. Then, the sequential monitoring would be the next step to measure

the continuous improvement or decline in the healthcare service industry [4]. These systematic roots may have been established in the developed countries but might not be in the developing or under developed countries. Which is why, emphasizing on the proper monitoring system should be ensured to improve the base healthcare service quality in the developing or under developed countries. Even though the governmental policies are implemented but these policies might not be followed properly in many private clinics and hospitals (especially profit oriented) in the country. So, providing a false coronavirus test certificate is a real time example of violating those policies by few private clinics or hospitals in Bangladesh. Such healthcare service faux pas during the coronavirus pandemic in the country was found in this study. In the country, a number of people received false COVID-19 test reports from few private clinics or hospitals. Eventually, a significant number of them had to go through COVID-19 tests several times due to the fake test certificates.

Coronavirus test (infected or not-infected status basis) was generally the target of few profit oriented private clinics in the short-term. In doing so, they provided faux COVID-19 test certificates to many individuals. The person with the coronavirus certificate "Not Infected Status" was actually infected whereas the person with the coronavirus certificate "Infected Status" was truly healthy. This faux pas was documented by the international news media [2, 3, 4]. Literally, such kind of healthcare faux pas explicitly affected the mental health or life satisfaction of the people in the country, and implicitly declined the trust on healthcare service in the country [2,3,4]. Therefore, many participants experienced unexpected mental distress in Bangladesh, which is similar to other studies [1,7,14,15]. The current study also found that the life satisfaction was dramatically dropped among Bangladeshi people. By the study results, mostly female participants experienced higher levels of mental distress than male attendants. The study results even disclosed that satisfaction on the private healthcare system in Bangladesh had significantly declined compared to the public healthcare system. So, the study concludes that the authentication of public healthcare service is much better than the private healthcare service during the COVID-19 pandemic in the country. This is why, the continuous observations and new policies on test certificate authentication for private healthcare clinics and hospitals are indeed essential to improve the timely as well as

reliable healthcare service throughout the country.

## 5. CONCLUSION

The study findings disclosed that the current scarring situation caused by SARS-CoV-2 outbreak is significantly geared up by the unethical healthcare service in Bangladesh. Additionally, improper test guidance (faux coronavirus test certificates/reports) to general people has been dramatically developing physical or mental health issues that badly disrupted life satisfaction of the individuals in the country. In summary, the study found that female individuals had higher levels of mental distress than male participants due to faux coronavirus test reports. Furthermore, almost every participant in the study had lower life satisfaction and higher dissatisfaction on healthcare service because of fake COVID-19 test certificates. Therefore, the Governmental (ethical and legal actions) and non-governmental aspects are in dire need to medicate this emerging healthcare faux pas so that people of the country get proper healthcare benefits or services in the future. Moreover, the private healthcare service of the country should be prominent as well as trustworthy, because having a minimum level of unethical practice may be claimed thousands of lives in the country. Prominently, ensuring a good healthcare system for all would significantly help general people to regain their life satisfaction through better mental health and even brighten the Bangladeshi healthcare image to the other international bodies around the world.

## 6. LIMITATIONS

Like other similar studies, this study faced few limitations. Firstly, the study findings are derived from evidence on individuals by a cross sectional survey, less than six months. Therefore, the study findings are constructed as a short period of the study. Secondly, the study results show a comprehensive overview of severe levels (focused on stress and dissatisfaction) of mental illness and life dissatisfaction caused by fake COVID-19 test reports but some of the participants had already similar stress problems due to the home quarantine or chronic disease or financial constraint.

## 7. RECOMMENDATIONS

The study puts a high emphasis on the quality measurement of the private healthcare services

and clinical environment. To develop the healthcare facilities, a quality assurance system should be implemented by the country concerned. Furthermore, every individual should acquire knowledge regarding the healthcare service-abuse law in the country and take immediate legal steps if any violence happens. To ensure a secure and pleasant healthcare facility for all, the Government should draw the ethical and lawful orders for every private healthcare organization in the rural and urban areas in the country.

### CONSENT AND ETHICAL APPROVAL

In the current study, all respondents participated in the survey were fully voluntary. The survey process was anonymously performed and the final survey included a cover letter/consent form that informed all participants about the main objective of the study. Before conducting the survey, we received the ethical approval (#60-211-9) from University of Information Technology and Sciences (UITS).

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### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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