Mental Health and Psychological Wellbeing of Employees to Manage Post COVID-19 Crisis: Insights from Hospitality Industry

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ABSTRACT: COVID-19 pandemic has driven the world towards socio-economic emergency and psychological distress. This unprecedented but far-reaching consequence has devastated the service sector, particularly the hospitality industry. The purpose of this study was to explore the impact of managing mental health as well as psychological wellbeing of the employees in the hospitality industry to manage the crisis of post COVID-19 in terms of depression, anxiety and stress. This study used quantitative research methods and data were collected from a sample of 253 employees of hospitality industry using a purposing sampling technique. More emphasize were given to Dhaka, Chattagram and Sylhet divisions due to proximity of hospitality properties. The cross-sectional survey form was designed to measure the mental health and psychological wellbeing of employees in the hospitality industry whereas DASS-21 (Depression, Anxiety and Stress Scale) was used as screening instrument. The multinomial logistic regression was used to test the relationship among the variables. The results of the study show that 52% of the respondents are suffering from moderate to severe level of depression, 66% of the respondents are suffering from moderate to extremely severe level of anxiety but almost 90% of the respondents are not stressed or have mild stress symptoms. In addition, likelihood test results of DASS-21 shows that pandemic had a significant negative impact on initiative to work, panic, and agitated for the employees of hospitality industry, which still have a dominance. The findings of this study will assist the researchers, top management; and government to understand mental health and psychology of employees.

KEYWORDS: Mental health; psychological wellbeing; DASS-21 scale; employee; post COVID crisis; hospitality industry.

1. Introduction

The World Health Organization (WHO) has declared the unprecedented infectious disease, acute respiratory syndrome coronavirus 2 (SARS-CoV-2), widely known as COVID-19, as a pandemic. This novel coronavirus was first detected in China in December 2019 [1]. COVID-19 has heightened fear and panic among people, attacking the carrier's immune system and jeopardizing health and mortality. The COVID-19 pandemic has created health emergencies

affecting around a billion people and resulting in the deaths of millions in more than 200 countries [2].

The news regarding the COVID-19 health emergency, disseminated through electronic, print, and social media, triggered fear and panic among individuals, leading to mental health problems associated with anxiety, depression, and a high prevalence of both conditions [3]. [4] found that most countries employed various measures such as shutdowns, lockdowns, closures of institutions and businesses, international and domestic border closures, shutdowns of hotels and restaurants, quarantines, and social distancing to flatten the pandemic's upward curve. These actions adversely affected the global economy, workplaces, and individuals' daily activities and work lives [5]. The sustainability of businesses across all sectors has been damaged. Stock indices plummeted, and the global economy slowed down. Due to business failures and loan defaults, many business establishments have shut down, while others have reduced their operations. This situation has shaken business sustainability, resulting in thousands of job losses [6].

The hospitality industry, which relies on the tourist movement, has been one of the hardest-hit sectors [7]. Government restrictions like shutdowns, lockdowns, and limited people movement have impeded hospitality business operations [8]. Those still in operation have incurred huge losses, and many could not manage to repay bank loans. This condition has led to emergencies in the industry, although some financial organizations do not count these failures as defaults [9]. Thousands of hospitality employees have lost their jobs, and those still employed fear joblessness. This unprecedented threat and uncertainty have intensified individuals' fear, anxiety, panic, disorder, and depression [10]. Additionally, as a service industry, the main earnings come from service charges and tips [11]. Due to limited operations, employees only rely on a basic salary, which is minimal. Besides financial issues, there is a fear of contracting COVID-19 [12]. Many hotels are hosting quarantine guests, especially those returning from abroad or coming from another country, which significantly affects the working atmosphere of hospitality employees. In this situation, they are playing a role similar to front-line health workers as they directly contact quarantined guests. This increases the mental pressure of potential contagion for themselves and their family members [13]. Previous studies indicated that this causes a wide variety of psychological problems such as stress, panic disorder, depression, and anxiety [14, 15].

Furthermore, the cumulative prevalence rates of chronic mental health illnesses, such as anxiety and post-traumatic stress symptoms, are visible in the post-pandemic period [16]. In this post-pandemic period, hospitality employees are providing services to both local and international guests. Therefore, staff still fear COVID-19 due to direct contact with guests, especially those from different countries. Additionally, they fear the spread of COVID-19 or any other contagious disease that could potentially become a pandemic, which would hamper regular jobs and income. Moreover, during this period, owners have changed organizational policies to more conservative ways to cover pandemic-incurred losses by cutting costs, reducing the workforce, and not providing bonuses. This has created a fear of being fired among employees.

Literature has identified several factors that contribute to depression, stress, and anxiety in people, including sex, financial difficulty, familial pressure, isolation, increased screen usage, and a toxic psychological environment [17–19]. Prior studies investigated the mental health and psychological distress of students, front-line health workers, and the general

population during the COVID-19 pandemic. A wide variety of mental health outcomes and psychological disorders were evident from the results [15, 20]. Furthermore, in the post-pandemic period, the cumulative prevalence rates of chronic mental health disorders, including anxiety and post-traumatic stress symptoms, are evident [16]. However, little information exists on the mental health conditions and psychological wellbeing of hotel, motel, and resort employees in this post-pandemic crisis situation.

Therefore, the purpose of this study is to explore the condition of mental health and psychological wellbeing among employees in the hospitality industry to manage post-COVID-19 crisis issues, such as depression, anxiety, and stress. The popular DASS-21 approach was used to assess the mental health of hospitality sector workers, measuring stress, anxiety, and depression at different levels. Multinomial logistic regression (MLR) was also used to predict an individual's level of stress.

2. Literature Review.

SARS-CoV-2 was the causative agent of COVID-19, often referred to as the novel coronavirus. COVID-19 was a respiratory infection that was extremely contagious. In December of 2019, the illness was first detected in Wuhan, China. It then rapidly spread throughout the rest of the world, resulting in a pandemic that affected the entire planet. Acute respiratory distress syndrome (ARDS) could be brought on by the critical illness manifestations of COVID-19, which included fever, coughing, shortness of breath, exhaustion, headaches, sore throats, runny or congested noses, nausea, vomiting, diarrhea, cardiovascular abnormalities, and respiratory symptoms [21]. By April 28, 2023, more than 452 million confirmed cases of the disease and over 6.9 million deaths were estimated globally, according to World Health Organization (WHO) estimations [2]. Additionally, COVID-19 had a huge impact on the global economy as well as the day-to-day lives of people all over the world [22]. As a result of lockdowns and other social distancing measures, a great number of businesses were forced to shut their doors, while others were compelled to shift their focus to online sales and services. The epidemic was estimated to have caused the loss of 225 million jobs around the globe, as stated in a report published by the International Labor Organization (ILO) in 2022 [23].

The hospitality industry was expected to take the biggest blow due to the movement of tourists from one location to another and even from one country to another [7]. The operations of hospitality companies were hampered when the government-imposed restrictions such as shutdowns, lockdowns, or limits on the movement of people [8]. Those involved in business activities suffered enormous losses, and a large number were unable to repay the bank loans they had taken out. Even if certain financial institutions did not count this failure as a default, the scenario nonetheless led to emergencies in the business [9]. Thousands of people who worked in the hospitality industry were laid off, and those who remained employed lived in constant fear of losing their jobs. This previously unseen level of threat and uncertainty exacerbated fear, anxiety, panic, disorder, and sadness among people [10].

Globally, after COVID-19, personnel in the hospitality industry were likely to be concerned about the security of their jobs. Because of the epidemic, the hospitality industry experienced major job losses and furloughs, leaving many hospitality workers in a state of insecurity. Additionally, there were concerns about workplace safety, as people working in the hospitality business were more likely to contract the virus due to their interactions with

customers. People continued to worry about the re-spread of COVID-19, fearing they might get the virus at work and transmit it to their families.

In this new normal era, the post-COVID-19 period, questions still arose about the mental and psychological state of hospitality employees. Were they relaxing, or were they still facing pandemic-related depression, anxiety, or stress? Were there any factors leading to depression, anxiety, and stress that triggered employees' mental and psychological conditions? This study examines the mental and psychological outcomes resulting from the pandemic and post-pandemic crises [24]. Most of the time, psychological discomfort is used as a measure of mental health. It is a state in which a person experiences emotional suffering and shows signs of depression and anxiety, like sadness, loss of interest, and physical symptoms like insomnia [14, 25].

Psychological distress is linked to a set of psychophysiological and behavioral signs that manifest at different times and in different ways. Depression is a psychiatric mood disorder that causes people to feel sad and uninterested most of the time, have negative feelings, and struggle to take care of their daily duties. If not dealt with, psychological distress can lead to major depression. Depression may lead to severe consequences like suicide [8, 26, 27].

Stress often causes depression and anxiety when a person struggles to deal with stressful events [28]. The COVID-19 pandemic was a huge source of stress for everyone in the world [20]. Many stressors linked to the COVID-19 pandemic could hurt employees' mental well-being during and after the pandemic. This problem is not just the suffering that a person feels but also includes a sense of safety, threat, and risk of spreading the disease, quarantine and confinement, embarrassment and social rejection, financial loss, and job uncertainty [12, 29].

Fear and panic set in when there is a pandemic, from the first case to the last death. In fact, people's worry may get worse after the first death and as the number of new cases receives more attention in the news. However, [30] showed that some stresses occurring during pandemic outbreaks have long-term effects. As a result, the purpose of this study is to investigate the state of mental health and psychological welfare of those who work in the hotel business to deal with the aftermath of the COVID-19 crisis, including feelings of depression, anxiety, and stress. This study assumes three hypotheses. Firstly, hospitality employees are suffering from post-COVID-19-related depression. Secondly, hospitality employees are suffering from post-COVID-19-related anxiety. Thirdly, hospitality employees are suffering from post-COVID-19-related stress.

The complete version of the DASS, a regularly used instrument for screening mental health problems, consists of 42 items, while the short form, also commonly used, consists of 21 items [31]. The scale was developed as a self-report questionnaire [31], with the original goal of DASS-21 being to provide a consistent measurement system that could differentiate between depression, anxiety, and stress. This would help with clinical diagnosis using other psychometric indicators and give researchers a quick and accurate way to screen research subjects [32]. The DASS-21 is a validated instrument that provides a single, straightforward, and systematic way to score these three areas of adult mental health [33–35]. The DASS-21 has undergone empirical validation with data from various cultures and has been shown to have a high level of internal consistency. Several investigations of its psychometric qualities have been carried out in China. On COVID-19, [36] conducted a study on the psychological health of university students in Bangladesh. During the COVID-19 pandemic, [37] investigated the psychological well-being of the academic community in Saudi Arabia and discovered

significant mental distress among students and staff members. Moreover, they found that the DASS-21 had stable psychometric qualities and accurately reflected the psychological distress state based on their survey results. Therefore, the 21-item version of the DASS-21 was chosen for the present investigation due to its benefit of being able to be completed and scored more accurately [36–38].

3. Materials and Methods

3.1. Study design and participants.

This study used convenient sampling techniques for data collection based on the characteristics of the population, whereas [39] stated that purposive sampling is appropriate for exploring behavioral patterns and mental health situations from an intuitive approach. Employees working in the hospitality industry (hotels and resorts) were considered as the sample. [09] stated that purposive sampling is appropriate for exploring behavioral patterns and mental health situations where the discovery of meaning can benefit from an intuitive approach.

To understand the mental health condition of hospitality employees, this study employed a cross-sectional online survey. In the post-COVID-19 era, employees of the hospitality industry are more comfortable providing information online rather than through traditional methods; hence, this study used an online method. A well-structured Google Form questionnaire was designed for data collection from hospitality industry employees in Bangladesh during the post-crisis period from May 15 to July 10, 2023. Representatives of selected hotels and resorts were contacted before data collection. They were informed about the purpose, survey grounds, and procedures through direct calls, emails, Facebook Messenger, and WhatsApp. Then, they were sent the Google Form link to collect data from respective hotel and resort employees, along with a consent form ensuring no future harm. The research team directly contacted respondents who faced difficulties understanding the questions. For confidentiality, data was collected anonymously.

A total of 350 questionnaires were distributed. To understand the prevalence, the country was divided into five divisions: Dhaka, Chattagram, Sylhet, Khulna, and the rest of the divisions. More emphasis was given to Dhaka, Chattagram, and Sylhet due to the proximity of hospitality properties. However, the quantity of usable survey responses was 253, yielding a response rate of 72.28%. Many hospitality industry employees were busy with their work schedules, preventing them from completing the survey, and some respondents did not answer all the questions, leading to the elimination of incomplete surveys. Additionally, respondents indirectly working in the hospitality industry who did not fill out the entire questionnaire were also eliminated. Therefore, during the survey period, a total of 253 hotel, motel, and resort employees provided valid responses, which were considered as the valid sample.

3.2. Measures.

To measure the mental health condition of hospitality employees and their levels of depression, anxiety, and stress, the survey included socio-demographic information (Gender, Age, Educational Level, Monthly Income, and Job Position) and the Depression, Anxiety, and Stress Scale (DASS-21) [38, 40]. The DASS-21 was used to measure three subscales—levels of

depression, anxiety, and stress—each having seven items to evaluate the mental health of participants. Each item was scored on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time), a scale validated by [41]. The DASS-21 with the 4-point Likert scale was also used to measure the psychological well-being of academicians during COVID-19 by Alfawaz et al. [4].

Questions 3, 5, 10, 13, 16, 17, and 21 were related to the depression subscale, with subscale scores ranging from normal/no depression (0-9), mild depression (10-13), moderate depression (14-20), severe depression (21-27), and extremely severe depression (28 and above). The anxiety subscale included questions 2, 4, 7, 9, 15, 19, and 20, with subscale scores ranging from normal/no anxiety (0-7), mild anxiety (8-9), moderate anxiety (10-14), severe anxiety (15-19), and extremely severe anxiety (20 and above). The stress subscale included questions 1, 6, 8, 11, 12, 14, and 18, with subscale scores ranging from normal/no stress (0-14), mild stress (15-18), moderate stress (19-25), severe stress (26-33), and extremely severe stress (34 and above).

Multinomial logistic regression (MLR) was utilized in this study to predict each subject's level of stress. Effective correlational research reveals the relationship between variables, assesses the strength of this relationship, and provides crucial insights for higher-quality studies [21]. Multinomial Logistic Regression (MLR) was employed because it allows for the inclusion of more than two categories of the outcome variable [37]. When there are more than two categorical dependent variables, the binary logistic regression model is modified and used as the multinomial logistic regression model. The parameter estimates in an MLR model can be found and contrasted with a baseline category of the dependent variable, allowing for comparisons between every category of the dependent variable and a reference category. In this case, the reference category is excessive stress, which has the highest observed frequency. The MLR model will typically include j–1 equation if the dependent variable has j potential levels.

4. Results and Discussion

4.1. Demographics profile of the respondents.

The demographics of the respondents included gender (male, female, and others), age (below 20, 21-30, 31-40, 41-50, 51-60, and above 60 years), educational level (secondary and below, higher secondary, graduate, post-graduate, and others), monthly income (below 10,000 Taka, 10,000-19,999 Taka, 20,000-29,999 Taka, 30,000-39,999 Taka, 40,000-49,999 Taka, 50,000-59,999 Taka, and above 60,000 Taka), and job position (casual or part-time, operational level, supervisory level, and managerial level). Among the 253 respondents who participated and answered the questionnaire, 171 (67.6%) were male and 82 (32.4%) were female. In terms of age, 6 (2.4%) were below 20 years old, 70 (28.9%) were between 21-30 years, 91 (36.0%) were from 31-40 years, 56 (22.1%) were from 41-50 years, 21 (8.3%) were from 51-60 years, and 6 (2.4%) were more than 60 years old.

In terms of education, 12 (4.7%) of the respondents had secondary school education, 38 (15%) had higher secondary education, 97 (38.3%) had undergraduate education, 104 (41.1%) had postgraduate education, and 2 (0.8%) had other forms of education. Regarding income, 21 (8.3%) respondents had an income below 10,000 Taka, 31 (12.3%) had an income ranging between 10,000-19,999 Taka, 62 (24.5%) had an income ranging between 20,000-29,999 Taka,

50 (19.8%) had an income ranging between 30,000-39,999 Taka, 37 (14.6%) had an income ranging between 40,000-49,999 Taka, 16 (6.3%) had an income ranging between 50,000-59,000 Taka, and 36 (14.2%) had an income above 60,000 Taka. Regarding job positions, 26 (10.3%) of the respondents were part-time or casual hospitality employees, 62 (24.5%) were operational level employees, 72 (28.5%) were supervisory level employees, and 93 (36.8%) were managerial level employees (Table 1).

Table 1. Demographic profile of respondents.

		N	Percentage (%)
Gender	Male	171	67.6%
	Female	82	32.4%
Age	Below 20	6	2.4%
	21-30	73	28.9%
	31-40	91	36.0%
	41-50	56	22.1%
	51-60	21	8.3%
	More than 60	6	2.4%
Educational	SSC	12	4.7%
	HSC	38	15.0%
	Graduate	97	38.3%
	Postgraduate	104	41.1%
	Others	2	0.8%
Monthly Income	Below 10000	21	8.3%
	10000-19999	36	14.2%
	20,000-29,999	62	24.5%
	30,000-39,999	50	19.8%
	40,000-49,000	37	14.6%
	50,000-59,999	16	6.3%
	Above 60,000	31	12.3%
What is your job Position	Casual or Part Time	26	10.3%
	Operational Level	62	24.5%
	Supervisory level	72	28.5%
	Managerial Level	93	36.8%

4.2. Prevalence and mental and psychological health condition.

The prevalence and symptoms of three mental and psychological conditions- depression, anxiety and stress- among the 253 samples is shown in Table 2 (prevalence of depression, anxiety and stress). Regarding depression, 30.8% of respondents were not depressed, 18.6% were mildly depressed, 49.8% were moderately depressed, and 0.8% were severely depressed. No respondents were found to be extremely severely depressed. In terms of stress, 52.2% were normal with no stress, 37.9% had mild stress, and 9.9% had moderate stress. No hospitality employees were found to have severe or extremely severe stress. The results also confirmed that 26.1% were not anxious, 7.5% of hospitality industry employees were mildly anxious, 25.7% were moderately anxious, 38.3% were severely anxious, and 2.4% were extremely severely anxious. As the dependent variable is categorical in nature with more than two categories, multinomial logistic regression can be applied. In this analysis, depression, stress, and anxiety are the dependent variables. Initially, five sub-scales for each scale—normal/no,

mild, moderate, severe, and extremely severe—were used to measure mental and psychological health conditions. However, due to the large sample size and the closeness between the normal and mild categories as well as the severe and extremely severe categories, these were merged into normal and severe levels of each mental and psychological condition. The moderate variable remains as a separate categorical variable. Thus, multinomial logistic regression was applied with three categories.

Table 2. Prevalence of depression, anxiety and stress**.**

		N	Marginal Percentage
Depression	Normal/no depression	78	30.8%
	Mild Depression	47	18.6%
	Moderate Depression	126	49.8%
	Severe Depression	2	0.8%
Stress	Normal/ No Stress	132	52.2%
	Mild Stress	96	37.9%
	Moderate Stress	25	9.9%
Anxiety	Normal/ No Anxiety	66	26.1%
	Mild Anxiety	19	7.5%
	Moderate Anxiety	65	25.7%
	Severe Anxiety	97	38.3%
	Extremely Severe Anxiety	6	2.4%

Table 3 illustrates whether the model is statistically significant. The significance value ($P = .045$) indicates that the entire model is statistically valid and predicts the dependent variable better than an intercept-only model. The model summary provides additional information on the model's usefulness after including the independent variables.

Table 3. Goodness-of-fit.

	Chi-Square	Df	Sig.
Pearson	183.771	153	.045
Deviance	191.890	153	.018

Table 4 shows that the Pseudo R-square values represent the test statistics for Cox and Snell R Square and Nagelkerke R Square. The values of 0.305 and 0.428 suggest that 30.5% and 42.8% of the variability in the dependent variables is explained by the predictors.

Table 4. Pseudo R-Square.

Cox and Snell	.306
Nagel Kerke	.428
McFadden	.290

Table 5 shows that income is significant associated with depression, anxiety, and stress of hospitality industry employees. The results of Likelihood ratio test of DASS 21 discovers that Dass 5: Dass 5 I had trouble taking initiative and taking charge of thing; Dass 9 I was concerned about situations in which I might panic and make a fool of myself; Dass 11: I found that I was becoming upset/ agitated; Dass 13 Dass 13 I felt depressed and down-hearted; Dass 19: I was conscious of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat) are the critical factors having a significant impact on depression, anxiety, and stress of the employees of hospitality industry. Hence, employees were found due

to COVID-19 pandemic their income is decreasing at a significant rate along with pandemic has a significant impact on impact on DASS such as difficult to take initiatives to work, employees became panic, felt agitated, felt down hearted and blue, and aware of the action of their heart. Likelihood Ratio Test depicts whether the independent variables are statistically significant. Table 6 shows that the variable Depression is less statistically significant because P=. 267 (the "Sig" column of depression row). On the other hand, the Anxiety and Stress variable are statistically significant because the P= .045 for Anxiety and P=. 046 (The "Sig" column of Anxiety and Stress row). There is no interest of model intercept.

Table 5. Likelihood Tests results for factors affecting DASS and COVID-19.

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	189.943[a]	.000	0	.
Age	195.211	5.267	5	.384
Educational	193.341	3.398	4	.494
Monthly_Income	197.120	8.177	6	.042
What is your job Position	192.703	2.760	3	.430
Dass1I found trouble to wind down	190.713	.770	3	.857
Dass2 I notice that my mouth felt dry	193.980	4.037	3	.258
Dass3 I was unable to feel happy/positive at all	190.292	.349	3	.951
Dass 4 I had trouble breathing (eg, excessively rapid breathing, breathlessness in the absence of physical exertion	191.017	1.074	3	.783
Dass 5 I had trouble taking initiative and taking charge of thing	190.438	7.495	3	.049
Dass 6 I has a tendebcy to overreact	190.603	.660	3	.883
Dass 7 I shook to handshake	192.173	2.230	3	.526
Dass 8 I felt that I was expending a lot of nervous energy	192.109	2.166	3	.539
Dass 9 I was concerned about situations in which I might panic and make a fool of myself	198.096	8.153	3	.043
Dass 10 I felt that I had nothing to look forward	194.394	4.451	3	.217
Dass11 I found that I was becoming upset/ agitated	196.250	7.307	3	.048
Dass12 I found trouble to relax	190.051	.108	3	.991
Dass 13 I felt depressed and downhearted	196.945	7.002	3	.052
Dass 14 I was intolerant of anything that preventing me completing my tasks.	191.820	1.877	3	.598
Dass 15 I thought I was about to lose it	193.830	3.887	3	.274
Dass 16 I could not get enthusiastic about anything	194.451	4.508	3	.212
Dass 17 I thought I wasn't worth much as a person	193.237	3.294	3	.348
Dass 18 I thought I was quite sensitive	190.762	.819	3	.845
Dass 19 I was conscious of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	200.900	10.957	3	.012
Dass 20 I felt afraid for no apparent cause	193.781	3.838	3	.280
Dass 21 I felt that life was meaningless	194.744	4.801	3	.187

Table 6. Likelihood ratio tests (depression, anxiety, and stress).

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	208.761[a]	.000	0	.00
Depression	230.003	21.242	18	.267
Anxiety	236.772	28.011	17	.045
Stress	239.244	30.483	19	.046

5. Key Findings.

Mental health and psychology related symptoms due to COVID-19 were assessed through this cross-sectional survey. The study found that there is prevalence of psychological and mental conditions of hospitality employees due to the COVID-19 pandemic. The results show that 51.6% of the respondents had moderate to severe depression symptoms; 66.4% had moderate to extremely severe symptoms of anxiety; 9.9% of the respondents reports moderate level to external level of stress symptoms. In relation to other studies, the direct relation has been found with mental health of quarantine hotel employees of China almost similar results have been found with depression (43.5), anxiety (68.2%), and stress (8.2%) [42]. However, as there are very few literatures related to hospitality employees available, it compares with similar studies conducted around the world. [43] in terms of depression, it is evident that the depression of hospitality employees is higher than college students of Spain (18.4%), doctors in India (34.9%) [11]; children's and adolescent in China (17.66%) [15]; nurses in Iran (43%) [44] university of southeast Ethiopia (22.9%) [45]. Bangladeshi students (46.2%) [47] and the general population of Philippines (16.9%) [45]. Conversely, the prevalence of depression of hospitality employees is almost similar to the general population of Bangladesh (49.8%) [46], and health workers of china (50.4%) [24]. Moreover, the prevalence of depression of general population and hospitality employees are very close. That means economic downturn, shutdown, lockdown, and closure of government and no government activities due to COVID-19pandemic depressed all citizens equally in Bangladesh.

This study evident that the prevalence of anxiety is 66.4% which is higher than most of the study conducted around the world; Students of Saudi Arabia was 50.1% [37], health workers of Peru 27.1% [38], 39.5% India [40] and 44.6% in China [41]. Whereas; 73% of the general population of Bangladesh are being anxious [46] Compared with different studies, the hospitality employees are much more anxious due to COVID-19than the average range of anxiety around the world (12.9% to 50%) [24]. The prevalence of anxiousness exists widely because most of the destinations and international borders were closed; hotels, motel and resort were off; and those were in operations were used for quarantined guest which cause the fear of contagion. Thus, everything heightens the anxiousness.

Moreover, this study has found that the prevalence of stress among the hospitality employees was not so severe. Only 9.9% of the respondents were stressed which is much lower than the results of other studies. For example, 38% of the general pollution of Bangladesh [46], 28.5% of the college and university students of Bangladesh [31] but 32.9 % of doctors in India [48], 17.4% of nurses in Iran [49] as well 71.5% of health workers of China [17] were stressed. In addition, the prevalence of Depression and anxiety has far-reaching consequence for any individuals, which may lead to lifetime stress and self-harming behaviors [28]. Fear of economic insolvency, jobless, isolations, COVID-19 contagion, and other effective controlling of pandemic cause the depression and anxiety, which eventually isolate and create loneliness among the employees. The neurobiology and social isolations demonstrate that these isolation and loneliness have downward psychological events, which, apart from other negative consequences, may lead suicidal tendencies. Furthermore, the results of likelihood test for DASS 21 shows that in post COVID-19 pandemic the income of hospitality industry employees are decreased or in stagnant position at a significant rate in Bangladesh which is a common factor for depression, anxiety, and stress for the employees of China [50]. In addition, likelihood test results of DASS 21 shows that pandemic has a significant negative impact on

initiative to work, panic, and agitated for the employees of hospitality industry which is similar with [21] and still prevalence in the hospitality industry.

6. Conclusions and Implications of the Study.

Due to the outbreak of COVID-19 and even in post pandemic, the employees of hospitality industry are facing high levels of depression and anxiety, the authority and owners need to mitigate and implement psychological wellbeing programs to minimize the mental and psychological distress. Counseling and motivational programs should be introduced immediately throughout the hospitality properties to let the employees understand the situations, to create the confidence, and to cope up with the disaster. COVID-19 prevention training is to be provided every hospitality employee by the property authorities and by the government. Hospitality employees are suffering from moderate to high levels of depression and anxiety while few respondents are suffered from moderate stress. The study shows that the prevalence of depression and anxiety in hotels and resorts are greater than many other previous studies conducting on general populations, students, and health care workers around the world. Effective measurements are required to minimize the psychological and mental health conditions, and strong efforts are required to improve the psychological wellbeing of the employees in the industry by organization/property itself and the government. This study provides a theoretical knowledge in the era of mental health and psychological situation of the employees of hospitality industry during the time of crisis or pandemic. This is a unique study on the employees of hospitality industry of Bangladesh. Conclusively, this study provides enriching literature and clear guidelines how to reduce depression, stress, and anxiety among the employees of hospitality industry by using DASS-21 model as well as this study will assists the researcher in the section of literature for further study. In addition, training should be provided on how to adopt technology-oriented services, and how to regain traveler confidence to get good feedback in the new normal world. Moreover, during the post pandemic era, international travelers and home coming non-residence Bangladeshis are looking for healthy and hygienic environment in hotel services and touch less service should be introduced to mitigate the chance of contagion and virus spread. In broad perspective, different hospitality trade bodies, hotel owner associations, hotelier associations, resort associations, and hospitality employees/workers federations, and Tourism Board or Government Regulatory Authorities should come forward in this regard to ameliorate the psychological and mental health conditions of depressed and anxious employees. Likewise, for psychological wellbeing of the employees it is essential to mental treatment to those who are extremely severe depressed, anxious and stressed. Besides that, the employees of managerial position are also depressed and anxious due to business tardiness and low-slung revenue earning that's why government would to focus on financial support i.e. subsidies, tax redemptions or any other incentives. Finally, all employees should be vaccinated as early as possible and open business activities as usual. This study conducted on Bangladesh Perspectives that's why the findings of this study provide an idea regarding the mental health and psychological wellbeing of hospitality industry but the findings cannot be generalized. Further study can be conducted with more respondents and a comparative study can be conducted in global perspective.

Contribution and Declaration of Competing Interest

All the authors are equal contribution to compete the study. in addition, the authors are declared that there is no conflict of interest.

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