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ORIGINAL ARTICLE

Prevalence and Factors Associated with Generalized Anxiety Disorder During Covid-19 Pandemic among Healthcare Workers in a Tertiary Facility in Edo State, Nigeria

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Keywords

Perceived threat;

Anxiety symptoms;

COVID-19;

Healthcare workers

ABSTRACT

Background: The potential risk of the Coronavirus disease-2019 (COVID-19) pandemic and the psychological challenges that accompanied the pandemic posed a major threat and evoked high levels of anxiety among healthcare workers (HCWs) in Nigeria. Thus, this study aimed to assess healthcare workers' perceived threat of COVID-19, determine the prevalence of generalized anxiety disorder (GAD) among respondents and elucidate the factors associated with GAD.

Methods: A cross-sectional study that used the 7-item Generalized Anxiety Disorder (GAD-7) Scale, 8-item Perceived Threat Scale, and a socio-demographic data collection sheet was used to obtain information from eligible healthcare workers who were selected using a convenience sampling technique. Data analysis was done using SPSS version 21, at a statistical significance level of $p < 0.05$.

Results: Two hundred and thirteen HCWs participated in the study. COVID-19 posed moderate-severe threats to 57.3% of the participants, and the prevalence of GAD among respondents was 25.4%. Having a moderate-severe perception of threat by COVID-19 (p=0.039), being unmarried (p= .026), being previously suspected to have COVID-19 (p=0.018) and being directly involved in the care of COVID-19 patients (p=0.031) were significantly associated with anxiety disorder after adjusting for other variables.

Conclusion: COVID-19 posed a substantial threat to HCWs and the prevalence of GAD among the study group was high. Government, public health institutions and non-governmental organizations have the responsibility to practically demonstrate concern for the mental well-being of HCWs by investing in mental health resources and providing adequate physical, material and psychological support for HCWs to guarantee their well-being.

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INTRODUCTION

Since its initial outbreak, reported in Wuhan, China in December 2019, the Coronavirus disease- 2019 (COVID-19) pandemic has spread worldwide, so much that it was declared a pandemic by the World Health Organization (WHO) on March 11, 2020.[1]

The COVID-19 pandemic has posed a substantial threat to the public, globally, since its outbreak but of particular concern is the enormity of the threat it poses to healthcare workers (HCWs), comprising medical and non-medical hospital personnel. The worry and threat associated with the pandemic, perhaps, stem from the fact that the disease is novel, highly contagious, spreading fast, causing severe morbidity and mortality, yet without established curative therapy.[2] Consequently, COVID-19 is perceived to pose a serious threat; a perception that has evoked excessive worry and anxiety.

Anxiety disorders are common types of mental disorders.[3] They contribute tremendously to the global burden of diseases and are often encountered in stress-related circumstances, such as work settings.[4] Such stressful workplace settings have been created for HCWs by the ongoing COVID-19 pandemic, thereby increasing the risk of anxiety among them.[5] Although many types of anxiety disorders are classified, including generalized anxiety disorder (GAD), phobic anxiety disorders, panic disorder, etc, the focus of the present study is a generalized anxiety disorder, which is characterized by excessive uncontrollable and often irrational worry about events or activities which could interfere with daily functioning. When anxious feelings are persistently intense and last for weeks, they become distressing and may interfere with the individual's function.[6] As the number of COVID-19 infections grew exponentially, it was clear that mental health among HCWs was being challenged and anxiety disorder was identified as the centre of mental health impairment.[7] Awareness that all persons across geographical locations, ages, races, gender and religion are at risk of COVID-19 and an increasing number of reported deaths due to COVID-19 among family and community members led to rising anxiety.[8,9] In Nigeria news report of prominent community members and government officials who reportedly died due to complications arising from COVID-19 is common. Identified risk factors for anxiety disorders include genetics, personality, ongoing physical illness and environmental factors.[10]

Some previous studies have reported various prevalence rates for anxiety disorders among HCWs, during the ongoing COVID-19 pandemic. Using the Generalized Anxiety Disorder Scale (GAD-7) as the measurement tool, a study in Saudi Arabia reported a rate of 33.3% for anxiety disorder among 441 HCWs.[11] Rates of 20.1% - 24.1% were reported among HCWs in China.[12] In the U.S., out of 1,685 HCWs who participated in a national survey, 33% were reported to have "clinically meaningful anxiety".[13] Some other studies also found that levels of anxiety were high among HCWs during the COVID-19 pandemic.[14] In Nigeria, a comparative study found a prevalence of 58.4% for generalized anxiety among HCWs as against 49.6% in the general population.[2]

Many factors associated with anxiety disorder among HCWs have been reported by previous researchers. A study found a significant relationship between fear of death and COVID-19-related anxiety.[15] Another study conducted in China found that; lack of family support, being a woman, having an intermediate professional title, perceived stress, poor sleep quality, and having family members or friends infected with the Coronavirus was associated with elevated anxiety symptoms.[12]

Untreated anxiety disorders among HCWs, as they grapple with the challenges of COVID-19, portend grave consequences, not only for their psychological outcome but for work performance. Impairment of interpersonal relationships, reduction in concentration, judgment, decision-making capacity, and ability to communicate appropriately with clients have been identified.[16] Frustration, physical reactions (such as headaches and body pains), worsening of chronic health problems and mental health outcomes have been mentioned.[17]

At present, there is a dearth of information about the level of generalized anxiety disorder among HCWs in Nigeria and the factors that are associated with it. Thus, this study aimed to determine the prevalence of generalized anxiety disorder among HCWs at a tertiary health facility in Edo state, Nigeria, assess the relationship of perceived threat with anxiety, and determine the socio-demographic and clinical variables that are associated with anxiety.

METHODOLOGY

Study location and design

This study was conducted at a tertiary hospital in Benin City, Edo State, Nigeria. The hospital serves as a major referral centre for many primary and secondary hospitals in the entire state, as well as some neighboring states. Besides, it is a major referral centre for the management of patients with COVID-19 infection due to the availability of a COVID-19 management and isolation ward as well as expert care. Thus, many HCWs are often drafted to the isolation ward to render services. A cross-sectional design was adopted, and data collection was from May 2021- July 2021.

Study population

Participants included different categories of healthcare workers (HCWs) in the tertiary hospital. The HCWs were stratified into two categories comprising "medical" and "non-medical" personnel. For this study, we defined medical personnel as HCWs who provide direct clinical services or care to patients; they often have varying degrees of contact with patients; while the non-medical personnel include those who perform services that do not constitute the practice of medicine or nursing. They consist, essentially, of workers in the administrative and maintenance units of the hospital and include accountants, engineers, medical record officers, receptionists, cleaners, etc. In this study, the medical personnel were purposefully targeted. Their proximity to the patients might put them at higher risk of contracting COVID-19 and developing anxiety symptoms. Thus, participants were recruited from

among doctors, nurses, pharmacists, physiotherapists, occupational therapists and medical laboratory scientists. However, a seventh category of workers (medical record officers) was selected by ballot from among the non-medical personnel, for the purpose of comparison of findings across the two categories.

Eligibility criteria

HCWs who are bona fide staff of the hospital, aged 18 years and above, have been working in the hospital prior to the outbreak of the COVID-19 pandemic in Nigeria, have no history of a chronic illness like hypertension, diabetes, mental illness and so forth (self-reported), and willing to participate and sign informed consent were considered eligible to participate. Individuals with chronic medical conditions often have anxiety, secondary to the underlying medical conditions, and were excluded. HCWs who did not meet any of the above criteria were also excluded from the study.

Sample size determination

The sample size for this study was calculated using single population proportion formula,

$$\frac{(z)2pq}{(d2)},$$

where z = constant standard deviation usually set at 1.95 (at 95% Confidence level),
p = estimated prevalence of GAD (based on previous studies), q= 1-p and d = degree of accuracy set at 0.05.18 A previous study in Nigeria found a prevalence rate (p) of 24.9% for GAD among HCWs.19 That prevalence rate was adopted in calculating the sample size in this study.
Thus, a sample size of 284 was calculated.

Sampling technique
A convenience sampling technique was employed in selecting the participants within each category of HCWs.

Data collection tool

The questionnaire for data collection was divided into four sections described below:

Section A: Socio-demographic data collection sheet designed by the authors was used to obtain information regarding participants' demographic characteristics (such as age, gender, marital status, and religion).

Section B: The Generalized Anxiety Disorder 7-item (GAD-7) scale was used to measure anxiety in the participants. It is a self-report scale developed to assess the defining symptoms of anxiety.20 The items are rated on a 4-point Likert-type scale (from 0 = not at all, to 3 = nearly every day), and the overall scores range from 0 to 21. The GAD-7 has been used in earlier COVID-19 studies and a cut-off score of > 8 is recommended to identify clinically important anxiety symptoms with adequate specificity (82.0%) and sensitivity (77.0%).20The original Cronbach's Alpha of the 7-item GAD Scale was 0.92.20 In this study, the computed Cronbach's Alpha Coefficient was 0.86 using the split-half method.

Section C: A self-administered, 8-item questionnaire, adopted from previous similar research to assess the perceived threat of COVID-19 among medical care workers in China12, was used to assess the perceived threat among the HCWs. Examples of the items include: "I'm afraid of being infected by COVID-19"; I'm anxious to be shifted to the ward for COVID-19 patients"; "My job puts me at a high risk of being infected by COVID-19"; I'm stigmatized by others due to my job" and so forth. For each item, the answer is on a 5-point Likert scale ('strongly disagree' to 'strongly agree') with a total score range of 0-32. A higher total score indicated a greater perceived threat of the COVID-19 pandemic and a range of 1-16, 17-24, and 25-32 were used to identify mild, moderate and severe threats respectively. The original Cronbach's Alpha of the 8-item perceived threat was 0.81.12In this study, the computed Cronbach's Alpha was 0.72 using the split-half method.

Section D: Comprised of 10 questions designed by the researchers to elicit specific COVID-19-related responses from the participants, such as: "Has any of your colleagues, friends, or family members been confirmed or suspected to have COVID-19"?; "Have you always been provided with adequate personal protective equipment (PPE) such as face masks, protective gown, sanitizer, etc, when you need them"?; "Are you involved directly in testing, treating or caring for COVID-19 patients"? and so forth. A categorical "Yes" or "No" response is required for each question.

Data management
Data collection was done among the HCWs in the departments of the hospital that were selected for the study by distributing the questionnaires to eligible HCWs on each working day (Monday to Friday) between 12 and 3 pm. The questionnaires, which were written in English, were self-administered, but

participants were told to feel free to seek clarification on any item of the questionnaire as the need arose.
Data were analyzed using SPSS version 21. Categorical variables were dichotomized as necessary, and their frequencies and percentages were calculated. Chi-square test and correlation coefficient analyses were done to determine sociodemographic and clinical variables that had a significant relationship with anxiety disorder. Such significant variables (independent variables) were regressed on anxiety disorder (outcome variable) using a binary logistic regression model to further confirm the association observed in bivariate analysis.

Ethical Considerations
Ethical clearance was obtained from the Ethics and Research Committee of the University of Benin Teaching Hospital (ADM/E22/A/VOL.VII/14831107). The nature and purpose of the study were explained to the participants, and they were informed of their liberty to either participate voluntarily or decline participation. Confidentiality was assured and verbal informed consent was obtained from each willing participant.

RESULTS

Out of all the questionnaires distributed to respondents who consented to participate in the study, 269 questionnaires were retrieved giving a response rate of 83.8%. However, 213 properly filled questionnaires were analyzed.

One hundred and twenty-seven of the respondents (59.6%) were females. The highest proportion (68; 31.8%) of the respondents, were in the 30-39 age group, and the mean age was 37.31+ 9.92 years. Respondents were predominantly Christians, 183 (85.9%), and more than half of them, 118 (55.4%), were married. (Table 1).

Although, about two-thirds, 144 (67.6%) of the respondents had been suspected to have COVID-19 at one time or the other, only 20 (9.4%) had previously been confirmed cases. One hundred and fifty (70.4%) reported that they had access to adequate PPE, about one-third, 76 (35.7%) were directly involved in caring for COVID-19 patients, while less than half, 96 (45.1%) had access to any form of psychological support programs since the outbreak of the pandemic. One hundred and twenty-two (57.3%) had a moderate-severe perception of the threat of COVID-19 pandemic, and about one quarter, 54 (25.4%) had clinically detectable generalized anxiety disorder (table 2).

The chi-square test showed that the prevalence of generalized anxiety among the previously married HCWs (52.9%) was higher than that among singles (26.9%) and the married (20.3%); this difference was statistically significant (X2 =8.505, P = 0.014). Also, Muslims had a statistically significant higher prevalence of anxiety than Christians and adherents of other religions (X2= 8.696, P =0.013). The administrative staff (non-medical personnel category) had the least prevalence of GAD compared with any of the medical personnel categories. Although the difference was not statistically significant (P = 0.061) (table 3).

The prevalence of anxiety among HCWs who previously had been suspected to have COVID-19 (44.9%) was higher than that among those who were never COVID-19 suspects (16.0%) and the difference was statistically significant (X2 = 20.666, P < .001). Similarly, anxiety was significantly more prevalent among HCWs who: had a colleague, friend, or family member that had tested positive for COVID-19 (X2 = 4.679, P = 0.031); lacked access to PPE (X2 = 5.833, P =0.015); had prior contact with a person who later had COVID-19 (X2=12.427, P < .001) and were directly involved in caring for COVID-19 patients (X2 = 12.451, P < .001). Perception of the moderate-severe threat of COVID-19 was significantly associated with a higher prevalence of GAD than a mild threat (X2 = 12.424, P<.001) (table 4).

Multivariate binary regression analysis showed that, compared with those who were previously married (reference category), the married had a reduced risk of developing GAD (OR = .247, P = 0.025, 95% CI = .073 - .839). Having mild perceived threat of COVID-19 (OR = .434, P = 0.048, 95% CI = .190 - .992); never being suspected to have COVID-19 (OR = .259, P = 0.002, 95% CI =.111 - .603) and not being directly involved in the care of the COVID-19 patients (OR = .390, P=0.023, 95% CI = .173 - .879), all had reduced risk of generalized anxiety when compared with their reference categories respectively. Thus, being married, having a mild perceived threat of COVID-19, never being suspected to have COVID-19, and not being directly involved in the care of COVID-19 patients had protective effects against the COVID-19 pandemic. (Table 5).

DISCUSSION

This study examined the prevalence and correlates of generalized anxiety disorder among HCWs in a tertiary health facility in Edo state, Nigeria during the COVID-19 pandemic. The perception of the threat associated with COVID-19 was high, as the pandemic

posed a moderate to severe threat to more than half of the respondents. There are few studies in the local environment that previously assessed perceived threats and anxiety disorders associated with the COVID-19 pandemic, especially among HCWs, during the ongoing pandemic. Consequently, the comparison of our findings with previous similar studies was limited. However, Agberotimi et al, in a previous study in Nigeria, similarly observed that the threat COVID-19 posed to HCWs was enormous.[2] The reasons for such a high perceived threat may stem from the fact that the disease is novel, highly contagious, spreading fast across the globe, with reported severe morbidity and mortality, and uncertain therapeutic outcomes.

The prevalence of clinically detectable GAD found among the HCWs in this study was 25.4%. Although we did not have pre-COVID pandemic data for anxiety disorder among HCWs in this environment, a prevalence of 25.4% (about one in every four HCWs) is considered high. This finding is in keeping with the observations that the global prevalence of anxiety has increased during the COVID-19 pandemic, especially among HCWs.[11] While some studies reported rates that were similar to the rate found in this study, some rates were slightly lower, while others were higher. Du et al reported a fairly similar prevalence rate of 24.1% among a sample of HCWs in China, and a lower rate of 20.1% among another sample.[12] However, a higher rate of 58.4% was reported by Agberotimi et al in Nigeria.[2] Though they used the same instrument (GAD-7) as in this study, their study covered a wider geographic area of the country, and their sample size was higher and that study coincided with the first wave of the COVID-19 pandemic in Nigeria; the period of lockdown and unusual restriction of movements and social activities. These factors may explain the higher prevalence as observed in that study. Among foreign studies however, higher rates of 33.3% were reported by Esra et al among 441 HCWs in Saudi Arabia and 33% among 1,685 HCWs who participated in a national survey in the USA.[11, 13] These higher prevalence rates may not be unconnected with a possible higher burden of care, morbidity and mortality in non-African countries of Europe and the USA. Besides, prevalence rates are generally influenced by operational definitions of concepts, methods of measurement and the population studied.

Anecdotal evidence suggests that the relatively high rate of anxiety disorder among HCWs in this study may be attributed to possible fear of being infected; worries about the consequences of infection: social isolation, financial worries, morbidity and mortality, and concern for family members and loved ones in the event of mortality and/or morbidity. All of these are stressors that may trigger increased anxiety. Menzies et al found a significant relationship between fear of death and COVID-19-related anxiety.[15]

However, given the substantial threat posed by COVID-19 in this study, wherein more than half (57.3%) of the respondents perceived a moderate to severe threat, it would be expected that the rate of anxiety among them would be higher than the rate observed. It is possible that certain protective factors reported by the HCWs attenuated the prevalence of anxiety and caused the disproportional rates between threat and anxiety. Such factors include access to adequate PPE as reported by 70.4% of the respondents, satisfactory social support from significant others (87.3%), satisfactory teamwork among the HCWs (87.3%), and the fact that only (35.7%) of the HCWs were directly involved in the care of COVID-19 patients.

In terms of clinical implication, anxiety disorder among the HCWs, especially if not detected and treated promptly may jeopardize health services. First, the increased workload occasioned by the care of COVID-19 patients may lead to fatigue and exhaustion which may, not only worsen the anxiety symptoms but impact negatively on their ability to work effectively and seek the support of relevant others. Secondly, the risk of suicidal thinking, self-harm, suicidal attempt, or suicide is known and should be borne in mind as a possible consequence of untreated anxiety. This underscores the importance of routine screening, early detection, and prompt treatment of HCWs with symptoms of anxiety during this COVID-19 pandemic.

Unfortunately, the surge in anxiety and, perhaps, other mental disorders, such as depression, happened against a background of the chronic shortage of mental health resources in Nigeria and sub-Saharan Africa at large. This might have caused some disruptions to mental health services and the care of other patients generally, leaving huge gaps in the care of other categories of patients who equally need it.

The factors that were associated with reduced risk of anxiety among HCWs in this study, after controlling for other variables, include: being married, having minimal (rather than moderate-severe) perception of a threat of COVID-19, not being previously suspected to have COVID-19 and not being directly involved in the care of patients with COVID-19. The protective effect of marriage against anxiety could be derived from the social/family support that marriage confers in adverse circumstances. Du et al found that, after adjusting for other variables, lack of family support was associated with elevated anxiety symptoms.[12] This

underscores the importance of social support for HCWs from significant others during the COVID-19 pandemic. It is heart-warming that a substantial proportion (87.3%) of the respondents in this study reported that they enjoyed satisfactory support from friends and family members.

Reduced perception of the threat of COVID-19, which was also found to have a protective effect against anxiety in this study, could be achieved among HCWs through appropriate education, enlightenment and organized psychological support programmes. However, less than half (45.1%) of the respondents reported that they had access to any organized psychological support programmes. It behooves appropriate institutions, and governmental and non-governmental organizations to enhance the resilience of HCWs through various psychological support programmes to reduce their perception of threat, and the prevalence of anxiety due to COVID-19.

Although not being directly involved in caring for COVID-19 patients reduced the risk of anxiety, the patients reserve the right to be taken care of, and relevant HCWs have the responsibility to take care of them. However, in caring for the patients the HCWs must be adequately protected. In this regard, compliance with the standard COVID-19 preventive guidelines must be constantly encouraged. Equally important is adequate provision of PPEs. Most respondents in this study (70.4%) reported that they had access to adequate PPEs. This is encouraging but needs to be sustained among all cadres of HCWs in all institutions throughout the period of the pandemic.

CONCLUSION

In summary, the current study found a high prevalence of clinically detectable generalized anxiety disorder among our sample of HCWs. Being married, having minimal perception of the threat of COVID-19 and not having direct contact with COVID-19 patients are some of the factors that protected against anxiety. Undoubtedly, the COVID-19 pandemic has generated substantial interest in, and concern for mental health; the findings of this study in terms of the threat posed by the pandemic and the high rate of anxiety seemed to justify that concern. It is hoped that government, non-governmental organisations and policymakers will act urgently to translate such interest and concern to improved investment in mental health resources and favourable policymaking in order to make mental health services and support available to all, especially during the period of the COVID-19 pandemic.

RECOMMENDATIONS

The importance of routine screening for early detection and prompt treatment of anxiety is very imperative. The provision of adequate PPEs, access to regularly organized psychological support programmes, and social support by significant others may go a long way in reducing the prevalence of GAD among HCWs during the COVID-19 pandemic. In this regard, the government, policymakers and various health institutions have crucial roles to play.

LIMITATIONS

The relatively small scale of the study, in terms of sample size and institutional coverage, necessitates a cautious generalization of findings.

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CONFLICTS OF INTEREST

The authors declared that there was no conflict of interest.

AUTHORS' CONTRIBUTIONS

The first author (SOO) was involved in the conceptualization of the study. The second author (KOO) was involved in the literature review. Both authors were involved in the design and planning of the methodology, data collection, processing, analysis and interpretation of results. Both authors also took part in the writing, critical review and editing of the manuscript.

Table 1: Socio-demographic and clinical profile of respondents

Variable	Frequency	Percent
Sex		
Female	127	59.6
Male	86	40.4
Age (Years)		
<30	57	26.8
30-39	68	31.8
40-49	54	25.4
50 and above	34	16.0
Marital status		
Single	78	36.6
Married	118	55.4
Previously married	17	8.0
Religion		
Islam	27	12.7
Christianity	183	85.9
Other religions	3	1.4
Category of HCWs		
Admin staff	25	11.7
Doctors	66	31.0
Nurses	51	23.9
Lab scientists	13	6.1
Physiotherapists	20	9.4
Occupational therapist	21	9.9
Pharmacists	17	8.0

Table 2: Frequency distribution of COVID-19 related items

Variable	Frequency	Percent
Ever suspected to have COVID-19		
No	144	67.6
Yes	69	32.4
Ever confirmed to have COVID-19		
No	193	90.6
Yes	20	9.4
A colleague/friend/family with COVID-19		
No	98	46.0
Yes	115	54.0
Recent/prior contact with a person who later had COVID-19		
No	115	54.0
Yes	98	46.0
Involved in direct care of COVID-19 patients		
No	137	64.3
Yes	76	35.7
Access to adequate PPE		
No	63	29.6
Yes	150	70.4
Satisfactory support from family/friends		
No	34	16.0
Yes	179	85.0
Access to psychological support programmes		
No	117	54.9
Yes	96	45.1
Satisfactory teamwork with colleagues		
No	27	12.7
Yes	186	87.3
Perceived threat		
Mild threat	91	42.7
Moderate-severe	122	57.3
Generalized anxiety disorder		
Absent	159	74.6
Present	54	25.4

Table 3: Association between socio-demographic/clinical variables and anxiety disorder

Variable	Generalized Anxiety Disorder: Absent n (%)	Generalized Anxiety Disorder: Present n (%)	Test statistic: X^2	*p-value*
Sex				
Female	98 (77.2)	29 (22.8)	1.053	0.305
Male	61 (70.9)	25 (29.1)		
Age (Years)				
<30	44 (77.2)	13 (22.8)	.505	0.918
30-39	51 (75.0)	17 (25.0)		
40-49	40 (74.1)	14 (25.9)		
50 and above	24 (70.6)	10 (29.4)		
Marital status				
Single	57 (73.1)	21 (26.9)	8.506	0.014*
Married	94 (79.7)	24 (20.3)		
Previously married	8 (47.1)	9 (52.9)		
Religion				
Islam	14 (51.9)	13 (48.1)	8.696	0.013*
Christianity	143 (78.1)	40 (21.9)		
Other religions	2 (66.7)	1 (33.3)		
Category of HCWs				
Admin staff	24 (96.0)	1 (4.0)	12.029	0.061
Doctors	44 (66.7)	22 (33.3)		
Nurses	42 (82.4)	9 (17.6)		
Lab scientists	8 (61.5)	5 (38.5)		
Physiotherapists	15 (75.0)	5 (25.0)		
Occupational therapist	15 (71.4)	6 (28.6)		
Pharmacists	11 (64.7)	6 (35.3)		

*** Statistically Significant *P*- value**

Table 4: Association between COVID-19-related items and anxiety disorder

Variable	Generalized Anxiety Disorder: Absent n (%)	Generalized Anxiety Disorder: Present n (%)	Test statistic: X^2	*p-value*
Ever suspected to have COVID-19				
No	121 (84.0)	23 (16.0)	20.666	<.001*
Yes	38 (55.1)	31 (44.9)		
Ever confirmed to have COVID-19				
No	143 (74.1)	50 (25.9)	.334	.563
Yes	16 (80.0)	4 (20.0)		
A colleague/friend/family with COVID-19				
No	80 (81.6)	18 (18.4)	4.679	.031*
Yes	79 (68.7)	36 (31.3)		
Recent/prior contact with a person who later had COVID-19				
No	97 (84.3)	18 (15.7)	12.427	<.001*
Yes	62 (63.3)	36 (36.7)		
Involved in direct care of COVID-19 patients				
No	113 (82.5)	24 (17.5)	12.451	<.001*
Yes	46 (60.5)	30 (39.5)		
Access to adequate PPE				
No	40 (63.5)	23 (36.5)	5.883	.015*
Yes	119 (79.3)	31 (20.7)		
Satisfactory support from family/friends				
No	28 (82.4)	6 (17.6)	1.268	.260
Yes	131 (73.2)	48 (26.8)		
Access to psychological support programmes				
No	87 (74.4)	30 (25.6)	.011	.915
Yes	72 (75.0)	24 (25.0)		
Satisfactory teamwork with colleagues				
No	19 (70.4)	8 (29.6)	.299	.585
Yes	140 (75.3)	46 (24.7)		
Perceived threat				
Mild threat	79 (86.8)	12 (13.2)	12. 424	<.001*
Moderate-severe	80 (65.6)	42 (34.4)		

***Statistically significant *P*- values**

Table 5: Logistic regression for Predictors of Anxiety Disorder

Independent variables	*B*	Odds Ratio	*P*-value	95% Confidence interval
Marital status				
Single	-.667	.513	.296	.147- 1.793
Married	-1.400	.247	.025*	.073 - .839
Previously married (separated/divorced/widowed)		Ref		
Religion				
Islam	1.422	4.144	.522	.054 - 320.228
Christianity	.075	1.078	.972	.015 - 77.469
Other religions		Ref		
Perceived threat				
Mild	-.834	.434	.048*	.190 - .992
Moderate-severe		Ref		
Ever suspected to have COVID-19				
No	-1.351	.259	.002*	.111 - .603
Yes		Ref		
Access to adequate PPE				
No	.630	1.878	.111	.865 – 4.078
Yes		Ref		
Recent/prior contact with a person who later had COVID-19				
No	-.345	.708	.436	.297 – 1.688
Yes		Ref		
Involved in direct care of COVID-19 patients				
No	-.942	.390	.023*	.173 - .879
Yes		Ref		

Coefficient of determination (R^2): 34.3% **Ref: Reference category**

***B*: Regression coefficient** ***Statistically significant *p*-value**

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