ORIGINAL ARTICLE

COVID-19 Induced Anxiety among Health Care Professionals

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ABSTRACT

Objective: To evaluate the stress level among doctors and nurses during COVID-19 crises.
Study design: Descriptive correlational study
Place and duration of study: Department of Medicine & Critical Care, Services Hospital Lahore and Bahria International Hospital, Lahore from 1st May 2020 to 31st July 2020
Methodology: Descriptive correlational study design to evaluate the stress level among doctors and nurses. A couple of other factors were also identified like lack of personal protective equipment's (PPEs) and family pressure to quite job along with COVID-19 stress. Two groups were substituted one with exposure of COVID-19 and other without its exposure. The internal review board and ethical committee of Bahria International Hospital, Lahore, approved the study. Questionnaire was collected after proper informed consent from health professionals working at COVID management units at Services Hospital Lahore and Bahria International Hospital Lahore. Chi-Square test and Odd ratios were calculated among the stated groups of doctors and nurses.
Results: Statistical analysis among the groups of doctors and nurses exposed and not exposed shows significant higher levels of anxiety in doctors and nurses who were involved in management of COVID-19 patients directly as compared to those who were not. Similarly, the level of risks increased almost double in the exposed healthcare workers. Availability of personal protective equipment and pressure from the families to quit the job also plays significant role in elevating of anxiety levels.
Conclusion: Study concludes that anxiety increases in the health care professionals due to lack of robust systems to cope up with the COVID-19 pandemic. Factors like stress from family, lack of proper protective equipment leads to fear of being infected and taking the infection to their loved ones. It is responsibility of management of health care set ups to ensure the availability of PPEs and making a robust system of infection control to help combat the pandemic.
Key words: Anxiety; Stress; COVID-19; Sars CoV2; Corona virus; Health care professionals; Infection control; Personal protective equipment (PPE)

INTRODUCTION

Around 121 million people are currently suffering from mental health issues worldwide over ninety percent of these problems are anxiety and depression. About two-thirds of the affected people live in developing countries. They constitute a substantial proportion of the global burden of disease, and are projected to form the second most common cause of disability by 2020.[1]

Available evidence suggests anxiety and depressive disorders a major social dilemma in Pakistan, and an overall prevalence is 34%. This evidence is limited because of methodological problems faced in writing such literature.[2]

The novel corona virus disease (COVID-19) is spreading in world since December 2019. Virus has affected more than 4.5 million lives directly with about 0.31 million deaths.[3] This pandemic has raised serious concerns in public health systems like administrative issues and competency of governing authorities. Outbreak of COVID-19 has major impacts on the mental health and anxiety-related issues in the health professionals[4] and it is a serious point of concern for all European, Central Asian, and American countries who are striving hard to combat the concerns of medical staff during this pandemic. The major existing issues are due to increased workload and lack of appropriate protective equipment.[5]

Previous literature reveals the significant impact of pandemic over the psychological and emotional behaviour of health professionals. As in South and Southeast Asia countries, also in Italy, there are similar problems in medical staff due to high workload and lack of protective devices.[6] Health professionals who worked in SARS units and hospitals during the SARS outbreak also reported depression, anxiety, fear, and frustration.[7]

Health professionals, especially those working in hospitals caring for people with confirmed or suspected 2019-nCoV pneumonia, are vulnerable to both high risk of infection and mental health problems.[8]

The main aim of this study was to assess the Covid-19 induced anxiety and aggravating factors among doctors and nurses directly involved in the management of COVID-19 patients

MATERIALS AND METHODS

The descriptive correlational study design was used to assess the correlation between Covid induced Anxiety and factors among health care professionals those were taking care of Covid-19 patients Data collected from n=170 health care professionals in which 60 were doctors and 110 were nurse both data of doctors and nurses analyzed separately by using statistical correlation. Sample was collected from

Bahria International Lahore and Services Hospital Lahore. Convenient sampling technique used, Sample obtained after getting informed consent. For the assessment of anxiety GAD-7 scoring system was used and outcomes were assessed as explained by Spitzer et al.[9] It has seven questions with 4 possible outcomes i.e., score 0 (not at all) to 3 (nearly every day). Thus, score obtained in between 0-21 was encoded as follows: Scores of 5-9 for mild anxiety, 10-14 moderate anxiety, and ≥15 severe anxiety. Apart from the GAD-7 scoring two other factors (a) Family stress to quit the job (b) Lack of adequate supply of personal protective equipment (PPEs) were also assessed which were specifically relevant to those who were directly involved in the treatment of patients. After obtaining the data it was subjected to statistical analysis done by using Pearson's correlation coefficient test with *p*-value less than 0.05 remained statistically significant, to assess the relationship of anxiety with non-availability of PPEs and family pressure.

RESULTS

There were 110 were nurses in which 86 (78.2%) females and 24 (21.8%) males similarly 60 were doctors in which 6 (26.7%) were females and 44 (73.3%) were males (Table 1). There were 18 (16.4 %) nurses suffering from mild anxiety, 48 (43.6%) with moderate and 44 (40%) suffering from severe anxiety due COVID-19. Similarly 8 (13.3%) doctors were suffering from mild anxiety, 28 (46.7%) with moderate and 24 (40.0%) were engaged in sever anxiety due to COVID-19. Hence, sever anxiety among doctors and nurses were same, more doctors were suffering from moderate anxiety as compared to nurses and the level of mild anxiety among nurses was higher than doctors (Table 2).

The pressure on doctors and nurses from their families to quit their job during the pandemic of Covid-19, 88 (80%) nurses were facing this pressure from their families, only 22 (20%) were free from this pressure similarly 49 (81.7%) doctors were facing family pressure to quit job and 11 (18.3%) were free from this stress. The level of family pressure among nurses and doctors was same (Table 3). The level of anxiety among nurses and doctors due to non-availability of PPEs during pandemic era, 61 (55.5%) nurse were anxious due to non-availability and lack of PPEs during their working hours 49 (44.5%) were neutral on the other hand 37 (61.7%) doctors were anxious about lack and non- availability of PPEs and 23 (38.3%) were not concerning about non-availability of PPEs (Table 4).

With the interpretation of Pearson's correlation coefficient test in 1st case anxiety level is correlated with family pressure here is the value of Pearson's correlation coefficient r is (r =.281) that is in range of -1 to +1 and the level of significance value is .003 that is less than p value .05 so covid-19 induced anxiety is positively correlated with family pressure to quit job, according to results when family pressure increased anxiety among nurses also increased. On the other hand anxiety is also correlated with non-availability of PPEs according to results Pearson's correlation coefficient r is (r =.912) and level of significance value is .000 is less than P value .05 so anxiety is directly proportional to family pressure and non-availability of PPEs (Table 4).

With the interpretation of Pearson's correlation coefficient test in 1st case anxiety level is correlated with family pressure here is the value of Pearson's correlation coefficient r is (r =.294) that is in range of -1 to +1 and the level of significance value is .023 that is less than p value .05 so covid-19 induced anxiety is positively correlated with family pressure to quit job, according to results when family pressure increased anxiety among nurses also increased. On the other hand anxiety is also correlated with non-availability of PPEs according to results Pearson's correlation coefficient r is (r =1.00) and level of significance value is .000 is less than P value .05 so anxiety is directly proportional to family pressure and non-availability of PPEs (Table 5).

Table 1: Comparison of gender according to professionals

Gender	Nurses		Doctors	
	No.	%	No.	%
Female	86	78.2	16	26.7
Male	24	21.8	44	73.3
Total	110	100.0	60	100.0

Table 2: Comparison of anxiety due to COVID-19 according to professionals

Anxiety	Nurses		Doctors	
	No.	%	No.	%
Mild(0-9)	18	16.4	8	13.3
Moderate(10-14)	48	43.6	28	46.7
Severe(15-21)	44	40.0	24	40.0
Total	110	100.0	60	100.0

Table 3: Comparison of family pressure according to professionals

Family pressure	Nurses		Doctors	
	No.	%	No.	%
Yes	88	80.0	49	81.7
No	22	20.0	11	18.3
Total	110	100.0	60	100.0

Table 4: Comparison of anxiety due to non-availability of PPE to professionals

Anxiety due to non-availability of PPE	Nurses		Doctors	
	No.	%	No.	%
Yes	61	55.5	37	61.7
No	49	44.5	23	38.3
Total	110	100.0	60	100.0

Table 5: Association of anxiety level is correlated with family pressure to quit job and non-availability of PPEs and vice versa among nurses

Variable	Anxiety level among nurses	Family pressure	Non-availability of PPE
Anxiety level among nurses			
Pearson correlation Sig. (2-tailed) N	1 110	.308** .001 110	.281** .003 110
Family pressure			
Pearson Correlation Sig. (2-tailed) N	.308** .001 110	1 110	.912** .000 110
Non-availability of PPE			
Pearson Correlation Sig. (2-tailed) N	.281** .003 110	.912** .000 110	1 110

Table 5: Association of anxiety level is correlated with family pressure to quit job and non-availability of PPEs and vice versa among doctors

Variable	Anxiety level among nurses	Family pressure	Non-availability of PPE
Anxiety level among doctors			
Pearson correlation Sig. (2-tailed) N	1 60	.294* .023 60	.294* .023 60
Family pressure			
Pearson Correlation Sig. (2-tailed) N	.294* .023 60	1 60	1.000** .000 60
Non-availability of PPE			
Pearson Correlation Sig. (2-tailed) N	.294* .023 60	1.000** .000 60	1 60

DISCUSSION

Results of present study showed that 18 (16.4%) nurses were suffering from mild anxiety, 48(43.6%) were with moderate and 44 (40%) were suffering from severe anxiety due to COVID-19. Similarly 8 (13.3%) doctors were suffering from mild anxiety, 28 (46.7%) and 24 (40%) were engaged in sever anxiety due to COVID-19. Hence, severe anxiety among doctors and nurses was same, more doctors were suffering from moderate anxiety as compared to nurses and the level of mild anxiety among nurses was higher than doctors. A cross-sectional study conducted on the Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China, participants reported mild (*n*=545, 27.1%), moderate (*n*=221, 11.0%), and severe (*n*=67, 3.3%) anxiety. By comparing results it showed that in our participants moderate and sever anxiety level were higher than study conducted in Wuhan.[10]

A similar study conducted on doctors told that the overall anxiety incidence of the Chinese medical staff was 34.7%, and the mild anxiety incidence was 24.8% which were little bit closer results to our study.[11] Results of present study shows that pressure on doctors and nurses from their families to quit their job during the pandemic of Covid-19 according to given table and 88 (80%) nurses were facing this pressure from their families, only 22 (20) were free from this pressure similarly 49 (81.7%) doctors were facing family pressure to quit job and 11 (18.3%) were free from this stress. The level of family pressure among nurses and doctors was same.

A similar study which was looking for causes of anxiety conducted by Zhu et al[12] concluded that living with family members and worried about myself or my family members being infected by COVID-19 were two major risk factors of anxiety. Similarly our study showed that family pressure to quit job causes of getting infection is major cause of anxiety among doctors and nurse.

In present study, the level of anxiety among nurses and doctors due to non-availability of PPEs during pandemic was evaluated. According to this study 61 (55.5%) nurse were anxious due to non-availability and lack of PPEs during their working hours 49 (44.5%) were neutral on the other hand 37 (61.7%) doctors were anxious about lack and non- availability of PPEs and 23 (38.3%) were not concerning about non-availability of PPEs.

A similar study shows that non availability of PPEs is major causes of being anxious and only approximately one fourth of respondents reported always having sufficient gowns (n=156; 26.7%) and P2/N95 masks (*n*=136; 23.3%), with just under half of the respondents never having sufficient gowns (*n*=234; 40.1%) and P2/N95 masks (*n*=265; 45.4%) available. Qualitative data confirmed a high level of concern regarding the paucity of PPE. This was largely attributed to lack of stock availability related to the worldwide shortage.[13]

Pearson's correlation coefficient test in anxiety level is correlated with family pressure. The value of Pearson's correlation coefficient r in doctors (r =.294) in nurses value was (r =.281) in both cases range r value is in the mid -1 to +1 and the level of significance value is .023 in doctors and .003 is in nurses both values are less than p value .05 so covid-19 induced anxiety is hugely related with family pressure to quit job, according to results when family pressure increased anxiety among doctors and nurse also increased. On the other hand anxiety was also related to non-availability of PPEs and according to results Pearson's correlation coefficient r in doctor is (r=1.00) and coefficient r is (r=.912) among nurses, level of significance value is .000 in both doctors and nurses which is less than P value .05 so anxiety is directly proportional to family pressure and non-availability of PPEs.

Rana et al[14] wrote in his report Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak that COVID-19 has considerably high potential for psychological fear as contagion and has resulted in multitude of psychological problems such as fear, anxiety, stigma, prejudice towards the disease and its relation to all people ranging from healthy to at-risk individuals to care-workers. Medical workers have been under physical and psychological pressure including high risk of infection, inadequate equipment for safety from contagion, isolation, exhaustion, and lack of contact with family. Similarly, our study shows that family pressure and non-availability of PPEs are major causes of anxiety among nurses and doctors.

CONCLUSION

Factors that increase in the level of anxiety include the pressure from family to quit the job, lack of availability of proper protective equipment that even raises the fear to become infected or spread the infection to their loved ones. Hence, it is responsibility of administrative officials to ensure the availability of PPEs so, that it may eradicate the anxiety of healthcare professionals to work in such pandemic situation.

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