

A study on Depression, Anxiety, Stress, Resilience, and Sleep Quality among Physicians working with COVID'19 Cases in India

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Abstract—This research aimed to study and compare the levels of depression, anxiety, stress, resilience and quality of sleep in Physicians Working with COVID'19 cases and Physicians working with Non COVID'19 cases in private and public hospitals in Lucknow city, India, during the COVID'19 pandemic. Data was collected via Google Form. Participants were required to fill out demographic datasheet and answer standardized questionnaires on depression, anxiety, stress, resilience and quality of sleep. Purposive sampling method was used. Interestingly, no significant difference was found between the two groups on the depression, anxiety, stress, resilience and quality of sleep. However, mean scores indicated that Physicians Working with COVID'19 cases experienced more anxiety, stress and a poorer sleep quality as compared to Physicians working with Non COVID'19 cases. Those physicians who worked with COVID'19 cases scored higher on resilience and lower on depression as compared to those physicians who were working with Non COVID'19 cases. The reasons could be that the former developed more resilience in order perhaps due to the support available from the trained staff, appropriate security/safety measures, family support and teamwork. The variables that would contribute to their better mental health need to be further explored so that the Physicians' mental health can be further promoted through relevant interventions and psychoeducation, during challenging times such as the COVID'19.

Index Terms—Depression, Anxiety, Stress, Resilience, Quality of sleep, Physicians Health COVID'19 cases

I. INTRODUCTION

Coronavirus disease (COVID-19) – A Pandemic of Sorts

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered Coronavirus, called as novel Coronavirus, first identified in Wuhan,

China in December 2019. Since it is an infectious disease, it can spread directly or indirectly from one person to another. Coronavirus has “high infectivity but low mortality. Mortality rate ranges between 2-3%. It is significantly less severe than 2003 SARS (MR: 10%) or 2012 MERS (MR: 35%) outbreaks. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. Risk of death is only higher in older people (above an age of ~60 years) and people with pre-existing health conditions. COVID-19 appears to be relatively rare and mild in children. Just over 2% of cases were under 18 years of age. Of these, fewer than 3% developed severe or critical disease.

Coronavirus spreads from an infected person to a healthy person, through eye, nose, and mouth, via droplets produced on coughing or sneezing. Close contact with infected person or contact with contaminated surfaces, objects, or items of personal use can also facilitate its spread.

People face anxiety of contracting the disease, fear due to the worsening outcome was faced all over the globe. Depression and loneliness was also dealt with by people because of nation-wide lockdown and social distancing.

Everyone has a different response to a situation like this. How one responds to the outbreak depends on their social background and personal experience and certain personal factors, as well. The various negative outcomes usually observed in the individuals during stressful times are e.g. worrying about health of dear

ones, disturbed sleep and eating habits, difficulty in sleeping and concentration etc.

In terms of factors giving rise to anxiety one may worry about monetary losses they face during such curfews, tension over medical expenses, if and when, has to be afforded. The major stress yielding factor is the negative news breaks flashed in news channels and social media. The stringent hygiene protocols may also push people to over-think or overdo certain tasks e.g. washing their hands and sanitizing the things they touch, which can lead to even more anxiety and other mental health issues.

Besides psychological aspects of the pandemic on society, medical practitioners and other healthcare workers were subjected to an additional stress due to engaging directly in the treatment of cases infected with COVID-19 virus and increased risk for contagion, concerns about health of self and loved ones, fear of transmission to their families, feeling stigmatized and rejected and working under extreme pressures. On the other side, the increasing number of cases deaths, heavy workload for extended period and depletion of personnel protection equipment caused emotional and physical burnout over time.

Elbay and Kurtulmuş (2020) did a study to assess anxiety, stress, and depression levels of physicians during the Covid-19 outbreak and explored certain associated factors. 442 physicians participated in the research and Depression Anxiety and Stress Scale-21 (DAS-21) was applied. It was reported that 286 participants had symptoms of depression, 224 had anxiety, and 182 had stress symptoms. Factors associated with high scores on all the dimensions were being female, young, and single, having less work experience and working in frontline. Factors found to be associated with higher DAS-21 scores were increased working hours, increased number of cases cared for and lower level of support from peers and supervisors.

Ramalisa and Plessis (2018) did a study to explore and describe how to strengthen the resilience of nurses in a work environment with involuntary mental health care users. Narrative responses to open-ended questions underlined certain coping mechanisms and resilience strengthening strategies. To strengthen their resilience the following factors were considered: support, trained staff, security measures and safety and teamwork.

Research was conducted to measure the depression, anxiety and stress rates among postgraduate medical residents. Data were collected from 200 residents through face-to-face interview and Depression Anxiety Stress Scale (DASS-21) was used. It was found that 6% of the residents experienced severe to extremely severe depression, 3.5% had severe to extremely severe anxiety, and 6.5% had severe to extremely severe stress disorder. (Sadiq et al., 2019). This research aims to study and compare depression, anxiety, stress, resilience and quality of sleep Physicians Working with COVID-19 cases (PWC) and Physicians working with Non COVID-19 cases (PWNC).

II. METHOD

Sample

The Sample included male and female Physicians Working with COVID-19 cases (PWC) and Physicians working with Non COVID-19 cases (PWNC). The age range of the sample was 30 -55 years. Participants were asked if they were directly involved in the treatment of cases suffering from COVID 19 in the COVID wards or not. Thus, the sample of the present study comprised of 100 participants, out of whom 50 participants had Physicians Working with COVID-19 cases (PWC) and 50 Physicians working with Non COVID-19 cases (PWNC). In the sample, 55% were female physicians and 45% male physicians. Out of the 100 physicians, 77% were married and 23% were unmarried. 76% of the participants were medical education postgraduates and 24% were medical education graduates. 69% of the participants were part of a nuclear family and 31% had joint families. 17% of the physicians lived alone and 83% lived with other people.

Tools

1. Depression, Anxiety and Stress

Depression Anxiety Stress Scale (DASS-21: Lovibond & Lovibond, 1995). It is a 21-item scale designed to measure three related negative emotional states of depression, anxiety and stress. Respondents answer each item on a 4-point Likert-type scale ranging from 0 (did not apply to them at all) to 3 (apply to them very much, or most of the time). The scale has a reliability Cronbach's alpha .94 for depression, .88 for anxiety and .93 for stress. The validity Convergent validity was $r = .75$.

2. Resilience

Brief Resilience Scale (BRS: Smith et al., 2008). It is a 6-item scale designed to assess the ability to bounce back. Respondent answers each item on a 5-point Likert-type scale ranging from strongly disagree to strongly agree. 3 items are reverse scored. Reliability is Cronbach’s alpha .80 and test-retest reliability was .69. The Convergent validity was $r = .43$ and, Discriminant validity $r = -.27$.

3. Quality of sleep

Sleep Quality Scale (SQS: Snyder et al., 2018). It is a 1 item scale to measure the quality of sleep. Respondents answer the item on a visual analog scale ranging from 0 (terrible) to 10 (excellent). The Test-retest reliability coefficient of the test was .62 and the validity in terms of Discriminant validity was $r = -.17$. Procedure

Structured and standardized questionnaires were chosen and made accessible online as a Google Form for self-administration by the participants. An informed consent was obtained explaining the objective of the study. The degree to which the participants wished to share personal details was left to their discretion. To reach out to the potential participants, purposive sampling was used, which is a

non-probability sampling method. It was mentioned that physicians that worked in the COVID’19 wards and those that did not work in the COVID’19 wards at public and private facilities in India were eligible to participate in the research.

Physicians working in the COVID’19 wards (PWC) and not working in the COVID’19 wards (PWNC) were contacted. 103 responses were received, out of which 3 were outliers and were hence discarded. Responses of only 100 physicians were considered for analysis.

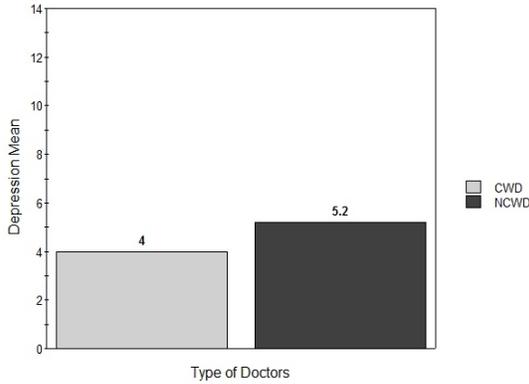
III. RESULTS

Means were calculated to assess the level of depression, anxiety, stress, resilience and quality of sleep and t-test was applied to find out the group differences in Physicians Working with COVID’19 cases (PWC) and Physicians working with Non COVID’19 cases (PWNC).

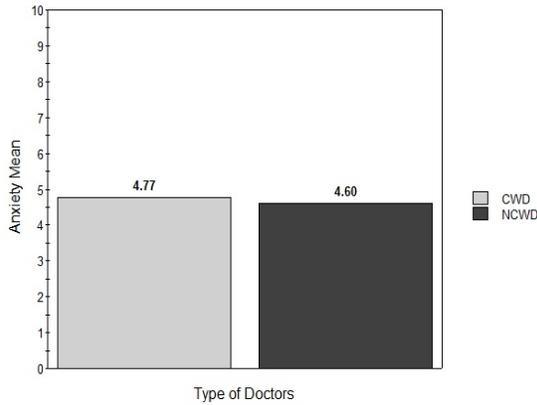
To study the two groups, means were calculated, and differences were seen. The two groups differed on their levels of depression, anxiety, stress, resilience and quality of sleep, as shown in Table 1.

Table 1: Mean Scores of Depression, Anxiety, Stress, Resilience and Quality of Sleep of Physicians Working with COVID’19 cases (PWC) and 50 Physicians working with Non COVID’19 cases (PWNC).

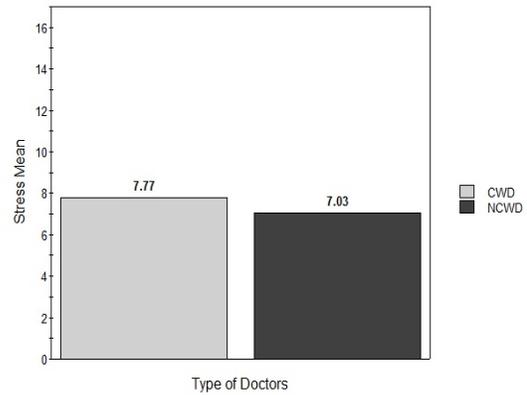
Variable	Type Of Doctor	N	Mean	Range
Depression	PWC	50	4.44	Normal
	PWNC	50	5.20	Mild
Anxiety	PWC	50	5.24	Mild
	PWNC	50	4.98	Mild
Stress	PWC	50	7.90	Mild
	PWNC	50	6.62	Normal
Resilience	PWC	50	3.71	Normal
	PWNC	50	3.41	Normal
Quality Of Sleep	PWC	50	4.80	Fair
	PWNC	50	6.58	Good



CWD- Physicians in COVID'19 Ward; NCWD - Physicians in Non COVID'19 Ward
 Figure 1: Graph showing means of PWC and PWNC for Depression



CWD- Physicians in COVID'19 Ward; NCWD – Physicians in Non COVID'19 Ward
 Figure 2: Graph showing means of PWC and PWNC for Anxiety



CWD- Physicians in COVID'19 Ward; NCWD - Physicians in Non COVID'19 ward
 Figure 3: Graph showing PWC and PWNC for Stress
 Figure 1 depicts the meaning of PWC and PWNC on the dimension of depression. PWNC has a higher depression than PWC. Figure 2 depicts the means of PWC and PWNC on the dimension of anxiety. PWC has a higher anxiety mean than PWNC. Figure 3 depicts the PWC and PWNC on the dimension of stress. PWC had a higher stress mean than PWNC.

Table 2: t value for the Significance of Difference Between the Means of Depression, Stress, Anxiety, Resilience and Quality of Sleep between Physicians Working with COVID'19 cases (PWC) and 50 Physicians working with Non COVID'19 cases (PWNC).

Variable	t value	p value
Depression	1.336	>.05
Anxiety	0.432	>.05
Stress	2.186	>.05
Resilience	2.051	>.05
Quality Of Sleep	4.288	>.05

Table 2 shows the values for the significant difference between the means on depression, anxiety, stress, resilience and quality of sleep. No significant difference was found on these variables between the Physicians Working with COVID'19 cases (PWC) and 50 Physicians working with non-COVID'19 cases (PWNC).

From the above analysis, the PWC and PWNC do not differ significantly on the mental health variables chosen for the study attesting to the fact that Physicians are well prepared for crisis situations, and suffer only slight variations in their emotional states in crisis situations and are able to sustain their mental health during these situations

IV. DISCUSSION

The purpose of this research was to study and compare depression, anxiety, stress, resilience and quality of sleep of Physicians Working with COVID'19 cases (PWC) and Physicians working with Non COVID'19 cases (PWNC). For this purpose, questionnaires were administered to measure the variables on a sample of 100 physicians. Data calculated was tabulated and t-test was applied.

The mean scores obtained by the two groups were studied and it was seen that PWNC obtained a higher mean value on the dimension of depression as compared to PWC and experienced mild depression (Table 1). In certain research it was found that physicians experienced depression when working with serious cases (Sadiq et al., 2019).

Although both the groups experienced mild level of anxiety, mean scores showed that PWC experienced slightly more anxiety as compared to PWNC. PWC scored higher on the dimension of stress than PWNC, experiencing mild level of stress. It was also found in previous researches that physicians experienced high levels of stress while working as frontline healthcare providers due to increased working hours, increased number of cases cared for and lower level of support from peers and supervisors (Elbay and Kurtulmuş, 2020).

Mean scores obtained on the dimension of resilience showed that PWC are more resilient than PWNC. In certain research it was found that factors that may contribute to building resilience are support, trained staff, security measures and safety and teamwork (Ramalisa and Plessis, 2018).

Quality of sleep was good for PWNC and was fair for PWC, which implies that PWC could not sleep very well and had a comparatively poorer sleep quality than PWNC.

To conclude, it can be said that the mean scores (Table 1) indicate that PWC experience more anxiety, stress and a poorer sleep quality as compared to PWNC. PWC scored higher on resilience, anxiety and stress and lower on depression as compared to PWNC. Stress reduction techniques can be planned and taught to the PWC so that they can employ the same while working. In addition, the t test values show no significant difference between the two groups (PWC and PWNC) on the dimensions of Depression, Anxiety, Stress, Resilience and Quality of Sleep (Table 2).

It may be said that factors other than working or not working with COVID'19 cases could be more responsible for a doctor's current psychological health and quality of sleep. These factors could be family support, social support, teamwork, training, feeling safe, availability of safety equipment, personality variables etc., which can be explored in future research.

The findings are very significant in view of the fact that Physicians' sound mental health which would be crucial in delivering treatment to the cases who might be already fear and panic stricken due to the pandemic.

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