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"Study of Stress, Anxiety and Depression among Doctors attending COVID 19 Patients in a COVID Designated Tertiary care Hospital".

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Abstract
Background: *Psychological impact of COVID 19 Pandemic on Doctors attending Covid duties was not well documented in*
Aim: *The current study aims to evaluate the psychological impact of COVID 19 Pandemic on the Doctors attending COVID patients in COVID Wards and ICU.*
Materials and Methods: *An online survey using Google Forms online platform was carried out to evaluate Depression (using Patient Health Questionnaire, PHQ-9), Anxiety (using Generalized Anxiety Disorder Questionnaire, GAD-7) and Stress (using Perceived Stress Scale, PSS-10) among the doctors attending COVID 19 patients.*
Results: *The study sample comprised 107 participants with mean Age of 29.56 years and 60.7% (n-65) of them were Male and Female participants were 39.3%(n=42). Among the participants, 67.3% (n=72) were exposed to COVID patients in ICU and 32.7% (n=35) were restricted to ward duties. Nearly half of the participants had Minimal Anxiety (42.1%) and Minimal Depression (52%) and Majority of them has Moderate stress Levels (70.1%).*
Among those who were posted in ICU units 25% (n=18) were having Moderate Anxiety levels and 45.8% (n=33) were having Minimal depression and 70.8% (n=51) had Moderate stress levels.
Conclusion: *About half of the Doctors worked in COVID wards are suffering from psychiatric morbidity, specifically anxiety, in the wake of the COVID-19 pandemic. There is a need to assess all the Doctors for psychiatric morbidity and provide them with Psychological support.*
Key words: *COVID 19, Pandemic, Anxiety, Depression, Perceived stress, Doctor*

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I. Introduction

The world is grappling with an ongoing COVID-19 pandemic that has shaken the mankind to the core and disrupted the lives of everyone[1]. It has not only bought life to a standstill personally and professionally, but has also cast its impact on the psychological well-being of everyone around the globe thereby hampering the psychological resilience and coping abilities of individuals. This has presented the healthcare systems worldwide with a novel and catastrophic risk for which presently no breakthrough has been discovered leading to further anxiety and fear of this never ending uncertainty.

A pandemic is the worldwide spread of a new disease, otherwise known as an epidemic that has spread over several countries or continents. On 31st December 2019, China reported an acute pneumonia outbreak that had emerged from Wuhan. In a short span of time, the disease caused by the new Corona virus (COVID-19) spread from China to other countries, and caused several health, socio-economic and political challenges globally [2, 3] . On 30th January 2020, the World Health Organization (WHO) declared the 2019 New Corona virus as a Public Health Emergency of International Concern (PHEIC). On February 11, 2020, WHO declared a global pandemic, and officially named the new Corona virus as COVID-19 [3–5]. On the same day, the

International Committee on Virus Classification (ICTV) modified the 2019-nCoV name to SARS-CoV-2 [5]. The outbreak of the disease has put a lot of psychological pressure on different communities and key workers, especially Hospital staff who are in a direct contact with the patients [5]. Hospital staff in charge of admitting and caring for patients with COVID-19 have been subjected to a variety of individual, and organizational stresses that have adversely affected their health and job satisfaction. Therefore, recognizing stressors and periodic training will be an effective step towards prevention, treatment and stress reduction [6-10]. Stress can increase depression and anxiety reduces job satisfaction, impair individual relationships, and even lead to suicidal thoughts. Doctors and nurses who are considered as the frontliners for dealing with this pandemic at point blank range are the most vulnerable to develop mental health concerns. The gruelling working schedule amidst pandemic has predisposed them to witness psychological distress while providing direct care to the patients, being informed about the spike in cases or due to the mandatory requirements of isolation or quarantine [12-14]. Corona virus has the potential of instilling a sense of fear among other healthcare professionals regarding their own lives. The current norm of social distancing also conflicts with their professional duty to treat others and also at the same time to maintain their own personal well-being. [15] Such kind of a cognitive dissonance can also lead to heightened levels of stress, worry, anxiety, depression, and reduced sleep, among other various issues that can take a toll on their psychological health. A shift in the present lifestyle further maximizes stress and anxiety thereby depleting the psychological resilience even lower than what currently it is. We therefore aimed to assess the presence of psychological distress, depression, anxiety experienced by the healthcare workers in India related to COVID-19 pandemic.

II. Materials And Methods

This is a web based cross sectional study which was carried out at Department of Psychiatry from My 2021 to July 2021 on doctors attending COVID -19 duties at Maharajah's Institute of Medical Sciences and General Hospital, Vizianagaram which was a government notified private teritiary care hospital for COVID patients.A total 107 adult subjects (both male and females) of aged ≥ 18, years were for in this study.

Study design: A Web-based cross-sectional survey

Study Location: A Government Notified Private Tertiary care Hospital for COVID Patients in COVID 19 Pandemic based study done in Department of Psychiatry, at Maharajah's Institute of Medical Sciences and General Hospital, Vizianagaram, Andhra Pradesh.

Study Duration: May 2021 to July 2021

Sample Size: 107 participants

Sample Size Calculation: Sample size was calculated using Epi Info V.7 using the prevalence of anxiety, depression and perceived stress (20.2, 12.7% and 59%, respectively), with a confidence level 90% and a margin of error of 5%.

Subjects and selection method: The study population was drawn from Doctors (Post MD/MS Clinicians) and Postgraduate students from all Departments working at Maharajah's Institute of Medical Sciences and General Hospital Government Notified Private Tertiary Care hospital during COVID 19 Pandemic.The study was approved by the institutional ethics committee. An online written informed consent was obtained from all the participants.

Inclusion Criteria:

1. Doctors and Postgraduates who have attended COVID duties in COVID WARDS and ICU.
2. Doctors of either sex aged 18-56 years.
3. Participants who have given Consent for the Study.

Exclusion Criteria:

1. Faculty who were doing Hospital Administration Duties.
2. Doctors who have not given consent

Procedure Methodology:

Informed consent was taken from the respondents before the study and an option to terminate was made available anytime they desired in the form itself**.** A pre-designed, pre-tested validated semi-structured questionnaire was administered to the study subjects wherein objectives were explained, respectively. The questionnaires included Semi- Structured Questionnaire included age, gender, designation.

Perceived Stress Scale -10 consists of 10 questions about feelings and thoughts during the last month. Each case was asked to indicate how often they felt or thought in a certain way. The answers to each question are on a 5-rate scale, ranging from never to very often. Each answer has a score then the total score is calculated. Scores ranging from 0 to 13 are considered low stress. Scores 14–26 are considered moderate stress. Scores between 27 and 40 are considered high-perceived stress.

Generalized Anxiety Disorder 7-item questionnaire (GAD-7) consists of seven questions on feeling in the last 2 weeks. Answers are on a 4-rate scale ranging from not at all sure to nearly every day. Each answer has a score then a total score will be calculated.

Patient Health Questionnaire (depression module) 9 (PHQ-9): It consists of nine questions about feeling in the past 2 weeks. Answers are on a 4-rate scale, ranging from not at all to nearly every day. Each answer has a score then the total score is calculated. A score of 1–4 indicates minimal depression. A score of 5–9 indicates mild depression. A score of 10–14 indicates moderate depression. A score of 15–19 indicates moderately severe depression. A score of 20–27 indicates severe depression.

The questionnaires were prepared in the format of a Google forms which were sent across through social media platforms such as Whatsapp and e-mail starting from May 2021 to July 2021 to follow the restrictions and protocols of social distancing. We have activated the 'limit to one response' option to avoid duplicate responses. Complete confidentiality of the respondents was ensured and no personal details were recorded for the purpose of the study such as name, address, and contact details.

Statistical Data:

Data were analyzed using statistical package for social sciences, sixteenth edition (SPSS-16) (SPSS Inc. Released 2007. SPSS for Windows, Version 16.0. Chicago, SPSS Inc.). Continuous variables were analyzed in the form of mean, standard deviation (SD), and median. Categorical variables were assessed as frequency and percentages.

III. Result

The total number of responses received was 107 responses. The mean age of the participants was 29.56 years (24-56) years. A majority of them were male (60.7%).

Among the participating doctors 67.3% were exposed to high risk areas like COVID ICU and 32.7% in low risk areas like COVID Wards.

Among all the participants 3.7% (n=4) had High, 70.1% (n=75) had Moderate and 26.2% (n=28) had Low stress levels.

Among all the participants 5.6% (n=6) had Severe, 20.6% (n=22) had moderate, 31.8% (n=34) had Mild and 42.1% (n=45) had Minimal anxiety.

Among all the participants 3.7% (n=4) had Severe, 3.7% (n=4) had Moderately Severe, 17.8% (n=19) had Moderate, 26.2% (n=28) had Mild, 27.1% (n=29) had Minimal and 21.5% (n=23) had No Depression.

Among Females 83.4% (n=35) were having moderate to high stress, 26.1% (n=11) were having moderate to severe anxiety, 26.2% (n=11) having moderate to severe depression when compared to males.

Among ICU Exposed doctors 76.4% (n=55) reported moderate to high stress, 31.9% (n=23) were having moderate to severe anxiety and 27.9% (n=20) had moderate to severe depression when compared to doctors not exposed to ICU.

More than half (73.8%) of the doctors participated in the study had clinically significant levels of stress, Anxiety and depression in the study participants nearly half (42%) of the participants had either stress or anxiety disorder or depression or all three

Table no - 1 Show Percentage of Percieved Stress among Doctors attending COVID duties

Grading	Frequency	Percent	Valid Percent	Cumulative Percent
LOW STRESS	28	26.2	26.2	29.9
MODERATE STRESS	**75**	**70.1**	70.1	100.0
HIGH STRESS	4	3.7	3.7	3.7
Total	107	100.0	100.0	

Table no - 2 Show Percentage of Anxiety among Doctors attending COVID duties

Grading	Frequency	Percent	Valid Percent	Cumulative Percent
MINIMAL ANXIETY	45	42.1	42.1	73.8
MILD ANXIETY	34	31.8	31.8	31.8
MODERATE ANXIETY	22	20.6	20.6	94.4
SEVERE ANXIETY	6	5.6	5.6	100.0
Total	107	100.0	100.0	

Table no – 3 Percentage of Depression among Doctors attending COVID duites

Grading	Frequency	Percent	Valid Percent	Cumulative Percent
MINIMAL DEPRESSION	29	27.1	27.1	53.3
MILD DEPRESSION	28	26.2	26.2	26.2
MODERATE DEPRESSION	19	17.8	17.8	71.0

MODERATELY SEVERE DEPRESSION	4	3.7	3.7	74.8
SEVERE DEPRESSION	4	3.7	3.7	100.0
Total	107	100.0	100.0	

Table no - 4 Comparison of Percentage of Perceived Stress, Anxiety and Depression among Male and Female Doctors attending COVID duties

			GENDER		Total
			Female	Male	
PSS GRADING	LOW STRESS	Count	7	21	28
		% within GENDER	16.7%	32.3%	26.2%
	MODERATE STRESS	Count	33	42	75
		% within GENDER	**78.6%**	**64.6%**	70.1%
	HIGH STRESS	Count	2	2	4
		% within GENDER	4.8%	3.1%	3.7%
GAD GRADING	MINIMAL ANXIETY	Count	16	29	45
		% within GENDER	**38.1%**	**44.6%**	42.1%
	MILD ANXIETY	Count	15	19	34
		% within GENDER	35.7%	29.2%	31.8%
	MODERATE ANXIETY	Count	8	14	22
		% within GENDER	19.0%	21.5%	20.6%
	SEVERE ANXIETY	Count	3	3	6
		% within GENDER	7.1%	4.6%	5.6%
PHQ GRADING	NO DEPRESSION	Count	7	16	23
		% within GENDER	16.7%	24.6%	21.5%
	MINIMAL DEPRESSION	Count	13	16	29
		% within GENDER	31.0%	24.6%	27.1%
	MILD DEPRESSION	Count	11	17	28
		% within GENDER	26.2%	26.2%	26.2%
	MODERATE DEPRESSION	Count	8	11	19
		% within GENDER	**19.0%**	**16.9%**	17.8%
	MODERATELY SEVERE DEPRESSION	Count	2	2	4
		% within GENDER	**4.8%**	**3.1%**	3.7%
	SEVERE DEPRESSION	Count	1	3	4
		% within GENDER	2.4%	4.6%	3.7%
Total		Count	42	65	107
		% within GENDER	100.0%	100.0%	100.0%
		% within AGE GROUP	100.0%	100.0%	100.0%

Table no – 5 Comparison of Percentage of Stress, Anxiety and Depression among doctors exposed to ICU and not exposed to ICU

			ICU Exposure		Total
			No	Yes	
PSS GRADING	LOW STRESS	Count	11	17	28
		% within ICU Exposure	31.4%	23.6%	26.2%
	MODERATE STRESS	Count	24	51	75
		% within ICU Exposure	**68.6%**	**70.8%**	70.1%
	HIGH STRESS	Count	0	4	4
		% within ICU Exposure	0.0%	5.6%	3.7%
GAD GRADING	MINIMAL ANXIETY	Count	20	25	45
		% within ICU Exposure	57.1%	34.7%	42.1%
	MILD ANXIETY	Count	10	24	34
		% within ICU Exposure	28.6%	33.3%	31.8%
	MODERATE ANXIETY	Count	4	18	22
		% within ICU Exposure	11.4%	25.0%	20.6%
		Count	1	5	6

	SEVERE ANXIETY				
		% within ICU Exposure	2.9%	6.9%	5.6%
PHQ GRADING	NO DEPRESSION	Count	10	13	23
		% within ICU Exposure	28.6%	18.1%	21.5%
	MINIMAL DEPRESSION	Count	9	20	29
		% within ICU Exposure	25.7%	27.8%	27.1%
	MILD DEPRESSION	Count	9	19	28
		% within ICU Exposure	25.7%	26.4%	26.2%
	MODERATE DEPRESSION	Count	6	13	19
		% within ICU Exposure	17.1%	18.1%	17.8%
	MODERATELY SEVERE DEPRESSION	Count	0	4	4
		% within ICU Exposure	0.0%	5.6%	3.7%
	SEVERE DEPRESSION	Count	1	3	4
		% within ICU Exposure	2.9%	4.2%	3.7%
Total		Count	35	72	107
		% within ICU Exposure	100.0%	100.0%	100.0%

IV. Discussion

In the challenging times of outbreak of the COVID‐19, Doctors across the globe are at the forefront of prevention of spread and treatment of patients who developed COVID‐19 infection. They are subjected to long working hours, risk of infection, loneliness, exhaustion and separation from families [2]. The present study reflects the psychological impact of the pandemic on Doctors attending COVID duties. The prevalence rates of clinically significant stress, anxiety & depression among doctors in the study were 73.4%, 58% & 51.4% respectively. Prevalence of stress was significantly higher than that reported for anxiety and depression. Similar study done by Sandeep Grover, et al., found that 46.2% of the had either anxiety disorder or depression or both and Higher level of anxiety and depression scores were associated with being female, directly involved in the care of COVID-19 patients, and younger age (<30 years). Higher prevalence of depression and anxiety disorder was seen in younger (<30 years) age group, being a doctor (compared to paramedics). In addition, higher prevalence of depression was seen in those who were directly involved in the care of patients with COVID-19 infection. Studies done on doctors, using the similar scales across the different parts of the globe, suggest the prevalence of anxiety to be varying between 10.5% and 44.7% and that of depression vary between 8.9% and 50.7% [3-12]. Findings of the present study are within the reported range.

In a similar Indian study done by Chatterjee SS, Bhattacharyya R, Bhattacharyya S, et al involving 152 doctors, 34.9% were found to be depressed and 39.5% and 32.9% were experiencing anxiety and stress [14].

In another study done by Das A, Sil A, Jaiswal S, et al. involving 422 doctors, 63.5% were found to be depressed and 45% were experiencing stress [14].

Hence, it can be said that the pandemic has led to an increase in the psychiatric morbidity among the Doctors, who has been working in adverse situations and facing multiple mental health issues [16].In the present study, participants who were females reported higher prevalence of stress, anxiety and depression. Previous studies have also shown a similar association of higher level of anxiety and depression with female gender [3,11]. These results possibly reflect the personality dimension of the Doctors, who despite working in adverse situations and were at risk of infection for themselves and their family members, were dedicated to their work like soldiers. Majority of doctors who were exposed to high risk areas like ICU reported higher prevalence of stress, anxiety and depression than doctors who were posted in COVID wards.

V. Conclusion

All these findings suggest that there is an urgent need to screen all the doctors for psychiatric morbidity and they must be provided adequate psychological support while providing the services during this COVID times [17]. All the doctors should work together to follow effective strategies to promote their psychological well-being. During such outbreaks, support from the organization has been proven to be effective in protecting

their mental health. Hence, the organization should make sure that they are adequately supported by their staff members and colleagues. They can also start a support cell, which will provide a platform for workers to exchange and address their concerns, normalize their feelings related to the stressful environment, share helpful stress coping strategies, and discuss about the maladaptive response [18]

VI. Limitations

Limitations of the study include small sample size. Information was not available about the Specialty of the participants; hence, this study does not provide any information about the level of anxiety and depression across different specialty areas. Other factors such as whether Quarantine period was spent alone or with family members, whether contracted infection post COVID Duty and H/o Psychiatric and Physical co-morbidities were not taken into consideration

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