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General anxiety predictors among frontline warriors of COVID: Cross-sectional study among health care workers

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Abstract---COVID-19 pandemic has increased the generalized anxiety among Healthcare workers, The cross sectional questionnaire based study aimed to determine the generalized anxiety disorders among the Healthcare workers working in secondary and tertiary care hospitals. GAD-7 scale and Perceived stress scale were used to assess anxiety. Non parametric statistics were applied to estimate the difference among the groups. A total of 270 Male 150 (55%) and Female 120 (44%) Healthcare workers responded to this survey. In Healthcare workers, the Doctors are revealed the more anxious and depression suffered than the other healthcare workers who participated in this study.

Keywords---GAD-7, perceived stress scale, healthcare workers, COVID.

Introduction

The Considering health professionals among high-risk individuals^[1]. The work related stress results in employees and organization and related to decreased productivity, physical illness poor quality of healthcare services and increase risk of medical errors. Stress can be defined a physical or psychological stimulus that can produce mental tension or physiological reactions that may lead to anxious, illness and depression^[2]. On 30 January 2020, the World Health Organization (WHO) declared the emergence of the novel corona virus as a Public Health Emergency of International Concern (PHEIC)^[3]. In India over 200 Healthcare Peoples including doctors and nurses have been diagnosed with COVID 19. There are also reports of unsuspecting HCPs infected while caring for asymptomatic patients. This pandemic has caused high levels of anxiety, stress and depression in the general population and the HCPs may be disproportionately of more number of Male and Female affected due to fear of infection, workplace stress, social isolation and discrimination.^[4]. So In this pandemic situation the Government has taken a series of effective administrative measures to interrupt the spread of the epidemic including early diagnosis, patient isolation, symptomatic monitoring of contacts with suspected and confirmed cases, social distancing and community based isolation, which played a vital role in limiting the COVID-19 outbreak.^[5] and observing for this study using the Perceived Stress Scale^[6] and A GAD-7 assessment tool^[7].

Materials and Methods

Study design

The online cross sectional study was conducted among frontline healthcare providers. The Protocol of the study was reviewed and approved by the IEC. The Informed consent was obtained from the each study participant.

Sample Size

The Sample size was calculated based on the formula

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)}$$

Data Collection and Statistics

The Standardized GAD-7 assessment tool and Perceived Stress Scale questionnaire was used to collect data. The questionnaire contained the Sociodemographic characteristic/ Age, Gender designation was created as a Google form and circulated among Healthcare Providers. The response was

recorded and the scoring was calculated and assessed. The SPSS was used for in this study.

Result

A total of 270 participants were included in the study with a response rate of 100%. Among the respondents, the majority were male [150(56%)], while the majority of the respondents were in the age range of 21-40 years [94 (35%)]. Of the total participants 44 % were doctors and 21% were nurses (Table 1). Fig 1 shows the anxiety level based on GAD 7 scoring, 41% of overall participants were under the severe anxiety score, 36 % were under moderate anxiety score. The majority of the respondents were anxious for more than half days in the past 2 weeks of Covid duty, and most were feeling anxious nearly every day and were unable to concentrate in daily routine work. (Table 2) From bivariate binary logistic analysis variables, sex, age, designation were found to have a P value less than 0.25. From multivariate analysis only variables, age in the range of 31-40 years, being a doctor and nurse were statistically significant with Generalised anxiety disorder on Covid duty at a P value less than 0.05 (Table 3) The PSS scoring classification, Out of all participants 48 % were under severe stress and 47% were under moderate stress. (Fig 2)

Nearly 50% of the respondents were very annoyed by things that happened outside very often, while some others felt well fairly often. On the other hand, the majority of the respondents were able to complete the important events in their life properly, while others could not cope with all the things happening outside (Table 6). Perceived stress, among frontline healthcare workers, was very high. The highest perceived stress score was observed among doctors, while the smallest was seen among other healthcare providers.

From multivariate analysis with chi square test, having perceived stress on COVID-19 among respondents who were in the age range of 31-40 years was almost 2 times higher as compared to that in the age range of 20-30 years of respondents. On the other hand, the doctors were 3 times more likely to have perceived stress during COVID-19 as compared with nurses (Table 7)

Table: 1 Socio Demographics Of The Respondents

S.NO	VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE%
1.	GENDER	Male	150	56%
		Female	120	44%
2.	AGE	21-30	74	27%
		31-40	94	35%
		41-50	60	22%
		51-60	33	12%
		Above -60	09	04%
3.	DESIGNATION	Doctor	118	44%
		Pharmacist	52	19%
		Nurses	58	21%

	Others	42	16%
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Table 2: GAD-7 Among Healthcare Providers

S.no	Question	Not at all n (%)	Several days n (%)	More than halfdays n (%)	Nearly everyday n (%)
1.	Feeling nervous, and anxious or on edge	24 (8.8)	61 (23)	115 (43)	70 (26)
2.	Not being able to stop or control worrying	33 (12.2)	72 (27)	89 (33)	76 (28)
3.	Worrying too much about different things	35 (9.2)	72 (27)	93 (34)	80 (30)
4.	Trouble relaxing	32 (11.8)	67 (25)	99 (37)	72 (27)
5.	Being so restless that its hard to sit still	28 (10.30)	79 (29)	85 (31)	78 (29)
6.	Becoming easily annoyed or irritable	34 (12.5)	65 (24)	103 (38)	68 (25)
7.	Feeling afraid as if something awful might happen	33 (12.2)	89 (33)	88 (33)	60 (22)

Table 3: Bivariate and Multivariate analysis of factors associated with GAD-7 assessment tool on COVID-19 among healthcare providers

VARIABLE	CATEGORY	N=270	%	GAD-7		Chi-Square Tests			
				YES	NO		Value	df	Asymp. Sig. (2-sided)
Gender of participants	Male	150	56	85	65	Pearson Chi-Square	321.036 ^a	140	.000
	Female	120	44	80	40				
						N of Valid Cases	270		
Age	20-30	74	28	54	20	Pearson Chi-Square	1270.955 ^a	920	.000
	31-40	94	35	61	33				
	41-50	60	22	33	27	Likelihood Ratio	565.696	920	1.000
	51-60	33	12	13	20				
	Above 60	09	03	04	05	N of Valid	270		

						Cases			
Profession of participants	Doctors	118	44	90	28	Pearson Chi-Square	2020.645 ^a	1540	.000
	Pharmacists	52	19	28	24	Likelihood Ratio N of Valid Cases	2020.645 ^a 270	1540	.000
	Nurses	58	21	37	21				
	Others	42	16	26	16	Pearson Chi-Square	2020.645 ^a	1540	.000

Table 4: Perceived Stress Scale Among Healthcare Providers

S.no	Question	Almost never %	Sometimes %	Fairly often %	Often %	Never %
1.	In the last month, how often have you been upset because of something that happen unexpectedly?	37 (14)	118 (44)	78 (29)	25 (9.2)	12 (4.4)
2.	In the last month, how often have you felt that you were unable to control the important things in your life ?	32 (12)	94 (35)	98 (36)	24 (9)	22 (8)
3.	In the last month, how often have you felt nervous and "stressed"?	33 (12)	93 (34)	91 (34)	37 (14)	16 (6)
4.	In the last month, how often have you felt confident about your ability to handle your personal problems?	30 (11)	83 (31)	91 (34)	55 (20)	11 (4)
5.	In the last month, how often have you felt that things were going your way?	33 (12)	91 (34)	89 (33)	42 (15.5)	15 (5.5)
6.	In the last month, how often have you found that you could not cope with all the things that you had to go ?	33 (12)	83 (31)	84 (31)	52 (19)	18 (7)
7.	In the last month, how often have you been able to control	22 (8)	97 (36)	92 (34)	42 (15.5)	17 (6)

	irritations in your life?					
8.	In the last month, how often have you felt that you were on top of things?	27 (10)	95 (35)	87 (32)	43 (16)	18 (7)
9.	In the last month, how often have you been angered because of things that were outside of your control?	33 (12)	90 (33)	85 (31)	42 (15.5)	20 (7.4)
10.	In the last month, how often have you felt difficulties were piling up so high that you couldn't overcome them?	32 (11.2)	85 (31)	82 (30)	47 (17)	24 (9)

Table 5 Bivariate and Multivariate analysis of factors associated with perceived stress on COVID-19 among healthcare providers

VARIABLE	CATEGORY	N=270	%	PERCEIVED STRESS SCALE		COR AOR			
				YES	NO			Asym p. Sig. (2-sided)	
						Value	df		
Gender of participants	Male	150	56	73	77	Pearson Chi-Square	337.167 ^a	210	.000
	Female	120	44	58	62	Likelihood Ratio	98.681	210	1.000
						N of Valid Cases	270		
Age	20-30	74	28	37	27	Pearson Chi-Square	1379.03 ^{2a}	1380	.502
	31-40	94	35	52	42				
	41-50	60	22	25	35	Likelihood Ratio	652.529	1380	1.000
	51-60	33	12	12	21				
	Above 60	09	03	05	04	N of Valid Cases	270		

Profession of participants	Doctors	118	44	64	54	Pearson Chi-Square	2392.80 _{9a}	2310	.112
	Pharmacists	52	19	28	24	Likelihood Ratio	716.260	2310	1.000
	Nurses	58	21	17	41				
	Others	42	16	22	22	N of Valid Cases	270		

Fig 1 :GAD- 7 Scoring

■ 0--4 ■ 5--9 ■ 10--15 ■ 15--21

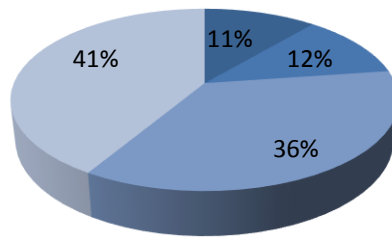
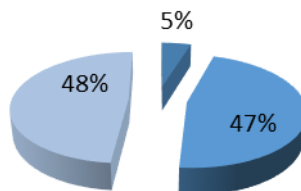


Fig 2 : Perceived stress scale

■ 0-13 ■ 14-26 ■ 27-40



Discussion

The cross-sectional study had tried to determine the magnitude of perceived stress and anxiety level among using a PSS scale and GAD-7 scale. Among the respondents, the majority were male [150(56%)], while the majority of the respondents were in the age range of 21-40 years [94 (35%)]. Of the total

participants 44 % were doctors and 21% were nurses. The finding was similar to the study Khan T M, Tahir H, Salman M, Ul Mustafa Z, Raza M H, Asif N, et al., 2021.

Based on GAD 7 scoring, 61% of overall participants were under the severe anxiety score, 25 % were under moderate anxiety score. From multivariate binary logistic regression, only variables, namely, age in the range of (31-40) Totally 94 participants are responded more affected the perceived stress level and the GAD-7 and their percentage is 35%. In the profession of participants 118 (44%) Doctors were more suffered than the other healthcare providers. And the findings are similar to the study C. Wang, R. Pan, X. Wan et al., 2019.

In the range of PSS scoring point 0-13 is mild stress, 14-26 is moderate stress, 27-40 is High perceived stress, Out of all participants 48 % were under severe stress and 47% were under moderate stress. The 131(48%) frontline health care workers carries a PSS score point of between a 27- 40 so that had a high perceived stress. Similar that of the majority of healthcare providers were predominantly males (161 (66.0%)). The overall prevalence of perceived stress among healthcare providers of Gedeo Zone governmental health institutions was found to be 51.6%. The finding of this study was in line with the study Yigrem Ali Chekole et al., 2020.

Conclusion

In summary this study revealed that more than half of frontline workers to have perceived stress and feeling anxious on COVID-19 duty. Being at the age range of their qualifications, Doctors were found to have statistically significant with perceived stress. A Majority of doctors were found to have severe stress levels, only 38% met the GAD-7 criteria (score>10) of generalized anxiety disorder. Particularly of great concern should be given to frontline Healthcare workers because they are at a great risk of developing psychological problems.

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