

Depression, Anxiety and Stress Among Frontline Doctors of Covid Hospital in Eastern Nepal

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Abstract

INTRODUCTION

The COVID-19 pandemic has caused several mental health problems including depression, anxiety, and stress. In BPKIHS, junior resident doctors are one of the frontline health care professionals and are vulnerable to mental health problems. This study was undertaken to find out depression, anxiety, and stress in the frontline junior resident doctors (FJR).

METHODOLOGY

A web-based cross-sectional study among FJR was done from 29 August to 28 September 2020 using Depression, Anxiety, and Stress Scale (DASS-21).

RESULT

Among 168 FJR, 144(85.7%) responded, and the mean age was 29.6±1.9 years. They were mostly male (56.9%), unmarried (60.4%), living alone (77.1%), first-year junior residents (43.1%), and had last duty more than 2 weeks(56.9%). Anxiety was seen in 50%; followed by Depression in 38.1%; and Stress in 27.7%. The moderate type of Depression, Anxiety, and Stress was common which were 19.6%, 24.3% and 15.2% respectively. Depression, Anxiety and Stress was more in male (55 to 61.1%), unmarried (60-64%), living alone (76-85%) and first-year residents (37.5-43.6%) but not statistically significant. Depression, Anxiety and Stress were more in those whose

last duty more than 2 weeks but statistically significant with Anxiety ($p=0.03$) only. There was a strong correlation among each other of depression, anxiety and stress ($p<0.05$).

CONCLUSION

Depression, anxiety, and stress were greater in FJR. The most common being anxiety, followed by depression and stress. In severity grading moderate was common. It shows the need for early intervention and management.

KEYWORDS

COVID-19 pandemic, Frontline Doctors, Depression, Anxiety, Stress

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INTRODUCTION

A novel Corona virus infection was first reported on 31 December 2019 from Wuhan, China.^{1,2} As the number of cases increased worldwide, Nepal recorded its first case on 5th January 2020.³ Nepal was in a high-risk zone because of its comparably weak health system and porous borders with India.

The people are having increased stress because of the large-scale unprecedented infectious threat. The lockdown, strict social distancing, quarantine, isolation, financial loss, and insecurity have added more stress and mental health problems.⁴ Along with the general population, the healthcare professionals (HCP) who attempt to quell the pandemic, are at significant risk, and more so are the frontline HCP. Due to the new challenges, the frontline HCPs have experienced different psychiatric problems.⁵ The knowledge about COVID-19 is still dynamic and evolving. To date, there is no definitive cure and this has further contributed to the stress. Preliminary evidence suggests that symptoms of anxiety and depression, and self-reported stress are common mental health problems.⁶

The junior resident doctors are one of the frontline HCPs in the COVID Hospital of BP Koirala Institute of Health Science (BPKIHS). They are the MD/MS students of different departments pursuing post-graduation. One hundred sixty-eight junior resident doctors are posted there.

WHO has prioritized the psychosocial and mental health well-being in this pandemic and has issued 30 points of Mental health and psychosocial consideration on 18th March 2020 among which five points from 7-11 are for HCP.⁷

This study aims to provide the prevalence of, depression, anxiety, and stress among the frontline junior resident doctors (FJRD) posted in COVID Hospital of BPKIHS.

MATERIALS AND METHODS

It is a descriptive, cross-sectional, hospital-based study done from 29th August 2020 to 28th September 2020 in BPKIHS, Dharan. Ethical approval was obtained from the Institutional Review Committee (46/077/078 - IRC). A self-reporting questionnaire and DASS-21 was uploaded through Google Survey by <https://docs.google.com/forms/>. The participant information sheet and informed consent form were sent by email and instant messaging apps (Viber/ WhatsApp) to the FJRD posted in COVID Hospital fulfilling the inclusion criteria. Once they expressed the willingness to participate, then the uploaded survey was sent for web-based online filling. The data were exported to Microsoft Excel and statistical analysis was done by SPSS 19.

The DASS-21 is a modified shorter form of DASS-42.⁸ Ratings are made on a series of 4-point scales (0 - did not apply at all to 3 - applied to me very much or most of the time). The total score is interpreted as follows: for depression: normal (<10), mild (≥10–13), moderate (14–20), severe (21–27), extremely severe (28+); anxiety: normal (<8), mild (8–9), moderate (10–14), severe (15–19), extremely severe (20+) and stress: no stress (>15), mild (15–18), moderate (19–25), severe (26–

33), extremely severe (34+). DASS-21 questionnaires have been validated in Nepal.⁹

RESULTS

One hundred forty-four (85.7%) responded. They were of the age 29.6±1.9 years; mostly male (56.9%), unmarried (60.4%), living alone (77.1%), first-year junior resident (43.1%), and last duty was done more than 2 weeks ago (56.9%).

Table 1: Characteristics of the participants

Characteristics		Total (144)	Percent (%)
Gender	Male	82	56.9
	Female	62	43.1
Age in Years	Range	12 (25 – 37)	
	Mean ± SD	29.66 ±1.93	
	Median	30	
	Mode	30	
Marital Status	Unmarried	87	60.4
	Married	57	39.6
Living	Alone	111	77.1
	Family	15	10.4
	Spouse	18	12.5
Year of Residency	First Year	62	43.1
	Second Year	52	36.1
	Third Year	30	20.8
Last duty done	Less than 1 week	29	20.1
	1 – 2 weeks	33	22.9
	More than 2 weeks	82	56.9

Anxiety (50%) was most common; followed by Depression (38.1%) and Stress (27.7%). Among them, the moderate type was common as shown in Table 2.

Table 2: Prevalence and Grading of Depression, Anxiety and Stress

Diagnosis	Number of positive cases	Mean Scores Overall Cases	Median Score overall cases	Mean score Depression/ Anxiety / Stress	DASS21 scale and grading			
					Mild	Moderate	Severe	Extremely Severe
Depression ≥ 10	55 (38.1%)	8.44±7.87	6	16.72	Score 10-13	14-20	21-27	28+
					17(11.7%)	28(19.6%)	6(4.1%)	4(2.7%)
Anxiety ≥ 8	72 (50%)	8.64±7.25	7	14.25	Score 8-9	10-14	15-19	20+
					12(8.3%)	35(24.3%)	12(8.3%)	13(9.1%)
Stress ≥ 15	40 (27.7%)	10.0±7.93	10	22	Score 15-18	19-25	26-33	34+
					11(7.6%)	22(15.2%)	6(4.3%)	1(0.6%)

Table 3: Age with Depression, Anxiety and Stress

		Depression	Anxiety	Stress	TOTAL DASS SCORE
Age	Pearson Correlation	0.083	0.110	0.079	0.098
	P value	0.325	0.188	0.345	0.245

Depression, anxiety, and stress were more in males, but not statistically significant as in Table 4.

Table 4: Gender with Depression, Anxiety and Stress (Mann Whitney U Test)

Diagnosis	Total	Gender				P value
		Male (82)	Median Score	Female (62)	Median Score	
Depression ≥ 10	55	32(58.1%)	6	23(41.9%)	6	0.9
Anxiety ≥ 8	72	44(61.1%)	8	28(38.9%)	6	0.4
Stress ≥ 15	40	22(55%)	10	18(45%)	10	0.8

Depression, anxiety and stress were more in unmarried, but not statistically significant as in Table 5.

Table 5: Marital status with Depression, Anxiety and Stress (Mann Whitney U Test)

Diagnosis	Total	Marital Status				P value
		Married	Median Score	Unmarried	Median Score	
Depression ≥ 10	55	22(40%)	6	33(60%)	6	0.9
Anxiety ≥ 8	72	26(36.1%)	6	46(63.9%)	8	0.1
Stress ≥ 15	40	11(27.5%)	10	29(72.5%)	10	0.3

Depression, anxiety, and stress were more in living alone but not statistically significant (Table 6).

Table 6: Accompanying status with Depression, Anxiety and Stress (Kruskal Wallis Test)

Diagnosis	Total	Accompanying Status						P value
		Alone	Median Score	Family	Median Score	Spouse	Median Score	
Depression ≥ 10	55	44(80%)	6	4(7.2%)	6	7(12.8%)	6	0.7
Anxiety ≥ 8	72	58(80.5%)	8	6(8.3%)	6	8(11.2%)	6	0.8
Stress ≥ 15	40	34(85%)	10	3(7.5%)	8	3(7.5%)	10	0.6

Depression, anxiety and stress were more in FJD whose last duty was more than 2 weeks ago and the relation between Anxiety and last duty was statistically significant (p=0.03), (Table 7).

Table 7: The last duty with Depression, Anxiety and Stress (Kruskal Wallis Test)

Diagnosis	Total	Last duty						P value
		<1 week	Median Score	1-2 weeks	Median Score	>2 weeks	Median Score	
Depression ≥ 10	55	11(20%)	6	17(30.9%)	10	27(49.1%)	5	0.09
Anxiety ≥ 8	72	16(22.2%)	8	24(33.3%)	12	32(44.5%)	6	0.03
Stress ≥ 15	40	9(22.5%)	10	13(32.5%)	12	18(45%)	9	0.1

Depression, anxiety and stress were common in the first-year resident, but not statistically significant (Table 8).

Table 8: The year of residency with Depression, Anxiety and Stress (Kruskal Wallis Test)

Diagnosis	Total	Year of residency						P value
		First year	Median Score	Second year	Median Score	Third year	Median Score	
Depression ≥ 10	55	24(43.6%)	6	18(32.7%)	6	13(23.7%)	8	0.5
Anxiety ≥ 8	72	30(41.6%)	6	26(36.1%)	7	16(22.3%)	8	0.8
Stress ≥ 15	40	15(37.5%)	8	14(35%)	10	11(27.5%)	11	0.5

There was a strong correlation among depression, anxiety and stress (Table 9).

Table 9: Correlation between Depression, Anxiety and Stress

		Depression	Anxiety	Stress
Depression	Pearson Correlation	1	0.751	0.795
	P value		<0.001	<0.001
Anxiety	Pearson Correlation	0.751	1	0.796
	P value	<0.001		<0.001
Stress	Pearson Correlation	0.795	0.796	1
	P value	<0.001	<0.001	

DISCUSSION

This study found depression in 38.1%; anxiety in 50%; and stress in 27.7%. Anxiety was common, which is similar to the findings of Chew et al⁵ and the meta-analysis by Luo et al⁴ among the HCP; and studies by González et al¹⁰ and Huang Y et al¹¹ done among the general population. But, stress was more common in the study by Shechter et al¹² and depression was more common in the study by Jianbo Lai et al¹³.

In this study, the level of anxiety among HCP increased in this pandemic similar to the studies by Ya Mei et al¹⁴ and Preti E et al¹⁵. The prevalence of anxiety in our study was in half of the participants which is similar to the studies by Jianbo Lai et al¹³ (44.6%) and Zhi-HaoTu et al¹⁶ (40%), but more than the findings by Luo et al⁹ (33%) and Shechter et al¹²; by Sofia Pappa et al¹⁷ (22.8%), by Liu et al¹⁸ (12.5%), by Zhang WR et al¹⁹ (13%); and by Chew et al⁸ (8.7%).

We found depression in about one-third of the participants (38.1%) which is similar to the finding by Huang Y et al¹¹ (35.1%), but more than the findings by Zhang WR et al¹⁹ (12.2%), Luo et al⁴ (28%), Sofia Pappa et al¹⁷ (23.2%), Chew et al⁵ (5.3%), and González et al¹⁰ (18.7%). While less than the findings by Zhi-HaoTu et al¹⁶ (46%), Shechter et al¹² (48%) and Jianbo Lai et al¹³ (50.4%).

About one-fourth of the participants had stress (27.7%) in our study which was less than the findings of 71.5% by Jianbo Lai et al¹³, 57% by Shechter et al¹², but more than the findings of 6% by Chew et al⁵.

Among the overall severity grading, 23.6% had a subthreshold level, 9.2% had a mild level, 10.1% had moderate level and 8.6% had a severe level of symptoms which were similar to the study findings by Kang et al²⁰ where 36.9% had subthreshold, 34.4% had mild, 22.4% had moderate and 6.2% had a severe level of disturbances. In both the studies, the severe disturbance was the least and the subthreshold disturbance was the highest.

Globally in this pandemic, the prevalence of stress, anxiety and depression in the general population were 35%, 21.6%, and 20.1% respectively whereas in HCP it was 2.2%-37%, 13%-40%, and 5.3-48% respectively.^{8-13,16-26} In Nepal, Anil Sigdel et al found depression 34%, anxiety 31% and depression-anxiety 23.2% in the general population, but our study shows that the depression and anxiety were more in frontline doctors than the general population; and is similar to the study by Pratik et al²⁸ where anxiety (13.6%) and depression (8%) were prevalent.

Huang Y et al¹¹ found younger age group were associated with

mental health problems, where our study participants are young age group. Zhang C et al²⁷ found being a female, isolation environment, and doctor were related with psychological worries. Sofia Pappa et al¹⁷ and Jianbo Lai et al¹³ found the prevalence of anxiety and depression more in female, but our study showed the presence of anxiety with the last contact with COVID-19 patient of more than 2 weeks group. In this study, as there was male preponderance more were seen in male.

We found that depression, anxiety, and stress are more in unmarried compared to married; and living alone compared to living with a spouse and family. This may be due to the fact that the married person and those living in the family could share their feelings and support one another. Also, it was seen more among the first-year JFRD; as their participation was highest, and has just joined the residency.

We found a strong correlation among depression, anxiety and stress. This finding is similar to the finding of Zhang C et al²⁹ et al who showed that the presence of depressive symptoms and anxiety symptoms were associated with the presence of insomnia.

Overall, the increased level of depression, anxiety and stress among the frontline HCPs than other studies may be because of inadequate healthcare system, poor resources and health policies.

The high prevalence of the depression, anxiety and stress requires personalized mental health care and counseling for the frontline HCPs including junior resident doctors.

LIMITATION

This study was conducted virtually through google forms on junior resident doctors of a single institution. The study was questionnaire-based. Hence the findings may not be generalized.

CONCLUSION

Depression, anxiety, and stress were prevalent in more than a quarter of the frontline junior resident doctors. The most common being anxiety in half of the responders, followed by depression in one-third of the responders, and stress in a quarter of the responders. The moderate severity was common in depression, anxiety and stress.

RECOMMENDATIONS

The high prevalence of depression, anxiety and stress requires individualized mental health counseling and care for the frontline junior resident doctors. The Department of Psychiatry along with the concerned authority should take the initiative for the same.

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