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

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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 (FJRD).

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

RESULT
Among 168 FJRD, 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 FJRD. 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

INTRODUCTION
A novel Corona virus infection was first reported on 31 December 2019 from Wuhan, China. As the number of cases increased worldwide, Nepal recorded its first case on 5th January 2020. 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. 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. 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.
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 18 March 2020 among which five points from 7-11 are for HCP. 

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 29 August 2020 to 28 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. 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); 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.

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

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total (144)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>82</td>
<td>56.9</td>
</tr>
<tr>
<td>Female</td>
<td>62</td>
<td>43.1</td>
</tr>
<tr>
<td>Age in Years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>12 (25 – 37)</td>
<td></td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>29.66 ±1.93</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>87</td>
<td>60.4</td>
</tr>
<tr>
<td>Married</td>
<td>57</td>
<td>39.6</td>
</tr>
<tr>
<td>Living</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>111</td>
<td>71.1</td>
</tr>
<tr>
<td>Family</td>
<td>15</td>
<td>10.4</td>
</tr>
<tr>
<td>Spouse</td>
<td>18</td>
<td>12.5</td>
</tr>
<tr>
<td>Year of Residency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year</td>
<td>62</td>
<td>43.1</td>
</tr>
<tr>
<td>Second Year</td>
<td>52</td>
<td>36.1</td>
</tr>
<tr>
<td>Third Year</td>
<td>30</td>
<td>20.8</td>
</tr>
<tr>
<td>Last duty done</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 week</td>
<td>29</td>
<td>20.1</td>
</tr>
<tr>
<td>1 – 2 weeks</td>
<td>33</td>
<td>22.9</td>
</tr>
<tr>
<td>More than 2 weeks</td>
<td>82</td>
<td>56.9</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number of positive cases</th>
<th>Mean Scores Overall Cases</th>
<th>Median Score overall cases</th>
<th>Mean score Depression/ Anxiety / Stress</th>
<th>DASS21 scale and grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>55 (38.1%)</td>
<td>8.44±7.87</td>
<td>6</td>
<td>16.72</td>
<td>Score 10-13</td>
</tr>
<tr>
<td>Anxiety</td>
<td>72 (50%)</td>
<td>8.64±7.25</td>
<td>7</td>
<td>14.25</td>
<td>Score 8-9</td>
</tr>
<tr>
<td>Stress</td>
<td>40 (27.7%)</td>
<td>10.0±7.93</td>
<td>10</td>
<td>22</td>
<td>Score 15-18</td>
</tr>
</tbody>
</table>

Table 3: Age with Depression, Anxiety and Stress

<table>
<thead>
<tr>
<th>Age</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
<th>TOTAL DASS SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>0.083</td>
<td>0.110</td>
<td>0.079</td>
<td>0.098</td>
</tr>
<tr>
<td>P value</td>
<td>0.325</td>
<td>0.188</td>
<td>0.345</td>
<td>0.245</td>
</tr>
</tbody>
</table>

Depression, anxiety, and stress were more in males, but not statistically significant as in Table 4.
Depression, anxiety and stress were more in unmarried, but not statistically significant as in Table 5.

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

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

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

**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 al and the meta-analysis by Luo et al among the HCP; and studies by González et al and Huang Y et al done among the general population. But, stress was more common in the study by Shechter et al and depression was more common in the study by Jianbo Lai et al.

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

We found depression in about one-third of the participants (38.1%) which is similar to the finding by Huang Y et al (35.1%), but more than the findings by Zhi-HaoTu et al (12.2%), Luo et al (28%), Sofia Pappa et al (23.2%), Chew et al (5.3%), and González et al (18.7%). While less than the findings by Zhi-HaoTu et al (46%), Shechter et al (48%) and Jianbo Lai et al (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 al, 57% by Shechter et al, but more than the findings of 6% by Chew et al.

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 al 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 hold 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. 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 al where anxiety (13.6%) and depression (8%) were prevalent.

Huang Y et al found younger age group were associated with...
The high prevalence 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.


the frontline HCPs including junior resident doctors. Zhang C et al17 found being a female, isolation environment, and doctor were related with psychological worries. Sofia Pappa et al11 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 al19 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.

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.

ACKNOWLEDGMENT

I would like to acknowledge all the participants for their time and cooperation. I would also like to acknowledge Prof Dr. Baikuntha Raj Adhikari, the then HOD, Department of Psychiatry for the inspiration and guidance; and Dr. Rajendra Ghimire, the then President, Junior Resident Doctor Welfare Society for the help during the data collection. I would like to thank all the faculties of the Department of Psychiatry for their continuous support.

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5. Chew NWS, Lee GKH, Tan BYQ, Jing M, Goh Y, Ngiam NJH, Yeo LLL, Komalkumar RN, Meenakshi PV, Shah K, Patel B, Chan BPL, Sunny S, Ahmad A, Ahmed Khan F, Napoleon Shannugam G, Sharma AK, Konalkumar RN, Meenakshi PV, Shah K, Patel B, Chan BPL, Sunny S, Chandra B, Ong JY, Palwal PR, Wong LYH, Sagayanathan R, Chen JT, Ying Ng AT, Teoh HL, Tsiougoulis G, Ho CS, Ho RC, Sharma VK. A multinational, multicentre study on the psychological outcomes, risk factors associated with mental health problems, where our study participants are young age group. Zhang C et al17 found being a female, isolation environment, and doctor were related with psychological worries. Sofia Pappa et al11 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.

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