

# Workplace Stress and Anxiety among Medical Health Workers in Selected Hospitals of Kathmandu during COVID-19 Pandemic: A Cross-sectional Descriptive Study

Radha Kumari Shah,<sup>1\*</sup> Susmita Nepal,<sup>1</sup> Dibya Sharma,<sup>1</sup> Indira Kumari Shah,<sup>1</sup> Barsha Karki,<sup>1</sup> Prakriti Pokhrel<sup>2</sup>

<sup>1</sup>Department of Public Health, Om Health Campus, Kathmandu, Nepal.

<sup>2</sup>Kathmandu Medical College Teaching Hospital, Kathmandu, Nepal.

## ABSTRACT

**Introduction:** Workers in the health-care industry who are exposed to COVID-19 are more likely to suffer mental health issues. The aim of this study was to assess the work place stress & anxiety among medical health worker working in selected hospital of Kathmandu during COVID-19 pandemic.

**Methods:** We conducted a descriptive cross-sectional study among medical health workers working in selected hospitals of Kathmandu during COVID-19 pandemic. A total of 420 medical health workers were selected through convenient sampling from various wards of the selected hospital. Data was collected using a self- administered questionnaire. Perceived Stress scale (PSS-10) and Generalised Anxiety Disorder (GAD - 7) were used to assess stress and anxiety among health care workers. Data analysis was performed in SPSS version 21. Point estimate at 95% Confidence Interval was calculated along with frequency and percentage.

**Results:** Out of 420 respondents, 361 (86.0%) (95% CI: 82.3 to 89.1) experienced moderate levels of stress, while 13 (3%) (95% CI: 1.7 to 5.2) of them experienced high levels of stress. Similarly, out of 420 respondents, 105 (25.0%) (95% CI: 20.9 to 29.4) had moderate anxiety, while 57 (13.60%) (95% CI: 10.4 to 17.2) of them had severe anxiety.

**Conclusions:** The outcomes of the study indicated a significant proportion of anxiety and stress symptoms among health professionals in Nepal during the pandemic's stages. Health worker preferences should be incorporated into programs designed to reduce stress among them during the COVID-19 pandemic.

**Keywords:** *Anxiety; COVID-19; Distress; Healthcare worker; Nepal.*

## INTRODUCTION

The COVID-19 pandemic has had an impact on front-line workers' mental health, provoking anxiety, stress, or insomnia,<sup>1</sup> as they are at risk of direct exposure to the virus.<sup>2</sup> Frontline HCWs are medical personnel who are exposed to and have direct contact with confirmed or suspected coronavirus patients. They face increased workload, and increased risk of infection, causing mental

health problems.<sup>3</sup>

Health professionals require a support system at work to improve their mental well-being, and their activities must be closely monitored, especially at the time of health emergencies.<sup>4</sup> During an emergency, a quick assessment of mental health state and mental health requirements of health professionals would aid management in responding to, reducing psychological distress, and

\*Correspondence: [radhashah200@gmail.com](mailto:radhashah200@gmail.com)

Department of Public Health, Om Health Campus, Kathmandu, Nepal

aligning health workers with patient needs.<sup>5</sup>

In this context, we aimed to assess the workplace stress and anxiety among medical health workers working in selected hospitals of Kathmandu during COVID-19 pandemic.

## METHODS

We conducted a descriptive cross-sectional study among medical health workers in selected hospitals of Kathmandu. We obtained ethical clearance approval from the Institutional Review Board (Ref no. EPYIRC 345/2021) and also got official permission from respective hospitals administration. We acquired a written consent from the participants. The data collection was done from January 2021 to February 2021 at Om Dental SamajHospital, Samaj Dental Hospital and Om Hospital and Research Centre, Kathmandu, Nepal.

Those who were unwilling to participate in the study were not included. Any person suffering from COVID-19 and who were under the medication of COVID-19 were excluded. Anxiety and stress assessment was done in an apparently healthy population.

We conveniently selected three hospitals in Kathmandu. Altogether there were 420 medical health workers who took participation in this study.

The sample size was determined using the formula,

$$(n) = Z^2 pq/d^2$$

where,

n=required sample size

d = margin of error (5%)

p= 55% = 0.55 (Prevalence from a study conducted in Nepal)<sup>6</sup>

q= 1-p=0.45

z= 1.96 at 95% level of confidence.

$$n = (1.96)^2 * 0.55 * 0.45 / (0.05)^2 = 380$$

Assuming 10% non-respondent rate, the total sample size for the study was 418. However, we recruited 420 medical health workers from three hospitals in Kathmandu. Participants were selected conveniently.

We used self-administration techniques in the selected hospitals for data collection. A structured questionnaire was prepared as the tool for collecting the data. The tool was made through the extraction from the existing tools and referenced literature from earlier studies.

We used Perceived Stress Scale (PSS) and GAD-7 scale to assess stress and anxiety among health workers. The Perceived Stress Scale (PSS)-10, which consists of ten items concerning specific experiences encountered in the previous month, was used to assess perceived

stress.<sup>7</sup>

In clinical practice, the 7-item Generalised Anxiety Disorder (GAD-7) scale was a valid and effective instrument for screening anxiety and determining its severity. It consisted of seven multiple-choice questions that use a 4-point Likert scale to quantify the frequency of anxiety symptoms during the previous two weeks.<sup>8</sup>

The questionnaire was translated to Nepali language. For reliability, data was pretested on 10% of the sample size which was the representative study population other than the sample. Other additional editing to the questionnaire was done according to the comments and response from the pre-test.

Data was entered and analysed in SPSS version 20.0. Descriptive analysis was done and presented using frequency and percentage.

## RESULTS

Out of 420 respondents, 361 (86.0%) (95% CI: 82.3 to 89.1) experienced moderate levels of stress, while 13 (3%) (95% CI: 1.7 to 5.2) of them experienced high levels of stress. (Figure 1). Similarly, out of 420 respondents, 105 (25.0%) (95% CI: 20.9 to 29.4) had moderate anxiety, while 57 (13.60%) (95% CI: 10.4 to 17.2) of them had severe anxiety. (Figure 2).

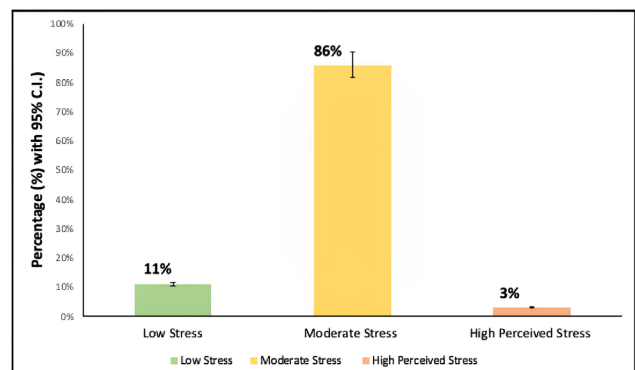


Figure 1. Prevalence of stress among medical health workers (n=420)

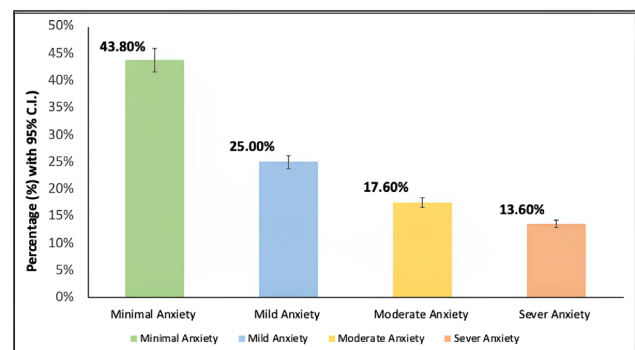


Figure 2. Prevalence of anxiety among medical health workers (n=420)

The 420 health workers under the study belonged to

diverse age groups, they majorly belonged to the young age of 20-30 (65.5), followed by middle aged such as 30-40 (23.1), 40-50 (7.4), 50-60 (3.8) and elderly of over 60 (0.2). Similarly, the respondents were mostly females (74.8). Regarding ethnicity, most of them were brahmin/chhetri (47.9), followed by Janajati (33.3), Madhesi (10.5), Dalit (5.2), Muslim (2.4), and the rest belonged to ethnicity other than stated. However, half of the respondents were married (50.2), the rest were either unmarried (44.8), divorced (2.4) or widowed (2.6). Similarly, most of the respondents belonged to the nuclear household (58.8); few belonged to the joint (28.6) and the least belonged to the extended household (2.6). Nonetheless, the health workers studied more than an undergraduate level (63.3), the rest were undergraduate (36.7). There were 12.9% smokers and 21.9% consumed alcohol.

**Table 1. Socio demographic characteristics (n=420)**

Characteristics	n (%)
<b>Age range</b>	
20-30	275 (65.5)
30-40	97 (23.1)
40-50	31 (7.4)
50-60	16 (3.8)
60-70	1 (0.2)
<b>Sex</b>	
Male	106 (25.2)
Female	314 (74.8)
<b>Ethnicity</b>	
Dalit	22 (5.2)
Janajati	140 (33.3)
Madhesi	44 (10.5)
Muslim	10 (2.4)
Brahmin/Chettrai	201 (47.9)
Other	3 (0.7)
<b>Marital Status</b>	
Married	211 (50.2)
Unmarried	188 (44.8)
Divorced	10 (2.4)
Widowed	11 (2.6)
<b>Types of Family</b>	
Nuclear	247 (58.8)
Joint	162 (28.6)
Extended	11 (2.6)
<b>Income per month</b>	
Less than 10,000	18 (4.3)
10,000-20,000	134 (31.9)
More than 20,000	268 (63.9)

Characteristics	n (%)
<b>Educational Level</b>	
<Undergraduate	154 (36.7)
≥Undergraduate/Postgraduate	266 (63.3)
<b>Alcohol consumption</b>	
Yes	92 (21.9)
No	328 (78.1)
<b>Smoking Status</b>	
Yes	54 (12.9)
No	366 (87.1)

Among the health workers under study, mostly were serving in general ward (35.5%) and OPD Department (35.7%), the rest were serving in ICU (8.3%), critical unit (4.0%), emergency unit (4.0%), surgical ward (3.6%) and isolated ward (2.9%). However, the majority were Nurse (47.6%), followed by consultant (20.5%), Health Assistant/ Dental Assistant (19.8%), Lab Technician (4.3%), Medical Officer (3.8%), Supporting Staff (3.3%) and the rest were other than stated (0.7%). Similarly, 59.9% worked in a tertiary hospital and 40.5% worked in a non-tertiary hospital.

**Table 2. Respondents' Workplace Status (n=420)**

Variables	n (%)
<b>Place of services</b>	
Critical Care Unit	17 (4.0)
General Ward	149 (35.5)
Emergency Unit	17 (4.0)
ICU (Intensive Care Unit)	35 (8.3)
Surgical Ward	15 (3.6)
OPD (Out-Patient Department)	150 (35.7)
Isolated Ward	12 (2.9)
<b>Job Profile</b>	
Medical Officer	16 (3.8)
Consultant	86 (20.5)
Health Assistant/Dental Assistance	83 (19.8)
Nurse	200 (47.6)
Lab-technician	18 (4.3)
Supporting Staff	14 (3.3)
Other	3 (0.7)
<b>Types of hospital</b>	
Non-tertiary	170 (40.5)
Tertiary	250 (59.5)

**DISCUSSION**

Despite the fact that the repercussions of a disease

outbreak are costly, mental health impact during pandemic was at times overlooked during management.<sup>9</sup> Early data suggested that health care professionals who were actively engaged in the diagnosis, treatment, and care of COVID-19 patients were at risk of acquiring mental health problems.<sup>5</sup> COVID-19-related psychological stress caused an unprecedented level of stress in healthcare professionals across professional and personal domains.<sup>10</sup>

The main purpose of this research was to assess the workplace stress and anxiety among medical health workers working in the selected hospitals of Kathmandu during COVID-19 pandemic. The discussion of the findings according to the literature review was done on the basis of objectives of the study.

Similar study conducted in the tertiary care hospital of Chitwan Medical College, Nepal revealed that out of 181 nurses, 54.7% reported moderate stress and 37.6% reported high level of stress, 10.5% of nurses reported mild to moderate level of anxiety and 1.1% had experienced severe anxiety.<sup>6</sup> This study supported the current study where most of the health workers were moderately stressed and had mid-to moderate anxiety.

However, another study conducted in Nepal, showed that among 150 HCWs, 38 % of the HCWs on COVID-19 duty in Nepal were suffering anxiety and/or depression. This study findings varied compared to this study's finding, which may be due to difference in sample size.<sup>11</sup>

A study conducted in Turkey among 140 health care workers reported having anxiety in 57%. The present finding was identical to our study's finding.<sup>12</sup>

The study conducted in the United States of America, among 657 healthcare workers (HCW) reported that 57% of the respondents had experienced acute stress symptoms and 33% of them had experienced anxiety symptoms. While the present study findings revealed that 89 % of them had stress symptoms during COVID-19 pandemic and 57% had anxiety symptoms. Hence, the finding is in contrast from present study, it may be due to variation in countries.<sup>13</sup>

A study conducted in Istanbul, Turkey among 442 physicians during the COVID-19 outbreak showed that 286 (64.7%) had symptoms of depression, 224 (51.6%) had symptoms of anxiety, and 182 (41.2%) had symptoms of stress. Anxiety finding was slightly different with the present study finding while present study finding of stress did not show any relation with this study.<sup>14</sup> Similarly a study conducted in China showed that the prevalence of anxiety symptoms during the COVID-19 pandemic in China among healthcare workers was 46.04% which was almost found to be quite similar with present study.<sup>15</sup>

A study conducted in Spain, among 1,422 health workers 56.6% of health workers were present with the symptoms of post-traumatic stress disorder, 58.6% of

health workers were present with anxiety disorder. The findings of anxiety symptoms were comparable with present study while stress symptoms showed totally different findings with the present study findings.<sup>16</sup>

## CONCLUSIONS

During the COVID-19 pandemic, a significant number of medical health personnel in various wards were found to be suffering from stress and anxiety, which was a cause for concern. As a result, the responsible authority must perform psychological interventions and support, such as stress alleviating or stress management programs, as well as motivating programs, in order to improve the working environment among medical health personnel and ensure consistency in patient care.

## ACKNOWLEDGEMENT

Not applicable

## CONFLICT OF INTEREST

None

## FUNDING

This study was funded with the authors' own contributions.

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