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# Prevalence of anxiety, stress, and depression among health care and nonhealth-care professionals in India

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## Abstract:

**BACKGROUND:** The psychological impact of anxiety, stress, and depression among health care and nonhealth-care professionals in India contribute significantly to the global burden of mental illness in the world. Impaired mental health and stress influence the efficiency and productivity of work. Long-term professional stress among individuals can lead to chronic illness, increased blood pressure, and many systemic disorders. The aim of this study was to assess the prevalence of anxiety, stress, and depression among the health care and nonhealth-care professionals in India.

**MATERIALS AND METHODS:** This prospective survey-based study included 200 study participants (80 nonhealth care and 120 health-care workers) who were asked to submit their feedback and opinion on a questionnaire survey. Depression, stress, and anxiety were scored as per patient health questionnaire-4 and UCLA scale. The reliability of questionnaires was assessed using the Cronbach's alpha ( $r = 0.90$ ). The statistical analysis was done using the Chi-square test.

**RESULTS:** Higher prevalence ratio of anxiety, depression, and stress was observed among nonhealth care compared to health-care professionals.

**CONCLUSION:** Psychological disturbances were found to be higher among nonmedical when compared to health-care workers or professionals. Thus, psychological counseling is required to manage the stress levels in both health care and nonhealth-care professionals.

## Keywords:

Anxiety, depression, health care, nonhealth care, stress

## Introduction

Depression, anxiety, and stress constitute a significant proportion of psychological morbidity among nonhealth-care professionals.<sup>[1]</sup> According to the World Health Organization, the highest overall prevalence of depression among Indians is around 36% and a lifetime prevalence of 5.25% in adults as per the National Mental Health Survey.<sup>[2]</sup> Mental stress and anxiety together may lead to the creation of an unpleasant feeling which has been associated with fear, worry, and feeling of uneasiness. It is a generalized mental

condition occurring without any trigger or stimulus. Various symptoms of depression include anxiousness, sadness and empty feelings, hopelessness, guilt, and sense of helplessness.<sup>[3]</sup>

Healthcare and nonhealth-care professionals are exposed to several professional stressors that can adversely affect both their mental and physical health thus decreasing their efficiency at work, reduces the productivity causing significant morbidity. Depression and anxiety disorders markedly compromise the individual quality of life and psychosocial functioning causing significant impairment even at subthreshold levels. For a successful intervention, the

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causes and management of these disorders among the professionals must be documented.<sup>[1]</sup>

It affects not just the individuals but also their immediate family members with the high risk of developing somatic and psychological problems, especially in caregivers, including spouses and children, thus affecting the society at large. The various inherent factors, including exhaustive working hours, excessive work load, peer pressure, dealing with death and dying, inter personal conflict with other staff, patient's expectation, and threat of malpractice litigation can be the reason of stress, anxiety, and depression among these professionals.<sup>[4]</sup>

Moreover, health-care workers dealing with life-threatening injuries and illnesses complicated by overwork with limited paramedical staff, tight schedules, and malfunctioning equipment working on dependent and demanding patients significantly contribute to stress among them.<sup>[5]</sup>

Because health-care professionals are well educated in the health field, one would naturally assume that their health status and health behaviors would be better than the health behaviors of the nonhealth-care workers. The overall challenges that health-care professionals face in their day to day life practicing healthy behaviors are exacerbated by the fact that they have many competing demands for their time, energy, and attention.<sup>[6]</sup> While the nonhealthcare professionals have to focus on the demands of their supervisors, the needs of family members, their own needs, and the concerns of their own family members.<sup>[7]</sup> The increasing demand faced by this group of professionals not only affects their personal and professional lives but increases their risk of chronic stress, work-family conflict, and unhealthy behaviors.<sup>[8]</sup>

There are several studies regarding the assessment levels of anxiety, stress and depression among healthcare workers but very rare on nonhealth-care workers of the community in India.<sup>[9,10]</sup> Hence this study is being taken up to evaluate the prevalence of anxiety, stress and depression among healthcare and nonhealth-care professionals.

## Materials and Methods

### Study design and participants

This was a prospective on-line survey study based on the two sets of questionnaires. The patient health questionnaire-4 was used for assessing depression and anxiety scores while the UCLA (University of California, Los Angeles) scale for screening loneliness was used to evaluate the psychosomatic parameter. A total of 200 subjects 120, healthcare workers of Nalanda Medical College, Patna (doctors and paramedical staff) and

80, nonhealthcare workers residing in the vicinity of the hospital were included in the survey. All the participants were screened for the signs and symptoms of anxiety, stress, and depression after maintaining 2 months of lockdown period.

### Measures

The questionnaires were mailed to numerous contacts through electronic mail system using open-ended questions as described below. Patient health questionnaire-4 for screening subjects for depression and anxiety included the following points:

During the period of last 2 weeks, have you been troubled by any of the following problems?

(a) Continuous feeling about nervousness, anxiousness, or always being on the edge? (b) Inability to discontinue constant worrying? (c) Showing very less interest in performing routine tasks? (d) Continuous feeling of hopelessness and depression?

On the basis of subject's response a score of 0 (represented absence of anxiousness or depression), 1 (represented feeling anxious or nervous for several days), 2 (represented feeling anxious for more than half the time), 3 (represented anxiousness feeling almost every day).

After adding the scores, various categories of psychological anxiety and distress are as follows-score: 0-2-no anxiety; scores ranging from 3 to 5-mild anxiety; scores ranging from 6 to 8-moderate anxiety, and scores 9-12-severe anxiety.

The questionnaire as per the UCLA scale of loneliness score included following points:

(a) How frequently do you feel that companionship is required? (b) How frequently do you feel segregated or isolated? (C) How frequently does the feeling of isolation occurs?

The available options for answering this scale were: 1 (never), 2 (sometimes) and 3 (quite often). On addition of obtained scores, total score can be elucidated as under: scores 3-5 (no feeling of loneliness), scores 6-9 (feeling of loneliness). The internal reliability of questionnaires was assessed using Cronbach's alpha ( $r = 0.90$ ). Significant differences ( $P < 0.001$ ) between the scores of the two studied groups indicated that the questionnaire had satisfactory construct validity. The study was conducted in compliance with the protocol; ethical approval was obtained from the ethical committee of the Nalanda Medical College, Patna, Bihar (Ethical Approval Number - NM/ETH/2020/066). The subjects participating in the present study provided their

informed written consent before taking the survey by signing the consent form.

### Statistical analysis

All the data obtained were compiled in Microsoft Excel 2007 Datasheet and Chi-square test was applied as statistical tool. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software version 16 (SPSS Inc., Chicago, IL, USA).

## Results

On analyzing the data, anxiety, stress, and depression were found to be 10.1%, 20%, and 9% in nonhealthcare and 15%, 13%, and 2.4% among health-care staff, respectively. The adjusted prevalence ratio was found to be odds ratio (OR), 1.12; 0.12–2.00 95% confidence interval (CI); OR, 1.85, 1.2–2.5 95% CI and OR, 1.0; 0.4–2.09 95% CI [Table 1].

## Discussion

In the present study, the prevalence of anxiety was found to be higher among health-care workers, and this finding was found to be in accordance with the previous study conducted by Yahaya *et al.* that evaluated the prevalence of depression, anxiety, and stress among medical officers working at the emergency department in Malaysian hospitals and concluded that the anxiety levels were higher, whereas the levels of depression and stress were considerably low.<sup>[11]</sup> Similar study conducted by Erdur *et al.* among doctors working in the emergency units in Denizli, Turkey found higher levels of anxiety as compared to depression or stress.<sup>[9]</sup>

Sagar *et al.* evaluated the professional stress levels among health-care workers by using professional life stress scale and concluded that more than half of them were moderately stressed and very few were severely stressed. The main occupational stressors included inability to finish work in available time, lack of working knowledge, loss of interest due to nonappreciation for good work, and rude attitude of higher authorities.<sup>[10]</sup>

Male and female health-care workers showed different but non-significant stress and depression scores in this study. The prevalence of anxiety among female health-care workers was found to be significantly

higher than the male health-care workers this finding was consistent with previous study conducted by Lloyd and Gartrell in which female medical students reported higher anxiety than their male colleagues.<sup>[12]</sup> Hojat *et al.* reported similar findings in which baseline anxiety scores were similar among men and women but anxiety levels were higher in females than the males, especially through the course of the 1<sup>st</sup> year.<sup>[13]</sup> Dyrbye *et al.* conducted a systematic review and found a high prevalence of depression and anxiety among medical students. Moreover, the findings suggested higher psychological distress among female students.<sup>[14]</sup>

This finding was in contrast to the study conducted by Yahaya *et al.* that demonstrated significantly greater anxiety symptoms in male medical officers as compared to female medical officers; however, depression and stress symptoms between male and female medical officers were not significantly different.<sup>[11]</sup>

The prevalence of increased anxiety, mild to moderate levels of stress and depression among the health-care workers in the present survey indicated a significant impact on the mental health of healthcare workers in the country and suggest an urgent need to address the same.

In the present survey, the prevalence of stress was found to be higher among nonhealthcare workers, and the finding was found to be in contrast with the study conducted by Garg and Kumar that evaluated the prevalence of depression, anxiety, and stress in Class-IV workers and concluded that the prevalence of stress was lowest among these nonhealthcare workers.<sup>[1]</sup>

Rao and Ramesh *et al.* performed a pilot study to measure the levels of depression, anxiety, and stress in an industry workers and found a prevalence rate of around 18%–36% for anxiety and stress amongst the workers at the factory. No workers had a symptomatic depression score.<sup>[15]</sup>

KNieuwenhuijsen *et al.* evaluated the psychometric factors and examined the cases with anxiety disorder and depression in a population of working employees. High probabilities of anxiety and depression disorders were found among the working population.<sup>[16]</sup>

The reason for increased stress among nonhealthcare workers in the present study can be explained on the

**Table 1: Demonstrating the prevalence of anxiety, stress, and depression in healthcare-related and nonhealth-care personnel's**

Outcome	Nonhealth-care personnel (n=80), n (%)	Health-care personnel (n=120), n (%)	Crude prevalence ratio (95% CI)	Adjusted prevalence ratio (95% CI)
Anxiety	16 (10.1)	18 (15)	1.26 (0.8-2.1)	1.12 (0.12-2.00)
Stress	34 (20)	16 (13)	1.85 (1.23-2.8)	1.85 (1.2-2.5)
Depression	12 (9)	8 (2.4)	1.05 (0.52-2.14)	1.0 (0.4-2.09)

CI=Confidence interval

basis of number of factors, including increased financial burden, longer daily travel distances from home to workplace, and greater number of working hours per day.

Kang *et al.* in a cross-sectional study on health-care staff comprising of medical doctors and nurses demonstrated that greater number of them suffered from sub-threshold levels of mental health disorders while few of them suffered from mild, moderate, and severe disturbances of mental status.<sup>[17]</sup> Lai *et al.* in their study on patients using a questionnaire survey reported a higher prevalence of depression followed by anxiety, insomnia, and distress.<sup>[18]</sup>

In the present survey, 60% of the participants were health-care workers and 40% were non health-care workers, while comparing the prevalence of psychiatric morbidity between these two groups, it was observed that the prevalence ratio of anxiety, stress, and depression to be significantly higher among the nonhealth-care workers. These findings were comparable with the study conducted by Kellner *et al.* that compared the severity of distress in medical students to that of nonmedical law students using the Hopkins Symptom Checklist and the symptom questionnaire. It was observed that the Law students reported significantly more depression and anger-hostility and less contentment and feelings of friendliness.<sup>[19]</sup> El-Gilany *et al.* conducted a similar study to determine the levels of perceived stress between the medical and law students in Mansoura University, Egypt, and reported the high level of perceived stress in medical and law students.<sup>[20]</sup> Sathiya *et al.* evaluated the prevalence of perceived stress and its sources among doctors and nurses and reported that doctors had a higher perceived stress score compared to nurses but was not statistically significant.<sup>[5]</sup>

Hawryluck reported the high prevalence of posttraumatic stress disorder (PTSD) and depression. Furthermore, a significant correlation was observed between prevalent-based analysis symptoms of PTSD and duration of quarantine or self-isolation.<sup>[21]</sup> Limcaoco *et al.* in their study observed that there was no statistically significant difference in psychological distress among general population and health-care professionals or those under quarantine or without quarantine.<sup>[22]</sup>

Tan *et al.* performed a study on psychological anxiety, depression, distress, and stress in Singapore. The study case participants were both medical and nonmedical hospital staff using a validated "Depression, Anxiety, and Stress Scales -21. This study found that anxiety prevalence was the highest among the non-medical staff when compared to trained medical staff.<sup>[23]</sup>

The limitations of the present survey are to be viewed with following key points. First, it was an online survey and only those individuals who had an access to smartphones and computers were able to participate thus the study did not include participants from different strata of the country. Second, the ratio of healthcare to nonhealth-care workers was higher and most of them were doctors thus the subject count was unequally distributed. Third, the study failed to evaluate a causal relationship between mental health and sociodemographic and clinical variables.

## Conclusion

The present survey suggested that both healthcare and nonhealthcare workers are under the increased influence of psychiatric morbidity. The findings of this study suggested that there is a need of expanding the mental health services to both healthcare and nonhealthcare professionals. The prevalence of anxiety, stress, and depression among healthcare and nonhealth-care professionals has astounding implications on subjective and collective physical and emotional well-being. In addition to providing medical care, already overworked health care providers have an additional responsibility of continuous monitoring of psychosocial adaptive behavior. Stressors and sequelae of psychiatric disorders require an urgent redressal by means of allaying of anxiety and strengthening of psychosocial networking or support system.

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## Conflicts of interest

There are no conflicts of interest.

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