

# Assessment of Stress Level of Health Care Workers Working in Hospitals of Odisha During Covid-19 Outbreak

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## Abstract

Corona viruses are emerging respiratory viruses that are known to cause illness ranging from the common cold to severe acute respiratory syndrome. The Covid-19 pandemic is likely to put healthcare professionals across the world in an unprecedented situation, which has led stress levels among them. Keeping this in view, a descriptive research study with survey approach was undertaken, to assess the stress level of healthcare workers employed in different hospitals of Odisha by convenient sampling technique through electronic media. The data was collected from 376 samples by Kessler Psychological Distress Scale. The results depict that the overall mean stress level of HCWs is  $23 \pm 3.13$  which represents mild level. Chi square was measured to find out the association between the stress score of the HCWs with their selected associated factors. A significant relationship was observed between the stress level of HCWs with 'Being quarantined for this outbreak'. So it can be interpreted that isolation is one of the major cause of stress among health care workers.

The pandemic Covid-19 has shaken the entire world and created global panic. Within seven months of its onset, its global incidence was 49,634,173 including 1,248,953 deaths. In India the magnitude was 8,462,080 and 1,25,605 deaths as on 7 October 2020. Not only sufferings & deaths, due to lockdown, shutdown and social isolation there is a significant impact on the mental health of general people and also health care workers (Cai et al, 2020). The Covid-19 pandemic is likely to put healthcare professionals across the world in an unprecedented situation where they have to work under extreme pressures (Kang et al, 2020; NIMHANS, 2020). Nurses work at the front lines in all healthcare settings, providing the hands-on care for patients and giving information to the doctors and making decisions for their patients' care. All health care providers are the front-line worriers of Covid-19 outbreak. Further, they are exposed to hazards that not only put them at risk of infection but also psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence (Talaee et al, 2020). Study depicts that the HCWs had more risk of psychological trauma due to the above factors. The HCWs especially nurses are under-protected, overworked and more vulnerable to infection which are the cause of stress. Chronic stress increases the risk of developing depression and anxiety and reduces the level of productivity (Talaee et al, 2020).

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## Objectives

The study had two objectives.

1. To assess the stress level of healthcare workers (HCWs) working in different hospitals of Odisha.
2. To find out the association of the stress level of HCWs with their selected demographic variables.

## Review of Literature

Psychiatry research studies during pandemics have the potential to provide vital information on symptom fluctuations, psychological impact, neurobiological effects, treatment challenges including pharmacological interactions and the course of disorders.

A study by Cai et al (2020) on psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 found that HCWs experienced emotional stress during the COVID-19 outbreak. It has been proved that self-coping styles and psychological growth played an important role in maintaining mental health of nurses.

A systematic review including 44 studies by Mohamad-Hani Temsa et al on psychological impact of Covid-19 pandemic on health care workers in a MERS-CoV endemic country observed that between 11 and 73.4 percent of HCWs, mainly including physicians, nurses, and auxiliary staff,

showed post-traumatic stress symptoms during outbreaks, with symptoms lasting after 1–3 years in 10–40 percent. Depressive symptoms are reported in 27.5–50.7 percent, insomnia symptoms in 34–36.1 percent, and severe anxiety symptoms in 45%. General psychiatric symptoms during outbreaks have a range comprised between 17.3 and 75.3 percent; high levels of stress related to working were reported in 18.1 to 80.1 percent cases.

Kang et al (2020) reported the mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. The authors showed that Covid-19 causes mental health problems such as stress, anxiety, depressive symptoms, insomnia, denial, anger, and fear. These mental health problems not only affect the medical workers' attention, understanding, and decision-making ability, which might hinder the fight against 2019-nCoV, but could also have a lasting effect on their overall well-being.

### Methodology

A descriptive research design with survey approach was selected to conduct a study for assessing the stress level of HCWs working in different hospitals Odisha; 376 health care workers (HCWs) who are the direct care providers were selected for this study by convenient sampling technique through electronic media by goggle spread sheet. The data was collected from 21 April 2020 to 28 May 2020. Prior to data collection the written consent from the health care providers was obtained through e-mail. The tool used two parts, part A and part B. Part A consisted of demographic variables and part B had standardised scale called K-10 scale. The Kessler Psychological Distress Scale (K10) is a standardised scale to measure psychological stress of human beings. It involves 10 questions about emotional states each with a five-level response scale. Each item is scored from one 'none of the time' to five 'all of the time'. Scores of the 10 items are then summed, yielding a minimum score of 10 and a maximum score of 50. Low scores indicate

low levels of psychological distress and high scores indicate high levels of psychological distress.

### Results

The findings shows that highest percentage (64.36%) of HCWs were in the age group of 21 to 30 years, highest percentage (68.62%) of HCWs were female, highest (68.08%) were nurse, highest percentage (46.27%) were working in General ward. Highest percentage (60.11%) of people were having less than 5 years' experience. Highest percentage (47.87%) were having UG level of professional education. Majority of them (87.76%) did not come in contact with any Covid-19 cases. Most of them (87.23%) were not quarantined. Most of

Table 1: Demographic variables of Health care workers

| Sl. No. | Demographic variable              | Category             | Frequency |                         | Percentage |
|---------|-----------------------------------|----------------------|-----------|-------------------------|------------|
| 1       | Age                               | 21-30                | 242       |                         | 64.36      |
|         |                                   | 31-40                | 84        |                         | 22.34      |
|         |                                   | 41-50                | 34        |                         | 9          |
|         |                                   | Above 50             | 16        |                         | 4.2        |
| 2       | Gender                            | Male                 | 118       |                         | 31.38      |
|         |                                   | Female               | 258       |                         | 68.62      |
| 3       | Occupation                        | Nurse                | 256       |                         | 68.08      |
|         |                                   | Doctor               | 82        |                         | 21.8       |
|         |                                   | Lab Tech             | 26        |                         | 6.9        |
|         |                                   | Pharmacist           | 14        |                         | 3.93       |
| 4       | Place of duty                     | General ward         | 174       |                         | 46.27      |
|         |                                   | ICU other than Covid | 104       |                         | 27.65      |
|         |                                   | Covid Ward & ICU     | 68        |                         | 18.18      |
|         |                                   | Micro lab            | 8         |                         | 2.13       |
|         |                                   | Quarantine centre    | 8         |                         | 2.13       |
|         |                                   | OPD& emergency       | 14        |                         | 3.72       |
| 5       | Year of experience                | <5 years             | 226       |                         | 60.11      |
|         |                                   | 5 -10 years          | 82        |                         | 21.81      |
|         |                                   | >10 years            | 68        |                         | 18.08      |
| 6       | Educational qualifications        | UG                   | 180       |                         | 47.87      |
|         |                                   | PG                   | 102       |                         | 27.13      |
|         |                                   | Diploma              | 94        |                         | 25         |
| 7       | Come in contact with any Covid-19 | Yes                  | 46        |                         | 12.23      |
|         |                                   | No                   | 330       |                         | 87.76      |
| 8       | Being quarantined                 | Yes                  | 48        |                         | 12.77      |
|         |                                   | No                   | 328       |                         | 87.23      |
| 9       | Co-morbid condition               | Yes                  | 50        | Respiratory illness -14 | 13.29      |
|         |                                   |                      |           | DM & HTN-24             |            |
|         |                                   |                      |           | Thyroid disorder-10     |            |
|         |                                   |                      |           | Sickle cell anaemia-2   |            |
|         |                                   | No                   | 326       |                         | 86.71      |

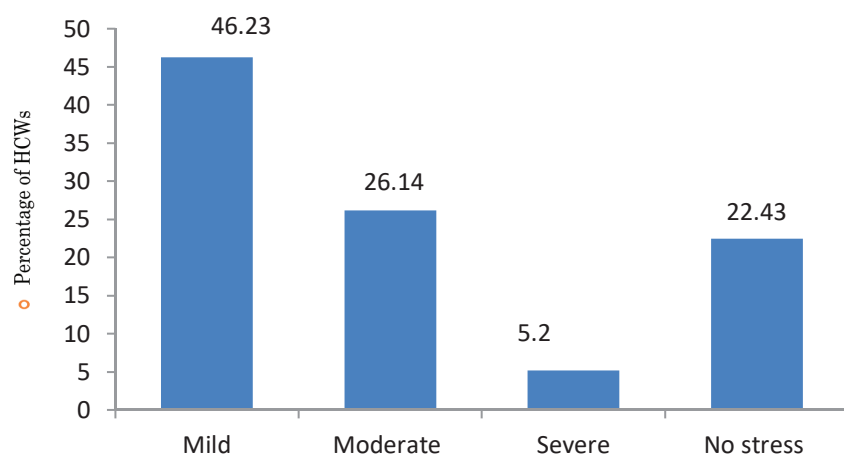


Fig 1: Stress level of healthcare workers.

them (86.71%) did not have any co-morbid condition (Table 1).

Percentage-wise distribution of HCWs according to their level of stress revealed that highest percentage (46.23) of HCWs had mild level of psychological stress, whereas only 5.2 percent of the HCWs had severe level of stress however; 22.43 percent of them had no stress, (Fig 1). However, the overall mean stress level of HCWs was  $23 \pm 3.13$  which depicts the HCWs having mild stress level during this pandemic.

Chi square was done to find out the association between the stress score of the HCWs with their selected associated factors such as age, gender, occupation, professional educational status, place of duty, years of experience, educational qualifications, having contact with any Covid-19 cases, being quarantined for this outbreak, or presence of any co-morbid condition. It was observed that there will be a significant relationship between the stress

Table 2: Chi - Square value for stress level of HCWs

| Demographic variables                   | Chi-Square value | Level of significance |
|-----------------------------------------|------------------|-----------------------|
| Age                                     | 0.91             | Not significant       |
| Gender,                                 | 1.21             | Not significant       |
| Occupation                              | 0.85             | Not significant       |
| professional education                  | 1.12             | Not significant       |
| Place of Duty,                          | 2.96             | Not significant       |
| Years of experience                     | 0.76             | Not significant       |
| Having contact with any COVID-19 cases, | 3.23             | Not significant       |
| Being quarantined for this outbreak     | 5.24             | Significant           |
| Presence of any co-morbid condition     | 0.75             | Not significant       |

p value < 0.05, df=1(as 2×2 table followed), Table value=3.84

level of HCWs with 'Being quarantined for this outbreak other than this there was no significant relationship between the stress level of HCWs with other selected demographic variables (Table 2). This depicts that staying in isolation is a major factor of stress among health-care providers in Odisha during data collection period.

## Discussion

The present study depicts that highest percentage (46.23%) of HCWs had mild level of psychological stress which is supported the study findings of Kang et al. (2020) who conducted a study on stress level of 994 medical and nursing staff in Wuhan, and found that 34.4 percent had mild disturbances. This study finding is also supported by the study finding of Cai et al (2020) who conducted a study among HCWs in Hubei and found that medical staff experienced emotional stress during the COVID-19 outbreak. Further it has observed that there is significant relationship of stress level of health care workers with 'being quarantined' which depicts isolation can cause stress.

## Nursing Implications

*Nursing research:* A study can be conducted by developing a counselling guideline to observe its effectiveness which may help reduce stress of health care workers.

*Nursing practice:* By using the same tool the nurse can assess the stress level of general public in a community or patients also. Based on the study, necessary steps may be taken to reduce the stress level of health care workers.

*Nursing education:* The nurse educator can use this stress scale to assess the stress of students and develop coping strategy for them.

*Nursing administration:* By assessing stress level of health care workers, necessary steps can be taken at administrative level to prevent stress level and stress-related complication of health care workers.

## Recommendation

- Similar studies need to be conducted in larger sample size.
- Comparative studies can be conducted between the stress level of healthcare workers with general population.
- A study can be undertaken to assess the stress level of nurses working for Covid patients.
- A study can be conducted on stress & coping strategy of healthcare workers.

## Conclusion

The present study revealed that there is a significant relationship between the stress level of HCWs with 'Being quarantined'. So, it can be interpreted that isolation is one of the major causes of stress among health care workers. Further the period of conducting study was the months of April & May 2020 when there was less outbreak of Covid-19 cases & less hospitalization in Odisha & during data collection period less percentage of HCWs having contact with Covid-19 cases which might be a cause of less stress level of health care workers.

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## Strengthening the TNAI Fold

### Appeal for Enrolling Memberships

In our age, it is numbers that matter.

We at TNAI strongly feel that the number of non-TNAI member nurses is many times the TNAI members. This is quite disheartening, and a challenge considering the status, prestige of organisation TNAI is, and also the numerous advantages of acquiring TNAI Membership.

Membership is the backbone of an organisation, especially the one like the TNAI. Larger the members, stronger we become, better we can bargain for the justice and welfare of nurses, and secure what nurses rightfully deserve at various levels: local, State, national, regional and international.

We urge you to kindly help strengthen TNAI, an organisation that is yours, by requesting/ convincing/ persuading/ cajoling the non-member nurses to acquire TNAI membership. Also think of any other modality to this end, and write or mail to us.

You can help TNAI become a stronger and more effective body by contributing to TNAI membership enrolments.

As you are aware, TNAI Membership entitles one to exclusive online resources, networking opportunities, scope for professional development, educational advancement and skill upgradation, discounts on TNAI publications, proposed health insurance.