Frontline Fatigue: The psychological impact of COVID-19 on Uttar Pradesh’s healthcare workers in India

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ABSTRACT

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| The COVID-19 pandemic significantly altered healthcare systems and raised the possibility of psychological suffering among medical personnel. Healthcare workers are one of the most exposed groups in society. It causes worry, hypertension, stress, panic, uncertainty, apprehension, phobia, sorrow, insomnia and other symptoms, some individuals withdraw emotionally and socially out of fear. The current study was carried out in 2021 in Ayodhya, Uttar Pradesh. Ayodhya district was selected for the research due to its exceptionally high degree of COVID-19 severity out of 75 districts. A pre-structured questionnaire was used to gather primary data. The data was scored using the Likert scale. IBM SPSS Statistics-19 and Microsoft Excel were used for the analysis of data. The majority of healthcare workers had moderate levels of psychological stress, mental symptoms and knowledge regarding COVID-19. According to the findings, psychological stress declines with age and income because people are more inclined to take preventative actions. Furthermore, the psychological effects of COVID-19 were significantly correlated negatively with socioeconomic characteristics (e.g., married status, education, and gender). The respondents recommended that maintaining a healthy lifestyle and reducing close contact are effective for mitigating the spread of COVID-19. The significance of mental health issues in the healthcare industry was brought to light by this study. Further research on the long-term effects of the COVID-19 pandemic that enhance mental health is required. |

*Keywords: COVID-19, psychological impact, health care workers, mental health, stress*

1. INTRODUCTION

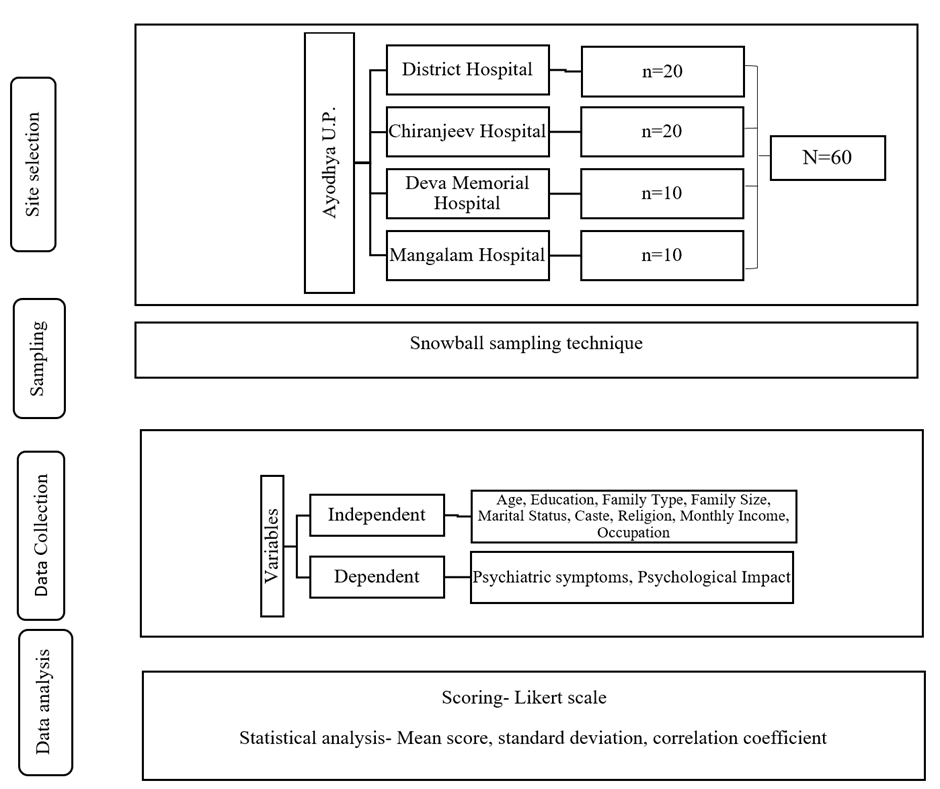
The World Health Organization (WHO) has designated the COVID-19 pandemic as a global public health emergency. The first COVID-19 outbreak was identified in Wuhan, Hubei Province, in early December 2019 (Wang et al., 2020). Numerous cases of bacterial meningitis were identified as having ecological relevance and were connected to Wuhan’s Huanan seafood market. After recognizing an epidemic as a Public Health Emergency of International Concern (PHEIC) on 30th January 2020 WHO formally named this coronavirus-related disease outbreak COVID-19 on 2nd February 2020. WHO declared COVID-19 a pandemic on 11th March 2020 (Huang et al., 2020). The letters CO, VI and D stand for Corona, Virus and Disease, respectively, and 2019 is the year in which it primarily occurred. Fever (rare), respiratory issues, coughing, fatigue, headache, myalgia, sore throat and conjunctivitis are some of the symptoms of COVID-19 (Alimohamadi et al., 2020). Of these, the first four have caused moderate respiratory sickness in infected individuals, while the other three have resulted in fatalities.

The people most at risk for mental health problems were medical professionals, such as doctors and nurses, who struggled with this pandemic daily (Galbraith et al., 2021). COVID-19 caused a great deal of stress for healthcare professionals due to the high risk of infection, poor protection, lack of skills in managing the illness, overload, negative remarks from doctors, social discrimination, significant lifestyle changes, containment and less financial assistance, especially for others who may come into contact with confirmed or suspected cases. The prevalence of fear, anxiety, depression and insomnia among healthcare workers was higher as a result of these factors, which can negatively affect their long-term health and productivity at work (Giorgi et al., 2020). Due to the demanding work schedule during the pandemic, they have been compelled to see psychological distress when directly treating patients, learning about the increase in cases or because quarantine is required. Since the virus produces worry, hypertension, stress, panic, uncertainty, apprehension, phobia, sorrow, insomnia and other symptoms, some individuals withdraw emotionally and socially out of fear of contracting it or spreading it to their loved ones (Kontoangelos et al., 2020).

It is essential to understand the psychological stress among different groups of healthcare professionals, such as nurses, physicians and administrative staff to provide psychological support, enhance mental health services and advance mental healthcare. The study has been designed with the following goals, i.e. to study the psychiatric symptoms of healthcare workers, to identify protective factors of psychological stress and to evaluate the psychological impact of the COVID-19 outbreak on healthcare workers. This research will help to better understand how pandemics affect the mental health of healthcare workers and will recommend actions beyond saving the lives of COVID-19 patients.

2. methodology

The present study was conducted in the Ayodhya district of Uttar Pradesh in 2021. The factors taken into consideration are shown in Figure 1.



**Figure 1: Schematic representation of the method used for the study**

To gather data appropriately and to learn more about the current state of COVID-19 in the city, a researcher had to visit hospitals located in Ayodhya. Out of 75 districts, Ayodhya district was specifically chosen for the study because of the extremely high level of COVID-19 severity. To collect primary data, a pre-structured questionnaire was employed. The scoring was provided based on the levels. The questionnaire was validated by 4 experts of the committee. Concerns regarding the psychological impact of COVID-19 on medical personnel were raised in the questionnaire. Additionally, an appointment calendar was used to collect the data one-on-one. An interview schedule was used to gather the respondent data and coding was done for the comprehensive analysis. Every response was assigned a score determined by how well it would satisfy the requirements. The Likert scale was used for scoring the data. Further, Microsoft Excel and IBM SPSS Statistics-19 were used for the calculation of mean scores, standard deviation and correlation coefficient based on the scorings.

# 3. results and discussion

The present study found that self-reported psychological challenges are prevalent among healthcare workers during the COVID-19 pandemic. This study highlighted the seriousness of mental health concerns in the healthcare business by finding that medical health professionals reported more symptoms than medical health workers. To properly understand the study’s findings and make an informed inference, the socio-personal and economic profiles of the chosen respondents were examined (Table 1). Medical professionals were far more likely to have psychological problems (such as anxiety, depression and insomnia) during the pandemic than healthcare workers (58.33% of respondents experienced psychological stress) (Xing et al., 2020).

**Table 1: Categorization of the variables based on socio-personal and economic profiles and their distribution among respondents (n=60)**

| **Variables** | **Particulars** | **Scores** | **Frequency (F)** | **Percentage (%)** |
| --- | --- | --- | --- | --- |
| **Age** | 21-30 years | 1 | 22 | 36.67 |
|  | 31 years -40 years | 2 | 12 | 20.00 |
|  | 41 years -50 years | 3 | 9 | 15.00 |
|  | 51 years -60 years | 4 | 13 | 21.67 |
|  | 60 years& above | 5 | 4 | 6.66 |
| **Gender** | Female | 1 | 33 | 55.00 |
|  | Male | 2 | 27 | 45.00 |
| **Education** | Intermediate | 1 | 7 | 11.67 |
|  | Graduate | 2 | 21 | 35.00 |
|  | Post-graduate | 3 | 13 | 21.66 |
|  | MBBS | 4 | 19 | 31.67 |
| **Family Type** | Nuclear Family | 1 | 29 | 48.33 |
|  | Joint Family | 2 | 31 | 51.67 |
| **Family Size** | 1-5 members | 1 | 13 | 21.67 |
|  | 6-10 members | 2 | 19 | 31.66 |
|  | 11-15 members | 3 | 21 | 35.00 |
|  | Above 15 members | 4 | 7 | 11.67 |
| **Marital Status** | Married | 1 | 42 | 70.00 |
|  | Unmarried | 2 | 18 | 30.00 |
| **Caste** | SC | 1 | 18 | 30.00 |
|  | ST | 2 | 4 | 6.67 |
|  | OBC | 3 | 20 | 33.33 |
|  | General | 4 | 18 | 30.00 |
| **Religion** | Hindu | 1 | 55 | 91.67 |
|  | Muslim | 2 | 5 | 8.33 |
|  | Christian | 3 | - | - |
|  | Others | 4 | - | - |
| **Income (Monthly)** | Below Rs. 50,000 | 1 | 25 | 41.67 |
|  | Rs. 50,001- Rs. 1,00,000 | 2 | 11 | 18.33 |
|  | Rs. 1,00,001-Rs. 1,50,000 | 3 | 8 | 13.33 |
|  | Above 1,50,000 | 4 | 16 | 26.67 |
| **Occupation** | Doctors | 1 | 17 | 28.33 |
|  | Nurse | 2 | 25 | 41.67 |
|  | Administration Staff | 3 | 6 | 10.00 |
|  | Paramedic (Dietitian, Physiotherapist, Pharmacist) | 4 | 8 | 13.33 |
|  | Supporting Staff | 5 | 4 | 6.67 |

The data analysis findings listed in Table 2 demonstrate the level of awareness of healthcare workers regarding COVID-19. Thus, it can be concluded that a majority of respondents (83.33%) had a medium level of knowledge related to COVID-19. According to the gathered information, 75% of respondents work for 8-16 hours every day, having a full-time work pattern.

**Table 2: Knowledge level among healthcare workers regarding COVID-19 (n=60)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Knowledge level regarding COVID-19** | **Score** | **Frequency (f) (n=60)** | **Percentage (%)** | **Mean** | **S.D.** |
| **1** | Low level (Mean - SD) | 1 | 3 | 5 | 22.08 | 2.067 |
| **2** | Medium level (Mean ± SD) | 2 | 50 | **83.33** |
| **3** | High level (Mean + SD) | 3 | 7 | 11.67 |

\*SD indicating the standard deviation

\*Knowledge Index

The psychiatric symptoms of healthcare workers involve psychosis, psychoneurosis and medical cases. The majority of respondents (85%) said that they were unaffected or unconcerned about becoming sick while at work. The employment of 80% of respondents was hampered due to COVID-19. 75% of respondents were utilizing their protection equipment (PPE) at their workplace, whereas 76.67% of the responders maintained a complete physical distancing while working. For 51.67% of the responders, using PPE equipment during the COVID-19 was very difficult. The majority of respondents (60%) reported that their eating schedules and habits had been disrupted and the same of them reported feeling lonely and emotionally troubled as well as irritated and unpleasant most of the time. Over half of the participants (58.33%) stated that they had no opportunity to see their relatives in a long time. 56.67% of respondents stated that it was very difficult to stay away from relatives during the outbreak’s peak. It was observed that most respondents (56.67%) were frustrated due to a lack of public understanding.

Table 3 denotes the levels (level-1, level-2 & level-3) of psychiatric symptom among health care workers. Only 5% of respondents showed low levels of psychiatric symptoms, whilst the majority (78.33%) had medium levels of psychiatric symptoms.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Category** | **Score** | **Frequency (f)** | **Percentage (%)** | **Mean** | **S.D.** |
| **1** | Level-1  (low) | 1 | 3 | 5.00 | 84.32 | **9.577** |
| **2** | Level-2  (medium) | 2 | 47 | **78.33** |
| **3** | Level-3  (high) | 3 | 10 | 16.67 |

**Table 3: Levels of psychiatric symptoms of Health Care Workers (n=60)**

\*SD indicating the standard deviation

As mentioned in Table 4, the correlation between protective factors contributing to psychological stress was found to be significantly negative with a few independent variables such as age (-.295\*\*) and income (-.247\*). This indicates that with increasing age and income, the effect of psychological stress decreases, as they tend to follow higher protective measures. The literature revealed that with increasing age the protective factors are more followed, thus reducing the psychological stress (He et al., 2018). In addition, it was also observed that people with lesser income tend to have more psychological stress as compared to people with higher income due to the presence of income as a protective factor (Santana et al., 2021). The gender (.135), education (-.136), family type (.148), family size (.131), marital status (-.003), caste (-.200), religion (.082) and occupation (-.097) were all determined to be non-significant. A higher household income and regular exercise are protective against depression and other psychiatric diseases (Kikuchi et al., 2021). Cleaning, avoiding unnecessary social events, improving lifestyle and incorporating herbs and spices into regular meals were all factors in preventing COVID-19. The results from the study indicate that a healthy lifestyle, exercise, healthy diet and adequate sleep can prevent individuals from the impact of COVID-19 (Khetarpaul, 2021).

**Table 4: Correlation between socio-economic profile (independent variables) with the protective factors contributing to psychological stress (n=60)**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Independent variables** | **Correlation coefficient** |
| **1.** | Age | -.295\*\* |
| **2.** | Gender | .135 |
| **3.** | Education | -.136 |
| **4.** | Family type | .148 |
| **5.** | Family size | .131 |
| **6.** | Marital status | -.003 |
| **7.** | Caste | -.200 |
| **8.** | Religion | .082 |
| **9.** | Income | -.247\* |
| **10.** | Occupation | -.097 |

1. \*Correlation is significant at the 0.10 (10%) level (2-tailed)

2. \*\*Correlation is significant at the 0.05 (5%) level (2-tailed)

The social protective factor involving social and physical distancing was followed by a higher percentage of respondents i.e. 68.33 % and 66.67 % respectively. Furthermore, 61.67% of respondents regularly consumed kadha and followed frequent hand washing (Shimul et al., 2024) as a protective measure against COVID-19. 75% of respondents preferred drinking warm water and the same percentage agreed on using sanitizer after any testing. The majority (68.33%) of respondents believed that wearing a mask and physical exercise as part of a daily routine is important for the prevention of COVID-19 (Irfan et al., 2021). Around 65% of people surveyed agreed to the fact that they cover their mouth and nose properly while coughing and sneezing. 76% of the respondents realized that the phrase, “Health is Wealth” is applied to adoption. According to 68.33% of respondents, they have learnt to stay away from unnecessary crowds.

The findings of the current study also focus on protective factors that influence the psychological impact of COVID-19 which is indicated in Table 5. The results indicated that the independent variables, age (.882\*\*) and income (.753\*\*), were both positively significant at the 5% level which shows that elderly people have more psychological impact in the presence of diseases (Penninx et al., 1996) and also that COVID-19 had huge negative impact on the employment of the people. The factors that were shown to be adversely significant at the 5% level are marital status (-.581\*\*), education (-.765\*\*) and gender (-.542\*\*) which suggests that females have a higher psychological impact as compared to men (Umbetkulova et al., 2024). The study revealed that nurses may have a greater workload and a greater likelihood of direct interaction with COVID-19 patients, especially women who were more likely to suffer from mental illness. Research has indicated that nursing stress is primarily caused by worries about family members, highlighting the significance of community. The social protective factor involving social and physical distancing was followed by a higher percentage of respondents i.e. 68.33 % and 66.67 % respectively. Furthermore, 61.67% of respondents regularly consumed kadha and followed frequent hand washing as a protective measure against COVID-19. 75% of respondents preferred drinking warm water and the same percentage agreed on using sanitizer after any testing. The majority (68.33%) of respondents believed that wearing a mask and physical exercise as part of a daily routine is important for the prevention of COVID-19. Around 65% of people surveyed agreed to the fact that they cover their mouth and nose properly while coughing and sneezing. 76% of the respondents realised that the phrase, “Health is Wealth” is applied to adoption. According to 68.33% of respondents, they have learnt to stay away from unnecessary crowds.

**Table 5: Correlation between socio-economic profile (independent variables) with the psychological impact of the COVID-19 outbreak on healthcare workers (n=60)**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Independent variables** | **Correlation coefficient** |
| **1.** | Age | .882\*\* |
| **2.** | Gender | -.542\*\* |
| **3.** | Education | -.765\*\* |
| **4.** | Family type | .225 |
| **5.** | Family size | .076 |
| **6.** | Marital status | -.581\*\* |
| **7.** | Caste | .074 |
| **8.** | Religion | -.049 |
| **9.** | Income | .753\*\* |
| **10.** | Occupation | -.32 |

\*\*Correlation is significant at the 0.05 (5%) level (2-tailed)

4. Conclusion

This study examined the psychological status of healthcare workers in Ayodhya, Uttar Pradesh during COVID-19. It was found that unfavorable psychiatric symptoms were highly prevalent among respondents but various protective factors were effective against it. The findings of this research may help in shaping preventive measures for such conditions in any other disease outbreaks. This study identifies the importance of mental health among frontline health workers. Further research into the long-term psychological effects of COVID-19 is crucial. The use of the snowball sampling technique presented several limitations such as a small sample size and limited area, which could impact the representativeness of the studied population and increase error.

**Disclaimer (Artificial intelligence)**

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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