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

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ABSTRACT

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| The COVID-19 pandemic significantly altered health care systems and raised the possibility of psychological suffering among medical personnel. Healthcare workers are one of the most exposed groups of the society. The psychosocial impact on healthcare workers is one of the most important factor to be studied. 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. Additionally, the computation was performed using Microsoft Excel. The results of the current study indicated that majority of health workers had medium level of psychiatric symptoms. Further results revealed that majority of health care workers have medium level of knowledge regarding COVID-19. The majority of respondents experienced a medium level of psychological stress. The significance of mental health issues in the healthcare industry was brought to light by this study. This suggests that psychological stress tends to reduce as people age and earn more money because they are more likely to take preventive measures. Additionally, it was shown that there was a significantly negative correlation between the socioeconomic profile, independent factors (gender, education and marital status) and the psychological impact of COVID-19. The findings of survey indicate that maintaining a healthy lifestyle and avoiding close contact can help prevent the spread of COVID-19. 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 Organisation (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 recognising an epidemic as a Public Health Emergency of International Concern (PHEIC) on 30th January 2020 WHO formally named this coronavirus-related disease outbreak as 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). It may be difficult to differentiate this illness from other respiratory illnesses. HKU1, NL63, 229E, OC43, SARS-CoV, MERS-CoV and SARS-CoV-19 are among the seven strains of coronavirus (Malik, 2020). Of these, 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 on a daily basis (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).

To provide psychological support, enhance mental health support services and advance mental healthcare internationally, the knowledge of psychological burden among different groups of healthcare professionals, such as nurses, physicians, administrative staff, etc. is essential. This study makes conclusions about the psychological impact of the COVID-19 on healthcare workers in Uttar Pradesh (India), as well as COVID-19 related factors associated with different psychological problems. The study has been designed with the following goals i.e. to study the psychiatric symptoms of healthcare workers, to identity protective factors contributing to 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 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 during 2021. The factors taken into consideration are shown in figure-1.

 

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

For the purpose of gathering data in an appropriate manner 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. 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, MS Excel and IBM SPSS Statistics-19 was 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. In order to properly understand the study’s findings and make an informed inference, the socio-personal and economic profiles of the chosen respondents was examined (Table-1). The medical professionals were far more likely to have psychological problems (such as anxiety, depression and insomnia) during the pandemic than the 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 its distribution among respondents**

| **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 | 56.67 |
| **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 health care 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 full time work pattern.

**Table 2: Knowledge level among health care workers regarding COVID-19**

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

\*SD indicating the standard deviation

The psychiatric symptoms of health care workers involved psychosis, psychoneurosis and medical-cases. The majority of respondents (85%) said that they were unaffected or unconcerned about becoming sick while at work. Employment of 80% respondents had hampered due to COVID-19. 75% of respondents were utilizing their personal protection equipment (PPE) at their work place, 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 haven’t got the 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 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 mental symptoms, whilst the majority (78.33%) had medium levels of psychiatric symptoms.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Category** | **Range** | **Frequency (f)** | **Percentage (%)** | **Mean** | **S.D.** |
| **1** | Level-1(low) | ≤66 | 3 | 5.00 | 84.32 | **9.577** |
| **2** | Level-2(medium) | 67-92 | 47 | **78.33** |
| **3** | Level-3(high) | 93-120 | 10 | 16.67 |

**Table 3: Levels of psychiatric symptoms of Health Care Workers**

\*SD indicating the standard deviation

As mentioned in Table 4, correlation between protective factors contributing to psychological stress was found 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 decreased, 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 the people with lesser income tend to have more psychological stress as compared to that of 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 has been shown to be 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 indicates that healthy lifestyle, exercise, healthy diet and adequate sleep can prevent the individuals from impact of COVID-19 (Khetarpaul, 2021).

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

|  |  |  |
| --- | --- | --- |
| **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 were followed by higher percentage of respondents i.e. 68.33 % and 66.67 % respectively. Furthermore, 61.67% of respondents regularly consumed kadha and followed frequent hand wash as the protective measure against COVID-19. 75% respondents preferred drinking warm water and same percentage agreed of using sanitizer after any testing. Majority (68.33%) of respondents believed that wearing a mask and physical exercise as part of daily routine is important for 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 actually 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 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 higher psychological impact as compared to men. 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 support for mental health of nurses. In contrast, physicians are more likely to be men and may be better able to handle stress and take on more risk than nurses. It was found that with increasing education level, the psychological impact of COVID-19 was reduced (Traunmüller et al., 2020). The current study revealed that married individuals have higher psychological impact of COVID-19 (Suryavanshi et al., 2020). But age and income have significantly positive correlation with the psychological impact, which indicates that respondents with higher age and income have more psychological impact of COVID-19 thus they tend to follow more precautions. The research revealed that receiving negative feedback from friends and relatives who joined front-line labour and paying attention to neutral or negative information about the COVID-19 (instead of positive information) were associated with a higher risk of psychiatric illnesses (Que et al., 2020). A person’s mental health has been observed to suffer when they were exposed to a lot of negative information about the pandemic, as well as misinformation from the media and other sources. According to the results from survey, following healthy lifestyle and proper social and physical distancing can help the people from the transmission of COVID-19. The importance of social and physical distancing among people for prevention of COVID-19 was also studied (Aquino et al., 2020). Further results of the study indicated that utilizing the personal protective equipment (PPE) at the work place also acted as the measure for reduction of psychological stress (Shwe et al., 2021). According to the current investigation, regular consumption of kadha and followed frequent hand wash acted as the preventive measure against COVID-19 indicating the importance of herbal products for protection against COVID-19 (Pieroni et al., 2020).

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

|  |  |  |
| --- | --- | --- |
| **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 health care 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. It also suggested that by maintaining proper hygiene. Further research on the long-term effects of COVID-19, such as PTSD and depression, as well as psychosocial interventions that enhance mental health, is also crucial. The snowball sampling technique resulted in a number of limitations for this investigation. The main limitation was the small sample size and limited area which could impact the representativeness of the studied population and increased error.

References

1. Wang, C., Horby, P. W., Hayden, F. G., & Gao, G. F. (2020). A novel coronavirus outbreak of global health concern. *The lancet*, *395*(10223), 470-473. [10.1016/S0140-6736(20)30185-9](https://doi.org/10.1016/s0140-6736%2820%2930185-9)

2. Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., & Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The lancet*, *395*(10223), 497-506.  [10.1016/S0140-6736(20)30183-5](https://doi.org/10.1016/s0140-6736%2820%2930183-5)

3. Alimohamadi, Y., Sepandi, M., Taghdir, M., & Hosamirudsari, H. (2020). Determine the most common clinical symptoms in COVID-19 patients: a systematic review and meta-analysis. *Journal of preventive medicine and hygiene*, *61*(3), E304. [10.15167/2421-4248/jpmh2020.61.3.1530](https://doi.org/10.15167/2421-4248/jpmh2020.61.3.1530)

4. Malik, Y. A. (2020). Properties of coronavirus and SARS-CoV-2. *The Malaysian journal of pathology*, *42*(1), 3-11.https://pubmed.ncbi.nlm.nih.gov/32342926/

5. Galbraith, N., Boyda, D., McFeeters, D., & Hassan, T. (2021). The mental health of doctors during the COVID-19 pandemic. *BJPsych bulletin*, *45*(2), 93-97. [10.1192/bjb.2020.44](https://doi.org/10.1192/bjb.2020.44)

6. Giorgi, G., Lecca, L. I., Alessio, F., Finstad, G. L., Bondanini, G., Lulli, L. G., Arcangeli, G., & Mucci, N. (2020). COVID-19-related mental health effects in the workplace: a narrative review. *International journal of environmental research and public health*, *17*(21), 7857. [**https://doi.org/10.3390/ijerph17217857**](https://doi.org/10.3390/ijerph17217857)

7. Kontoangelos, K., Economou, M., & Papageorgiou, C. (2020). Mental health effects of COVID-19 pandemia: a review of clinical and psychological traits. *Psychiatry investigation*, *17*(6), 491. https://doi.org/[10.30773/pi.2020.0161](https://doi.org/10.30773/pi.2020.0161)

8. Xing, J., Sun, N., Xu, J., Geng, S., & Li, Y. (2020). Study of the mental health status of medical personnel dealing with new coronavirus pneumonia. *PloS one*, *15*(5), e0233145. <https://doi.org/10.1371/journal.pone.0233145>

9. Que, J., Shi, L. E., Deng, J., Liu, J., Zhang, L., Wu, S., Gong, Y., Huang, W., Yuan, K., Yan, W., Sun, Y., & Lu, L. (2020). Psychological impact of the COVID-19 pandemic on healthcare workers: a cross-sectional study in China. *General psychiatry*, *33*(3), e100259. [10.1136/gpsych-2020-100259](https://doi.org/10.1136/gpsych-2020-100259)

10. Kikuchi, H., Machida, M., Nakamura, I., Saito, R., Odagiri, Y., Kojima, T., Watanabe, H., & Inoue, S. (2021). Development of severe psychological distress among low-income individuals during the COVID-19 pandemic: longitudinal study. *BJPsych Open*, *7*(2), e50. [10.1192/bjo.2021.5](https://doi.org/10.1192/bjo.2021.5)

11. Khetarpaul, N. (2022). COVID-19, nutrition, immunity, and diet. In *Delineating Health and Health System: Mechanistic Insights into Covid 19 Complications* (pp. 449-470). Singapore: Springer Singapore. <https://doi.org/10.1007/978-981-16-5105-2_26>

12. He, F. X., Turnbull, B., Kirshbaum, M. N., Phillips, B., & Klainin-Yobas, P. (2018). Assessing stress, protective factors and psychological well-being among undergraduate nursing students. *Nurse education today*, *68*, 4-12. <https://doi.org/10.1016/j.nedt.2018.05.013>

13. Santana, C. L. A., Manfrinato, C. V., Souza, P. R. P., Marino, A., Condé, V. F., Stedefeldt, E., Tomita, L.Y., & do Carmo Franco, M. (2021). Psychological distress, low-income, and socio-economic vulnerability in the COVID-19 pandemic. *Public Health*, *199*, 42-45. [10.1016/j.puhe.2021.08.016](https://doi.org/10.1016/j.puhe.2021.08.016)

14. Traunmüller, C., Stefitz, R., Gaisbachgrabner, K., & Schwerdtfeger, A. (2020). Psychological correlates of COVID-19 pandemic in the Austrian population. *BMC Public Health*, *20*, 1-16. [10.1186/s12889-020-09489-5](https://doi.org/10.1186/s12889-020-09489-5)

15. Suryavanshi, N., Kadam, A., Dhumal, G., Nimkar, S., Mave, V., Gupta, A., Cox, S. R., & Gupte, N. (2020). Mental health and quality of life among healthcare professionals during the COVID‐19 pandemic in India. *Brain and behavior*, *10*(11), e01837. [10.1002/brb3.1837](https://doi.org/10.1002/brb3.1837)

16. Penninx, B. W., Beekman, A. T., Ormel, J., Kriegsman, D. M., Boeke, A. J. P., Van Eijk, J. T. M., & Deeg, D. J. (1996). Psychological status among elderly people with chronic diseases: does type of disease play a part?. *Journal of psychosomatic research*, *40*(5), 521-534. [10.1016/0022-3999(95)00620-6](https://doi.org/10.1016/0022-3999%2895%2900620-6)

17. Aquino, E. M., Silveira, I. H., Pescarini, J. M., Aquino, R., & Souza-Filho, J. A. D. (2020). Medidas de distanciamento social no controle da pandemia de COVID-19: potenciais impactos e desafios no Brasil. *Ciência & saúde coletiva*, *25*(1), 2423-2446.[10.1590/1413-81232020256.1.10502020](https://doi.org/10.1590/1413-81232020256.1.10502020)

18. Shwe, S., Sharma, A. A., Lee, P. K., & Lee, P. (2021). Personal protective equipment: attitudes and behaviors among nurses at a single university medical center. *Cureus*, *13*(12). [10.7759/cureus.20265](https://doi.org/10.7759/cureus.20265)

19. Pieroni, A., Vandebroek, I., Prakofjewa, J., Bussmann, R. W., Paniagua-Zambrana, N. Y., Maroyi, A., Torri L, Zocchi DM, Dam AT, Khan SM, Ahmad H, [Yeşil](https://link.springer.com/article/10.1186/s13002-020-00426-9#auth-Yeter-Ye_il-Aff13) Y, Huish R, Santayana MP, Mocan A, Hu X, Boscolo O & Sõukand, R. (2020). Taming the pandemic? The importance of homemade plant-based foods and beverages as community responses to COVID-19. *Journal of ethnobiology and ethnomedicine*, *16*, 1-9. [10.1186/s13002-020-00426-9](https://doi.org/10.1186/s13002-020-00426-9)