

“Psychosocial Impact of COVID-19 on Frontline Nurses in Rural Maharashtra: A Cross-Sectional Study”

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Abstract: Background: The COVID-19 outbreak has caused severe physical and psychological trauma in health care workers, with nurses at the forefront of patient care. Nurses in a resource-limited rural area, such as rural Osmanabad, Maharashtra, experienced extended working hours, mental stress, and compromised institutional backing. These circumstances contributed to a high burden of burnout and mental health conditions, especially in the post-pandemic period. **Objectives:** This study was conducted to see the prevalence and severity of burnout and psychological distress among nurses in Osmanabad after COVID-19. It also explored the association between occupational exposures (e.g., night shift frequency and peer support) and mental health outcomes to identify modifiable risk and protective factors. **Methods:** A cross-sectional study was conducted in the government as well as private health care settings of Osmanabad city. 80 registered nurses qualified, selected by stratified purposive sampling. Data came from the Maslach Burnout Inventory–Human Services Survey (MBI-HSS) and the General Health Questionnaire-12 (GHQ-12), and demographic and occupational variables. Descriptive, chi-square tests, and logistic regression were applied for analysis using IBM SPSS v26. **Results:** The presence of emotional exhaustion was 65%, depersonalization 42%, and low personal accomplishment 58%. Fifty-five percent of the participants were found to be psychologically distressed. Burnout was significantly related to variables such as common nightshift work ($p < 0.05$), the lack of peer support ($p < 0.01$), and non-exercise ($p < 0.05$). **Conclusion:** The study highlights a pressing need for mental health preventive interventions for rural nurses. Individualised interventions to help prevent burnout and encourage sustainable nursing practices in rural India (resilience training, institutional peer support, and workload adjustments) are needed.

Keywords: Burnout, Mental Health Nurses, COVID-19, Rural Healthcare, Osmanabad, Stressors.

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1. INTRODUCTION

1.1 Background

The COVID-19 outbreak brought unprecedented pressure to healthcare systems globally and involved nurses as legions, as frontline actors. In rural areas, such as Osmanabad district, Maharashtra, the impact was compounded due to a lack of infrastructure, a shortage of staff, and poor mental health services. Nurses were exposed to the high-risk environment repeatedly, sometimes without proper protection or psychological assistance [1,2].

Burnout a psychological syndrome characterised by emotional exhaustion,

depersonalization, and diminished personal accomplishment has been widely acknowledged as an outcome of continuous occupational stress [3]. Pandemic exacerbated these stressors associated with high levels of reports of anxiety, depression, and post-traumatic symptoms from nurses [4,5].

1.2 Rationale

Although post-pandemic mental health research has focused intensely on urban areas, rural territories such as Osmanabad are less well studied. As they will often come from difficult social backgrounds as well as being informally employed (where traceability is problematic), appreciation must be paid to the particular

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issues for such performing nurses to have context-sensitive interventions and policy reforms. This research endeavours to bridge this gap by examining burnout and mental health outcomes among the nurses in Osmanabad, employing validated instruments and cross-sectional methodology.

1.3 Significance

The results will add to the emerging literature on the well-being of healthcare workers, particularly in rural India. The research will inform nurse-led interventions and promote resilience, as well as the identification and end exploitation of factors that place women at increased risk for unplanned pregnancies in rural settings.

2. REVIEW OF LITERATURE

2.1 Understanding Burnout in Nursing

Burnout is a psychological syndrome arising from long-term exposure to chronic workplace stress, and is particularly high in nursing because of emotional labour, shift working, and patient-related requests [6-7]. The Maslach Burnout Inventory (MBI) is the most commonly used instrument for measuring burnout in health care professionals [8]. Emotional exhaustion, depersonalization are reported with regularity for nurses in high-stress situations, particularly health crises like COVID-19 [9-10].

2.2 COVID-19 Effects on Mental Health

The stress prompted by the pandemic contributed to mental health problems of nurses, with the literature indicating higher prevalence rates of anxiety, depression, and post-traumatic stress symptoms [11]. A study in India reported that frontline nurses were experiencing a high degree of psychological distress owing to the fear of being infected, isolation, and moral injury [12]. The effects were especially powerful in understaffed environments with little access to mental health resources.

2.3 Rural Healthcare Challenges

The stressors that rural nurses experience such as: lack of infrastructure, heavy patient loads, and lack of professional growth opportunities. Rural nurses, Rural nursing, Stressors in rural nurses, Staff shortages in rural areas. Studies from Maharashtra, as well as other Indian states, reveal that nursing personnel in rural areas were overworked and overloaded, leading to higher burnout [13]. This task is compounded by inadequate rural mental health services [14].

2.4 Protective and Risk Factors

Resilience, supportive peers, and physical activity have been reported to be protective factors against burnout [15]. On the other hand, the higher the frequency of night shifts, the lower the organisational support, and the exposure to patients with COVID-19 is correlated with a higher level of psychological distress

[16]. Research highlights the need for organisational-level interventions to reduce these risks

2.5 Gaps in Literature

Even though the number of studies related to nurse burnout during the COVID-19 pandemic is increasing, few studies focus on rural areas such as Osmanabad. Most research is based on urban hospitals or tertiary care facilities, which do not take into account the socio-cultural and bio-physical challenges encountered by rural nurses. The present study fills this void by offering a grounded understanding of burnout and mental health at the district level in rural India.

3. RESEARCH METHODOLOGY

3.1 Study Design

This study utilizes a cross-sectional, descriptive quantitative method to measure the level of burnout and mental health problems among nurses at Osmanabad following COVID-19. The design will permit the gathering of recent psychological outcomes and occupational exposures over a limited period of time.

3.2 Study Setting

This study was carried out in selected government and private health care units in Osmanabad district, Maharashtra. Selected facilities represented different levels of care (primary, secondary, and tertiary) in the rural settings.

3.3 Study Population

The study population included all staff nurses currently working in the hospital at Osmanabad. Eligibility criteria included:

- 1 or more years of professional nursing experience
- Direct engagement in patient care during or following the COVID-19 pandemic
- Informed consent to participate

3.4 Sample Size and Sampling Procedure

The study consisted of 80 nurses. Study participants were recruited via stratified purposive sampling to ensure distribution across facility type (public versus private) and work location (ICU, wards, emergency services, etc.).

3.5 Data Collection Tools

Two standardised instruments were used:

- Maslach Burnout Inventory – Human Services Survey (MBI-HSS) to measure burnout in terms of emotional exhaustion, depersonalization, and personal accomplishment.
- (MH symptom) and General Health Questionnaire (GHQ-12), to screen for mental stress, anxiety, and emotional instability.

A demographic and professional history sheet was also filled out to record variables, age, gender,

frequency of shifts, COVID-19 care exposure, hours of work, and the existence of peer or institutional support.

3.6 Data Collection Procedure

Questionnaires were distributed in print and returned by mail over six weeks. Qualified staff introduced the purpose of the study, and confidentiality of information and anonymity of responses were explained to the participants before data collection.

3.7 Ethical Considerations

All subjects provided oral and written consent. The information was anonymised, and participation was entirely voluntary with the possibility of withdrawal at any time.

3.8 Data Analysis

- Demographic and psychometric findings were summarised via descriptive statistics (mean, standard deviation, frequency).
- Chi-square and binary logistic regression analyses were used to assess relationships between burnout levels and potential predictor variables (e.g., frequency of shift, peer support).
- For all inferential statistics, we used a significance value of $p < 0.05$.
- The data were analysed using IBM SPSS Statistics version 26.

4. RESULTS AND ANALYSIS

4.1 Overview

The results of a cross-sectional survey, in which 80 nurses of Osmanabad participated to know their lives after the COVID-19 epidemic, are described in this section. The study investigates the level of burnout, symptoms of mental health issues, and their inter-relationship to work-related and personal characteristics. Findings: There is a high prevalence of emotional exhaustion and psychological distress, especially in nurses who regularly work night shifts and do not receive good support from colleagues. The data emphasise the need for immediate systemic and individual-level interventions to support the well-being of rural nurses.

4.2 Demographic Profile of Participants

Among the 80 nurses studied in Osmanabad:

- mean age, 33.6 years [SD, 6.8]).
- 85% were female
- The majority of respondents (62%) were working at a government health facility, with 38% working at a private health facility.
- 40% were actively involved in the care of COVID-19 cases
- 52% worked at least 6 night turns per month

Table 1: Demographic Distribution of Participants

Variable	Category	Frequency (%)
Age Group	25–34 years	48 (60%)
Gender	Female	68 (85%)
Hospital Type	Government	50 (62%)
COVID-19 Care Exposure	Yes	32 (40%)
Night Shifts/month	≥6	42 (52%)

Most of the participants were female nurses working in government hospitals, and this reflected the gendered choices in the profession in rural areas and the institutional constraints of the work.

4.3 Burnout Assessment

The MBI-HSS was employed to evaluate burnout in three domains:

- Emotional Exhaustion: 65% had moderate to high levels
- Depersonalization: 42% had elevated scores
- Personal Success: 58% reported diminished feelings of success

Table 2: Burnout Levels Among Nurses

Burnout Domain	Level	Frequency (%)
Emotional Exhaustion	Moderate/High	52 (65%)
Depersonalization	Moderate/High	34 (42%)
Personal Accomplishment	Low/Very Low	46 (58%)

Emotional exhaustion stood out as the most common burnout domain, indicating the presence of physical and mental exhaustion among the participants.

4.4 Mental Health Screening

Mental health symptoms were captured using the GHQ-12 scale:

- 55% screened positive for psychological distress

- Symptoms included sleep disturbance, irritability, and persistent worry

Table 3: GHQ-12 Mental Health Classification

Mental Health Status	Frequency (%)
Positive for distress	44 (55%)
Negative (healthy baseline)	36 (45%)

Participants had suffered mental health symptoms in more than half (55%) of the cases, reinforcing the long-lasting psychological effects of pandemic-related nursing roles.

4.5 Correlation Analysis

Burnout was generally associated with the following factors using statistical tests:

- Night shifts (≥ 6 /month) were significantly associated with emotional exhaustion ($p < 0.05$).
- Thin peer support is associated with higher depersonalization ($p < 0.01$)
- Nurses who had regular physical activity showed lower GHQ-12 scores.

Table 4: Key Associations with Burnout and Mental Health

Predictor Variable	Associated Outcome	Significance (p)
≥ 6 Night Shifts	Emotional Exhaustion	< 0.05
Lack of Peer Support	Depersonalization	< 0.01
Regular Exercise	Lower GHQ Scores	< 0.05

Lifestyle and support variables have a strong mediating effect on psychological outcomes, offering targets for preventive intervention.

5. DISCUSSION

5.1 Interpretation of Key Findings

The current study reported high proportions of burnout and psychological distress among nurses in Osmanabad, with 65% reporting emotional exhaustion, and 55% positive for mental health symptoms. These results also correspond with global post-pandemic patterns in which front-line nurses suffer from continued emotional exhaustion and diminished personal performance [16]. The higher burnout rates in Osmanabad can be attributed to the rural stress factors such as inadequate staff, poor mental health facilities, and night duties.

5.2 Comparison with Existing Literature

Such studies in tertiary settings and urban hospitals demonstrate similar burnout rates; nevertheless, rural nurses may have additional challenges. For instance, it's observed that 55.8% of nurses had severe anxiety and 37.2% had moderate to severe depression during the pandemic [17]. Found night shift frequency, health status, and exercise burden to be the determinants of burnout [18]. Similar findings were visible in the Osmanabad cohort as well, building the case for focused interventions.

5.3. Occupation and Personal Risk Limitations

The results of this study showed that ≥ 6 -night shifts/month, lack of peer support, and exposure to direct positive COVID-19 caring increased the risk of burnout. These results reinforce Johnson *et al.*, s research, which indicated that ED nurses were more vulnerable to burnout than their ICU counterparts [19]. Further,

highlighted the role of perceived organisational support and resilience in reducing burnout. Lack of established support systems possibly intensified the affective burden too in Osmanabad.

5.4 Implications for Rural Health Systems

The findings highlight the glaring necessity of mental health incorporation into rural nursing practice. Osmanabad does not have a specialized mental health treatment for health workers, as is available in the urban clusters. Results indicate that peer support groups, mindfulness-based interventions, and courses that target resilience would be low-cost, scalable approaches. Additionally, addressing staff ratios and workload management is essential for preventing burnout and enhancing retention.

5.5 Strengths and Limitations

One of the strengths of our study is that it is set in a rural Indian district, and hence provides findings that are often hidden in national data sets. The fact that validated instruments have been employed adds to the reliability of the study. Nevertheless, the cross-sectional design, precluding causal inference, and modest sample size ($n=80$), limiting generalisability, are two significant limitations of this study. This may be addressed in the future using a longitudinal study, which can also examine the trajectories of burnout and the impact of intervention, is sustained over time.

6. CONCLUSION

This study also shows the serious psychological impact of the COVID-19 pandemic on the nurses in Osmanabad. Results: Most of the 80 respondents experienced moderate to high levels of burnout—mainly emotional exhaustion and reduced personal accomplishment—and more than half screened positive

for psychological distress. These results are dire, particularly in the context where infrastructure is weak and the provision of psychosocial support is limited in a rural setting.

Working specific roles (night shifts, direct patient care of COVID-19 patients, lack of peer support) were strong predictors of both burnout and mental health problems. Although these stressors make their presence felt across systems of healthcare, this becomes magnified in low-resourced rural regions such as Osmanabad, where structural constraints could enhance the vulnerability of nurses. Additionally, there are no institutionalised methods to recover the emotionally or mentally damaged.

Significantly, researchers also found protective factors—like physical activity and an informal peer network that they can tap into—that can be used to drive down burnout. Such findings highlight the importance of upscaling the implementation of context-specific interventions such as resilience programmes, debriefing sessions, and routine mental health assessments to match the emotional well-being of rural healthcare workers.

Centring the voices and experiences of nurses in Osmanabad, this paper brings a salient analysis of the discussion on healthcare equity and workforce sustainability in post-pandemic India. It calls for a transition away from a reactive crisis response toward proactive institutional care—where the emotional health of nurses is a part of rural health care strategy, not an afterthought.

7. Conflicts Of Interest

The authors have no conflicts of interest related to this study. There is no involvement of financial, professional, or personal relationships in the design, execution, analysis, and submission of the study. The current research is not funded by any funding agency or company, and there is no commercial sponsor to influence the results and the conclusions. Ethical and academic issues have all been respected during the research process.

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