



Burnout and psychological strain among healthcare professionals during COVID-19: A correlational study in Delhi and Solan

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Abstract

Background: The COVID-19 pandemic has significantly intensified occupational stressors among healthcare professionals, precipitating elevated rates of burnout and psychological distress. This study investigates the relationship between burnout dimensions and psychological strain among doctors across distinct urban and rural healthcare contexts.

Objective: To examine the association between burnout (emotional exhaustion, depersonalization, and personal accomplishment) and psychological strain (depression, anxiety, and stress) among healthcare professionals in Delhi and Solan during the COVID-19 pandemic.

Methods: A correlational research design was employed with 106 doctors equally distributed between Delhi (mean age: 34.4 ± 10.6 years) and Solan, Himachal Pradesh (mean age: 26.6 ± 4.3 years). Participants completed the Maslach Burnout Inventory (MBI) and the Depression Anxiety and Stress Scale (DASS-21) retrospectively to assess pandemic-related occupational strain. Pearson's product-moment correlation coefficients were calculated to examine relationships between burnout dimensions and psychological strain variables.

Results: Statistically significant positive correlations were identified between emotional exhaustion and depression ($r = 0.47$, $p < 0.01$ in Delhi; $r = 0.37$, $p < 0.01$ in Solan), anxiety ($r = 0.45$, $p < 0.01$ in Delhi; $r = 0.30$, $p < 0.05$ in Solan), and stress ($r = 0.45$, $p < 0.01$ in Delhi; $r = 0.43$, $p < 0.01$ in Solan). Depersonalization also demonstrated significant correlations with all three psychological strain indicators across both locations. Personal accomplishment was not significantly correlated with psychological distress in either region, suggesting its distinct role in burnout conceptualization.

Conclusions: This study substantiates the significant relationship between burnout and psychological strain among healthcare professionals across urban and rural settings during the pandemic. The findings underscore the urgent necessity for comprehensive, context-sensitive interventions addressing both individual coping mechanisms and organizational factors to mitigate burnout and enhance psychological well-being among healthcare workers.

Keywords: Burnout, emotional exhaustion, depersonalization, psychological strain, Covid-19, healthcare professionals, Delhi, Solan

Introduction

Burnout, as defined by the World Health Organization (Downey *et al.*, 2022) [2], is a syndrome resulting from chronic workplace stress that has not been successfully managed. It is characterized by three core dimensions: emotional exhaustion (EE), signifying depletion of emotional and physical resources; depersonalization (D), reflecting cynical attitudes towards patients or clients; and reduced personal accomplishment (PA), involving a negative self-evaluation regarding work performance (Maslach & Jackson, 1981) [10].

Occupations involving continuous public interaction—such as healthcare, law enforcement, education, and social work—are especially prone to burnout. Among these, healthcare professionals are particularly vulnerable due to the interpersonal intensity and emotional demands of their roles (García-Arroyo & Osca Segovia, 2018). The reported prevalence of burnout varies widely, from 2.5% to 87.9% (Wright *et al.*, 2022) [17]. Nurses and physicians face unique challenges, including workload pressures and an imbalance between job demands and resources, exacerbated by close contact with patients and families, and the ongoing requirement for emotional regulation (Ślusarz *et al.*, 2022). Burnout frequently co-occurs with depression, anxiety, and

Stress posing significant mental health risks to healthcare professionals (HCPs). Studies report elevated rates of burnout and depressive symptoms in specific disciplines such as emergency medicine, anesthesiology, and obstetrics and gynecology (Nazeema *et al.*, 2023) [12]. For example, a national study in Ireland found high levels of stress and depression among hospital consultants, with burnout closely linked to depressive symptoms (Crudden *et al.*, 2023) [3]. Similarly, a survey in Hong Kong revealed widespread burnout among young doctors, with one-fifth experiencing depression (Kwan *et al.*, 2021) [8].

In Pakistan, 43% of frontline physicians experienced burnout along with anxiety and depression, especially those working directly with COVID-19 patients (Amin *et al.*, 2020) [1]. Sonmez and Gul (2021) [15] found that anxiety not only affected job satisfaction but also exacerbated burnout, particularly among younger emergency medicine doctors. These data underscore the high prevalence of psychological strain and its interrelationship with burnout in the healthcare sector.

The present study aims to explore the relationship between burnout and symptoms of stress, anxiety, and depression among healthcare professionals, particularly in the context of increased demands during the COVID-19 pandemic.

Materials and Methods

Sample

The study comprised 106 doctors, with 53 participants each from Delhi and the Solan district of Himachal Pradesh. The mean age (\pm S.D.) of doctors from Delhi was 34.4 ± 10.6 years, while that of Solan doctors was 26.6 ± 4.3 years. Both male and female doctors were included, with the minimum educational qualification set at an M.B.B.S degree. Inclusion criteria required a minimum of two years of regular service. Due to practical constraints regarding availability and access, purposive sampling was used based on participant availability and willingness.

Each participant self-administered the instruments. The following measures were used:

▪ Depression Anxiety and Stress Scale (DASS-21)

Developed by Lovibond & Lovibond (1995), the DASS-21 is a validated self-report instrument with 21 items across three subscales—depression, anxiety, and stress. It is widely recognized for its reliability and ease of administration in clinical and research settings.

▪ Maslach Burnout Inventory (MBI)

The MBI (Maslach & Jackson, 1986) consists of 22 items grouped into three subscales: emotional exhaustion, depersonalization, and personal accomplishment. It is considered the gold standard for measuring burnout among human service professionals.

Demographic information such as age, gender, education, years of service, work setting (urban/rural), and exposure to COVID-19 patients was recorded via a cover sheet.

Statistical Analysis

Pearson's product-moment correlation was used to examine the relationships among the MBI and DASS subscales.

Results

Table 1: Correlations among Burnout and Psychological Strain Variables – Delhi Doctors

	Depression	Anxiety	Stress
Emotional Exhaustion	0.47**	0.45**	0.45**
Depersonalization	0.36**	0.40**	0.29*
Personal Accomplishment	0.04	0.06	0.01

$p < .01$, $p < .05$

These results indicate statistically significant positive correlations between emotional exhaustion and all three psychological strain variables among Delhi doctors. Depersonalization was also significantly associated with depression, anxiety, and stress, suggesting elevated burnout in this group.

Table 2: Correlations among Burnout and Psychological Strain Variables – Solan Doctors

	Depression	Anxiety	Stress
Emotional Exhaustion	0.37**	0.30*	0.43**
Depersonalization	0.27*	0.32*	0.40**
Personal Accomplishment	-0.02	-0.002	0.004

$p < .01$, $p < .05$

A similar trend was observed among doctors in Solan, with emotional exhaustion and depersonalization showing significant positive correlations with psychological strain

indicators. However, personal accomplishment was not significantly correlated with depression, anxiety, or stress in either region.

Discussion

The results underscore a significant relationship between burnout and psychological strain among doctors in both Delhi and Solan. In Delhi, depersonalization showed strong correlations with depression, anxiety, and stress. These findings align with Johnson *et al.* (2020)^[6], who found that depression and anxiety significantly predicted emotional exhaustion in medical trainees. Similarly, El-Menyar *et al.* (2021)^[5] identified younger age, limited experience, and depressive symptoms as predictors of burnout.

The data also highlights a meaningful correlation between anxiety and burnout across both urban and rural contexts. Emotional exhaustion was significantly correlated with anxiety in both samples, echoing findings from Naidoo *et al.* (2020)^[11], who observed high anxiety and burnout levels in South African hospitals. Kelly *et al.* (2022)^[7] and Long *et al.* (2020) also documented higher anxiety and burnout in urban healthcare workers.

COVID-19 as a Contextual Amplifier of Burnout and Psychological Strain

The COVID-19 pandemic created unprecedented conditions that exponentially amplified occupational burnout among healthcare professionals globally. During acute phases of the pandemic, healthcare workers faced multiple simultaneous stressors including exposure to novel infectious disease, inadequate protective equipment, moral injuries stemming from ethically impossible care decisions, and the traumatic experience of witnessing high mortality rates among both patients and colleagues. Meta-analyses examining mental health during COVID-19 revealed alarming prevalence rates of anxiety (24.94%), depression (24.83%), and sleep disorders (44.03%) among healthcare workers, significantly exceeding baseline rates in non-pandemic contexts. Leo, C. G., Sabina, S., Consales, G., Capodici, A., & Trabucchi, G. (2021)^[9].

The pandemic-specific stressors contributed to qualitatively distinct psychological experiences compared to pre-pandemic burnout. Healthcare professionals reported not only emotional exhaustion but also profound moral injury psychological harm resulting from transgression of deeply held values when forced to make life-and-death decisions without optimal resources or established protocols. These moral injuries compound traditional burnout dimensions by creating lasting psychological consequences that persist beyond acute crisis periods. The retrospective assessment design of the present study captures healthcare professionals' recollections of pandemic-related strain, likely reflecting cumulative psychological impact rather than acute symptomatology during active infection waves. Leo, C. G., Sabina, S., Consales, G., Capodici, A., & Trabucchi, G. (2021)^[9].

These findings highlight the urgent necessity for institutional support and preventive mental health interventions tailored to both urban and rural healthcare environments.

Conclusion

This correlational study documents the significant positive relationship between burnout and psychological strain

among healthcare professionals in Delhi and Solan during the COVID-19 pandemic, extending previous findings into the Indian healthcare context and across contrasting geographic settings. The findings affirm burnout as a multidimensional syndrome intrinsically linked to depression, anxiety, and stress symptoms. Emotional exhaustion and depersonalization emerged as particularly salient burnout dimensions mediating psychological strain, consistent with network analysis perspectives emphasizing emotional exhaustion's central role in translating occupational stress into mental health symptoms. Geographic comparisons highlight that urban and rural healthcare settings present distinct stressor profiles requiring differentiated interventions. The pandemic context amplified traditional occupational stressors through exposure to novel infectious disease, resource inadequacies, and moral injuries, creating unprecedented psychological strain among frontline healthcare workers.

Importantly, the study's findings align with the contemporary paradigm shift attributing healthcare professional burnout primarily to organizational factors rather than individual deficits. Patient safety implications underscore the urgency of addressing burnout through comprehensive organizational reforms targeting workload, resources, leadership support, and workplace culture. Future efforts to support healthcare professional well-being must integrate evidence-based individual interventions with systemic organizational change, attend to gender and intersectional equity issues, and reflect the particular contexts and challenges of healthcare systems in diverse global settings.

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