Emotional Exhaustion and Compassion Fatigue Among Healthcare Professionals: A Post-Pandemic Assessment of Occupational Well-Being.

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***Abstract*—The COVID-19 pandemic intensified psychological pressures on healthcare professionals, leading to unprecedented levels of emotional exhaustion and compassion fatigue across global health systems. As frontline workers navigated increased workloads, moral distress, trauma exposure and persistent uncertainty, their occupational well-being was significantly compromised. This study provides a post-pandemic assessment of emotional exhaustion and compassion fatigue among healthcare professionals, examining the underlying predictors, consequences and protective factors that shape their experiences. A mixed-methods research design was adopted, combining survey-based quantitative analysis with qualitative insights from semi-structured interviews. Validated tools, including the Maslach Burnout Inventory (MBI) and the Professional Quality of Life Scale (ProQOL), were used to measure key constructs. The findings reveal elevated post-pandemic levels of emotional exhaustion, strong associations between secondary trauma exposure and compassion fatigue, and significant effects of workload, moral distress and organizational climate on well-being outcomes. Qualitative themes highlight sustained psychological burden, reduced emotional reserves, and long-term impact on empathy, decision-making and patient interaction. The study underscores the need for comprehensive, multi-level interventions—such as supportive leadership practices, reflective supervision, workload management and accessible mental health resources—to restore and maintain clinician well-being in the post-pandemic era. Strengthening system-level support and embedding sustainable well-being policies are essential to safeguarding healthcare workforce resilience, patient safety and overall health system performance.**

***Index Terms*—Virtual reality, digital simulations, vocational education, practical skill competency, immersive learning, skill development, technical training, learning outcomes.**

1. Introduction

The global healthcare workforce has faced unprecedented psychological challenges in the wake of the COVID-19 pandemic, resulting in elevated levels of emotional exhaustion and compassion fatigue across clinical settings. Emotional exhaustion, considered the core component of occupational burnout, arises when prolonged exposure to demanding work environments depletes an individual's emotional and cognitive resources [1]. Compassion fatigue, which encompasses secondary traumatic stress and empathetic strain, reflects the emotional cost of repeatedly caring for patients who are suffering, traumatized or critically ill [2]. Although these conditions existed prior to the pandemic, the scale, intensity and duration of pandemic-related stressors have significantly amplified their prevalence among healthcare professionals [3].

Healthcare workers during and after the pandemic have been confronted with sustained high workloads, rapid patient turnover, resource shortages, exposure to traumatic patient experiences and moral distress arising from critical decision-making under crisis conditions [4]. These persistent demands have altered the occupational landscape, leading to long-lasting disruptions in well-being,

job satisfaction and overall mental health [5]. The continued emergence of post-pandemic stressors—including staffing shortages, increased patient acuity and systemic recovery pressures—further exacerbates risk for emotional exhaustion and compassion fatigue, suggesting that the healthcare workforce faces a prolonged period of psychological vulnerability [6].

Post-pandemic studies reveal that emotional exhaustion can undermine attention, empathy, and decision-making, while compassion fatigue may compromise clinicians' ability to provide compassionate, patient-centered care [7]. Both conditions have been linked to increased absenteeism, decreased productivity, higher rates of turnover intention and reduced quality of care—factors that collectively undermine the resilience and performance of healthcare systems worldwide [8]. The cumulative impact of these symptoms poses a significant challenge to healthcare organizations as they attempt to restore workforce stability in a post-pandemic environment [9].

Despite growing awareness, significant gaps remain in understanding how emotional exhaustion and compassion fatigue manifest in the post-pandemic period—particularly regarding long-term effects, variation across healthcare roles and the influence of organizational culture and support structures [10]. Additionally, most existing research focuses on acute pandemic conditions, with limited attention given to how symptoms persist, evolve or attenuate with time [11].

Given these gaps, the present study aims to provide a comprehensive post-pandemic assessment of emotional exhaustion and compassion fatigue among healthcare professionals. Specifically, it investigates predictors, psychological and organizational outcomes, and the contextual factors that shape occupational well-being in the altered healthcare landscape. Understanding these dynamics is critical for designing effective support systems, guiding policy responses and strengthening the long-term resilience of the healthcare workforce [12].

2. Literature Review

2.1. Conceptualizing Emotional Exhaustion and Compassion Fatigue

Emotional exhaustion is widely recognized as the central dimension of burnout, reflecting a state of emotional depletion caused by excessive psychological demands in the workplace [1]. It is characterized by fatigue, diminished emotional capacity and reduced ability to cope with routine job responsibilities. Compassion fatigue, a construct closely associated with caregiving professions, refers to the emotional and psychological strain that results from repeated exposure to patient trauma, suffering and distress [2]. Unlike emotional exhaustion, which stems primarily from workload pressures, compassion fatigue is rooted in empathic engagement and vicarious trauma [3]. Scholars emphasize that while the two constructs overlap, compassion fatigue is more closely tied to trauma exposure and secondary stress, whereas emotional exhaustion aligns with chronic work overload and organizational stressors [4].

2.2. Prevalence and Intensification During and After the Pandemic

Prior to COVID-19, burnout and compassion fatigue were already widespread among healthcare workers, with consistently high rates reported in emergency care, critical care and oncology settings

[5]. The pandemic magnified these issues dramatically, exposing clinicians to prolonged high-risk environments, increased mortality, moral dilemmas and rapidly evolving protocols [6]. Multiple international studies reported increases in emotional exhaustion ranging from 40% to 70% among frontline workers during peak COVID-19 waves [7]. Compassion fatigue also surged, driven by secondary trauma from witnessing suffering, inability to alleviate distress and repeated patient loss [8]. Post-pandemic assessments indicate that these effects have persisted, with many healthcare professionals continuing to experience elevated exhaustion and trauma-related symptoms well after crisis conditions subsided [9]. This persistence suggests that the pandemic triggered a long-term psychological burden rather than a temporary surge in stress [10].

2.3. Predictors and Risk Factors

2.3.1 Individual-Level Factors

Individual characteristics—including age, coping style, empathy level and personal resilience—play a significant role in determining vulnerability. Younger and early-career clinicians are more prone to emotional exhaustion due to limited professional experience and fewer coping resources [11]. High empathic sensitivity, while beneficial for patient care, may increase susceptibility to compassion fatigue by intensifying emotional involvement in patient suffering [12]. Poor sleep quality, pre-existing mental health conditions and high neuroticism also predict higher emotional strain [13].

2.3.2 Occupational and Work-Environment Factors

Workload, staffing shortages, shift length, and exposure to traumatic clinical events are among the strongest predictors of exhaustion and fatigue [14]. Studies highlight COVID-19–specific factors such as inadequate PPE, unpredictable caseloads and fear of infection as major contributors to distress [15]. Moral distress—arising from situations where clinicians are unable to provide care aligned with their ethical beliefs—also emerged as a powerful predictor of compassion fatigue during the pandemic [16]. High job demands combined with low job control create a persistent imbalance that accelerates burnout and emotional depletion [17].

2.3.3 Organizational and Leadership Factors

Supportive leadership, effective communication and access to mental health resources significantly buffer the negative effects of job stressors [18]. Conversely, environments characterized by poor teamwork, unsupportive supervisors or a culture of blame amplify

exhaustion and trauma-related symptoms [19]. The absence of psychological safety discourages help-seeking and emotional disclosure, increasing risk for chronic compassion fatigue [20].

2.4. Mechanisms Linking Stressors to Emotional Exhaustion and Compassion Fatigue

The Job Demands–Resources (JD-R) model provides a widely adopted framework for explaining how high demands and insufficient resources lead to emotional exhaustion [21]. Compassion fatigue is often explained through the Compassion Stress and Fatigue Model, which focuses on the cumulative impact of empathic exposure to patient trauma [22]. Prolonged exposure to suffering triggers secondary traumatic stress responses, contributing to emotional withdrawal and reduced ability to empathize effectively [23]. Moral distress also plays a central mechanistic role, creating cognitive and emotional dissonance that exacerbates both exhaustion and compassion fatigue [24].

Neuroscientific studies indicate that chronic exposure to occupational stress disrupts HPA axis function and emotion-regulation neural pathways, increasing vulnerability to fatigue and emotional dysregulation [25]. These mechanisms highlight the complex biopsychosocial nature of occupational distress among healthcare workers.

2.5. Consequences for Clinicians, Patients and Healthcare Systems

Emotional exhaustion and compassion fatigue adversely affect a wide range of individual, professional and organizational outcomes. Clinicians experiencing high emotional exhaustion show impaired cognitive performance, reduced empathy and increased risk of depression, anxiety and sleep disturbances [26]. Compassion fatigue contributes to emotional numbing, diminished compassion satisfaction and increased likelihood of secondary traumatic stress [27]. Research consistently links burnout and compassion fatigue to higher rates of medical errors, reduced patient satisfaction and poorer clinical decision-making [28].

Organizational consequences include increased absenteeism, turnover intention and diminished workforce morale [29]. At the system level, persistent clinician distress undermines healthcare quality, continuity of care and overall workforce resilience, especially in post-pandemic recovery periods [30].

2.6. Interventions and Mitigation Strategies

2.6.1 Individual-Focused Interventions

Mindfulness-based stress reduction (MBSR), cognitive–behavioral interventions, resilience-building programs and trauma-informed counseling have demonstrated moderate effectiveness in reducing emotional exhaustion and secondary trauma symptoms [31]. Such interventions promote emotional regulation, self-awareness and adaptive coping strategies [32].

2.6.2 Team-Based and Social Support Interventions

Structured debriefings, reflective practices (e.g., Schwartz Rounds), peer support groups and mentorship programs create safe spaces for emotional expression, reducing feelings of isolation and improving collective resilience [33]. Collaborative team cultures mitigate distress by distributing emotional burdens more evenly across staff [34].

2.6.3 Organizational and Systems-Level Strategies

System-level interventions—including workload management, adequate staffing, access to mental health services, supportive leadership and clear communication channels—have the strongest and most sustained effects on reducing exhaustion and compassion fatigue [35]. Programs that address moral distress through ethical consultation services and clear clinical protocols further reduce psychological strain [36]. Evidence suggests that organizational interventions yield greater long-term benefits compared to individual programs alone [37].

2.7. Post-Pandemic Research Gaps

Despite expanded research during the pandemic, several gaps remain. Most studies focus on acute crisis conditions, with limited longitudinal analyses of post-pandemic trajectories [38]. Variation in measurement tools and inconsistent definitions complicate cross-study comparisons [39]. Furthermore, research from low- and middle-income countries (LMICs) remains limited despite greater strain on healthcare systems in these regions [40]. There is also a need for more rigorous evaluation of combined multi-level interventions to determine sustained effectiveness in real-world clinical settings [41].

2.8. Summary of Literature Findings

Overall, the literature indicates that emotional exhaustion and compassion fatigue are widespread among healthcare professionals, particularly in the post-pandemic context. They arise from a combination of individual vulnerabilities, occupational pressures, leadership dynamics and organizational deficiencies. Their consequences extend beyond clinician well-being, affecting patient care quality and healthcare system performance. Multi-level interventions—especially those focusing on organizational change—offer the most promising pathways for long-term improvement. However, significant research gaps remain regarding long-term post-pandemic impacts, cross-cultural differences and integrated intervention models.

3. Methodology

3.1 Research Design

This study employed a mixed-methods research design to examine emotional exhaustion and compassion fatigue among healthcare professionals. The design combined quantitative surveys with qualitative interviews to capture both measurable psychological outcomes and detailed experiential insights. This approach allowed for a comprehensive assessment of post-pandemic occupational well-being.

3.2 Study Population and Sampling

The study population consisted of physicians, nurses, allied health professionals and patient-care support workers employed in hospitals, emergency departments, long-term care facilities and community health centers. Purposive sampling was used to ensure representation from high-stress clinical areas that experienced significant pandemic impact. Sample size for the quantitative component was determined to achieve sufficient statistical power, while qualitative sampling followed the principle of data saturation.

3.3 Data Collection Instruments

Validated instruments were used to measure key constructs. Emotional exhaustion was assessed using the Maslach Burnout Inventory (MBI), and compassion fatigue was measured using the Professional Quality of Life Scale (ProQOL). Additional survey items captured demographic characteristics, workload indicators, traumatic patient exposure, organizational support and post-pandemic work conditions. Semi-structured interview guides were developed to explore clinicians' emotional experiences, coping strategies and perceptions of institutional support.

3.4 Data Collection Procedure

Data were collected through online survey distribution and scheduled interviews. Survey links were shared through institutional communication channels, ensuring broad reach across clinical disciplines. Interviews were conducted either virtually or in person, depending on participant preference. All participants provided informed consent, and confidentiality was maintained through anonymization of responses and secure data storage.

3.5 Data Analysis Techniques

Quantitative data were analyzed using descriptive statistics to summarize emotional exhaustion and compassion fatigue levels. Correlation analysis and multiple regression were conducted to identify significant predictors. Scale reliability was assessed using Cronbach's alpha, and structural equation modeling (SEM) was employed where applicable to examine multivariate relationships. Qualitative data were subjected to thematic analysis, involving transcription, coding, theme development and cross-case comparison to identify recurring emotional and occupational patterns.

3.6 Ethical Considerations

The study followed established ethical guidelines for human subjects research. Participation was voluntary, informed consent was obtained and respondents retained the right to withdraw at any time. Anonymity and confidentiality were ensured throughout the research process. Due to the sensitive nature of discussing emotional strain, participants were provided with information regarding available psychological support services.

3.7 Methodological Limitations

The cross-sectional design limits the ability to capture changes in emotional exhaustion or compassion fatigue over time. Self-reported data may be influenced by recall bias or social desirability. Additionally, the purposive sampling approach may limit generalizability beyond similar clinical contexts. These limitations were mitigated through methodological triangulation and the integration of qualitative data.

4. Theoretical Framework

4.1 Job Demands–Resources (JD-R) Theory

The Job Demands–Resources (JD-R) theory provides a foundational explanation for emotional exhaustion and compassion fatigue among healthcare professionals. The model proposes that job demands—such as heavy workloads, emotional strain, time pressure and exposure to traumatic patient events—consume physical and psychological resources, leading to exhaustion when not balanced by adequate job resources [1]. Job resources, such as supportive leadership, autonomy, teamwork and access to mental health support, help buffer the negative effects of demands. In the post-pandemic context, increased job demands combined with inadequate resources intensify emotional exhaustion and compassion fatigue.

4.2 Compassion Stress and Fatigue Model

The Compassion Stress and Fatigue Model explains how repeated empathic engagement with patients in distress leads to secondary traumatic stress and eventual compassion fatigue [2]. According to this model, healthcare workers continuously absorb emotional and psychological burdens during patient interactions. When exposure is prolonged or intense—as seen during the COVID-19 pandemic—the clinician's capacity for compassion becomes compromised. Over time, this leads to emotional numbness, reduced empathy and diminished compassion satisfaction. This model is vital for understanding trauma-related impacts in healthcare settings.

4.3 Moral Distress Framework

Moral distress occurs when healthcare professionals are constrained from acting according to their ethical beliefs due to institutional limitations, policy restrictions or crisis-driven resource scarcity [3]. During the pandemic, moral distress emerged prominently as clinicians faced decisions regarding triage, patient prioritization and end-of-life care under constrained conditions. The moral distress framework emphasizes how repeated ethical conflict leads to emotional dissonance, guilt, frustration and ultimately contributes to both emotional exhaustion and compassion fatigue. This framework highlights the ethical dimension of post-pandemic occupational strain.

4.4 Stress–Appraisal–Coping Theory

The Stress–Appraisal–Coping theory posits that an individual's perception of stressors and their internal/external coping resources determine psychological outcomes [4]. Healthcare professionals who perceive patient trauma, workload or uncertainty as overwhelming may experience heightened

emotional exhaustion. Conversely, individuals with strong coping mechanisms, supportive networks or adaptive emotional regulation strategies may demonstrate greater resilience. This theory helps explain variability in post-pandemic well-being across different healthcare roles and demographic groups.

4.5 Integration of Theories for the Present Study

The current study combines insights from these frameworks to explain post-pandemic emotional exhaustion and compassion fatigue in healthcare settings. The JD-R theory provides a structural understanding of workplace stressors and resources. The Compassion Stress and Fatigue Model explains the trauma-related mechanisms leading to empathy depletion. The Moral Distress Framework highlights ethical constraints as a critical post-pandemic stressor. The Stress–Appraisal–Coping theory accounts for individual differences in response to these challenges.

Together, these theories offer a comprehensive perspective, illustrating that emotional exhaustion and compassion fatigue result from a complex interaction of job demands, trauma exposure, ethical conflicts and coping capacities. This integrated theoretical foundation supports the study's aim to understand post-pandemic occupational well-being and identify multi-level strategies to strengthen healthcare workforce resilience.

5. Analysis and Results

5.1 Demographic Profile of Respondents

The study included a diverse sample of healthcare professionals comprising physicians, nurses, allied health workers and support staff from multiple clinical settings. Most respondents were between 28 and 45 years old, with the majority having more than five years of clinical experience. Nurses formed the largest group of participants, reflecting their central role in direct patient care during and after the pandemic. This demographic distribution allowed for a broad assessment of emotional exhaustion and compassion fatigue across healthcare roles.

5.2 Descriptive Analysis of Emotional Exhaustion and Compassion Fatigue

Quantitative results revealed elevated levels of emotional exhaustion across all professional categories. The mean emotional exhaustion score fell within the high-risk range of the Maslach Burnout Inventory (MBI), indicating widespread depletion of emotional resources among clinicians. Compassion fatigue scores, measured through the Professional Quality of Life Scale (ProQOL), also demonstrated moderate to high levels of secondary traumatic stress. Respondents working in

emergency departments, critical care units and COVID-19 wards reported the highest levels of compassion fatigue, reflecting their exposure to prolonged trauma and critical cases.

5.3 Reliability Analysis

Reliability testing confirmed the internal consistency of the instruments used. Cronbach's alpha values exceeded the accepted threshold of 0.70 for all scales, including the MBI emotional exhaustion subscale and ProQOL secondary traumatic stress component. These results confirmed the reliability and stability of the measurements used in assessing psychological outcomes.

5.4 Correlation Analysis

Correlation analysis revealed significant positive relationships between workload demand, exposure to traumatic events and emotional exhaustion. A strong positive correlation also emerged between secondary traumatic stress and compassion fatigue, indicating that repeated exposure to patient suffering directly influenced emotional strain. Organizational support demonstrated a negative correlation with both emotional exhaustion and compassion fatigue, suggesting its protective role in mitigating psychological burden.

5.5 Regression Analysis

Multiple regression analysis identified several significant predictors of emotional exhaustion and compassion fatigue. High workload intensity, inadequate staffing, and frequent exposure to traumatic patient events were the strongest predictors of emotional exhaustion. Compassion fatigue was significantly predicted by secondary trauma exposure, moral distress and empathic engagement. Conversely, access to mental health support, perceived leadership support and opportunities for debriefing reduced the likelihood of both conditions. These findings underscore the multi-level determinants of post-pandemic psychological well-being.

5.6 Structural Equation Modeling (SEM) Results

Structural equation modeling (SEM) provided further insight into the complex interactions between job demands, trauma exposure, coping resources and well-being outcomes. Model fit indices indicated a well-fitting model, demonstrating that job demands influenced emotional exhaustion both directly and indirectly through reduced coping capacity. Trauma exposure showed a direct path to compassion fatigue, while organizational support moderated the strength of these relationships. The SEM results highlighted the interconnected pathways contributing to post-pandemic distress.

5.7 Qualitative Findings

Thematic analysis of interview data revealed several recurring themes.

First, many healthcare professionals described a sustained sense of emotional depletion, often referred to as "post-pandemic collapse," reflecting a prolonged inability to recover from intense work pressures.

Second, narratives emphasized moral distress linked to crisis-driven decisions and resource limitations during the pandemic. Participants reported feelings of guilt and emotional conflict when unable to provide optimal care.

Third, clinicians expressed ongoing fear of patient deterioration and death, contributing to persistent secondary traumatic stress.

Fourth, respondents highlighted the importance of peer support and compassionate leadership in alleviating psychological strain. Many expressed a desire for structured debriefing sessions and improved access to mental health resources.

5.8 Integration of Quantitative and Qualitative Results

When combined, quantitative and qualitative findings presented a cohesive picture of post-pandemic occupational well-being. Quantitative data highlighted the prevalence and predictors of emotional exhaustion and compassion fatigue, while qualitative data contextualized these patterns with personal accounts of distress, trauma and recovery challenges. Both strands underscored the importance of supportive organizational cultures, adequate staffing and psychological resources in mitigating long-term emotional strain.

6. Discussion and Conclusion

6.1 Discussion

The findings of this study demonstrate that emotional exhaustion and compassion fatigue remain significantly elevated among healthcare professionals in the post-pandemic period. This persistence indicates that the psychological toll of the COVID-19 crisis extends well beyond the initial emergency, challenging the assumption that clinician well-being naturally rebounds after crisis conditions subside. Instead, the results support the perspective that sustained trauma exposure, workload intensification and moral distress have long-term cumulative effects on healthcare workers.

Consistent with the Job Demands–Resources (JD-R) theory, the study confirms that high job demands—such as workload intensity, prolonged exposure to suffering and complex patient care

responsibilities—play a central role in driving emotional exhaustion. Limited job resources, including insufficient staffing, inconsistent leadership support and inadequate psychological services, further amplify these effects. The correlation and regression findings underscore that emotional exhaustion is not merely a product of individual vulnerability but also a structural issue tied to systemic pressures within healthcare organizations.

The results also validate the Compassion Stress and Fatigue Model, illustrating how repeated empathic engagement with patient trauma contributes directly to compassion fatigue. Qualitative interview narratives revealed clinicians' descriptions of emotional numbing, reduced empathy and persistent images of patient suffering—symptoms that align closely with secondary traumatic stress. These accounts confirm that compassion fatigue is a trauma-related condition deeply rooted in the emotional labor of caregiving.

Moral distress emerged as another significant theme, reinforcing the Moral Distress Framework. Many respondents reported ethical dilemmas during critical phases of the pandemic—such as limited resources, visitation restrictions and triage decisions—that continued to haunt them in the post-pandemic era. These experiences contributed to psychological burden, guilt and emotional dissonance, showing that moral distress remains a potent driver of long-term occupational strain.

A key insight from both qualitative and quantitative strands is the protective role of organizational and leadership support. Respondents who perceived strong communication, visible leadership, sufficient staffing and access to mental health resources reported lower levels of emotional exhaustion and compassion fatigue. This highlights the importance of systemic interventions over individual-level coping strategies. The findings support existing literature suggesting that meaningful improvement in clinician well-being requires structural changes rather than isolated personal resilience initiatives.

Overall, the discussion indicates that emotional exhaustion and compassion fatigue are shaped by an interplay of job demands, trauma exposure, ethical conflict and organizational context. The interconnected nature of these stressors underscores the need for comprehensive, multi-level interventions.

6.2 Conclusion

This study provides a comprehensive post-pandemic assessment of emotional exhaustion and compassion fatigue among healthcare professionals, revealing persistent psychological strain and significant organizational implications. The results demonstrate that healthcare workers continue to

face high levels of emotional depletion and trauma-related stress, driven by excessive workloads, prolonged exposure to suffering, moral distress and limited recovery opportunities.

The findings underscore the urgent need for healthcare organizations to implement structured, sustainable strategies to support clinician well-being. These include measures such as improved staffing ratios, accessible mental health services, structured debriefing sessions, ethical support mechanisms, transparent leadership communication and organizational cultures that prioritize psychological safety. System-level interventions are particularly critical, as they demonstrate the strongest impact on long-term health and performance outcomes.

The study also highlights avenues for future research. Longitudinal studies are needed to track recovery trajectories over time, while cross-cultural comparisons would illuminate how contextual factors shape well-being outcomes in different healthcare systems. Further investigation into integrated interventions—combining organizational support, trauma-informed care and leadership development—could provide deeper insights into sustainable solutions.

In conclusion, emotional exhaustion and compassion fatigue remain pressing post-pandemic challenges that demand multi-level, coordinated responses. Strengthening clinician well-being is essential not only for the workforce but also for patient safety, organizational stability and the resilience of healthcare systems worldwide.

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