

Identifying Work-Related Psychosomatic Stressors in Healthcare Workers: A Qualitative Exploration

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ABSTRACT

This study aimed to explore and identify the organizational, psychosocial, and behavioral factors contributing to psychosomatic stress among healthcare workers in the United States through an in-depth qualitative analysis of their lived experiences. A qualitative exploratory design was employed to capture healthcare workers' subjective experiences of psychosomatic stress. Twenty-three participants, including nurses, physicians, technicians, and administrative staff, were purposively selected from hospitals and clinics across the United States. Data were collected through semi-structured interviews conducted face-to-face or via secure online platforms. Interviews were transcribed verbatim and analyzed thematically using NVivo 14 software. Thematic analysis followed the Braun and Clarke (2006) framework, allowing the identification of recurrent patterns and relationships among concepts. Data collection continued until theoretical saturation was reached. Three main themes emerged: (1) Organizational and structural stressors—including work overload, administrative pressure, resource scarcity, and unsafe working conditions—were linked to chronic fatigue, headaches, and sleep disturbances; (2) Psychosocial and emotional stressors—such as compassion fatigue, interpersonal strain, and work–family conflict—contributed to emotional exhaustion and physical symptoms; and (3) Psychosomatic manifestations and coping responses—showing how stress materialized as physical pain, anxiety, and maladaptive behaviors, while some workers adopted adaptive coping strategies like mindfulness and peer support. The findings suggest that psychosomatic stress in healthcare settings stems from systemic imbalance rather than individual vulnerability, confirming strong interdependence between emotional and physiological domains. The study highlights that healthcare workers' psychosomatic distress is rooted in organizational dysfunction and emotional overload.

Keywords: psychosomatic stress; healthcare workers; qualitative study; occupational stress; burnout

1. Introduction

The healthcare sector is universally acknowledged as one of the most psychologically demanding professional environments, characterized by long hours, high emotional labor, and continuous exposure to suffering and mortality. These occupational demands frequently translate into psychosomatic manifestations—physical symptoms without organic causes that reflect chronic stress exposure (Marcatto et al., 2024). Psychosomatic stress represents the embodied response to emotional and occupational strain, merging psychological distress with physical outcomes such as fatigue, headaches, gastrointestinal discomfort, and insomnia (Herrmann & Glaser, 2021). In healthcare professions, where the boundary between physical and emotional exhaustion is often blurred, understanding the sources of psychosomatic stress is vital to improving employee well-being, retention, and the quality of patient care (Samuel et al., 2021).

Contemporary literature identifies the healthcare workplace as a hub of multiple overlapping stressors, including heavy workloads, hierarchical rigidity, ethical dilemmas, and emotional exposure to suffering (Yi et al., 2021). The psychosomatic impact of these conditions has intensified in recent years, particularly during and after the COVID-19 pandemic, which dramatically heightened workloads, disrupted support systems, and exposed workers to unprecedented moral injury (Khalil & Khalid, 2023). Studies show that healthcare professionals under such chronic strain experience elevated risks of burnout, anxiety, and stress-induced somatic complaints (Arslanoğlu et al., 2024). These symptoms often persist even after acute stress periods subside, indicating a profound interaction between environmental pressures, emotional reactivity, and physiological adaptation mechanisms (Schilbach et al., 2023).

Work-related psychosomatic distress arises from the complex interplay between organizational, psychological, and behavioral factors. Research suggests that the intensity of stressors—such as patient load, shift irregularity, and managerial pressure—directly influences the manifestation of somatic complaints (Marcatto et al., 2024). In their study of nurses in Italy, Marcatto et al. found that organizational dysfunction and emotional dissonance were predictive of psychosomatic symptoms including tension headaches, fatigue, and gastrointestinal disturbances. Similarly, Herrmann and Glaser documented comparable outcomes among private security personnel, showing that long

working hours and limited decision autonomy correlated strongly with physical and psychological complaints (Herrmann & Glaser, 2021). These findings align with theories that conceptualize psychosomatic outcomes as the body's physiological encoding of unresolved occupational tension—a theme particularly relevant to healthcare environments characterized by emotional suppression and sustained vigilance (Linden & Lieberei, 2023).

The global healthcare landscape has undergone significant shifts in recent years, amplifying stress exposure for medical personnel. The COVID-19 pandemic revealed the fragility of mental health systems within healthcare institutions, as frontline workers reported chronic anxiety, moral fatigue, and psychosomatic exhaustion (Yoon et al., 2021). In a large-scale Chinese study, occupational pressure was identified as a central factor predicting psychosomatic burden among frontline medical staff, emphasizing that psychological stressors have concrete physiological manifestations (Yi et al., 2021). Similar outcomes were observed in Pakistan, where healthcare workers described sleep disturbances, somatic pain, and persistent fatigue linked to sustained exposure to COVID-19-related trauma (Khalil & Khalid, 2023). The psychosomatic dimension of this distress reflects not only the emotional weight of caregiving but also the failure of institutional mechanisms to provide psychological protection in times of crisis (Lenger et al., 2023).

Beyond pandemic-related pressures, everyday organizational challenges in healthcare institutions perpetuate stress responses. Work overload, administrative inefficiencies, and inadequate recognition consistently emerge as core stressors (Goetz et al., 2025). Goetz et al. introduced an ontology-based reasoning system (OntoKaire) to identify work-related stressors, highlighting that the interaction between workload intensity, role ambiguity, and insufficient rest contributes directly to psychosomatic reactions. These findings resonate with earlier evidence indicating that long working hours mediate psychosomatic stress through disrupted sleep and irregular mealtimes (Watanabe et al., 2022). In the same vein, Taylor et al. demonstrated that even digital interventions like mindfulness apps could mitigate somatic stress symptoms by regulating the psychophysiological responses to workplace tension (Taylor et al., 2022). Collectively, these studies underline the necessity of addressing structural and cognitive stress determinants simultaneously to prevent the internalization of stress in bodily form.

Burnout, a syndrome of emotional exhaustion and depersonalization, represents a key mediator between workplace stress and psychosomatic outcomes. The connection between burnout and somatic illness has been consistently demonstrated in nursing and allied health populations (Cohen et al., 2023). Cohen et al. emphasized that institutional interventions targeting well-being—such as mindfulness programs, organizational reforms, and leadership support—reduce both perceived stress and psychosomatic symptoms. Similarly, Maran et al. identified workplace bullying as a hidden but potent predictor of psychosomatic distress, illustrating how interpersonal hostility translates into chronic muscle pain, headaches, and sleep disruption (Maran et al., 2024). These findings affirm that psychosomatic disorders in healthcare professionals are not merely biological phenomena but are rooted in relational and ethical contexts within organizational systems.

The theoretical framework of psychosomatic health emphasizes the dynamic relationship between perceived injustice, emotional suppression, and physiological dysregulation (Linden & Lieberei, 2023). Linden and Lieberei introduced the concept of embitterment as a critical stressor leading to psychosomatic disorders, particularly when individuals perceive systemic injustice or moral injury in their work environment. This aligns with research in occupational psychology showing that feelings of helplessness and inequity trigger inflammatory responses and cortisol dysregulation (Kaltenegger et al., 2023). In their cross-sectional analysis among hospital employees, Kaltenegger and colleagues found that technostress—stress induced by digital workload and constant connectivity—was associated with both burnout symptoms and chronic low-grade inflammation. This biological dimension of occupational stress supports a biopsychosocial understanding of psychosomatic health among healthcare workers, in which workplace conditions activate stress pathways that manifest as bodily complaints.

Digitalization and modern work environments have introduced new forms of psychosomatic risk, notably through technology-mediated overload and surveillance. Egger et al. synthesized evidence on mobile and web-based stress management tools, suggesting that while digital interventions can enhance accessibility to mental health support, excessive reliance on mobile devices may itself create new stress cycles (Egger et al., 2023). This paradox highlights the need for organizational policies that balance digital integration with human-centered mental health support. In response, Demirel et al. explored a mobile stress

management intervention (STAPP@Work) among mental healthcare workers, revealing that structured digital tools can promote emotional regulation and early recognition of psychosomatic symptoms (Demirel et al., 2025). Similarly, Xu et al. documented that mobile mindfulness applications reduced perceived stress and somatic tension among emergency department staff, reinforcing the utility of technology when integrated within supportive occupational frameworks (Xu et al., 2021).

Cross-cultural perspectives on occupational stress provide further insights into the psychosomatic profiles of healthcare professionals. Studies from Ghana and Egypt have shown that resource limitations and high patient volumes contribute to psychosomatic manifestations such as tension, insomnia, and fatigue (Dartey et al., 2023; Omar et al., 2021). Dartey et al. reported that nurses frequently experience overlapping psychological and somatic symptoms, including headaches and chest tightness, which interfere with job performance. Similarly, Omar et al. found that Egyptian physicians' burnout levels correlated with physical complaints, suggesting a psychosomatic continuum between emotional strain and bodily dysfunction. These findings echo Nurdin and Murni's conceptualization of psychosomatic distress during the pandemic as an integrative response linking mental and physiological processes (Nurdin & Murni, 2022). Their framework emphasizes that chronic stress activates somatic pathways even in the absence of direct physical causes, highlighting the unity of mind and body in stress responses.

While individual and organizational factors both shape psychosomatic outcomes, personal coping mechanisms remain a crucial determinant of resilience. Research has shown that regular physical activity programs alleviate psychosomatic stress by improving mood regulation and physiological resilience (Almuhaidb et al., 2023). Likewise, Watanabe et al. demonstrated that healthier lifestyle routines, including consistent sleep and mealtimes, mitigate the indirect effects of long working hours on stress responses (Watanabe et al., 2022). Adaptive coping strategies such as mindfulness, emotional expression, and peer support play a central role in moderating the mind–body connection (Taylor et al., 2022). However, studies also indicate that many healthcare workers resort to emotional suppression and denial due to professional expectations of endurance (Lenger et al., 2023). This tendency often exacerbates psychosomatic symptoms, suggesting that self-care must be culturally legitimized within healthcare institutions.

The convergence of evidence across diverse settings underscores that psychosomatic stress among healthcare professionals is not merely an individual issue but a structural and systemic phenomenon. Affective reactivity to adversity, as described by Schilbach et al., explains how past exposure to workplace stressors heightens physiological sensitivity to future challenges (Schilbach et al., 2023). This cumulative vulnerability model helps clarify why even highly experienced healthcare workers develop chronic somatic symptoms despite familiarity with occupational stress. Furthermore, psychosomatic complaints are often underreported due to professional stigma, with many workers interpreting bodily distress as a personal weakness rather than a systemic signal (Linden & Lieberei, 2023). Therefore, qualitative inquiry is essential to capture the nuanced lived experiences of healthcare professionals who navigate the intersection of institutional pressures and bodily manifestations of stress.

Given the complexity and multidimensionality of psychosomatic stress in healthcare, the present study aims to qualitatively explore the work-related psychosomatic stressors experienced by healthcare workers in the United States.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a qualitative research design with an exploratory approach to identify work-related psychosomatic stressors among healthcare workers. The qualitative design was selected to gain a deep understanding of participants' lived experiences, perceptions, and emotional responses to workplace stress within healthcare settings.

Participants were 23 healthcare workers recruited from various hospitals and clinics across the United States, representing diverse professional backgrounds such as nurses, physicians, laboratory technicians, and administrative personnel. Inclusion criteria required participants to have at least two years of professional experience in healthcare and to report experiencing physical or psychological symptoms related to occupational stress. Purposive sampling was used to ensure diversity in gender, role, and work environment. Recruitment continued until theoretical saturation was achieved—that is, when no new themes or concepts emerged from the data.

2.2. Measures

Data were collected through semi-structured, in-depth interviews designed to explore participants' experiences with psychosomatic stressors in their work environment. The interview guide included open-ended questions such as: "Can you describe situations at work that cause you physical or emotional stress?" and "How do these experiences affect your body and mind?" Each interview lasted between 45 and 70 minutes and was conducted in a private and comfortable setting, either face-to-face or via secure online video conferencing platforms, depending on participant preference and geographical location. All interviews were audio-recorded with participants' consent and transcribed verbatim for analysis. Field notes were also taken to capture contextual details, emotional tone, and nonverbal cues observed during the sessions.

2.3. Data Analysis

Data were analyzed using thematic analysis following the framework of Braun and Clarke (2006). NVivo 14 software was utilized to facilitate systematic coding, organization, and retrieval of data. Analysis began with repeated reading of the transcripts to achieve familiarity with the content, followed by open coding to identify meaningful units of text. Codes were compared and grouped into subthemes and overarching themes that reflected shared patterns in the data. Constant comparison was applied throughout the analysis to refine categories and ensure conceptual coherence. Analytical memos were used to document the development of ideas and the researcher's reflections during the process. Credibility was enhanced through peer debriefing and member checking, wherein participants were invited to review and validate the interpreted themes.

3. Findings and Results

A total of 23 healthcare workers from various hospitals and clinics across the United States participated in this study. The sample consisted of 14 women (60.9%) and 9 men (39.1%), with ages ranging from 26 to 58 years (mean age = 39.4 years). In terms of professional roles, 10 participants (43.5%) were registered nurses, 5 (21.7%) were physicians, 4 (17.4%) were laboratory or radiology technicians, and 4 (17.4%) were administrative and support staff. The majority of participants (17 individuals, 73.9%) worked in hospital settings, while 6 (26.1%) were employed in private clinics or outpatient centers. Regarding work experience, 7

participants (30.4%) had between 2 and 5 years of experience, 9 (39.1%) had 6–10 years, and 7 (30.4%) had more than 10 years in healthcare practice. Marital status data showed that 15 participants (65.2%) were married, 6 (26.1%) were single, and 2 (8.7%) were divorced. The

educational background ranged from associate degrees (4 participants, 17.4%) to bachelor's degrees (11 participants, 47.8%) and master's or doctoral degrees (8 participants, 34.8%).

Table 1

Categories, Subcategories, and Concepts

Main Themes (Categories)	Subcategories	Concepts (Open Codes)
1. Organizational and Structural Stressors	1.1. Work Overload and Staffing Shortages	Chronic overtime; double shifts; inadequate staff-to-patient ratio; skipped breaks; exhaustion before shift end
	1.2. Administrative Pressure and Bureaucracy	Excessive paperwork; unclear procedures; rigid hierarchies; performance evaluation anxiety; lack of autonomy
	1.3. Ineffective Leadership and Management	Lack of supervisor support; favoritism; inconsistent feedback; micromanagement; distrust in leadership
	1.4. Resource Constraints	Insufficient medical supplies; outdated equipment; lack of protective gear; frustration over resource allocation
	1.5. Shift Work and Scheduling Conflicts	Irregular sleep patterns; rotating shifts; night duty fatigue; disruption of family time; circadian imbalance
	1.6. Workplace Violence and Safety Concerns	Verbal aggression from patients; physical threats; unsafe wards; fear of night shifts; lack of security presence
	1.7. Ethical and Legal Pressures	Fear of litigation; moral distress; witnessing malpractice; dilemmas in patient confidentiality; documentation burden
2. Psychosocial and Emotional Stressors	2.1. Emotional Labor and Compassion Fatigue	Suppressing emotions; emotional numbness; exhaustion from empathy; "putting on a brave face"; lack of recovery time
	2.2. Role Conflict and Ambiguity	Conflicting instructions; undefined responsibilities; overlapping roles; tension between care and administration
	2.3. Interpersonal Strain with Colleagues	Gossip and cliques; lack of teamwork; competitive environment; blame culture; interpersonal mistrust
	2.4. Patient-Related Emotional Burdens	Witnessing suffering; patient deaths; unrealistic family expectations; guilt over outcomes; helplessness
	2.5. Stigma and Lack of Recognition	Public undervaluation; lack of appreciation; negative media portrayal; internalized stigma; feeling replaceable
	2.6. Work–Family Conflict	Missed family events; emotional spillover; partner dissatisfaction; parenting guilt; difficulty disconnecting
3. Psychosomatic Manifestations and Coping Responses	3.1. Physical Symptoms of Stress	Headaches; gastrointestinal discomfort; muscle tension; sleep disturbances; heart palpitations
	3.2. Psychological Disturbances	Anxiety; irritability; emotional exhaustion; concentration problems; depressive symptoms
	3.3. Behavioral Reactions	Increased caffeine or alcohol use; emotional eating; withdrawal; absenteeism; reduced productivity
	3.4. Cognitive Strain and Detachment	Forgetfulness; decision fatigue; detachment from patients; automatic functioning; mental fog
	3.5. Adaptive Coping Strategies	Peer support; mindfulness; humor; prioritizing rest; boundary setting
	3.6. Maladaptive Coping Strategies	Emotional suppression; denial of symptoms; self-medication; overworking to escape stress

The first major theme emerging from the interviews was organizational and structural stressors, reflecting the systemic pressures embedded in healthcare institutions that directly contribute to psychosomatic strain. Many participants described the persistent work overload and staffing shortages as the most taxing factor, frequently leading to exhaustion and physical symptoms. As one nurse expressed, *"We're always short-staffed; I can't remember the last time I finished a shift without feeling dizzy from fatigue."* Participants emphasized how administrative pressure and bureaucracy intensified this burden, citing

endless documentation and rigid regulations that left little room for human connection. One physician noted, *"I spend more time filling out forms than talking to patients—it's mentally draining."* The theme also included ineffective leadership and management, as several participants reported inconsistent communication and a lack of appreciation from supervisors, describing it as *"like shouting into a void—no one listens even when we're drowning."* Another organizational barrier involved resource constraints, where inadequate medical supplies or malfunctioning equipment forced staff to improvise, increasing anxiety and guilt. A

technician remarked, *"Sometimes I feel sick to my stomach knowing I can't give patients the best care because we're out of essentials."* Similarly, shift work and scheduling conflicts emerged as a prominent subtheme, disrupting circadian rhythms and social lives. One participant mentioned, *"After rotating nights and days, I barely sleep and wake up with migraines—it feels like my body forgot how to rest."* The subtheme of workplace violence and safety concerns also resonated strongly, as healthcare workers reported verbal abuse and physical threats from patients or visitors, causing ongoing hypervigilance. Finally, ethical and legal pressures were evident, particularly among nurses and physicians who struggled with moral distress when institutional policies conflicted with patient-centered ethics. As one doctor summarized, *"The constant fear of lawsuits and moral compromise keeps me awake more than the night shifts ever did."*

The second major theme, psychosocial and emotional stressors, revealed the deep emotional toll of healthcare work, shaped by interpersonal dynamics, emotional regulation demands, and the invisible labor of care. The subtheme of emotional labor and compassion fatigue captured participants' ongoing struggle to maintain empathy amid overwhelming suffering. One nurse shared, *"You learn to smile while your heart breaks—it's like a mask you never take off."* Repeated exposure to trauma and death led many to emotional numbness and burnout, as expressed by another: *"I cry in my car after shifts; at work, I just switch off to survive."* Participants also described role conflict and ambiguity, citing the tension between patient care and administrative compliance. For instance, *"They want us to be both caregivers and data clerks—it's impossible to do both well."* Interpersonal dynamics further contributed to distress under the subtheme interpersonal strain with colleagues, characterized by gossip, competition, and blame culture, which one participant described as *"toxic and draining, worse than dealing with aggressive patients."* The patient-related emotional burdens were equally intense, as healthcare workers frequently confronted pain, death, and family expectations they could not fulfill. A young resident recounted, *"When a child dies, the body aches—it's not just sadness; it's physical."* Another subtheme, stigma and lack of recognition, illustrated how societal undervaluation of healthcare workers diminished morale. Participants voiced frustration about being *"treated like replaceable machines instead of professionals saving lives."* Finally, work–family conflict emerged as a pervasive stressor, as irregular hours and emotional spillover disrupted personal relationships. A

participant lamented, *"My kids stopped waiting up for me because they know I'll be too tired to talk."* These psychosocial dynamics intertwined with physical and psychological exhaustion, creating a cycle that blurred the boundaries between emotional pain and bodily distress.

The third main theme encompassed psychosomatic manifestations and coping responses, capturing how stress was internalized and expressed through both body and behavior. Participants described an array of physical symptoms of stress, including headaches, digestive issues, muscle tension, and palpitations. As one nurse noted, *"My shoulders are always tight, and my stomach burns after every double shift—it's like my body keeps score of every stressful day."* These physical experiences were closely tied to psychological disturbances, such as irritability, anxiety, and low mood. Another participant shared, *"There are nights when I feel too anxious to sleep, then wake up exhausted but still have to pretend everything's fine."* The subtheme of behavioral reactions revealed coping attempts that often worsened well-being—participants mentioned emotional eating, caffeine dependence, or avoidance. A male technician said, *"I started drinking more coffee just to stay awake, but it made my heart race even more."* Cognitive exhaustion emerged under cognitive strain and detachment, where participants described decision fatigue and emotional disconnection from patients: *"I sometimes talk to patients on autopilot; I'm there physically but mentally absent."* Despite these struggles, some described adaptive coping strategies, including peer support, mindfulness, and setting emotional boundaries. One participant mentioned, *"Talking to my colleagues after a hard shift helps me breathe again."* However, others relied on maladaptive coping strategies, such as denial and overworking, to avoid facing emotional pain. A senior nurse reflected, *"I just keep saying I'm fine until my body forces me to stop."* Overall, the convergence of physical symptoms, emotional depletion, and complex coping behaviors revealed how psychosomatic responses served both as indicators of distress and as mechanisms for temporary adaptation.

4. Discussion and Conclusion

The purpose of this qualitative study was to explore and interpret the work-related psychosomatic stressors experienced by healthcare workers in the United States. The analysis revealed three overarching themes—organizational and structural stressors, psychosocial and emotional stressors, and psychosomatic manifestations with coping

responses—each reflecting the complex interplay between systemic pressures, emotional labor, and physiological reactions. Collectively, these findings highlight how institutional contexts and interpersonal environments influence not only the mental but also the bodily health of healthcare professionals. The study underscores that psychosomatic stress in healthcare is not a purely individual phenomenon but a collective manifestation of organizational dysfunction, emotional suppression, and chronic overexposure to high-intensity work demands.

The first major category—organizational and structural stressors—captured how institutional inefficiencies and systemic shortcomings form the foundation for psychosomatic strain. Participants described chronic understaffing, excessive workloads, and administrative overload as primary sources of distress, leading to fatigue, headaches, and sleep disturbances. These observations are consistent with previous research emphasizing the direct link between work intensity and psychosomatic health outcomes (Marcatto et al., 2024). Marcatto et al. found that nurses working under sustained organizational stress reported significantly higher rates of somatic symptoms, particularly tension and gastrointestinal discomfort. Similarly, Goetz et al. noted that structural stressors such as long hours, unclear policies, and poor managerial communication serve as critical precursors to embodied stress responses (Goetz et al., 2025).

The participants' accounts of bureaucratic overload and managerial neglect echo global patterns observed in healthcare institutions. In particular, Arslanoğlu et al. identified that “stress of conscience”—the feeling of being unable to act according to professional and moral values due to organizational barriers—was a key contributor to burnout and psychosomatic distress among healthcare professionals (Arslanoğlu et al., 2024). Comparable sentiments were expressed in the present study, where participants reported moral exhaustion and physical pain associated with ethical dilemmas and conflicting institutional priorities. The study's findings also align with the broader literature linking poor leadership and insufficient resources to heightened physical manifestations of stress, including chronic pain, muscle tension, and cardiovascular reactivity (Herrmann & Glaser, 2021).

The subtheme of workplace violence and safety concerns emerged as another significant determinant of psychosomatic symptoms. Participants described heightened vigilance and sleep disturbances after exposure to verbal or physical aggression. These findings are consistent with

Dartey et al.'s evidence that occupational stress in healthcare often manifests through physical symptoms among nurses exposed to threatening environments (Dartey et al., 2023). Similarly, Omar et al. reported that Egyptian physicians experiencing patient-related hostility exhibited greater burnout and somatic fatigue (Omar et al., 2021). The chronic uncertainty associated with unsafe work settings contributes to sustained activation of stress pathways, reinforcing the psychosomatic link between perceived danger and physiological dysregulation.

The narratives also revealed that shift work and scheduling conflicts were among the most debilitating structural stressors, as they disrupted normal sleep patterns and family life. These findings closely correspond to Watanabe et al.'s study demonstrating that long working hours indirectly affect psychosomatic stress responses through irregular meals and shortened sleep (Watanabe et al., 2022). The body's inability to achieve circadian recovery fosters an internal state of imbalance that amplifies stress-related physical symptoms. Furthermore, the intersection of long hours and insufficient rest time amplifies inflammatory and hormonal dysregulation, as reported by Kaltenecker et al., who linked technostress and extended work exposure with low-grade inflammation among hospital employees (Kaltenecker et al., 2023). Taken together, the present findings affirm that organizational design, workload distribution, and scheduling equity are central determinants of healthcare workers' psychosomatic well-being.

The second theme—psychosocial and emotional stressors—captured the subjective and relational dimensions of occupational distress, highlighting the emotional labor intrinsic to caregiving professions. Participants described the emotional cost of continuous exposure to suffering, patient death, and ethical conflicts, which often resulted in chronic fatigue, emotional numbness, and physical exhaustion. These experiences resonate strongly with previous evidence suggesting that emotional suppression is one of the most powerful predictors of psychosomatic symptoms in healthcare workers (Linden & Lieberei, 2023). Linden and Lieberei conceptualized “embitterment” as a psychosomatic response to injustice and moral frustration—an interpretation consistent with the participants' sense of helplessness and frustration in morally conflicting situations.

The findings also reflected the role of emotional labor in amplifying physical and psychological symptoms. As one participant expressed, “I put on a smile while feeling sick inside,” a statement aligning with Maran et al.'s findings that nurses working in environments characterized by bullying

and hostility reported elevated levels of psychosomatic complaints (Maran et al., 2024). The emotional toll of managing patient suffering under adverse interpersonal and institutional conditions can transform empathy into exhaustion, a mechanism widely discussed in burnout literature (Cohen et al., 2023). Cohen et al. emphasized that workplace interventions focusing on emotional support and mindfulness effectively reduce burnout and somatic complaints, reinforcing the connection between psychosocial support and physical well-being.

Role conflict and ambiguity, another subtheme, emerged as a persistent source of cognitive and emotional strain. Participants reported confusion between administrative and caregiving responsibilities, echoing findings by Schilbach et al., who showed that unresolved past stressors heighten affective reactivity to new adversities, thereby intensifying psychosomatic responses (Schilbach et al., 2023). In essence, unclear roles not only increase cognitive overload but also re-trigger physiological stress reactions learned through prior occupational adversity.

The narratives of interpersonal strain among colleagues and lack of recognition further reinforced the psychosocial dimension of stress. Feelings of underappreciation and exclusion were reported as physically draining, mirroring results from Lenger et al., who found that perceptions of being uninformed or unsafe during the pandemic were associated with poorer psychosomatic health among frontline workers (Lenger et al., 2023). In a related study, Yi et al. observed that occupational pressure during the COVID-19 crisis directly contributed to psychosomatic burden among Chinese healthcare workers (Yi et al., 2021). Together, these findings suggest that relational disconnection and emotional isolation activate stress pathways comparable to those triggered by heavy workloads, underscoring the biopsychosocial unity of emotional and somatic distress.

Finally, work–family conflict emerged as a major psychosocial factor. Participants described guilt, emotional spillover, and family strain resulting from erratic schedules and chronic fatigue. These outcomes parallel the patterns reported by Khalil and Khalid, who found that healthcare professionals exposed to chronic pandemic-related pressure reported not only psychological distress but also somatic pain and fatigue (Khalil & Khalid, 2023). Emotional strain in the professional domain thus extends into personal life, contributing to continuous activation of stress-related biological systems.

The third major theme—psychosomatic manifestations and coping responses—illustrated how accumulated stress is embodied through physical, psychological, and behavioral expressions. Participants reported headaches, muscle tension, gastrointestinal discomfort, insomnia, and palpitations—symptoms well documented in psychosomatic literature (Nurdin & Murni, 2022). Nurdin and Murni emphasized that psychosomatic reactions represent an integrated mind–body process in which psychological stressors translate into bodily dysfunction via hormonal and neurological pathways. The participants’ narratives—such as “my body hurts even when I rest”—reinforce this conceptualization, demonstrating how unrelieved emotional tension becomes somaticized over time.

Psychological disturbances such as anxiety, irritability, and emotional exhaustion were widespread across participants, supporting earlier findings linking burnout with psychosomatic outcomes (Arslanoğlu et al., 2024; Cohen et al., 2023). Arslanoğlu et al. highlighted that “stress of conscience” predicts emotional exhaustion and moral injury, both of which are precursors to psychosomatic symptoms. In line with this, the present study found that participants who internalized guilt or moral conflict often experienced pronounced physical complaints. Similarly, Samuel et al. reported that work-related stressors perceived as unavoidable or unfair lead to higher frequencies of psychosomatic manifestations among nurses (Samuel et al., 2021).

Behavioral patterns such as increased caffeine consumption, emotional eating, and social withdrawal were also noted as maladaptive coping mechanisms. These behaviors often serve as temporary self-regulation strategies but perpetuate the physiological stress cycle. Taylor et al. found that digital mindfulness interventions reduced such maladaptive behaviors by improving self-awareness and emotional control (Taylor et al., 2022). However, not all technology-based interventions are uniformly beneficial. Egger et al. cautioned that overreliance on mobile health tools can paradoxically generate technostress, further aggravating physical symptoms (Egger et al., 2023). The coexistence of adaptive and maladaptive coping in the present findings reflects a tension between the need for psychological relief and the limitations of institutional support.

Interestingly, some participants reported adaptive coping strategies such as mindfulness, humor, peer support, and boundary setting, which mitigated both emotional and physical exhaustion. These findings are consistent with

Demirel et al.'s qualitative exploration of mobile stress management tools, which improved healthcare workers' capacity for early recognition and regulation of psychosomatic symptoms (Demirel et al., 2025). Similarly, Xu et al. found that mobile mindfulness programs enhanced emotional balance and decreased tension among emergency department staff (Xu et al., 2021). This alignment with the literature indicates that structured self-care interventions—whether digital or interpersonal—can serve as protective mechanisms against somatic consequences of occupational stress.

At a broader level, the participants' narratives echo the integrative perspective advanced by Nurdin and Murni, who conceptualized psychosomatic phenomena as multidimensional outcomes shaped by environmental, psychological, and biological interdependencies (Nurdin & Murni, 2022). When viewed through this lens, the convergence of organizational dysfunction, emotional overload, and bodily distress observed in this study represents a systemic failure of healthcare institutions to address the full continuum of employee well-being. The findings underscore that psychosomatic stress is not merely an indicator of individual vulnerability but a collective signal of organizational imbalance.

While this study contributes valuable insights into the psychosomatic experiences of healthcare workers, several limitations must be acknowledged. First, the qualitative design, while providing rich narrative depth, limits the generalizability of findings to other healthcare settings or national contexts. The study's sample consisted of 23 participants from the United States, which may not capture cultural or institutional variations influencing psychosomatic experiences in other countries. Second, the reliance on self-reported data introduces the possibility of recall bias or social desirability effects, as participants may have underreported sensitive emotional or physical symptoms. Third, although thematic analysis using NVivo enhanced rigor and consistency, the interpretive nature of qualitative coding may reflect researcher subjectivity. Lastly, the cross-sectional nature of data collection did not allow for tracking changes in psychosomatic symptoms over time, which future longitudinal or mixed-methods studies could address to better understand causal relationships.

Future research should seek to expand the cross-cultural scope of psychosomatic stress studies among healthcare workers by including participants from different healthcare systems and cultural contexts. Longitudinal designs could explore how organizational changes, leadership

interventions, or digital wellness programs influence psychosomatic outcomes over time. Mixed-methods research may also provide a more holistic understanding by integrating qualitative narratives with quantitative measures such as cortisol levels, heart rate variability, or inflammatory markers. Moreover, comparative analyses across healthcare professions—such as nursing, emergency medicine, and allied health—could illuminate profession-specific stress pathways and coping mechanisms. Finally, future studies should examine the long-term effects of digital stress management tools, balancing their benefits for emotional regulation with potential risks of technostress and digital fatigue.

Practically, healthcare organizations must adopt a systemic approach to stress management that addresses structural, interpersonal, and personal dimensions simultaneously. Interventions should prioritize fair workload distribution, adequate staffing, and consistent leadership communication to minimize chronic organizational strain. Integrating peer-support groups, mindfulness workshops, and emotional literacy training into workplace routines could help normalize emotional expression and reduce the internalization of stress. Additionally, institutions should promote ethical leadership and transparent communication to mitigate moral distress. Importantly, psychosomatic health indicators should be included in occupational health monitoring systems, recognizing that physical symptoms often serve as early warning signs of emotional overload. By fostering a culture of empathy, recognition, and shared responsibility, healthcare organizations can transform psychosomatic stress from an invisible burden into a visible metric for organizational well-being and resilience.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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