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## Burnout Syndrome Among Healthcare Professionals: Global Evidence and Strategies for Mitigation

**Running title: Burnout in healthcare professionals**

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### Summary

Occupational stress experienced daily by healthcare professionals can lead to burnout syndrome, a condition marked by exhaustion, anxiety, emotional distress and depression. The main aspects regarding burnout syndrome in healthcare settings and strategies to mitigate its impact on professionals' mental health and improve well-being are addressed.

### ABSTRACT

Workers are routinely exposed to stressful conditions that can lead to physical and psychological illness, largely due to the emotional and mental burden inherent to the labor process. These stressors, when persistent, may give rise to burnout syndrome-a multifactorial condition characterized by emotional exhaustion, chronic fatigue, anxiety, frustration and depressive symptoms. Burnout not only compromises the well-being of the individual but also impairs professional performance and interpersonal relationships. Although this syndrome can affect workers across multiple fields, healthcare professionals are particularly at risk, given their routine exposure to suffering, pain and patient mortality, which are inherent to their professional environment. The cumulative impact of such factors makes them especially susceptible to emotional overload and work-related mental health issues. This review aims to explore the main aspects of burnout syndrome among healthcare professionals, discuss its clinical manifestations and contributing factors and present preventive and mitigating strategies that can promote occupational health and well-being in this population.

**Keywords:** Burnout syndrome, Healthcare, Occupational stress, Mental health, Laboral environment

## Introduction

Work is an essential aspect of human existence, providing the means for self-sustenance and contributing to personal and social identity. However, under certain conditions, the work environment can become a source of intense stressful conditions and psychological pressure, leading to illness<sup>1</sup>. These adverse effects often stem from mental burdens imposed by specific demands and dynamics of the labor process<sup>2</sup>. In many cases, such conditions ultimately result in physical and emotional distress, which may not only compromise professional performance but also negatively impact personal well-being and social interactions<sup>3</sup>.

While all professionals are potentially susceptible to work-related stress, certain occupational groups are particularly exposed due to the nature of their responsibilities. Workers in construction<sup>4,5</sup>, law enforcement<sup>6</sup>, banking<sup>7</sup>, education<sup>8</sup> and the oil and gas industry<sup>9</sup> are frequently subjected to high-pressure situations, demanding workloads and environments that predispose them to chronic stress and its associated symptoms.

Regarding the distinct laboral groups, healthcare workers are among the most vulnerable to physical and psychological disorders related to their professional practice. This increased susceptibility is largely due to their constant exposure to distressing scenarios involving pain, suffering and the potential death of patients, compounded by excessive workloads and prolonged working hours, which contribute to both physical and mental exhaustion<sup>10-12</sup>. Moreover, the daily challenges of interacting with patients, family members and colleagues, often under emotionally charged circumstances, further intensify their stressful condition<sup>13</sup>. The fatigue accumulated through these demanding routines is also associated with a heightened risk of medical errors<sup>14,15</sup>.

Occupational stress is defined as a process through which workplace experiences and psychological demands lead to short- and long-term changes in workers' physical and mental health<sup>16</sup>. Workers may feel threatened or overwhelmed by labor-inherent circumstances, resulting in increased job insecurity, strained interpersonal relationships, bullying, emotional disturbances and decreased motivation and morale<sup>17</sup>. Specific stressors common in healthcare, such as high-pressure emergency situations, frequent exposure to patient suffering and death and interpersonal conflicts, are major contributors to occupational wear. These conditions can trigger a cascade of negative outcomes, including dissatisfaction, psychosomatic symptoms, low self-esteem, emotional vulnerability, psychiatric disorders, heightened anxiety and depression<sup>18</sup>.

The combination of all the aforementioned factors may ultimately increase the likelihood that healthcare professionals will develop burnout syndrome, also referred to as occupational burnout. This condition represents a serious threat to the health, well-being and performance of workers in this field. In this review, we aim to explore the main aspects related to burnout syndrome among healthcare professionals and to highlight strategies that may help prevent or mitigate its impact.

### Burnout syndrome: definition and general aspects

According to the World Health Organization (WHO), burnout is defined as an occupational phenomenon resulting from chronic workplace stress that has not been successfully

managed, with symptoms characterized by “feelings of energy depletion or exhaustion; increased mental distance from one’s job or feelings of negativism or cynicism related to one’s job; and reduced professional efficacy<sup>19</sup>”.

The first work to address this phenomenon is attributed to Schwartz and Will<sup>20</sup>, through a case study known as Miss Jones, which described the professional exhaustion experienced by a nurse. Later, in 1974, American psychiatrist Herbert Freudenberger formally introduced the term “burnout” as a syndrome marked by a state of physical and mental exhaustion stemming from occupational demands. His observations were based on systematic observation of volunteers working at a free medical clinic for individuals struggling with drug addiction in New York. Over time, these individuals exhibited progressive demotivation, emotional strain and psychological fatigue. The onset of symptoms occurred gradually, typically taking about a year to fully manifest, thus characterizing burnout as a chronic condition<sup>21</sup>. Freudenberger reported physical and behavioral symptoms such as frustration, paranoid complex regarding coworkers' perceived interference with personal ambitions, rigidity in work practices, irritability and signs of depression.

Although Freudenberger is recognized as a pioneer in the scientific study of burnout, the most widely accepted and influential definition was proposed by Christina Maslach and Susan E. Jackson in 1981. They defined burnout as “a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do ‘people work’ of some kind<sup>22</sup>”. Burnout is thus understood as a response to chronic occupational stress, emerging within the context of the work environment and leading to progressive declines in personal well-being, job performance and the quality of both family and social relationships<sup>19</sup>.

Building upon Freudenberger's early observations, Maslach, a social psychologist, investigated how individuals coped with emotional demands in their workplace environments, arriving at conclusions that aligned with and expanded upon those of her predecessor<sup>23</sup>. Her analysis focused particularly on healthcare professionals, such as physicians and nurses and how they developed coping mechanisms when confronted with their patients' suffering. One such mechanism was *depersonalization*, a cognitive strategy adopted as a form of emotional self-protection. By distancing themselves emotionally from patients, professionals attempted to shield themselves from psychological overload. While such behavior may serve as a temporary defense, it also reflects the early stages of burnout and contributes to the deterioration of empathetic engagement in clinical care.

Based on her observations, Maslach was the first to develop a standardized instrument to assess burnout syndrome, known as the Maslach Burnout Inventory (MBI). This tool conceptualizes burnout from a socio-psychological perspective, evaluating it as a response to emotional strain arising from excessive interpersonal interactions. The MBI is structured around three central dimensions that can be related to each other, yet independent: emotional exhaustion (EE), depersonalization (DP) and reduced personal accomplishment (PA)<sup>22</sup>. (EE) is characterized by a depletion of energy and enthusiasm, accompanied by feelings of demotivation and the sense that one no longer has the capacity to give of oneself as before. (DP) manifests as a loss of empathy and emotional detachment from clients, who are then treated more like objects than human beings. Finally, reduced

PA reflects diminished self-confidence and a negative self-evaluation regarding professional competence and achievement.

In addition to the MBI, several other instruments have been developed and employed to measure burnout syndrome. The Copenhagen Burnout Inventory (CBI) distinguishes between physical and psychological exhaustion as a central construct, through 19 items distributed across three scales assessing personal burnout, work-related burnout and client-related burnout.<sup>24</sup> The Bergen Burnout Inventory (BBI) consists of 9 items evaluating exhaustion at work, cynicism toward work's meaning and feelings of inadequacy in professional roles<sup>25</sup>. The Oldenburg Burnout Inventory (OLBI), in turn, measures two key dimensions: exhaustion and disengagement from work<sup>26</sup>, whilst the Shirom-Melamed Burnout Measure (SMBM) focuses on emotional exhaustion, physical exhaustion and cognitive weariness<sup>27</sup>. See<sup>28</sup> for a comprehensive review of these instruments.

### **Burnout syndrome among healthcare professionals**

According to estimates from the Agency for Healthcare Research and Quality, burnout syndrome affects approximately 30-50% of physicians, physician assistants and nurse practitioners, as well as 10-70% of nurses<sup>28</sup>, highlighting a concerning trend within the healthcare workforce. As briefly outlined in the introduction, healthcare professionals are particularly susceptible to burnout due to unique stressors inherent to their daily practice. These include prolonged working hours, emotionally taxing interactions with patients and families and frequent exposure to pain, suffering and death<sup>10</sup>.

The global prevalence of burnout among healthcare workers is on the rise. A systematic review and meta-analysis conducted by Woo, et al<sup>30</sup>, reported a worldwide burnout prevalence exceeding 11% among nurses, with pediatric nurses being the most affected subgroup. In the United States (USA), a comprehensive study by Shanafelt, et al<sup>31</sup>, demonstrated that more than half of physicians evaluated between 2011 and 2014 met the criteria for burnout, with prevalence increasing over time. Further, the same group found that burnout rates among physicians were significantly higher than those observed in the general USA working population, underscoring the intense pressure faced by this professional category<sup>32</sup>. A study by Shenoi, et al<sup>33</sup>, revealed that approximately two-thirds of American pediatric critical care physicians exhibited symptoms of burnout, with a substantial portion contemplating leaving the profession, a development that poses a serious risk to the stability of critical care services. Similarly, burnout is a growing concern among nurses. Dyrbye, et al<sup>34</sup>, found that more than 35% of the 812 nurses they evaluated experienced burnout symptoms, while nearly 30% exhibited signs of depression. These psychological burdens were accompanied by increased absenteeism and reduced job performance, which are particularly alarming given the pivotal role nurses play on the frontlines of patient care.

Studies conducted across various countries reinforce the global nature of burnout syndrome among healthcare workers and highlight factors that contribute to this condition. In Switzerland, Hämmig<sup>35</sup> assessed 1,840 healthcare professionals across six public hospitals and rehabilitation clinics and found that approximately one in twelve presented symptoms of burnout. These symptoms were strongly associated with high physical, emotional and mental workloads, as well as elevated occupational stress. A significant number of these professionals

frequently considered leaving the profession, mainly due to imbalances between effort and reward and difficulties reconciling work and personal life. Similarly, in the Netherlands, Van der Wal, et al<sup>36</sup>, reported high levels of psychological distress among anesthesiologists, about 40% of those surveyed, representing a rate nearly 50% higher than in the general Dutch population. Burnout syndrome was present in 18% of these professionals, surpassing the national average of 13% and was attributed to the high-stress environment of anesthesiology and possibly to personality traits common among practitioners of this specialty.

In Australia, physicians working in emergency departments exhibit particularly high rates of burnout, with more than 60% reporting symptoms, significantly higher than their peers in other specialties<sup>37</sup>. Simpson and Knott<sup>38</sup> emphasized the psychological toll of constant decision-making, a common and intense demand in emergency medicine, which places physicians in a persistent state of stress, contributing to the onset and development of burnout syndrome. In New Zealand, a study by Chambers, et al<sup>39</sup>, using the CBI to assess physicians and dentists working in the public health sector revealed a high prevalence of personal burnout (50%), especially among professionals in emergency medicine and psychiatry. The study also noted a low response rate (only 40% of professionals completed the survey), suggesting that the actual prevalence of burnout could be significantly higher than reported. These findings underscore the pressing need for structural, institutional and psychological strategies aimed at preventing and managing burnout among healthcare professionals worldwide.

There is a growing body of research on burnout syndrome in the Caribbean and Latin America, highlighting important regional challenges. A study by McKensie, et al<sup>40</sup>, in the Bahamas, using the MBI, found that EE was the most frequently reported dimension, particularly among young resident physicians and medical students. Older physicians appeared better able to manage their working hours, while younger professionals often worked consecutive shifts (recurrently in consecutive days), leading to significant physical strain. Additionally, DP was more commonly reported among female physicians than their male counterparts. In Cuba, institutional reports indicate that 25% to 40% of nurses either suffer from or are at risk of developing burnout syndrome. Symptoms such as lack of motivation, irritability, fatigue and anxiety were commonly described, along with somatic complaints such as headaches, muscle pain and flu-like symptoms. These manifestations disrupt daily work activities and reinforce feelings of frustration toward the profession<sup>41</sup>.

A broad multicentric study by Suñer-Soler, et al<sup>42</sup>, which included Spanish-speaking Latin American countries, identified low salaries in low-income economies as one of the main contributors to the onset of burnout among healthcare professionals. EE was again the most prominent dimension reported and was found to negatively affect both family and personal relationships. In a comparative study involving Spanish and Brazilian nurses, Baldonado-Mosteiro, et al<sup>43</sup>, demonstrated a strong association between EE and burnout, underscoring the need for early preventive and interventional strategies, since this dimension is often the initial phase in the burnout trajectory.

In Brazil, Roseno, et al<sup>44</sup>, reported that nurses from municipalities in the state of Paraíba, assessed using the CBI, exhibited moderate levels of both personal burnout and patient-



related burnout. Age and duration of professional experience were the most prevalent factors associated with the syndrome. Similarly, Freitas and Freire<sup>45</sup> observed a positive correlation between high workloads and burnout prevalence among nurses in a public hospital in Natal, Rio Grande do Norte. Intensive care nurses, assessed via MBI, showed high levels of EE and DP and low levels of PA, a pattern commonly associated with prolonged exposure to highly demanding work environments<sup>46</sup>.

Furthermore, a study by Alves, et al<sup>47</sup>, conducted in a public hospital in Mossoró, Rio Grande do Norte, identified high levels of personal burnout and moderate levels of work-related and client-related burnout. The study found strong positive correlations between the number of employment contracts and both personal and work-related burnout, as well as between workload and personal burnout. A moderate positive correlation was also observed between workload and work-related burnout. The findings highlight how extended working hours contribute to physical and psychological exhaustion, increasing vulnerability to occupational stress and impairing both professional performance and interpersonal relationships.

In Egypt, a study by Elshaer, et al<sup>48</sup>, evaluated the relationship between job stress and burnout syndrome amongst critical care healthcare workers, including nurses and healthcare technicians. Using the MBI, the authors identified elevated levels in all three burnout dimensions: EE in 80.5% of participants, DP in 21.9% and PA in 31.7%. These findings highlight the highly stressful nature of emergency departments and intensive care units as work environments in the Egyptian healthcare system. Similarly, in Ethiopia, Lrago, et al<sup>49</sup>, assessed burnout in physicians working in public hospitals. Their MBI-based evaluation revealed high prevalence of burnout, with PA being the most affected dimension (91%), followed by DP (85.1%) and EE (65.2%). Among the most frequently reported stressors was the number of patients seen per week, reinforcing the role of excessive workload and long working hours as central factors in the development of burnout among physicians.

In China, a nationwide study by the China Neurologist Association assessed burnout among neurologists using the MBI and revealed a high incidence of the syndrome, mainly driven by elevated work-related stress, low job satisfaction, unsatisfactory remuneration and excessive weekly work hours<sup>50</sup>. Alarming, more than 60% of neurologists reported career dissatisfaction, with many stating they would not choose the profession again if given the chance. These factors, compounded by sleep deprivation due to frequent shifts, contribute to significant psychological morbidity within this medical specialty. In Japan, Umene-Nakano, et al<sup>51</sup>, investigated burnout among psychiatrists and found that 46% of participants reported difficulty in achieving work-life balance. The PA dimension was the most commonly affected (72%), suggesting a widespread sense of reduced professional efficacy. EE was identified in 21% of participants, closely associated with low job satisfaction, while 12% reported high DP levels. Notably, a greater number of night shifts per month was significantly associated with higher DP, further underscoring how demanding schedules contribute to occupational stress and burnout in this group.

In a study assessing the prevalence of burnout among healthcare professionals in Mongolia, Bagaajav, et al<sup>52</sup>, investigated the key factors associated with the condition. The research included 180 physicians (45.9%) and 212 nurses

(54.1%), with a high response rate of 87%, based on a self-administered questionnaire. Burnout was evaluated using the CBI, while job stress was measured through the effort-reward imbalance (ERI) model. The results indicated relatively high burnout levels, with mean scores of 45.39 for personal burnout, 44.45 for work-related burnout and 32.46 for client-related burnout. Multiple regression analysis revealed that ERI was significantly associated with all burnout dimensions, whereas over-commitment was specifically linked to personal and work-related burnout, further highlighting the strong influence of job stress on burnout among Mongolian healthcare workers.

### **Strategies to mitigate the impacts of burnout syndrome and support mental health in healthcare professionals**

Given the increasing awareness of burnout syndrome among healthcare professionals and its potential consequences for both individual well-being and the quality of patient care, the scientific community has turned its attention to identifying effective strategies to mitigate its impact. Recent evidence highlights the relevance of multifaceted interventions, ranging from individual-centered practices, such as mindfulness, breathing techniques and emotional support groups, to broader organizational efforts focused on improving workplace dynamics and reducing excessive workloads. For instance, a systematic review by Araújo, et al<sup>53</sup>, demonstrated that interventions like mindfulness training, yoga and Balint groups are effective in decreasing emotional exhaustion and enhancing empathy among healthcare workers. Similarly, Adam, et al<sup>54</sup>, reviewed the use of digital tools for stress reduction and burnout prevention, emphasizing the potential of mobile health platforms and cognitive-behavioral strategies when combined with institutional support. These findings provide a foundation for the implementation of targeted measures to address burnout in healthcare settings, which will be further explored across this section.

As seen throughout this review, burnout syndrome is characterized as a chronic work-related condition that emerges in response to sustained occupational stress, directly affecting the professional performance and well-being of healthcare workers. In this context, several strategies have been proposed to mitigate its impact, with emphasis on reducing daily working hours, including the frequency and duration of night shifts, as well as promoting regular physical exercise and the adoption of relaxation techniques such as meditation and yoga<sup>55</sup>. These interventions have been shown to foster greater personal fulfillment and decrease the sense of emotional and physical exhaustion. Moreover, reducing workload not only contributes to minimizing stress levels but also facilitates a healthier integration between professional responsibilities and personal life, thereby enhancing overall quality of life and job satisfaction<sup>55</sup>.

A major challenge in addressing burnout among healthcare professionals lies in the limited access to appropriate treatment - or even its complete absence. Compounding this issue, many professionals refrain from seeking help due to fear of stigma, being labeled as mentally unfit or facing negative career repercussions. According to Pospos, et al<sup>56</sup>, concerns about confidentiality, potential impact on professional trajectories and constraints related to time and cost represent significant barriers to accessing proper care. In this regard, digital health tools, such as mobile and web-based applications, have emerged as promising, low-cost alternatives. These platforms offer accessible means of promoting self-care, alleviating stress and managing symptoms

of exhaustion and depression, especially in contexts where mental health services are scarce or underutilized.

In many cases, burnout significantly diminishes the worker's sense of resilience, particularly in situations where they feel powerless to resolve challenges intrinsic to their professional practice. To counteract this sense of incapacity, Mealer<sup>57</sup> emphasizes the importance of a collaborative approach between the healthcare professional and the employing organization. Workers are encouraged to foster stronger interactions and mutual support among colleagues, while also setting realistic and achievable professional and personal goals. From an organizational perspective, the promotion of positive interpersonal relationships between management and staff, along with the implementation of comprehensive training programs aimed at enhancing psychosocial work conditions, are crucial strategies. Such measures have demonstrated efficacy in reducing burnout triggers and ultimately improving the overall well-being and job satisfaction of healthcare professionals<sup>58,59</sup>.

## Conclusion

Burnout syndrome represents a pervasive and complex challenge for healthcare professionals worldwide, deeply rooted in the chronic stressors and demanding nature of their work environments. As detailed throughout this review, the multifaceted dimensions of burnout, including emotional exhaustion, depersonalization and reduced personal accomplishment, impact not only the quality of patient care but also the physical and mental well-being of the workers themselves. Despite its prevalence and significant consequences, burnout often remains underrecognized and inadequately addressed, partially due to stigma and barriers to seeking support. Though, evidence-based strategies involving workload management, psychosocial support organizational interventions and individual resilience-building offer promising avenues to mitigate burnout's adverse effects. Ultimately, fostering a culture of awareness, prevention and proactive intervention is essential to preserve the health of healthcare professionals and ensure sustainable, high-quality care delivery. Continued research and policy commitment are imperative to advance these goals and adapt interventions to the evolving demands of the healthcare sector.

## Declarations

### Ethics approval and consent to participate

Not applicable.

### Consent for publication

Not applicable.

### Availability of data and materials

Not applicable.

### Conflicts of interest

The authors declare the inexistence of any financial interests or other dual commitments that represent potential conflicts of interest related to the present manuscript.

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## Authors' contributions

Conceived and planned the work: CCF, BNA, DAL, JOS, MAMF; Wrote the manuscript: CCF, JOS, DAL, BNA, SB, DF, MAMF; Approved the final version: CCF, BNA, JOS, DAL, SB, DF, MAMF.

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