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Burnout Syndrome in Doctors on Call in Intensive Care Units: An Integrative Review

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ABSTRACT: The article highlights the crucial role of Intensive Care Units (ICUs) in providing intensive care to seriously ill patients, addressingthe stress faced by patients, families and healthcare professionals. It focuseson intensive medicine, describing intensivists and their exclusive dedication to the ICU. It also addresses the impact of the COVID-19 pandemic, highlighting how ICU professionals faced mental health problems, particularly Burnout Syndrome. This work also describesthis syndrome and its three main dimensions: emotional exhaustion, depersonalization, and low personal fulfillment. Finally, it establishes the purpose of the study, to analyze the literature on Burnout Syndrome in doctors on duty in ICUs, seeking to understand its characteristics, risk factors and impacts, aiming to contribute to the promotion of the mental health of these professionals.

Background:In the International Classification of Diseases - 11th Revision, Burnout Syndrome is categorized as an occupational phenomenon, but not as a clinical condition. This syndrome is described as resulting from stress that is not successfully controlled in the workplace and is characterized by three main dimensions: high emotional exhaustion, high depersonalization, and low personal accomplishment.

Materials and Methods: The present workis an integrative review conducted following six methodological steps: 1) Identification of the topic and formulation of the research question; 2) Definition of study inclusion and exclusion criteria; 3) Extraction of information from selected studies and their categorization; 4) Evaluation of the studies included in the review; 5) Interpretation of results; and 6) Showcaseof the literature datasynthesis.

Results: We divided the results of this study into three categories: 1) Prevalence and factors associated with Burnout Syndrome. 2) Burnout syndrome in adult ICU vs. pediatric and neonatal ICU doctors. 3) Burnout Syndrome in intensive care physicians during the COVID-19 pandemic period.

Conclusion: The evidence presented in this study highlights the worrying prevalence of the BurnoutSyndrome in this population, as well as the associated risk factors, such as extensive workload, emotional challenges inherent to the profession and constant exposure to high pressure and stressful situations.

Key Word:Burnout Syndrome, ICU, on duty, COVID-19, mental health.

I. INTRODUCTION

An intensive care unit (ICU) is defined as an organized system for the provision of care to critically ill patients, which provides intensive and specialized medical and nursing care.With enhanced monitoring capacity, it providesmultiple modalities of physiological organ support tosustain life during a period of acute organ system failure. Therefore, this environment is a significant source of stressfor the patient, their families and their doctor and care team (MARSHALL et al., 2017).

It is important to understand that critical care medicine involves the assessment, resuscitation, and ongoing management of critically ill patients with life-threatening single- or multiple-organ failure. An intensivist or ICU specialist is a medical professional trained in critical care medicine or critical care, usually according to standards established by a certifying body. This doctor ideally does not have outpatient responsibilities and spends most of his professional time in the ICU, together with other intensivists (AMIN et al., 2016).

In 2020, during the COVID-19 pandemic, the team working in ICUs, including doctors, nurses, and other healthcare professionals, was undeniably the most directly impacted by the increase in the number of patients seriously ill with the disease. Healthcare professionals, especially those working on the frontline, have experienced high rates of mental health issues such as depression, anxiety, stress, and burnout syndrome. During the period, some factors corroborated to this scenario, such as the risk perception to one's

own health due to exposure to COVID-19, very high mortality rates among patients under their care, reduced proportion of employees, shortage of individual protective equipment and the need to work beyond their level of expertise(HALL et al., 2022).

In the International Classification of Diseases (ICD) - 11th Revision, Burnout Syndrome is categorized as an occupational phenomenon, but not as a clinical condition. This syndrome is described as resulting from stress that is not successfully controlled in the workplace and is characterized by three main dimensions: high emotional exhaustion, high depersonalization, and low personal fulfillment (WHO, 2019).

Emotional exhaustion is characterized by a feeling of deep and persistent emotional exhaustion, in which affected individuals may feel emotionally drained, without energy or motivation to face the demands of work or personal life. Depersonalization is a detached and insensitive attitude towards others, especially patients or clients, resulting in a colder, cynical, or indifferent attitude, making it difficult to have an empathetic and affective connection with the people around you. Additionally, low personal fulfillment consists of the lack of satisfaction and fulfillment with work and the feeling that personal and professional achievements are insignificant or meaningless, questioning one's competence, loss of interest in one's professional activities, and general lack of fulfillment in professional life (RÖSSLER, 2012).

In this sense, the objective of this study is to analyze and synthesize the scientific literature available on Burnout Syndrome in doctors on duty in ICUs. The study aims to identify the main characteristics, risk factors and impacts of this syndrome in this specific group of health professionals. By gathering and analyzing the available evidence, we expectto provide a comprehensive and up-to-date understanding of the topic, contributing to the development of effective measures to promote the mental health and well-being of ICU doctors on duty.

II. MATERIAL AND METHODS

This is an integrative review conducted following six methodological steps: 1) Identification of the topic and formulation of the research question; 2) Definition of study inclusion and exclusion criteria; 3) Extraction of information from selected studies and their categorization; 4) Evaluation of the studies included in the review; 5) Interpretation of results; and 6) Showcaseof the literaturesynthesis (Sousa et al., 2018).

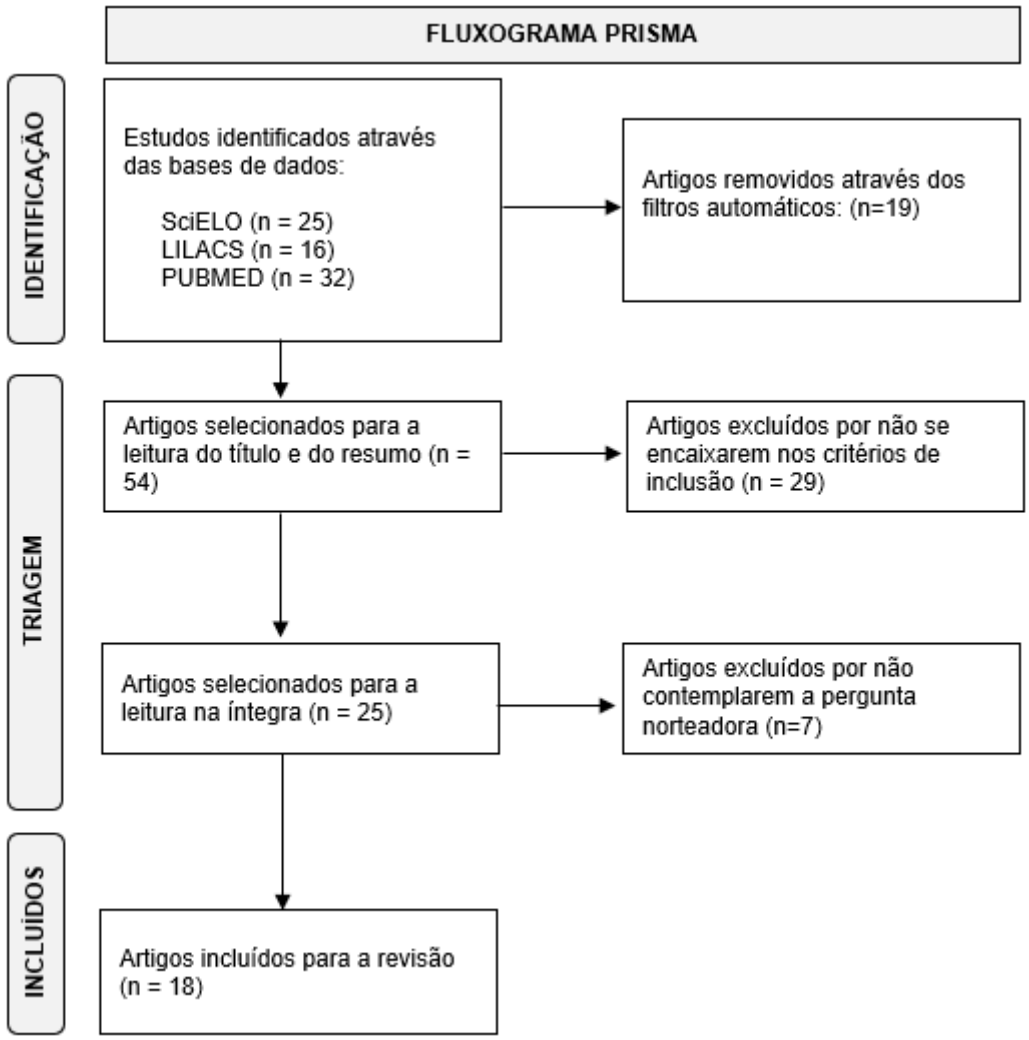
The guiding research question consisted of: "What is the panorama of Burnout Syndrome in medical professionals who work in ICUs?" To answer this question, we utilize the descriptors "Burnout Syndrome", "intensive care unit", "doctors" and "on duty", as well as their variations in English. The search for paperswas carried out in July 2023 in the Latin American and Caribbean Literature in Health Sciences (LILACS), Scientific Electronic Library Online (SciELO) and National Library of Medicine (PUBMED) databases. The search strategies used are demonstrated in table 1.

Table 1. Search strategies used.

Data base	Search strategy
PubMed	"burnout syndrome" AND "intensive care unit" AND (doctors OR doctor OR "medical staff" OR physician OR physicians)
SciELO	(síndrome de burnout) AND (unidade de terapia intensiva) AND (médico) OR (plantonista) OR (médicos) OR (equipe médica)
LILACS	"burnout syndrome" AND "intensive care unit" AND (doctors OR doctor OR "medical staff" OR physician OR physicians)

We utilized the following inclusion criteria: publication between 2016 and 2023, indexing in the selected databases, availability to read in full, in English, Portuguese or Spanish. The exclusion criteria were: articles that did not fit the chosen methodological type, not published in the given language, that did not answer the research question, duplicates, with inconclusive results, published outside the delimited period of time and methodological types of literature review, review systematics, meta-analysis, animal experiments and case reports and series. Two researchers independently performedthe search for manuscriptsand selection of studies, following the PRISMA flowchart for integrative and systematic reviews (Figure 1).

Figure 1. Adapted PRISMA flowchart used to screen manuscripts.



III. RESULT

We selected 18 (eighteen) studies to compose thisreview, as shown in table 2. It is important to highlight that, of these studies, all were cross-sectional studies using questionnaires. In general, all studies evaluated the domains of Burnout Syndrome and identified that most intensive care physician participants in the studies analyzed presented high levels of emotional exhaustion, depersonalization, physical exhaustion, and low personal fulfillment, corroborating the predominance of this syndrome amongst these professionals.

Chart 2. Studies selected for the integrative review.

Author (year)	Country	Kind of study	Objective
Balan et al. (2019)	Romania	Cross-sectional	To identify to what extent Burnout Syndrome is present among medical staff in anesthesia and intensive care units in Romania and whether there are significant

			differences depending on age or sex.
Yazıcı et al. (2021)	Turkey	Cross-sectional	To detectvariables associated with Burnout Syndrome in pediatric intensive care units and pediatric emergency medicine departments in Turkey
Fumis et al. (2022)	Brazil	Cross-sectional	To evaluate the prevalence of Burnout Syndrome among intensive care physicians working in a tertiary private hospital, as well as their perception of the impact of the COVID-19 pandemic on their lives.
Castro et al. (2020)	Brazil	Cross-sectional	To evaluate the frequency of severe Burnout Syndrome among intensive care professionals working in ICUs or smaller units and correlate it with work engagement.
Voultsos et al. (2020)	Greece	Cross-sectional	To investigate the incidence of Burnout and its association with state and trait anxiety and other sociodemographic, behavioral, and occupational parameters, among intensivists.
Vincent et al. (2019)	UK	Cross-sectional	To assess Burnout in the UK ICU workforce and across all three domains of Burnout.
Alvares et al. (2020)	Brazil	Cross-sectional	To evaluate the prevalence and factors associated with Burnout syndrome in intensive care unit professionals.
Saravanabavan et al. (2019)	India	Cross-sectional	To evaluate the prevalence of stress and burnout syndrome among doctors and other health professionals in ICUs.
Stocchetti et al. (2021)	Italy	Cross-sectional	To investigate the prevalence of symptoms of anxiety, depression and insomnia, Burnout Syndrome, and resilience in healthcare professionals during the

			COVID-19 pandemic and detect potential factors associated with their psychological response
Malaquin et al. (2017)	France	Cross-sectional	To determine the prevalence of Burnout Syndrome among employees at Amiens University Hospital and evaluate associated factors.
Tironi et al. (2016)	Brazil	Cross-sectional	To estimate the prevalence of Burnout in intensive care physicians working in adult, pediatric and neonatal ICUs in five Brazilian capitals.
Chinvararak et al. (2022)	Thailand	Cross-sectional	To assess the prevalence of burnout syndrome, anxiety, depression, and post-traumatic disorders, as well as examine their associated factors among Thai healthcare professionals during the COVID-19 pandemic.
Wang et al. (2021)	China	Cross-sectional	To investigate the prevalence and factors associated with burnout in ICU physicians in mainland China.
Meynaar et al. (2021)	Holland	Cross-sectional	To study Burnout and its association with work engagement and resilience among Dutch intensivists after the COVID-19 crisis.
Barros et al. (2016)	Brazil	Cross-sectional	To investigate the presence of Burnout among intensive care physicians in ICUs in Sergipe, as well as possible predictors of the syndrome.
Hoppen et al., 2017	Brazil	Cross-sectional	To identify Burnout Syndrome among intensivists treating adult patients in the city of Porto Alegre.
Marques et al. (2018)	Brazil	Cross-sectional	To estimate the prevalence of burnout syndrome and associated factors among ICU doctors on duty in São

			Luís-MA.
Tapia et al. (2022)	Ecuador	Transverse	To determine the presence of Burnout Syndrome in the internal medicine team and in the ICU of the Hospital Provincial General Docente de Riobamba, Chimborazo, Ecuador.

IV. DISCUSSION

Prevalence and factors associated with Burnout Syndrome

Various risk factors, such as age, gender, marital status, personality traits, ICU work experience, work environment, workload, and shift work, ethical issues, and end-of-life decision-making, are responsible for affecting the prevalence of Burnout among ICU professionals. However, the impact of these risk factors on this syndrome remains poorly understood (CHUANG et al., 2016).

In their study, Balan et al. (2019) applied a questionnaire to 275 participants, finding that the level of Burnout Syndrome is considered average, regardless of the individuals' biological gender or age. Given these results and considering the risk factors identified in the psycho-emotional sphere, as well as communication skills and the degree of organization and professional planning, it is suggested that the concern of the ICU medical team with psycho-emotional health may not be being efficient, as well as the identification and development of communication skills.

In a study conducted in Brazil, Castro et al. (2020) identified a high prevalence of severe Burnout Syndrome amongst intensive care professionals, with no significant difference in this frequency between different environments or professional groups. Furthermore, they found associationsbetween stress levels and the number of days working in another hospital, increasing the risk of severe Burnout Syndrome. The analyzes also revealed a positive correlation between symptoms of depression, anxiety, stress, and the presence of Burnout in the participants. Finally, a negative correlation was observed between burnout levels and work engagement, suggesting that emotional exhaustion can negatively affect engagement and satisfaction in the professional environment.

Barros et al. (2016) found results that showed that more than 40% of participants had symptoms of Burnout. According to the literature, the risk of Burnout is significantly higher in some professions, especially among healthcare professionals (HERT, 2020). The authors suggest that the results of this study are related to the stressful work routine experienced by intensive care medicine professionals.

In addition to the effects of an exhausting workload, long working hours and night shifts, the field of medicine presents specific stressors, such as facing death directly, the need to make quick decisions and the requirement for emotional control to deal with issues related to patients and their families (EMBRIACO et al., 2007; MAELER et al., 2007).According to Voutsos et al. (2020) and Vincent et al. (2019), intensive care physicians presented high levels of emotional exhaustion, depersonalization, and low personal fulfillment. For Voultsos et al. (2020), the presence of Burnout was associated only with behavioral and psychological characteristics, that is, greater trait anxiety, difficulty in acting accurately and fear of having committed a medical error in the past. No sociodemographic or occupational factors were associated with severe Burnout in the multivariate analysis.

Furthermore, Vincent et al. (2019) assessed that, although it is important to be cautious about overgeneralizations, the observed gender differences are intriguing. Women had significantly higher emotional exhaustion scores, as demonstrated by Stocchetti et al. (2021) and Marques et al. (2018), and women were at increased risk for this domain. On the other hand, men were at higher-risk for depersonalization scores.

A study conducted in India evaluated intensive care physicians working more than 50 hours per week on 6 working days per week and in shifts of 8 to 9 hours per day and found high levels of participants with Burnout Syndrome. This implies that working hours in India are longer and possibly contribute to a higher incidence of burnout among healthcare professionals. In such group, in which most work is cognitively intensive, working hours can be a significantindicator of stress (HU et al., 2016; SARAVANABAVAN et al, 2019).

In France, Malaquin et al. (2017) also revealed a high prevalence of Burnout Syndrome among all members of the intensive care team. However, in alarge French multicenter survey, most respondents were anesthetists or nurses, and only 15% of respondents were intensivists, which is a limitation of the study. Furthermore, due to the high rate of depression amongst those interviewed, the authors hypothesized that the desire to leave thejob may be related to depressive symptoms.

Similarly, in China, Wang et al. (2021) identified a high rate of burnout in ICU doctors. Difficult treatment decisions, number of children, and income satisfaction are independently associated with burnout rates among critical care physicians. Similarly,Voultsos et al. (2020), Stocchetti et al. (2021) and Chinvararak et al. (2022)found high levels of anxiety, depression and post-traumatic stress disorder.

The results of the research by Hoppen et al. (2017) indicated that young doctors with little experience had a higher incidence of Burnout, as well as those with long weekly hours, who also demonstrated a greater propensity to Burnout. These findings are probably related, since young doctors have less professional experience and work long hours, combining shifts and other horizontal activities. The proportion of older doctors who still work long shifts is lower, suggesting that those who consider shifts a burden may have chosen to abandon this activity, protecting themselves from Burnout, as shown by other findings in the literature(GUNTUPALLI et al., 2014; TIRONI et al., 2016).

Burnout syndrome in adult ICU vs. pediatric and neonatal ICU

Pediatric ICU staff work with children with critical illnesses and injuries, trauma, confronting and tragic psychosocial circumstances, lifelong illnesses and disabilities that can cause moral distress and dilemma, and/or palliation and death (CROWE et al., 2021). In NICUs, medical staff are responsible for caring for premature and critically ill newborns, interacting with parents, and making treatment and care decisions for babies with life-threatening conditions. Therefore, it is intuitive to assume that there may be high levels of Burnout experienced by teams in these scenarios(CARLETTO et al., 2022).

A study conducted in pediatric ICUsby Yazıcı et al. (2021) found that 76.1% of healthcare professionals in the pediatric ICU and other pediatric emergency services had Burnout Syndrome. Furthermore, the rate of emotional exhaustion was significantly higher among nurses compared to doctors and other healthcare professionals. However, doctors had significantly higher rates of Burnout Syndrome compared to nurses and other healthcare professionals.

For Tironi et al. (2016), the prevalence of Burnout based on a high score in at least one dimension was higher for doctors who worked in adult ICUs and lower for doctors who worked in pediatric and neonatal ICUs. When considering high scores in the three dimensions simultaneously, Burnout was observed only in doctors who worked in adult ICUs. When analyzed separately, the most affected dimension was emotional exhaustion; In this case, this exhaustion can be translated as physical and emotional overload. Depersonalization was the second most affected dimension, followed by ineffectiveness.

Alvares et al. (2020) utilizedMaslach and Geunfeld as the two criteria to evaluate Burnout Syndrome.The prevalence rates for the disease were 0.41% and 36.9%, respectively. The authors noted that pediatric ICU professionals were more likely to develop emotional exhaustion compared to other ICU professionals. On the other hand, those over 35 years of age were less likely to develop emotional exhaustion and depersonalization.

Burnout syndrome in intensive care physicians during the COVID-19 pandemic period

During the COVID-19 pandemic, the burden on intensive care physicians increased considerably. Throughthis period, critical care physicians often had to make difficult decisions when selecting which patients would be admitted to the ICU. Additionally, intensivists must deal with the constant fear of becoming infected or infecting their loved ones with the virus. These new circumstances probably increased the sources of emotional suffering and the prevalence of Burnout among these professionals (CAILLET et al., 2020; SOCOLOVITHCET al., 2020).

In a study performed in Brazil during the COVID-19 pandemic by Fumis et al. (2020),37.2% of the 51 intensive care physicians interviewed met the criteria for Burnout Syndrome. When analyzing the three domains that characterize this syndrome, 96.1% of the doctors interviewed hada low level of personal fulfillment, 51.0% demonstrated a high level of depersonalization and another 51.0% exhibited a high level of emotional exhaustion. Conflicts related to decision-making between the ICU team and other attending physicians were frequent, representing 50% of all conflicts

observed. Additionally, one-third of participants had been diagnosed with COVID-19, while 43.1% reported having an infected family member and 15.7% lost someone close to them due to the COVID-19 pandemic.

Similarly, the study conducted by Stocchetti et al. (2021) and Tapia et al. (2022) found results confirming that the COVID-19 pandemic had a significant adverse impact on the psychological well-being of ICU workers. The presence of symptoms of anxiety, depression and high levels of resilience were associated with high emotional exhaustion, high depersonalization, and low levels of personal accomplishment. Clinical symptoms of insomnia among intensivists were strongly associated with high levels of emotional exhaustion, with a greater predominance in women.

The literature shows that doctors face difficulties sharing their mental health concerns with colleagues or employers. The most frequently cited reasons include perceived stigma and concerns that it could harm their future career aspirations. Suicidal ideation in physicians can generate especially intense fears of stigmatization. These concerns can be fueled by feelings of shame and professional failure, as well as concerns about their ability to continue practicing the profession and possible license restrictions (GALBRAITH et al., 2020).

According to Chinvararak et al. (2022), during the pandemic, sexand perceived support were associated with all Burnout domains. Age, occupation, work unit, working hours and transfer were associated with emotional exhaustion; occupation, mental illness, work unit and work schedule were associated with depersonalization; and occupation and work unit were associated with a low level of personal fulfillment.

In an online questionnaire survey applied inDutch intensivists following the 2020 COVID-19 pandemic, Meynaar et al. (2020) found a prevalence of 8% of Burnout among participating professionals. This prevalence is much lower than usuallyreported in the literature, but it is important to highlight that the prevalence and incidence of Burnout in healthcare professionals varied enormously between studies and different countries (CHINVARARAK et al., 2022; FUMIS et al., 2020; STOCCHETTI et al., 2021).

V. CONCLUSION

Burnout Syndrome in doctors on duty in ICUs is a relevant and complex issue, with significant impacts on the mental health and well-being of these professionals. This literature review highlights the worrying prevalence of the syndrome in this population, as well as the associated risk factors, such as extensive workload, emotional challenges inherent to the profession and constant exposure to high pressure and stressful situations. Furthermore, lack of adequate support and reluctance to seek help also emerge as important issues.

In this context, prevention and intervention strategies must be implemented to mitigate the negative effects of this scenario. Raising awareness about the importance of mental health in the workplace and institutional support are fundamental to promote a healthy and resilient environment for these professionals.

Future work should be directed towards more comprehensive and longitudinal approaches to understanding this topic. Studies that investigate the effectiveness of preventive interventions and specific emotional support programs for this population can provide valuable insights for the development of effective strategies for coping with burnout. Furthermore, the investigation of organizational and cultural factors that influence the incidence of the syndrome in ICUs can contribute to the implementation of institutional strategiesthat promote a healthier and more resilient work environment. Finally, solutionsthat involve a multidisciplinary approach, with the collaboration of different specialties and perspectives, can further enrich the understanding of burnout syndrome and provide comprehensive solutions to support the mental health of ICU doctors on duty.

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