REVIEW ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

PREVALENCE OF BURNOUT SYNDROME AMONG NURSING PROFESSIONALS IN INTENSIVE CARE UNITS: A SYSTEMATIC REVIEW

PREVALENCIA DEL SÍNDROME DE BURNOUT ENTRE PROFESIONALES DE ENFERMERÍA EN UNIDADES DE CUIDADOS INTENSIVOS: UNA REVISIÓN SISTEMÁTICA

PREVALÊNCIA DA SÍNDROME DE BURNOUT EM PROFISSIONAIS DE ENFERMAGEM NAS UNIDADES DE TERAPIA INTENSIVA: UMA REVISÃO SISTEMÁTICA

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ABSTRACT
Objective: To analyze the prevalence of burnout syndrome among nursing professionals in intensive care units. **Methods:** The Systematic Reviews and Meta-Analyses (PRISMA) criteria and the PICOS strategy were used in this systematic review. The Joanna Briggs Institute (JBI) instrument was used to assess methodological quality. This study was registered in the international prospective register of systematic reviews (PROSPERO). **Results:** The search databases were PubMed, Scopus, Cochrane, and Scielo, totaling 1,594 publications. After applying the selection criteria, 18 studies were included in this systematic review. Different instruments were used to assess burnout syndrome, with 83% of the studies analyzed using the Maslach Burnout Inventory (MBI). The total sample of studies included in this systematic review was 3,964 participants. **Conclusion:** This study concluded that burnout syndrome is highly prevalent among nursing professionals.
Keywords: Nursing; Burnout Syndrome; ICU.

RESUMEN
Objetivo: Analizar la prevalencia del síndrome de burnout entre profesionales de enfermería en unidades de cuidados intensivos. **Métodos:** En esta revisión sistemática se utilizaron los criterios PRISMA (Revisiones Sistemáticas y Metaanálisis) y la estrategia PICOS. Se empleó el instrumento del Instituto Joanna Briggs (JBI) para evaluar la calidad metodológica. Este estudio se registró en el registro prospectivo internacional de revisiones sistemáticas (PROSPERO). **Resultados:** Las bases de datos de búsqueda fueron PubMed, Scopus, Cochrane y Scielo, con un total de 1594 publicaciones. Tras aplicar los criterios de selección, se incluyeron 18 estudios en esta revisión sistemática. Se utilizaron diferentes instrumentos para evaluar el síndrome de burnout; el 83% de los estudios analizados utilizaron el Inventario de Burnout de Maslach (MBI). La muestra total de estudios incluidos en esta revisión sistemática fue de 3964 participantes. **Conclusión:** Este estudio concluyó que el síndrome de burnout tiene una alta prevalencia entre los profesionales de enfermería.
Palabras clave: Enfermería; Síndrome de Burnout; UCI.

RESUMO
Objetivo: Analisar a prevalência da síndrome de Burnout em profissionais de enfermagem nas unidades de terapia intensiva. **Métodos:** Foram utilizados os critérios *Systematic Reviews and Meta-Analyses* (PRISMA) e a estratégia PICOS nesta revisão sistemática. Para a avaliação de qualidade metodológica foi utilizado o instrumento de Joanna Briggs Institute (JBI). Este estudo foi registrado no registro prospectivo internacional de revisões sistemáticas (Prospero). **Resultados:** As bases de busca foram PubMed, Scopus, Cochrane e Scielo, totalizando 1594 publicações. Após a utilização dos critérios de seleção, 18 estudos foram incluídos nesta revisão sistemática. Foram utilizados diferentes instrumentos na avaliação da síndrome de Burnout, sendo que 83% dos estudos analisados pela ferramenta Maslach Burnout Inventory (MBI). A amostra total dos estudos incluídos nesta revisão sistemática foi de 3964 participantes. **Conclusão:** Este estudo concluiu que há grande prevalência da síndrome de Burnout em profissionais da enfermagem.
Palavras-chaves: Enfermagem; Síndrome de Burnout; UTI.

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INTRODUTION

The World Health Organization has recognized Burnout syndrome in the latest edition of the International Classification of Diseases (ICD-11) as an "occupational phenomenon" resulting from poorly managed, challenging work environments. In recent years, research on Burnout syndrome has increased, with a particular focus on healthcare workers. The incidence of this syndrome among these professionals is associated with prolonged exposure to emotional demands and extensive working hours without adequate rest. These factors have led to increased stress and high levels of both physical and emotional fatigue. [1]

Healthcare professionals present higher rates of absenteeism due to psychological distress and burnout compared with workers in other sectors. Psychosocial factors, such as continuous exposure to work-related stress, increase the vulnerability of these professionals to presenteeism (reduced productivity), as well as to the development of anxiety and depression. Occupational stress is associated with workplace conditions that negatively affect physical and mental health, thereby favoring the onset of professional burnout. In addition, healthcare systems in developed countries face additional pressures due to financial constraints, population aging, technological advancements, and difficulties in retaining professionals.[2,3]

Certain risk factors may increase the likelihood of developing Burnout syndrome, including conflicts and financial difficulties in the workplace, excessive working hours, as well as communication or organizational problems. Healthcare professionals (physicians, nurses, and social workers) are at higher risk, as they maintain daily contact with severely ill individuals. [4–6]

This study is justified by the need to update knowledge on the health status of nursing professionals, particularly due to the increasing incidence of Burnout syndrome in this population. The study systematically addresses this topic and aims to analyze the prevalence of Burnout syndrome among nursing professionals working in intensive care units.

METHODS

The Systematic Reviews and Meta-Analyses (PRISMA) criteria were used in this systematic review. [7]. PROSPERO is an international registry of systematic reviews, and this study was registered under the number CRD420251117262.

Inclusion Process

The PICOS strategy [8] was used and defined as follows: Population: nursing professionals; Intervention: not applied; Comparison: not applied; Outcome: Burnout syndrome; Study design: descriptive studies. Studies involving systematic reviews and meta-analyses, as well as studies not published in peer-reviewed journals, were excluded.

Search Strategy

Searches were conducted from June 2, 2025, to June 10, 2025. Boolean operators

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(AND, OR) were used to construct the search string: *Nurses AND "Intensive Care Units" AND Burnout*. Descriptors followed the Medical Subject Headings (MeSH) and the Health Sciences Descriptors (DeCS). The database-specific search strategies were as follows: **PubMed:** ("nurse s"[All Fields] OR "nurses"[MeSH Terms] OR "nurses"[All Fields] OR "nurse"[All Fields] OR "nurses s"[All Fields]) AND "Intensive Care Units"[All Fields] AND ("burnout s"[All Fields] OR "burnout, psychological"[MeSH Terms] OR ("burnout"[All Fields] AND "psychological"[All Fields]) OR "psychological burnout"[All Fields] OR "burnout"[All Fields] OR "burnouts"[All Fields]); **Scopus:** (TITLE-ABS-KEY (nurse) AND TITLE-ABS-KEY (burnout) AND TITLE-ABS-KEY (intensive AND care AND units)); **Cochrane:** Nurse AND Burnout AND Intensive Care Unit in Title, Abstract, or Keywords; **SciELO:** Nurse AND Burnout. The Zotero software (version 6.0.30) was used in the study screening process.

Methodological Quality Assessment and Risk of Bias

The Joanna Briggs Institute (JBI) instrument was used to assess methodological quality. This tool consists of eight questions specifically designed to evaluate the methodology of descriptive cross-sectional studies, namely: Q1 – Were the criteria for inclusion in the sample clearly defined? Q2 – Were the study subjects and setting described in detail? Q3 – Was the exposure measured in a valid and reliable way? Q4 – Were objective, standard criteria used to measure the condition? Q5 – Were confounding factors identified? Q6 – Were strategies to deal with confounding factors stated? Q7 – Were the outcomes measured in a valid and reliable way? Q8 – Was appropriate statistical analysis used? For study categorization, the symbols Y = Yes, N = No, and UC = Unclear were used for each question. The classification criteria were as follows: "Low quality" when up to three "Yes" responses were present; "Moderate quality" when four to six "Yes" responses were present; and "High quality" when seven or more "Yes" responses were present.[9]

RESULTS

The extracted data were categorized by authorship, year of publication, country, population characteristics, results, and outcomes. The databases searched were MEDLINE via PubMed (n = 536), Scopus (n = 968), Cochrane (n = 40), and SciELO (n = 50), totaling 1,594 publications. After applying the selection criteria, 18 studies were included in this systematic review (Figure 1)

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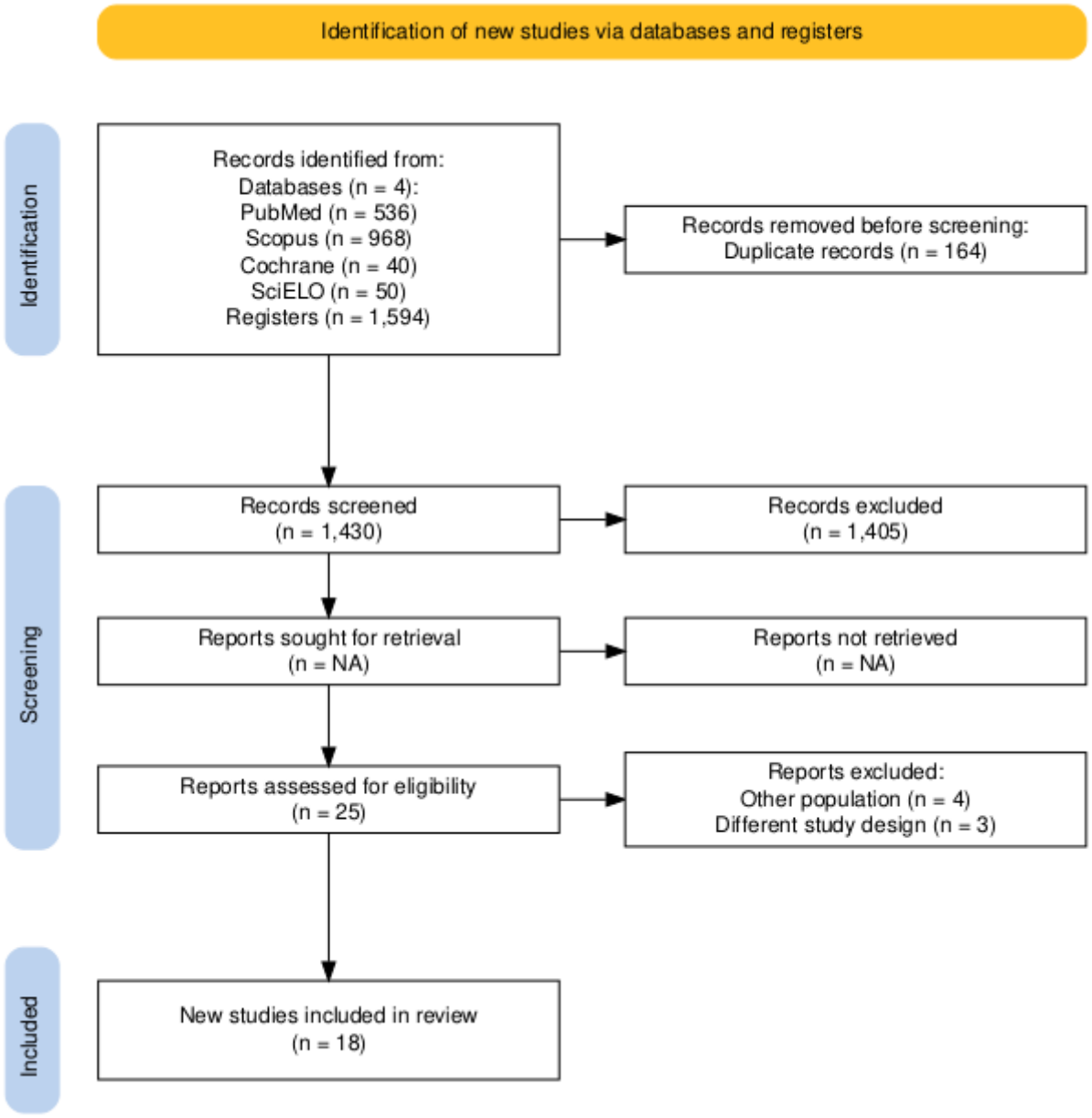
Figure 1 - PRISMA Flow Diagram



In Frame 1, the methodological quality data assessed using the JBI tool are presented. Seventy percent of the studies demonstrated high methodological quality, while 30% were classified as having moderate quality. The domains "Was the exposure measured in a valid and reliable way?" and "Were strategies to deal with confounding factors stated?" were the items that most contributed to the reduction in the methodological quality of the studies.

Frame 1 - Methodological Quality Assessment and Risk of Bias

n°	Author/ year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Quality Classification
1	De Aragão et al. 2019[10]	Y	Y	UC	Y	Y	N	Y	Y	Moderate
2	Cabrera et al.	Y	Y	Y	Y	Y	Y	Y	Y	High

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	2018[11]									
3	Alkubati et al. 2025[12]	Y	Y	Y	Y	Y	Y	Y	Y	High
4	Myhren et al. 2013[13]	Y	Y	Y	Y	Y	Y	Y	Y	High
5	Cecere et al. 2023[4]	Y	Y	Y	Y	Y	Y	Y	Y	High
6	Gunduz e Ozturk, 2025[15]	Y	Y	Y	Y	Y	Y	Y	Y	High
7	Bartz e Maloney, 1986[16]	Y	Y	UC	Y	Y	N	Y	Y	Moderate
8	De Sousa Veloso et al. 2024[17]	Y	Y	UC	Y	Y	Y	Y	Y	High
9	Nowacka et al. 2018[18]	Y	Y	UC	Y	Y	Y	Y	Y	High
10	Ozden et al.[19]	Y	Y	UC	Y	Y	Y	Y	Y	High
11	Chen e McMurray,[20]	Y	Y	UC	Y	Y	Y	Y	Y	High
12	Zhang et al. 2014[21]	Y	Y	UC	Y	Y	UC	Y	Y	Moderate
13	Sok et al. 2020[22]	Y	Y	Y	Y	Y	Y	Y	Y	High
14	Wright et al. 1993[23]	Y	Y	Y	Y	Y	N	Y	Y	High
15	Xie et al. 2020[24]	Y	Y	Y	Y	Y	N	Y	Y	High
16	Yanbei et al. 2023[25]	Y	Y	UC	Y	Y	N	Y	Y	Moderate
17	Yildiz et al. 2023[26]	Y	Y	UC	Y	Y	N	Y	Y	Moderate
18	Yousif e Al-Fayyadh, 2025[27]	Y	Y	UC	Y	Y	N	Y	Y	Moderate

In Table 1, different instruments were used to assess Burnout syndrome, with 83% of the studies employing the Maslach Burnout Inventory (MBI). The total sample size of the studies included in this systematic review was 3,964 participants.

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Table 1 - Data Extracted from the Studies

Author-year/ country	Study design	Population	Assessment Instrument	Results
De Aragão et al. 2019[10]/ Brasil	Cross-sectional	Nurses with a mean age of 42 years (n = 65) ♂♀	Maslach Burnout Inventory; Job Content Questionnaire (JCQ)	There was a prevalence of Burnout syndrome of 53.6%. Only 4.6% were smokers, 50.8% consumed alcoholic beverages, 46.2% did not engage in physical exercise, and 49.2% worked more than 54 hours per week.
Cabrera et al. 2018[11]/ Espanha	Cross-sectional	Nurses (n = 56) had a mean age of 29 years, while nursing assistants had a mean age of 39 years (n = 41). ♂♀	Maslach Burnout Inventory	There was a significant difference ($p < 0.05$) in the emotional exhaustion domain in GE2 (nursing assistants) in the intragroup analysis when comparing professionals working in the ICU with those in outpatient settings. In the domains of emotional exhaustion, professional accomplishment, and depersonalization, nurses presented higher levels than nursing assistants.
Alkubati et al. 2025[12]/ Arabia Saudita	Cross-sectional and correlational	Nurses (n = 306) with a mean age of 32 years ♂♀	Maslach Burnout inventory	In the emotional exhaustion domain, 21% of participants were classified as low, 29% as moderate, and 50% as high. In the depersonalization domain, 10% were classified as low, 10% as moderate, and 80% as high. In the personal accomplishment domain, 1% were classified as low, 10% as moderate, and 89% as high. The overall Burnout classification was 46%.
Myhren et al. 2013[13]/ Noruega	Cross-sectional	Nurses (n = 129) with age not reported ♂♀	Maslach Burnout Inventory, Basic Character Inventory, Job Satisfaction Scale (JSS), and Cooper's Job Stress Questionnaire (CJSQ).	No differences were observed between genders or according to experience regarding job satisfaction, job stress, or Burnout scores. Only the personality trait neuroticism (vulnerability) showed a significant difference between genders, with women presenting higher scores compared to men.
Cecere et al. 2023[4]/ Itália	Cross-sectional	Nurses (n = 140) aged between 21 and 50 years ♂♀	Maslach Burnout Inventory (MBI)	Higher levels of physical activity, emotional quality, social quality, and work-related quality were associated with lower levels of Burnout.
Gunduz e Ozturk, 2025[15]/ Turquia	Cross-sectional and correlational	Nurses (n = 156) aged between 23 and 56 years ♂♀	Mental Workload Scale (MWS) e Maslach Burnout Scale (MBI)	Thirty-one percent of nurses reported high emotional exhaustion, 18% reported high depersonalization, and 46% reported low personal accomplishment.
Bartz e Maloney, 1986[16]/ Arizona	Cross-sectional and correlational	Nurses (n = 89), both military and civilian, aged between 25 and 58 years ♂♀	Maslach Burnout Inventory (MBI)	The older the age, the lower the levels of emotional exhaustion and depersonalization. Men exhibited higher levels of emotional exhaustion and depersonalization than women. Military nurses showed higher levels of emotional exhaustion and depersonalization than civilian nurses. Higher educational attainment was

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				associated with greater emotional exhaustion. Longer time in nursing was associated with lower levels of emotional exhaustion and depersonalization.
De Sousa Veloso et al. 2024[17]/ Brasil	Cross-sectional and analytical	Nurses (n = 94) with a mean age of 39 years ♂♀	Maslach Burnout Inventory e Human Services Survey (MBI e HSS)	In the emotional exhaustion domain, 9.6% of participants were classified as low, 27.7% as moderate, and 62.8% as high. In the depersonalization domain, 7.4% were classified as low, 27.7% as moderate, and 64.9% as high. In the personal accomplishment domain, 3.2% were classified as low, 19.1% as moderate, and 77.7% as high.
Nowacka et al. 2018[18]/ Polônia	Cross-sectional and descriptive	Nurses (n = 560) aged between 27 and 63 years ♂♀	Maslach Burnout Inventory (MBI)	Thirty-four percent of participants presented low levels of emotional exhaustion, 29% moderate, and 37% high. In the depersonalization domain, 54% had high levels, 26% moderate, and 21% low. In the personal accomplishment domain, 64% reported low levels, 23% moderate, and 13% high.
Ozden et al.[19]/ Turquia	Cross-sectional and descriptive	Nurses (n = 138) aged between 22 and 48 years ♂♀	Maslach Burnout Inventory (MBI) e Minesota Satisfaction Questionary (MSQ)	Nurses with four years or less of service showed lower levels of professional accomplishment ($p < 0.05$) compared to those with five years or more. In the work shift domain, professionals working night shifts exhibited higher emotional exhaustion, greater depersonalization, and lower professional accomplishment ($p < 0.05$).
Chen e McMurray,[20]/ Australia	Cross-sectional and correlational	Nurses (n = 68) aged between 20 and 49 years, ♂♀	Maslach Burnout Inventory (MBI)	Younger nurses experience higher levels of emotional exhaustion, depersonalization, and personal accomplishment ($p < 0.05$).
Zhang et al. 2014[21]/ China	Observational	Nurses (n = 426) aged between 23 and 28 years ♂♀	Maslach Burnout Inventory e Human Services Survey (MBI e HSS)	Eighty-eight point five percent of the nurses who responded to the questionnaire were female and young, with 16% exhibiting significant levels of emotional exhaustion, depersonalization, and professional accomplishment. Among nurses with longer work experience (5 to 10 years), representing one-quarter of the total, high levels of Burnout were reported.
Sok et al. 2020[22]/ Korea do Sul	Cross-sectional and descriptive	Nurses (n = 115) aged between 25 and 40 years ♂♀	Copenhagen Burnout Inventory (CBI)	There was a strong correlation between Burnout, depression, and job stress. Participants aged between 25 and 30 years exhibited higher levels of depression, Burnout, and work-related stress.
Wright et al. 1993[23]/ Estados Unidos	Quantitative, correlational, and cross-sectional	Nurses (n = 31) aged between 31 and 37 years ♂♀	Hardincss test, Nursing Stress Scale (NSS), Boredom Scale	No significant relationship was found between stress and Burnout and the demographic variables (age, sex, shift, and specific unit).

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Xie et al. 2020[24]/ China	Descriptive, correlational, and cross-sectional	Nurses (n = 553) aged between 20 and 36 years	Maslach Burnout Inventory (MBI), Emotional Intelligence Scale (EIS)	Mindfulness had an indirect effect on emotional exhaustion (p = 0.006), depersonalization (p = 0.006), and professional accomplishment (p = 0.05).
Yanbei et al. 2023[25]/ China	Cross-sectional	Nurses (n = 479) aged between 25 and 35 years	Maslach Burnout Inventory e Human Services Survey (MBI e HSS)	Burnout showed a significant relationship with work-related frustration (p < 0.05), and significant differences were also observed (p < 0.05) in the work frustration domain.
Yildiz et al. 2023[26]/ Turquia	Cross-sectional	Nurses (n = 164) aged between 22 and 44 years ♂♀	Maslach Burnout Inventory (MBI), Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Secondary Traumatic Stress Scale (STSS)	Forty-seven point six percent of participants presented high levels of emotional exhaustion, 15.9% high levels of depersonalization, and 67.1% low levels of personal accomplishment. Additionally, 7.9% of nurses exhibited severe depression, and 26.8% severe anxiety.
Yousif e Al-Fayyadh, 2025[27]/ Iraque	Descriptive and correlational	Nurses (n = 377) aged between 21 and 60 years ♂♀	Burnout Assessment Tool (BAT)	Seventy percent of participants exhibited normal levels of anxiety, 16.2% moderate, and 9.5% severe. Eighty-four percent presented normal levels of depression, 10.1% moderate, and 5.6% severe.

DISCUSSION

This systematic review aimed to analyze the incidence of Burnout syndrome among nursing professionals working in intensive care units.

Different tools were used to classify the levels of Burnout syndrome; however, the most frequently used instrument was the MBI. [10–18,20,21,24–26,28] Corroborating this finding [1], it shows that, despite the existence of different versions of the MBI tool, the original version was the most frequently used.[1]

Burnout syndrome is described as a prolonged reaction to stress in the workplace, characterized by profound physical, mental, and emotional exhaustion, resulting in a reduced sense of both personal and professional accomplishment. [4] In this systematic review, the domains “emotional exhaustion,” “professional accomplishment,” and “depersonalization” were the most frequently used to classify the levels of Burnout syndrome. Another condition analyzed was depression. In the interpretation of these dimensions, emotional exhaustion reflects the feeling of being overloaded and emotionally drained by work. Depersonalization measures emotional distancing and cynicism toward work and others, while personal accomplishment assesses the sense of competence and success at work.

Accordingly, in the emotional exhaustion domain, the study by Cabrera et al. [11] found higher levels among nurses and professionals working in intensive care units. Studies [16,20] analyzed the relationship between participants’ age and emotional exhaustion, showing that younger professionals presented higher levels

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compared with older ones. Studies [12,17] reported that more than 50% of participants had high levels of emotional exhaustion, whereas studies [15,18,21,26] reported values below 50% in this domain.

In the professional accomplishment domain, studies [12,17,21] showed high classifications. However, studies [15,18,26] reported low classifications in this domain. The age factor was analyzed in studies [20,28], with younger professionals demonstrating higher levels of professional accomplishment.

In the depersonalization domain, studies [12,17,18] reported that more than 50% of respondents presented high levels of depersonalization. Younger individuals and those working night shifts showed higher levels of depersonalization.

One limitation identified in this systematic review was the absence of regional filters, which resulted in the inclusion of studies from different countries and continents. This may represent a potential source of confounding bias, considering that healthcare systems, as well as physical and organizational structures, can vary substantially across countries.

CONCLUSION

This study demonstrated a high prevalence of Burnout syndrome among nursing professionals, corroborating previous findings in the literature that identify this group as one of the most vulnerable to physical and emotional exhaustion within healthcare settings. The results indicate that biological factors, such as age and sex, work-related factors—particularly work shift—and chronological aspects, such as length of service, exert a significant influence on the development of this disorder. Younger professionals or those with longer exposure to occupational demands, as well as individuals subjected to extended working hours and night shifts, appear to be more susceptible to Burnout, possibly due to the cumulative effect of physical, emotional, and psychosocial stressors over time.

Thus, nursing working conditions—often characterized by work overload, shortages of human resources, low professional autonomy, and high levels of care-related responsibility—contribute significantly to emotional exhaustion and depersonalization, which are core dimensions of Burnout syndrome. Such factors may compromise not only the mental and physical health of these professionals but also the quality of care provided to patients, thereby negatively affecting health outcomes and patient safety.

In light of this scenario, the implementation of public and institutional policies aimed at promoting the occupational health of nursing professionals is essential. Strategies such as reorganizing work schedules, ensuring adequate staffing levels, providing psychological support, implementing occupational stress prevention programs, and promoting professional recognition may significantly contribute to reducing the prevalence of Burnout. Investing in improved working conditions and quality of life for these professionals is fundamental not only for

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individual well-being but also for strengthening healthcare systems and ensuring safe, humanized, and effective care for society.

Future studies addressing other variables, such as workplace bullying and remuneration, may help identify potential solutions to reduce the risk of developing this important syndrome, which significantly affects a large proportion of these professionals.

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Rodrigo Gomes de Souza Vale: Writing - revision and editing

Declaration of conflict of interest

Nothing to declare

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