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BURNOUT SYNDROME AND ASSOCIATED FACTORS IN INTENSIVIST NURSES: A SYSTEMATIC REVIEW

SÍNDROME DE *BURNOUT* E FATORES ASSOCIADOS EM ENFERMEIROS INTENSIVISTAS: UMA REVISÃO SISTEMÁTICA

SÍNDROME DE *BURNOUT* Y FACTORES ASOCIADOS EN ENFERMEROS DE UNIDADES DE CUIDADOS INTENSIVOS: UNA REVISIÓN SISTEMÁTICA

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Objective: to analyze the scientific production on prevalence and factors associated with the *Burnout* Syndrome in intensive care unit nurses. Method: a systematic review directed by the descriptors "Nurses", "Professional Exhaustion", "Cross-Sectional Studies", "Intensive Care Units" and synonyms. The search was performed on the following electronic databases: *MEDLINE/PubMed;* SciELO*;* LILACS*;* BDENF*;* Scopus*; Web of Science;* Embase. Results: 13 articles were selected, published between 1996 and 2018. A high prevalence of the *Burnout* Syndrome was observed, ranging from 14.3% to 67%, with the following associated variables: age, gender, marital status, time and work shift. Conclusion: the scientific production on the *Burnout* Syndrome prevalence in intensive care nurses was high and the following were identified as associated factors: sociodemographic (gender, age and marital status) and work-related variables (time and work shift). A variation in interpretation of the *Maslach Burnout Inventory* results was observed, generating heterogeneous prevalence estimates among different studies.

Descriptors: Nurses. Professional Exhaustion. Cross-sectional Studies. Intensive Care Units.

Objetivo: analisar a produção científica sobre prevalência e fatores associados à Síndrome de Burnout *em enfermeiros de unidade de terapia intensiva. Método: revisão sistemática direcionada pelos descritores "Enfermeiros e Enfermeiras", "Esgotamento Profissional", "Estudos Transversais", "Unidades de Terapia Intensiva" e sinônimos. A pesquisa foi realizada nas bases de dados eletrônicas,* MEDLINE/PubMed*; SciELO; LILACS; BDENF*; Scopus*;* Web of Science*; Embase. Resultados: foram selecionados 13 artigos, publicados entre os anos de 1996 a 2018. Observou-se elevada prevalência da Síndrome de Burnout que variou de 14,3% a 67%, tendo como variáveis associadas, idade, sexo, estado civil, tempo e turno de trabalho. Conclusão: a produção científica sobre prevalência da Síndrome de* Burnout *em enfermeiros intensivistas apresentou-se elevada e foram identificados como fatores associados, variáveis sociodemográficas (sexo, idade e estado civil) e relacionadas ao trabalho (tempo e turno de trabalho).*

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Observou-se variação na interpretação dos resultados do Maslach Burnout Inventory*, gerando estimativas de prevalência heterogêneas entre os diferentes estudos.*

Descritores: Enfermeiros e Enfermeiras. Esgotamento Profissional. Estudos Transversais. Unidades de Terapia Intensiva.

Objetivo: analizar la producción científica sobre la prevalencia y los factores asociados al Síndrome de Burnout *en enfermeros de una unidad de cuidados intensivos. Método: revisión sistemática dirigida por los descriptores "Enfermeros y Enfermeras", "Agotamiento Profesional", "Estudios Transversales", "Unidades de Cuidados Intensivo" y sinónimos. La investigación se realizó en las siguientes bases de datos electrónicas:* MEDLINE/PubMed*; SciELO; LILACS; BDENF; Scopus;* Web of Science *y Embase. Resultados: se seleccionaron 13 artículos, publicados entre 1996 y 2018. Se observó una elevada prevalencia del Síndrome de Burnout, que varió entre el 14,3% y el 67%, con las siguientes variables asociadas: edad, sexo, estado civil, tiempo y turno de trabajo. Conclusión: la producción científica sobre la prevalencia del Síndrome de* Burnout *en enfermeros in intensivistas fue elevada y se identificaron los siguientes como factores asociados, variables sociodemográficas (sexo, edad y estado civil) y relacionados al trabajo (tiempo y turno de trabajo). Se observó una variación en la interpretación de los resultados del* Maslach Burnout Inventory*, generándose así estimaciones de prevalencia heterogéneas entre los diferentes estudios.*

Descriptores: Enfermeros y Enfermeras. Agotamiento Profesional. Estudios Transversales. Unidades de Cuidados Intensivos.

Introduction

The transformations in the productive processes in the late twentieth century and first decade of twenty-first century generated changes in the technological area, impacting on the interpersonal conditions and relationships in the work environment and in the organizational conceptions, leading to pressure for increased productivity. As a consequence, these factors negatively influence workers' health, with repercussions on both physical and mental dimensions[1-2].

In this context, the organization of the work process, instead of promoting pleasure, satisfaction or professional fulfillment, has been increasing workers' stress and dissatisfaction[3-5]. The work environment is increasingly competitive, causing workers to exceed their tolerance limits.

In the labor health area, work stress is understood as an imbalance between the labor demands and the workers' ability to cope with these demands. That is, the inadequate psychological, physiological and emotional response to adapt to the demands of everyday work[6].

Interest in the study of occupational stress among health professionals has increased in recent years, especially among nurses working in intensive care[6-7]. Several studies signal at the ICU as the most stressful setting in hospital. The work of the intensive care professional requires qualified technical knowledge, skills, attention, quick thinking and emotional control to deal with the adversities that arise every moment, as well as continuous scientific updating, given the development that the specialty has been presenting in recent years. Much peace of mind and psychological preparation are needed to support family members in times of insecurity and uncertainty[8-11].

The working conditions of the intensive care professional are considered exhausting from both a quantitative and a qualitative point of view, due to the nature of work performed[11]. As working conditions, we understand the working day (number of hours worked), the type of work contract (signed leave, service), the form of payment (weekly, monthly, by productivity), the working hours (day, night, per shift), the amount of remuneration received monthly, the planned ascension system, the requirement for technical knowledge, among others[10]. Some studies sought to investigate the relationship between work and the *Burnout* Syndrome (BS) in workers from Intensive Care Units (ICUs)[10-11].

The work of an ICU nurse is considered exhaustive, requiring high technical knowledge, specific skills, attention, quick thinking and emotional balance to deal with adversity. In addition, given the development and competitiveness that the specialty has shown in recent years, it requires continuous scientific updating, which has generated an increase in the level of demands of personal and professional performance[10-11].

The *Burnout* Syndrome is a process which is initiated with excessive and prolonged levels of work stress. There are four theoretical concepts for the definition of this syndrome based on its possible etiology: clinical, socio-psychological, organizational, and socio-historical. The most used in the current studies is the socio-psychological conception[7,9]. This conception considers that the individual characteristics associated with the setting and a direct and prolonged contact with other human beings at work favor the appearance of the syndrome's three-dimensional factors: emotional exhaustion (feeling of physical and mental exhaustion), depersonalization (cold treatment and impersonal with users) and ineffectiveness (feeling of incompetence, pessimism, low self-esteem). The presence of the *burnout* syndrome would be related to signs and symptoms identified in these three dimensions in a given worker[7,9].

The most commonly used instrument for evaluating the *Burnout* Syndrome is the Maslach questionnaire – *Maslach Burnout Inventory* (MBI). This instrument assesses the feelings and attitudes experienced by the individual in his work and addresses the three dimensions of the syndrome. The MBI is made up of 22 statements that encompass the three dimensions of the syndrome, divided into a seven-point scale, ranging from 0 to 6, making it possible to describe each of the dimensions independently. Professional exhaustion is assessed by nine items, depersonalization by five, and personal accomplishment by eight. For emotional exhaustion, a score ≥ 27 indicates high level; from 17 to 26, moderate level; and less than 16, low level. For depersonalization, scores ≥ 13 indicate high level; from 7 to 12, moderate; and under 6, low level. Ineffectiveness scores go in the opposite direction, since scores from zero to 31 indicate high levels; from 32 to 38, moderate level; and ≥ 39, low[6]. In the literature, there is no consensus for the interpretation of the MBI. Thus, a variation in the definition of the syndrome can be observed according to presence or absence of one of the three dimensions[8].

The present study aims to analyze the scientific production on the prevalence and factors associated with the *Burnout* Syndrome in intensive care unit nurses.

Method

This is a Systematic Review, which sought to search cross-sectional articles on the prevalence of the *Burnout* Syndrome in intensive care unit nurses, conducted by the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA). The PRISMA recommendation comprises a study checklist containing 27 items considered essential in systematic reviews with or without meta-analysis[12].

The systematic review is a type of retrospective and secondary study, which allows the synthesis of the evidence found in the studies on a theme with the objective of answering a specific research question, with systematized methods and criticism of the selected information[13].

Initially, a research protocol was held to ensure the methodological rigor of the review. The protocol components were the following: research question; assembling of the review team; definition of the eligibility criteria (inclusion and exclusion); creation of a specific search strategy for each database, according to the need for adjustment with relation to the descriptors; assessment of the methodological quality; synthesis of the found evidence; and interpretation of the results[13-15]. All the stages were peer reviewed. The research question was the following: What is the scientific output on the prevalence and factors associated with the *burnout* syndrome in intensive care unit nurses?

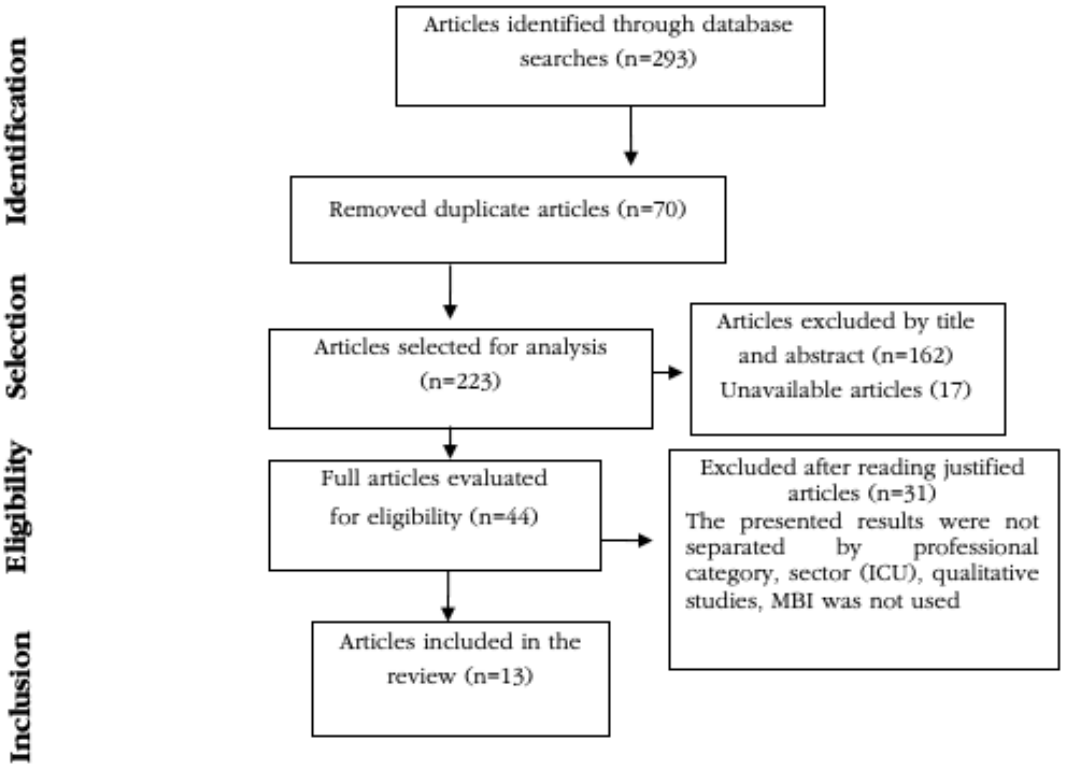
The search for article tracking was conducted in May 2018, without date restriction, in the following electronic databases: *MEDLINE/ PubMed, SciELO, LILACS, BDENF, Scopus, Web of Science, and Embase*. For the search strategy, descriptors combined with the connectors "AND" and/or "OR" were used, as needed in each database, in English, in accordance with the Medical Subject Headings (MeSH) and in Portuguese and Spanish, according to the Health Sciences Descriptors (*Descritores em Ciências da Saúde*, DeCS), with the following terms: *Nurse; Nurse, Registered; Professional Burnout; Burnout, Occupational; Intensive Care Unit; Care Unit, Intensive; Prevalence; Prevalence Studies*.

In the present study, the following inclusion criteria were adopted: original, complete and available articles; cross-sectional study; studies using the Maslach Burnout Inventory (MBI) to define the BS or previously validated adaptations of this instrument; and studies whose research subjects were ICU nurses, with results of prevalence of the *burnout* syndrome. The following were excluded: duplicate articles, considered only once; theses; primers; dissertations; monographs; qualitative articles; summaries; books; letters; publications in proceedings; editorials; and articles that used the same database.

The selection of the studies was performed in a double investigation independently, assessing the title initially. Subsequently, the articles' abstracts were read, observing if they met the previously defined inclusion and exclusion criteria. After the selection, the articles that met the eligibility criteria were read in full to evaluate the methodology used and the prevalence of the factors associated with the BS. In case of conflict between two reviewers, the evaluation by a third examiner was requested.

According to the search strategies determined in the protocol, a total of 293 articles were found: MEDLINE/PubMed (81 articles); SciELO (1 article); LILACS (9 articles); BDENF (8 articles); Scopus (27 articles); Web of Science (111 articles); Embase (56 articles). After removing the duplicate studies, the exclusion was performed based on reading titles, abstracts and full texts, following the inclusion and exclusion criteria adopted. There were a total of 13 eligible articles published in Brazil and abroad, between 1996 and 2018, on the prevalence and factors associated with the BS in intensive care unit nurses, described in the PRISMA flowchart (Figure 1).

Figure 1 – Different phases of the systematic review flowchart



Source: Created by the authors.

The analysis of the articles included in this SR was descriptive and performed in three staged. The first included author, title, objective, year of publication, country, and journal. The second stage comprised the socio-demographic characteristics: gender, age, marital status, children, and graduate school. The third stage consisted of the occupational characteristics, workload, having another job, time and work shift, in addition to the dimensions and cutoff points used for the definition of the BS and the prevalence levels of the *Burnout* Syndrome observed. The results were organized and synthesized in figures and tables.

Results and Discussion

Chart 1 describes the characterization of the eligible studies, selected in relation to the authors, title, objective, year of publication, place where it was performed, journal and electronic base where it was found.

Chart 1 – Characterization of the studies according to authors, title, objective, year of publication, country, journal and basis on which it was indexed (continued)

Article	Author(s)	Title	Objective	Year of Publication	Country	Journal/ Base
1[16]	Iskera-Golec I, Folkard S, Marek T, Noworol C.	Health, well-being and burnout of ICU nurses on 12- and 8-h shifts	To compare measures of health, sleep, psychological and social wellbeing, job satisfaction and *burnout* syndrome of ICU nurses in the 12 and 8 hour shifts.	1996	United Kingdom	Work & stress EMBASE
2[17]	Arıkan F, Köksal CD, Gökce C.	Work-related stress, burnout, and job satisfaction of dialysis nurses in association with perceived relations with professional contacts	To determine the levels of stress, *burnout* syndrome and job satisfaction in dialysis nurses compared to Intensive Care Unit (ICU) nurses.	2007	Turkey	Dialysis & Transplanta-tion EMBASE
3[18]	Mealer M, Burnham EL, Goode CJ, Rothbaum B, Moss M.	The Prevalence and Impact of post traumatic stress disorder and burnout syndrome in nurses.	To determine if the post-traumatic stress disorder and the BS are common in nurses.	2009	United States	Depression and Anxiety PUBMED
4[19]	Mealer M, Jones J, Newmana J, McFann KK, Rothbaum B, Moss M.	The presence of resilience is associated with a healthier psychological profile in intensive care unit (ICU) nurses: Results of a national survey.	To determine if resilience was associated with healthier psychological profiles in intensive care unit nurses.	2012	United States	International journal of nursing studies WEB OF SCIENCE
5[20]	Giannini A, Miccinesi G, Prandi E, Buzzoni C, Borreani C.	Partial liberalization of visiting policies and ICU staff: a before-and-after study	To investigate possible psychological distress among the staff after partial liberalization of visiting policies in Intensive Care Units (ICUs).	2013	Italy	Intensive care medicine EMBASE
6[21]	Teixeira C, Ribeiro O, Fonseca AM, Carvalho AS.	Burnout in intensive care units - a consideration of the possible prevalence and frequency of new risk factors: a descriptive correlational multicentre study	To study the Portuguese situation regarding the prevalence and risk factors of the *burnout* syndrome in ICUs.	2013	Portugal	BioMed Central anesthesiology EMBASE

Chart 1 – Characterization of the studies according to authors, title, objective, year of publication, country, journal and basis on which it was indexed (continued)

Article	Author(s)	Title	Objective	Year of Publication	Country	Journal/ Base
7[22]	Aytekin A, Yilmaz F, Kuguoglu S.	Burnout levels in neonatal intensive care nurses and its effects on their quality of life	To investigate the levels of the *burnout* syndrome in nurses working in a neonatal intensive care unit and the effects of the *burnout* syndrome on their quality of life.	2013	Turkey	Australian journal of advanced nursing WEB OF SCIENCE
8[23]	Ozden D, Karagozoglu S, Yıldırım G.	Intensive care nurses' perception of futility: Job satisfaction and burnout dimensions.	To investigate the levels of job satisfaction levels and exhaustion suffered by the intensive care nurses and the relationship between job satisfaction and the *burnout* syndrome through the futility dimension of the question.	2013	Turkey	Nursing Ethics WEB OF SCIENCE
9[24]	Zhang XC, Huang S, Guan P.	Job burnout among critical care nurses from 14 adult intensive care units in northeastern China: a cross-sectional survey	To understand the *Burnout* Syndrome among the Liaoning ICU nurses.	2014	China	BMJ Open EMBASE
10[25]	Denat Y, Gokce S, Gungor H, Zencir C, Akgullu C.	Relationship of anxiety and burnout with extrasystoles in critical care nurses in Turkey	To determine the relationship between the levels of anxiety levels and *burnout* and the prevalence of Atrial Extrasystoles (AES) and ventricular extrasystoles (VES) among critical care nurses.	2016	Turkey	Pakistan journal of medical sciences SCOPUS
11[26]	Ntantana A, Matamisa D, Savvidou S, Giannakou M, Gouva M, Nakos G, Koulouras V.	Burnout and job satisfaction of intensive care personnel and the relationship with personality and religious traits: An observational, multicenter, cross-sectional study	To investigate if *burnout* in the Intensive Care Unit (ICU) is influenced by aspects of personality, religiosity and job satisfaction.	2017	Greece	Intensive and Critical Care Nursing PUBMED

Chart 1 – Characterization of the studies according to authors, title, objective, year of publication, country, journal and basis on which it was indexed (conclusion)

Article	Author(s)	Title	Objective	Year of Publication	Country	Journal/ Base
12[27]	Gracia-Gracia P, Oliván-Blázquez B.	Burnout and Mindfulness Self-Compassion in Nurses of Intensive Care Units	To investigate the correlation between *burnout* and the capacity for *mindfulness* self-pity and to establish a predictive model for the occurrence of *burnout* in ICU nursing workers.	2017	Spain	Holistic nursing practice PUBMED
13[28]	Vasconcelos EM, Martino MMF, França SPS.	Burnout and depressive symptoms in intensive care nurses: relationship analysis	To analyze the existence of a relationship between *burnout* and depressive symptoms in intensive care nurses.	2018	Brazil	REBEN – Revista Brasileira de Enfermagem WEB OF SCIENCE

Source: Created by the authors.

Table 1 represents the sociodemographic characteristics of the 2,336 intensive care nurses described in the selected studies. The results found pointed to a predominance of females. Only in one study[20] the male population was larger than the female one. Most of the workers were married, with a mean age of 35 years old. Most of the selected studies showed incomplete sociodemographic variables.

Table 1 – Sociodemographic characteristics of the studies' population or sample included in the systematic review – 1996-2018 (continued)

Article	Gender		Mean Age	Marital Status		Children		Graduation		Mean Income
	M	F	SD	Has a partner (n)	No partner (n)	Y	N	Yes	No	
1[16]	*	*	n=96/25.96# n=30/26.12##	6# 4##	90# 26##	...	...	...	...	...
2[17]	*	*	...	...	...	...	...	...	...	...
3[18]	3	95	38.97±11	54	44	...	...	...	...	...
4[19]	67	677	43.6±11.0	498	246	...	...	...	...	...
5[20]	113	40	40.7/7.4	91	62	...	...	...	...	...
6[21]	*	*	...	...	...	...	...	...	...	...
7[22]	*	*	20-35 (73.7%) > 36 (26.3%)	65	15	53	27	9	71	...
8[23]	8	130	29.17±4.90	75	63	...	...	86	...	...
9[24]	00	95	...	...	...	...	...	...	...	...
10[25]	7	44	29.09±6.26	...	...	...	...	...	...	...
11[26]	58	262	20 to 40 (62%) 41 to >50 (37.4%)	...	...	...	...	...	...	...

Table 1 – Sociodemographic characteristics of the studies' population or sample included in the systematic review – 1996-2018 (conclusion)

Article	Gender		Mean Age	Marital Status		Children		Graduation		Mean Income
	M	F	SD	Has a partner (n)	No partner (n)	Y	N	Yes	No	
12[27]	6	62	38.49±9.26	38	30	...	...	...	...	...
13[28]	10	81	30.82±6.42	34	57	26	65	...	...	42 2 to 5 minimum wages
Total	272	1486	...	865	633	79	92	95	71	42

Source: Created by the authors.

Notes:
12-hour shift nurses compared to ## Nurses in an 8 hour shift.

* It was not possible to perform a calculation to know the gender, because the studies presented some general information related to other professionals involved in the research.

Conventional signal used:
... Numerical data not available.

Charts 2a and 2b present the occupational characteristics, prevalence and cutoff points used for the identification of the *Burnout* Syndrome and the observations regarding the definition of *burnout* according to the authors of the articles. Most of the researchers did not present results related to workload, shift, employment, income and working time, important characteristics in studies with workers, especially in research studies on mental distress. The presented results revealed differences in relation to the adopted cutoff point for the characterization of the BS, a fact that hindered the comparative analysis of the results found in different studies.

Chart 2a – Occupational characteristics of the research population of the studies included in the systematic review (continued)

Article	Weekly workload	Other job		Working time at the Intensive Care Unit		Work shift
	In hours (mean)	Yes	No	< 10 years	> 10 years	Night/Day
1[16]	...	...	...	...	...	...
2[17]*	...	...	...	...	...	...
3[18]	...	...	...	Mean = 13.87 SD = 10.9		...
4[19]	...	...	...	...	...	...
5[20]	...	...	...	...	...	...
6[21]	...	...	...	...	...	...
7[22]	...	...	...	Mean = 7.88 Depersonalization = 7.18		Alternating: Morning; Afternoon; Night

Chart 2a – Occupational characteristics of the research population of the studies included in the systematic review (conclusion)

Article	Weekly workload	Other job		Working time at the Intensive Care Unit		Work shift
	In hours (mean)	Yes	No	< 10 years	> 10 years	Night/Day
8[23]	...	...	...	± 4 years		Rotation 81.2%
9[24]	...	...	...	...	...	...
10[25]	40h 29 (56.9%) 48h 22 (43.1%)	...	...	40 78.4%	11 21.6%	...
11[26]	...	...	...	59.1%	40.9%	...
12[27]	...	...	...	Mean = 7.88 SD = 7.18	Alternating: Morning Afternoon Night	...
13[28]	...	6.6%	...	...	...	Night shift 31 (34.0%)

Source: Created by the authors.

Notes:
* In this study, the *Burnout* Syndrome was measured in two moments, only the first measurement (time zero) was considered for inclusion in this review.

Chart 2b – Prevalence and cutoff point used for defining the *Burnout* Syndrome definition of the surveyed population (continued)

Article	Prevalence of the Burnout Syndrome Maslach Burnout Inventory	Cutoff point used for the Burnout Syndrome	Observations
1[16]	MEAN n=96# **EE:** 21.37/ **SD:** 7,43/ **RP:** 28.39 **High *Burnout* prevalence 46.8%** n=30## **EE:** 16.80/ **SD:** 9,27/ **RP:** 31.00 **High *Burnout* prevalence 28.7%**	No answer	For the definition of *burnout,* a high level in at least one of the dimensions was used.
2[17]*	MEAN±STANDARD DEVIATION **EE:** 20.21 ± 6.41 **SD:** 6.79 ± 3.41 **RP:** 19.23 ± 4.34 **High *Burnout* prevalence 36%** (N=100)	EE average = 15– 23 SD = 4–8 PA = 30–36	For the definition of *burnout*, a high level in at least one of the dimensions was used.

Chart 2b – Prevalence and cutoff point used for defining the *Burnout* Syndrome definition of the surveyed population (continued)

Article	Prevalence of the Burnout Syndrome Maslach Burnout Inventory	Cutoff point used for the Burnout Syndrome	Observations
3[18]	**High *Burnout* prevalence** **EE** = 67% **SD** = 49% **RP** = 62% **(N=98)**	Moderate to high levels of the *burnout* syndrome, with the following values: EE≥17. SD≥7. PA≥31.	For the definition of the *burnout* syndrome, a high level in at least one of the dimensions was used.
4[19]	PERCENTAGE/MEAN/ STANDARD DEVIATION **High *Burnout* prevalence** Positive **EE** 61% Positive **DP** 44% Positive **RP** 50% (N=744)	Moderate to high levels of *burnout* syndrome, with the following values: EE > 17. SD > 7. PA > 31.	For the definition of *burnout*, a high level in at least one of the dimensions was used.
5[20]	MEAN±STANDARD DEVIATION **SD** = 17.3 ± 10.6 **SD** = 5.9 ± 5.2 **RP**= 36.2 ± 7.2 **High *Burnout* prevalence** 35.7% **(N=153)**	The Italian validation of the MBI has established the following groups: Mean EE = 15–23 SD = 4–8 PA = 30–36	For the definition of the *burnout* syndrome, a high level in at least one of the dimensions was used.
6[21]	MEAN EE≥20. **SD** = 5 PA≥34. **High *Burnout* prevalence** **26.2% (n=65)**	**EE:** low, ≤ 14; mean 15-24; high, ≥25; **DP:** low, ≤3; mean, 4–9; high, ≥10; **RP:** low, ≥40; mean, 33-39; high, ≤32 (inverted scale).	In this study, for the definition of *burnout*, a high level in at least one of the dimensions was considered.
7[22]	MEAN±STANDARD DEVIATION **High *Burnout* prevalence in the EE** **EE** = 14.90±5.53 **SD** = 3.87±2.77 **RP** = 11.43 ±4.63 **(N=80)**	No answer	For the definition of the *burnout* syndrome, a high level in at least one of the dimensions was used.
8[23]	MEAN±STANDARD DEVIATION **High *Burnout* prevalence** **EE** = 15.81±7.16 **SD** = 6.52±4.18 **RP** = 20.73 ±5.0 **(N=138)**	MBI scores: **EE** = 0 to 36 **SD** = 0 to 20 **RP** = 0 to 32	For the definition of *burnout*, a high level in at least one of the dimensions was used.
9[24]	MEAN±STANDARD DEVIATION **EE:** 25.51 ± 12.48 **SD:** 7.51 ± 7.11 **RP:** 34.18±10.04 **Moderate *Burnout* prevalence** 16% (n=68)	**EE** <19 = Low 19 to 26 = Moderate >26 = High **SD** <6 = Low 6 to 9 = Moderate >9 = High **RP** >39 = Low 34 to 39 = Moderate <34 = High	For the definition of *burnout*, a high level in all three dimensions was considered.

Chart 2b – Prevalence and cutoff point used for defining the *Burnout* Syndrome definition of the surveyed population (conclusion)

Article	Prevalence of the Burnout Syndrome Maslach Burnout Inventory	Cutoff point used for the Burnout Syndrome	Observations
10[25]	MEAN±STANDARD DEVIATION **High *Burnout* prevalence** **SD** = 14.68±6.10 ± 28% **SD** = 5.31±3.84 ± 10% **RP** = 19.19 ±7.08 ± 37% **(N=51)**	No answer	For the definition of the *burnout* syndrome, a high level in at least one of the dimensions was used.
11[26]	**EE:** Low–105(32.8%) Moderate–95(29.7%) High–120 (37.5%) **High *Burnout* prevalence 37.5%**	High EE = or greater than 27. Low EE = or less than 18.	Defined as high *burnout* by high scores of emotional exhaustion.
12[27]	**EE:** Low–105(32.8%) Moderate–95(29.7%) High–120 (37.5%) **High *Burnout* prevalence 37.5%**	High EE = or greater than 27. Low EE = or less than 18.	Defined as high *burnout* by high scores of emotional exhaustion.
13[28]	No Burnout 78 (85.7%) With Burnout 13 (14.3%) **(N=91)** **Moderate *Burnout* prevalence**	No answer	For the definition of the *burnout* syndrome, a high level in at least one of the dimensions was used.

Source: Created by the authors.

EE = Emotional Exhaustion; DP = Depersonalization; PA = Personal Achievement.

12-hour shift nurses compared to ## Nurses in an 8 hour shift.

* In this study, the *Burnout* Syndrome was measured in two moments; for inclusion in this review, only the first measurement (time zero) was considered.

The results showed that the investigations on the BS in intensive care nurses in this review, taking into account the criteria defined for searching databases, started in 1996 and there was an increase in the number of publications in the following years. The articles included had a cross-sectional epidemiological design, and the country with the most publications was Turkey. In Brazil, only one study was found.

Ten (77%)[16,18,20-24,26-28] among the selected articles, presented a high prevalence of the BS when considering a high level in at least one of the dimensions; in two (15.4%)[27-28] of them, the prevalence was moderate, considering a high level in at least one of the dimensions; and only one study (7.6%)[24] presented a moderate prevalence of the BS, considering a high level in the three dimensions. The results revealed high estimates of the prevalence of the *burnout* syndrome among intensive care nurses from different countries.

In a study conducted in China, a moderate prevalence of *burnout* was observed (16%)[24] and a high prevalence was found in studies conducted in Italy and Portugal, with 35.7%[20] and 31%[21] respectively. A study conducted in Saudi Arabia showed a high prevalence of *burnout* among nurses, presenting a result of 45% in the emotional exhaustion dimension, and of 28.9% in the depersonalization dimension. This study also found that personal accomplishment was moderate to low in most nurses (71.5%), and that it was related to mental distress among the surveyed professionals[29].

The authors studied in this research agree that the BS has a multi-factorial etiology[2,4-5,30]. In this sense, the studies pointed to several factors associated with the BS: those considered triggers were related to the work environment; those judged as facilitators were related to the person's inherent characteristics, which may act as predictors or inhibitors of the stress experienced during the activity developed in the workplace[30-31].

In relation to the gender variable, females were more frequent, with 1,486 women for 272 men studied. It is important to highlight that, although most studies reported this information, in only one, the number of men was higher in relation to females. This result precludes the use of the gender variable as a BS associated factor, making its comparison unfeasible. From the beginning of the nursing history as a profession to the present day, predominance of women among nurses is evident.

As for the age variable, younger intensive care nurses experience emotional exhaustion more often[1,5,9-12]. Older people experience depersonalization[6-8,13]. Most studies indicate that the BS has a higher prevalence among younger nurses[1,5,9-12]. This result may be related to the characteristics of young workers, considered less experienced, becoming more tense and vulnerable to stress due to the complications that may occur during the period they are working in the ICU[32].

In relation to the work shift, three studies analyzed the association of this variable with the BS[22-23,28]. However, only one analyzed the association between night work and the *burnout* syndrome, finding an association between night work and the emotional exhaustion dimension of the BS[28].

Of the 2,336 nurses participating in the selected studies, 865 reported having a partner and 633 reported not having. Most studies described the participants' marital status; however, none made any association between marital status and the BS. The authors point out that the nurses' sociodemographic and occupational profile should be investigated, as these variables are relevant information in studies that address workers' health.

In relation to the income and workload variables, according to the selected studies, workers who had more than one job, with the aim to raise their income, had a higher prevalence of burnout[33]. The authors argue that low pay, as well as lack of perspectives related to working life, leads to reduced job satisfaction, a situation that may contribute to the workers' psychological distress[28,34].

One of the selected studies[21], observed a prevalence of *burnout* of 31%, considered high, associated with organizational aspects of work, such as group experiences and extensive workload. Other studies have shown that *burnout* in intensive care nurses may be strongly associated with organizational factors and with the context of the work environment, such as workload, conflicts and experiences in the workplace, night shift, other job and income[30,32-33].

The results of the selected in relation to the analysis of the association among sociodemographic, labor and BS variables were heterogeneous, with no consensus on the presented results. Thus, it was not possible in this review to point out the relationship between the organizational factors and *burnout*, considering that few studies presented results relating work environment to the BS.

The relationship among some variables, such as age, income, children, graduate, workload, ICU experience and the BS, has not been described or well established in most studies included in the SR. In addition, the lack of standardization for defining *burnout* impaired a results comparison between the selected studies.

It was found that the version of the *Maslach Burnout Inventory* (MBI) used in the studies included in this review was the Human Services Survey (HSS), MBI-HSS, and its adaptations. It is important to clarify that the MBI version used has several adaptations in the countries where the studies with nurses were performed. All the adopted versions have been translated, adapted and validated for their

respective languages. Thus, the changes found may be related to the existence of cultural, social, economic, geographical and workplace differences in each studied population.

Currently, three distinct versions of the MBI are widely used in research studies on *burnout*. The first version, MBI-HSS, aimed at health professionals (22 items); the second version, *Maslach Burnout Inventory – Educators Survey* (MBI-ES), adapted to the educational context (22 items); and the third version, *Maslach Burnout Inventory – General Survey* (MBI-GS), more generic and adapted to the working population in general, with 16 items. All the versions follow the structure proposed by Christina Maslach[7,9,31,33,35].

The MBI an instrument considered as a gold standard by the researchers in characterizing the BS[35]. Regarding the classification of the BS, the presence of a high level in at least one of the three dimensions was the most used condition by the authors included in this study to estimate the prevalence of *burnout* among nurses. However, there is still no consensus for the classification of *burnout*. So most of the authors define *burnout* as a high level in at least one of the three dimensions; others, as a high level in all three dimensions; and there are still those who consider *burnout* a high in at least two of the three dimensions. Thus, there are large variations in the results of the studies on the prevalence of *burnout*, depending on the classification criteria adopted.

In this study, although it was possible to compare the prevalence levels found, since most[17-28] of the authors studied adopted a similar classification for *burnout* (a high level in at least one of the three dimensions), differences were observed in the value used as a cutoff point for the characterization of high, moderate and low level in the three dimensions of *burnout*.

The *Burnout* Syndrome involves a chronic process of stress. The onset of the symptoms is imperceptible, hindering comparability and prevention[19,32,36]. The individuals affected by the BS are subjected to the result of this exhaustion, often accompanied by inefficient work, less energy investment, absenteeism, abandonment of the profession, early retirement and, consequently, with repercussions on personal and professional life. All the aspects presented, isolated or enhanced by interaction, cause this sensation of chronic imbalance.

The studies have shown a relationship between the BS and specific occupations, such as intensive care nurses, focus of this study. These professionals seem to be at higher risk of *burnout*, due to the type of work, duration, workload, need for another job to complement income, as well as to the characteristics of the patients cared for, to the need for greater care, level of attention, skills and competences of the nurses and other personal factors that appear to be associated with the level of *burnout*.

Among the limitations of this study, we highlight the small number of articles found on the prevalence and factors associated with the BS in intensive care unit nurses. Among the selected studies, there was a lack of data regarding the sociodemographic and labor characteristics of these workers. There was also a lack of standardization regarding the dimensions and cutoff points used for the definition of the BS.

Conclusion

This research allows us to assert that the consulted scientific production presented homogeneous results in relation to a high prevalence of *burnout* in intensive care nurses in ten different countries. However, it should be pointed out that the consulted authors adopted different cutoff points for MBI interpretation and, in turn, for the definition of the high, moderate and low levels of the three dimensions of *burnout*; they also differed on the number of dimensions involved (one, two or three) for the identification of the *burnout* syndrome.

Among the variables analyzed as associated with the *burnout* syndrome, the most important were the sociodemographic ones (age, gender, marital status) and those related to the working conditions, time and work shift. Few studies have provided information regarding the number

of children, graduate, workload, type of job contract and income.

The results pointed to the need for further studies that adopt a standardization in relation to the dimensions and cutoff points used for defining the *burnout* syndrome and which analyze the sociodemographic and psychosocial factors, the work characteristics and the lifestyle habits that may be associated with the *burnout* syndrome in intensive care nurses.

Collaborations:

1 – conception, design, analysis and interpretation of data: Núbia Samara Caribé de Aragão, Gabriela Bené Barbosa and Carlito Lopes Nascimento Sobrinho;

2 – writing and relevant critical review of the intellectual content: Núbia Samara Caribé de Aragão, Gabriela Bené Barbosa and Carlito Lopes Nascimento Sobrinho;

3 – final approval of the version to be published: Núbia Samara Caribé de Aragão, Gabriela Bené Barbosa and Carlito Lopes Nascimento Sobrinho.

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