

# A Systematic Review of Burnout among Healthcare Professionals in Latin America

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## Abstract

Burnout stands out globally as one of the most worrisome occupational psychosocial factors. The objective of the present review was to analyze scientific studies on burnout in Latin American health professionals. A total of 52 articles published between 2015 and 2021 is the sample for this research. Peer and judge analyses were performed with the PRISMA method, in addition to N-VIVO and bibliometrics for data interpretation. The findings indicate that sociodemographic factors have an important role for the syndrome. However, the ones of greater labor risk are work shifts, exacerbated demands, lack of rest periods, routine changes, and labor violence. The most significant factors in protecting burnout are having children, a healthy lifestyle, social support, work engagement, and sufficient work resources. It was concluded that the symptoms and comorbidities need to be better investigated in the differentiation of clinical pictures and in the management strategies at early stages of this syndrome.

**Keywords:** burnout, Latin America, health professionals.

## Uma Revisão Sistemática do Burnout em Profissionais da Saúde na América Latina

### Resumo

*Burnout* se destaca globalmente como um dos fatores psicossociais de risco ocupacional mais preocupantes. Objetivou-se analisar estudos científicos sobre *burnout* em profissionais de saúde especificamente na América Latina. 52 artigos, publicados entre 2015 e 2021, compõem a amostra desta pesquisa. Foram realizadas, utilizando o método PRISMA, análises por pares e de juízes, no *software* N-VIVO; além de bibliometria para interpretação dos resultados. Os achados indicam que fatores sociodemográficos têm importância para a síndrome. Ainda, os de maior risco laboral são: turnos de trabalho, exigências exacerbadas, falta de períodos de descanso, mudanças de rotina e violência laboral. Já os mais significativos na proteção ao *Burnout* são: ter filhos, estilo de vida saudável, suporte social, engajamento no trabalho e recursos de trabalho suficientes. Concluiu-se que as sintomatologias e comorbidades precisam ser melhor investigadas na diferenciação de quadros clínicos e nas estratégias de manejo em estágios iniciais dessa síndrome.

**Palavras-chave:** *burnout*, América Latina, profissionais da saúde.

## Una Revisión Sistemática sobre Burnout entre Profesionales de la Salud en América Latina

### Resumen

El *burnout* se destaca globalmente como uno de los factores psicossociales ocupacionales más preocupantes. Se buscó analizar estudios científicos sobre *burnout* en profesionales de la salud específicamente para América Latina. Fueron analizados 52 artículos, publicados entre 2015 y 2021, los cuales fueron tomados como muestra de esta pesquisa. La revisión sistemática fue realizada utilizando el método PRISMA, análisis por pares y de jueces, en el *software* N-VIVO además de bibliometría para interpretación de los resultados. Los hallazgos indican que factores sociodemográficos desempeñan un factor importante para el desenvolvimiento de este síndrome. Los de mayor riesgo laboral son: los turnos laborales, las exigencias exacerbadas, la falta de períodos de descanso, cambios de rutina y violencia laboral. Por otra parte, los más significativos para protección del *burnout* son: tener hijos, estilo de vida saludable, apoyo social, compromiso en el trabajo y recursos laborales suficientes. Se concluyó que es necesario investigar de manera más profunda los síntomas y las comorbilidades en la diferenciación de los cuadros clínicos y en las estrategias de tratamiento en las fases iniciales de este síndrome.

**Palabras clave:** *burnout*, América Latina, profesionales de la salud.

There is an urge to enhance employees' well-being by experiencing protective psychosocial factors at work. Around 264 million people were diagnosed with depression and anxiety at work in 2019, causing losses to the tune of \$1 trillion/per year by reduced productivity in the world economy (World Health Organization [WHO], 2019). During the pandemic by covid-19, common mental disorders increased and significantly affected recovered people. In addition to the physical complaints of post-covid, anxiogenic and depressive symptoms became more frequent because of social distancing, abrupt change of habits, and the negative impacts of illness and bereavement. There were registered in Brazil in 2020: 3.428 cases of severe stress reactions and adaptation disorders (ICD F43), 2.242 cases of other anxiety disorders (ICD F41), 1.488 cases of depressive disorders (ICD F32), and 485 cases of depressive disorders arising (ICD F33) (Ministério do Trabalho e Previdência, 2020).

There are no statistics on burnout in terms of prevalence, not least because burnout is still a diagnosis that demands a more accurate definition and evidence to explain its dynamics and process. Despite robust scientific evidence of burnout syndrome, only in the latest version of the World Health Organization's International Classification of Diseases (ICD-11), released in 2022, was burnout included in the chapter on Problems associated with employment and unemployment under code QD85. Burnout is considered an occupational phenomenon associated with chronic stress at work and has not yet been included in the Diagnostic and Statistical Manual of Mental Disorders, DSM-V. Although there is an advance in this recognition of burnout in ICD-11, its definition does not include specific diagnostic criteria, even though it differentially excludes cases of adjustment disorders (6B43), specifically associated with stress (6B40 - 6B4Z), anxiety or fear disorders (6B00 - 6B0Z), and mood disorders (6A60 - 6A8Z).

Although various studies demonstrate some negative consequences of burnout, such as cardiovascular disease, hypercholesterolemia, type 2 diabetes, coronary heart disease, musculoskeletal disorders, prolonged fatigue, headaches, gastrointestinal problems, mood disorders, depressive symptoms, absenteeism, low work performance, labor accidents, low productivity, insomnia, depressive symptoms, and work overload in healthcare professionals because of the covid-19 pandemic (Chandrasekaran et al., 2020), there is also strong evidence that burnout is not only detrimental to workers wellbeing but also has adverse organizational and national effects (De Beer et al., 2020; Virgã et al., 2019).

Along with other scientists critical to the current model of understanding burnout, researchers from the field of occupational health and positive psychology have presented recent competing theoretical models that lead to a new conceptualization of burnout and a more accurate assessment of the phenomenon, including the clinical level and in evidence-based interventions (Schaufeli, 2021). Schaufeli et al. (2020) analyzed the best-known definitions of Burnout, considering conceptualization criticisms and identifying key aspects to develop and validate a new measurement for burnout. This process outcome defines the construct as follows:

Burnout is a work-related state of exhaustion that occurs among employees, which is characterized by extreme tiredness, reduced ability to regulate cognitive and emotional processes, and mental distancing. These four core dimensions of burnout are accompanied by depressed mood and non-specific psychological and psychosomatic distress symptoms (Figure 1). An imbalance between high job demands and insufficient job resources causes it. In addition, problems outside the work domain and personal vulnerability may facilitate the development of burnout (Schaufeli et al., 2019, p.30).

In this theoretical model, Burnout is defined as a syndrome activated by core dimensions that can interplay with secondary symptoms as the stressors act as a risk factor. On the other hand, there have been a significant number of studies on burnout among healthcare workers who are in constant adverse and uncontrollable labor conditions with highly physical and emotionally demanding interactions (Mijakoski et al., 2018; Salvagioni et al., 2017). Additionally, researchers suggest the severity of its consequences, not only as an individual matter leading to high job stress, intense time pressure, and workload as well as lack of organizational support (Dugan et al., 2018) but affecting patient care safety practices (Hall et al., 2016; Reith, 2018).

In this context, the objective of this systematic review was to identify empirical studies that evidence the state of the art of the burnout phenomenon, wanting to understand the advances in new theories and the definition of burnout, and how they are dealing with the critiques on the superficiality and lack of accuracy of the assessment instruments. This systematic review is underlined by this research question: what aspects of burnout are highlighted in the scientific literature on healthcare professionals in the Latin America (LA) context? Our interest in LA is in identifying studies developed in these countries and observing if there are similar characteristics given the region they inhabit. We argue that this study can make a relevant contribution to the field of occupational and workers' health by the systematization of the findings about burnout syndrome in LA countries.

## Method

This study aims to identify scientific articles on burnout in healthcare professionals in Latin America (LA) published between 2015 and 2021. The Preferred Reporting Items have written this paper for Systematic reviews and Meta-Analyses (PRISMA 2020) updated guideline sting systematic reviews (Page et al., 2021).

## Study Design and Eligibility Criteria

As the main objective of this study was to analyze the state of the art of burnout empirical studies, this variable was required to be the primary construct of the selected articles. Inclusion criteria were: empirical studies on burnout of healthcare workers in LA countries, and published from 2015 until 2021, to analyze the latest literature about burnout for the recent development of new theories. We included all healthcare team professionals as participants, even medical residents, because they are considered as part of a working context, assuming their professional behavior over being a student. Exclusion criteria were: gray literature studies, qualitative studies, and systematic reviews. There were excluded articles

with no information about the country and those that were not accessible or paid for. Healthcare students, professors, and professionals not acting in a healthy work context (such as consultancies, hospitals, and primary health care units) were not eligible.

## Information Sources and Search Strategy

Our research question was developed based on the PICOT method; it was based on a POT structure (referring to the specific population, outcome, and type of study; C. M. C. Santos et al., 2007). The papers were retrieved from PubMed, Web of Science, Scielo, BVS/LILACS, and Scopus databases, which yielded 6,455 papers. The search strategy was conducted using a combination of search terms and keywords by features of each database about burnout from 2015 to 2021, in English, Spanish and Portuguese papers (see Table 1).

## Study Selection Process

Four reviewers screened the 6,455 titles independently on each portal as an initial review to select and build a shared database ( $n = 1.271$ ) with the papers selected. Duplicates were removed, and a screening of all titles was again conducted independently to build the following filtered database for the first data retrieval ( $n = 608$ ). The retrieved metadata from these studies included: title, portal, authors, link to the source (DOI), journal, language, country of studied individuals, type of worker/professional, and publication year. Duplicates

were first removed from the database, and the information was screened to validate the articles in two phases: 1) First, filters were applied considering the retrieved information to select studies of health workers, LA studied countries, and articles published between 2015 and 2021. 2) From this filtered database ( $n = 74$ ), the abstract information was validated independently to identify inclusion criteria not presented previously in the title of the article and neither of the applied filters in the first phase (e.g., quantitative studies on burnout). Consequently, 534 papers were excluded because they did not meet the inclusion criteria, were duplicates, or had no full text available. Three of four independent authors read all 74 abstracts to discuss the ones selected for the qualitative review ( $n = 52$ ). At the end of this stage, an impartial author (A.C.S.V.) acting independently from the others in this study validated the screening and selection process by rereading all 74 abstracts. A final validation was made by the one author that did not read the abstracts. Discrepancies (34 articles) were discussed in an online session between all the authors to find agreement. This final validation stage left the number of selected articles at 52 to initiate the data collection process.

## Data Collection Process

The methodology for this process is based on the Grounded Theory principles for literature review (Dunne, 2011; Wolfswinkel et al., 2013). Beginning with the analysis stage, in an open coding task, each of the four independent authors was assigned a group of 13 articles to extract the stack of "excerpts"

**Table 1**

*Detailed search strategies for all databases*

Database	Strategy code - Detailed search strategies for all databases
BVS/LILACS	(burnout OR "agotamiento profesional" OR "Exaustão Profissional" OR "desgaste profissional" OR "esgotamento profissional") AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR "compromiso laboral") AND ( fulltext:( "1" OR "1" OR "1" OR "1" OR "1" ) AND db:( "LILACS" ) AND la:( "en" OR "es" OR "pt" ) ) AND ( year_cluster:[2015 TO 2021] )
SCOPUS	TITLE-ABS-KEY ( agotamiento AND demandas ) AND ( LIMIT-TO ( OA , "all" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( PUBYEAR , 2021 ) OR LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) OR LIMIT-TO ( PUBYEAR , 2016 ) OR LIMIT-TO ( PUBYEAR , 2015 ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) OR LIMIT-TO ( LANGUAGE , "Spanish" ) OR LIMIT-TO ( LANGUAGE , "Portuguese" ) )
WEB OF SCIENCE	TÓPICO: (BURNOUT OR "Agotamiento profesional" OR "Exaustão Profissional" OR "desgaste profissional" OR "esgotamento profissional") AND TÓPICO: (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR "compromiso laboral")  <i>Refinado por: Acceso Aberto: ( OPEN ACCESS ) AND IDIOMAS: ( ENGLISH OR SPANISH OR PORTUGUESE ) AND TIPOS DE DOCUMENTO: ( ARTICLE )</i>  <i>Tempo estipulado: 2015-2021. Índices: SCI-EXPANDED, SSCI, A&amp;HCI, CPCI-S, CPCI-SSH, ESCI.</i>
SCIELO	(burnout AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR compromiso laboral)) AND (year_cluster:(2015) or (2016) or (2017) or (2018) or (2019) or (2020) or (2021))) <i>Filtros aplicados: (Idioma: Português) (Idioma: Inglês) (Idioma: Español) (Tipo de literatura: Artigo)</i>  <i>(agotamiento profesional AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR compromiso laboral)) AND (year_cluster:(2015) or (2016) or (2017) or (2018) or (2019) or (2020) or (2021)))</i>  <i>Filtros aplicados: (Idioma: Português) (Idioma: Inglês) (Idioma: Español) (Tipo de literatura: Artigo)</i>  <i>(exaustão profissional AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR compromiso laboral)) AND (year_cluster:(2015) OR (2016) OR (2017) OR (2018) OR (2019) OR (2020) OR (2021))) AND network:org AND -network:rve AND ( la:( "pt" OR "en" OR "es" ) AND type:( "research-article" ) )</i>  <i>(esgotamento profissional AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR compromiso laboral)) AND (year_cluster:(2015) OR (2016) OR (2017) OR (2018) OR (2019) OR (2020) OR (2021))) AND network:org AND -network:rve AND ( la:( "pt" OR "en" OR "es" ) AND type:( "research-article" ) )</i>  <i>(desgaste profissional AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR compromiso laboral)) AND (year_cluster:(2015) OR (2016) OR (2017) OR (2018) OR (2019) OR (2020) OR (2021))) AND network:org AND -network:rve AND ( la:( "pt" OR "en" OR "es" ) AND type:( "research-article" ) )</i>
PUBMED	burnout AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento OR comprometimento OR compromiso laboral) Filters: Free full text, English, Portuguese, Spanish, from 2015 - 2021  <i>esgotamento AND (recursos OR demandas OR engagement OR resources OR demands OR engajamento) Filters: Free full text, English, Portuguese, Spanish, from 2015 - 2021</i>

aligned to the research goal. There were four questions as a base of concepts that needed to be identified in the articles, complemented with questions from the insights obtained while reading articles: 1. What are the definitions of burnout in the scientific literature? 2. Which risk and protection psychosocial factors related to burnout are evidenced? 3. Which symptoms and comorbidities are significantly associated with burnout? 4. What assessments are used to evaluate burnout in the studies?

From the 52 studies was collected the data on (a) the report: Title, author, year, language availability, and source of publication (link or Doi); (b) about the study: type of study, sample size characteristics, institution involved on the study, country of the sample, and definition and criteria used for burnout and other related variables; (c) sociodemographic variables were identified: sex, age, civil status, kids, experience, more than one job, shift, working area, schooling. (d) About the research design and features: research problem or question, a measurement tool for burnout, other variables and its measurement tools, theoretical framework mentioned, (e) for the 2020 and 2021 articles, it was asked if there was anything mentioned about COVID-19. (f) Findings: Main Findings, contributions, and (g) if it mentioned recommendations from the authors of the articles. No automation tools were used in the process; another checked data collected by one reviewer.

### Study Risk of Bias Assessment

Four authors assessed the paper to make the pairs reviews (Page et al., 2021). The risk of bias was assessed based on validation checkpoints and discussion meetings. All tasks independently conducted were checked by another two authors to mitigate the risk of selection bias and the potential for assessment errors. The selection process considered two checkpoints (1) After the abstract reading and discussion, where an impartial author reviewed all abstracts from the selected articles (J.F.F.A), and (2) After the first qualitative information extraction in the open axial task (A.C.S.V). On these checkpoints, the impartial author validated the database information, as it was assigned for this validation role. PRISMA 2020 protocols were applied to the Validation processes (Page, 2021).

### Sample

The initial search (on May 2021 and updated on January 2022) generated 6.455 articles (2.958 from Web of Science, 1.662 from SCOPUS, 1,526 from PUBMED, 174 from BVS/LILACS, and 135 From Scielo), of which 1.239 were duplicates. After reviewing article titles, 74 articles remained for abstract review. Using the eligibility criteria mentioned, 52 articles were included in the final data extraction and analysis. The articles examined empirical burnout studies in samples of LA healthcare workers.

### Qualitative Analysis on N-Vivo

The 52 articles were fully imported (full article) into the N-Vivo10 software, with the objective of filtering, analyzing, and critically describing the results. First, the software made a frequency table to visualize the most common terms in the studies. Words that were redundant and obvious to the research objective were selected and inserted in the barred words. For the word cloud, the option was chosen to display the thousand most frequent words with a minimum length of 4 words,

including derived terms. Afterward, the nodes were coded based on categories previously selected by the researchers in a previous reading of the analysis material. The nodes are presented as structures that store codified information and can assume different meanings. In the present study, the "nodes" took the function of categories that identified the themes explored in the articles. Since this is content analysis, these "nodes" receive codes (fragments of the objectives), forming categories of information. The researchers attempted the following categories: definition of burnout, sociodemographic factors, burnout measurement, protection factors, risk factors, comorbidities, and symptoms. Subsequently, NVivo performed a descriptive analysis by presenting the absolute frequency of the information.

Next, NVivo performed a cluster analysis to visualize the data by identifying groups of nodes. The cluster analysis technique was used by attribute Value, of the NVIVO 10 software, with a Jaccard coefficient that groups elements by similarity. In this case, categorical characteristics (attributes) were inserted that served as common elements between specific nodes, forming clusters. The Jaccard coefficient used in this technique considers binary data, which is understood as 1 = presence; 0 = absence. To summarize, a word cloud generated that the frequency data identified in the word cloud may signal connections across different publications, which may not have been evident from manual notetaking alone. Finally, cluster analysis was used to group nodes with similar words, attribute values, or encodings.

### Conceptual Structure Analysis

Our primary source of analysis was the 52 papers obtained from the systematic review. Regarding data preprocessing, we chose the titles, abstracts, and keywords as the unit of analysis. We extracted the noun phrases for the titles and abstracts using the model `en_core_web_lg` of SpaCy. This process and the cleaning process were executed on ad-hoc scripts in Python. The final corpus had 58 noun phrases after removing stop words and normalizing and deleting general terms. We decided to establish a term frequency of one and a co-occurrence of one because it yields the best results. The co-occurrence matrix was created and transformed into the VosViewer network file format. The network was normalized with the association strength, which according to van Eck & Waltman (2010), is the most suitable normalization measure for co-occurrence data. The network layout implemented the Visualization of Similarities with an attraction of 2 and repulsion of 0 as parameters. Regarding community detection, we used the Leiden algorithm, and after analyzing many scenarios (network outputs), we chose a parameter resolution of 0.30.

## Results

The 52 studies included in the final analysis spanned only LA countries and focused on various healthcare workers, including physicians, nurses, community health workers, medical residents, and dentists. The sample was composed of cross-sectional studies of 17.038 healthcare professionals. The country that had the highest number of healthcare professionals involved in the research was Brazil ( $N = 11.930$ ), followed by Ecuador ( $N = 1.707$ ) and Mexico ( $N = 1.671$ ). The Healthcare workers who participated the most in the research articles were nurses and nurse practitioners. The results will be organized according to the findings obtained from the guiding questions.

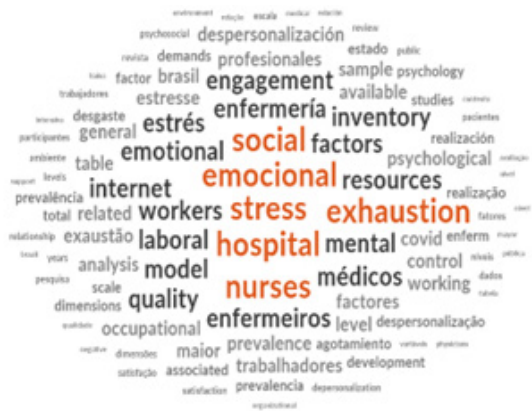
In the end, we will integrate the results better to understand this role in the theme of burnout (see Table 2).

**Definition of Burnout in the Scientific Literature on Healthcare Professionals in LA**

Most empirical studies do not critically present or discuss the concept of burnout, adopting as their guide the assessment instrument chosen for their research. Then, to deepen the understanding of which characteristics of burnout are being investigated in the scientific literature, the qualitative word cloud method and the bibliometrics investigation of the term were applied (Figure 1).

**Figure 1**

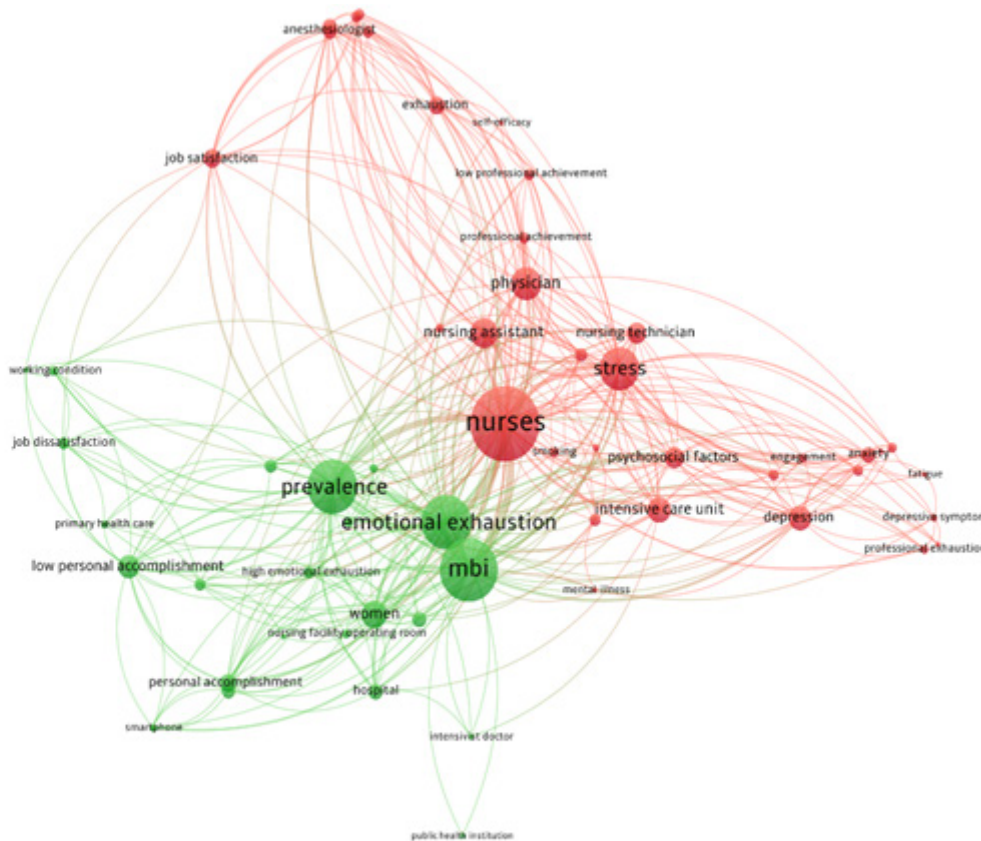
*Word Cloud of Literature*



The conceptual structural analysis of bibliometrics, which proceeded with the related conferences to minimize publication and language bias, shows the co-word network built on the

**Figure 2**

*Co-Word Network of Burnout in LA*



principal component based on 58 nodes and 374 edges (Figure 2). Regarding burnout characteristics, its analyses confirm the concentration of the focus on the nurse’s healthcare profession and associate this construct with emotional exhaustion and stress.

**Risk and Protection Psychosocial Factors Related to Burnout in the Papers’ Sample**

The most significant burnout protection factors described are 1) personal resources, related to variables studied by Positive Organizational Psychology, such as autonomy, self-efficacy, work engagement, satisfaction with aspects of life and professional accomplishment, as well as experience with the functions performed; 2) social resources such as support and social support in the work environment, related to a good relationship with leaders and coworkers, and 3) sociodemographic characteristics, even though there are no significative associations about the variables, the studies showed that there was a higher level of burnout in women, younger people aged less than 40 years old, singles and with children. Also, higher scholar level, less time of work experience, number of jobs, sleeping hours, and financial status appeared as risk factors.

These findings were confirmed in the coding analysis performed at N-Vivo. On the other hand, in the Conceptual Structural analysis, we identified community A (red), which describes associated factors (sociodemographic, risk, and protection). In contrast, community B (green) describes psychological factors such as job satisfaction and low personal accomplishment (see Figure 2). Our results point out the main psychosocial factor based on scientific evidence. In general, the psychosocial factors identified are related to the

Table 2

## General Characteristics of the studies

Study (year)	M Age	Sample	Female	Country	Work group
Acuña-Hormazabal et al (2021)	Unclear	45	Unclear	Chile	multiprofessional sample
Aguilar Camacho et al (2020)	Unclear	135	68.2%	Mexico	healthcare workers
Alvarado et al (2021)	42.06	559	84.2%	Ecuador	nurses
Alves et al (2021)	39	122	76%	Brazil	nurses
Astudillo et al (2015)	33	45	31%	Chile	medical interns
Borges et al (2021)	37.4	1052	83.2%	Brazil	nurses
Brito-Ortiz et al (2019)	39	357	98%	Mexico	nurses
Castro et al(2020)	35	206	72.8%	Brazil	critical care providers
Colindres et al (2017)	35.4	333	87.1%	Ecuador	nurses
Contreras et al (2020)	Unclear	219	100%	Colombia	nurses
Demarzo et al (2020)	41.09	407	84.5%	Brazil	primary care personnel
Enríquez et al (2021)	Unclear	212	61.3%	Mexico	medical residents
Escarón & Balado (2016)	36	87	73%	Uruguay	nurses
Fernandes et al (2018)	35.1	160	92.8%	Brazil	nurses
Frota et al (2021)	Unclear	13	92.3%	Brazil	healthcare workers
Gallegos & del Carpio Toia (2016)	39.19	47	89.4%	Peru	nurses
Guitart & Morelato (2020)	38.9	233	66%	Argentina	dentists
Gutiérrez et al (2020)	37	163	90%	Chile	nurses
Jácome et al (2016)	Unclear	40	45%	Colombia	medical residents
Juárez-García et al (2021)	Unclear	269	75.5%	Mexico	healthcare workers
Lima et al (2018)	45	153	82.4%	Brazil	healthcare workers
Loiola & Martins (2019)	31	82	78%	Brazil	nurses
Lorenz et al (2018)	Unclear	198	88.4%	Brazil	nurses
Magalhães et al (2015)	Unclear	241	34.5%	Brazil	anesthesiologists
Merces et al (2020)	37.1	1125	Unclear	Brazil	nurses
Miranda-Lara et al (2016)	37.8	535	93.8%	Mexico	nurses
Morais et al (2018)	30	89	71.9%	Brazil	doctors
Moura et al (2021)	38	2708	66%	Brazil	physicians
Munhoz et al (2019)	Unclear	146	Unclear	Brazil	healthcare workers
Nogueira et al (2018)	43	745	86.7%	Brazil	nurses
Ochoa (2018)	Unclear	435	42%	Ecuador	physicians
Oliveira et al (2020)	Unclear	134	89.6%	Brazil	medical residents
Pai et al (2015)	49	269	58.4%	Brazil	healthcare workers
Paiva et al (2017)	51	436	79.4%	Brazil	healthcare workers
Pereira & Gomes (2016)	36.57	153	82.4%	Brazil	nurses
Portillo et al (2018)	34	19	63.2%	Colombia	health workers
Prada-Ospina (2019)	Unclear	360	63%	Colombia	health workers
Rodríguez & Carlotto (2017)	34.7	518	77.6%	Brazil	psychologists
Rodríguez et al (2015)	38.9	163	78%	Mexico	nurses
Salvador et al (2021)	36.23	634	92.3%	Brazil	healthcare workers
Santos et al (2017)	Unclear	182	68.7%	Brazil	healthcare workers
Seguel Palma & Valenzuela Suazo (2016)	40	336	Unclear	Chile	nurses
Silva et al (2015)	35	130	50%	Brazil	nurses
Silva et al (2019)	Unclear	95	80%	Brazil	healthcare workers
Tironi et al (2016)	39	180	54.4%	Brazil	intensivist doctors
Toala et al (2021)	42	380	50%	Ecuador	healthcare workers
Torres et al (2019)	35.9	469	65.7%	Brazil	healthcare workers
Vaisman et al (2020)	Unclear	136	5.9%	Chile	orthopedic surgeons
Vasconcelos et al (2018)	30.82	91	89%	Brazil	nurses
Vidotti et al (2018)	Unclear	502	90.4%	Brazil	nursing workers
Vidotti et al (2019)	Unclear	502	90.4%	Brazil	nurses
Zanatta & Lucca (2015)	physicians (39.5), nurses (35.9) and nursing technicians (34.5).	188	71.6% of nursing technicians, 78.9% of nurses and 58.3% of physicians.	Brazil	physicians and nurses (technicians and professionals)

work organization context, focusing on the performance of healthcare professionals. Most of them, the work overload, the high psychological and labor demands, the long working day, the stressful work environment, and the exposure to violent situations or situations of risk to health in the work environment were pointed out as factors related to the increased risk of developing burnout syndrome.

### Symptoms and Comorbidities Significantly Associated with Burnout in the Findings.

In this topic, the studies converge in considering emotional exhaustion as the main symptom of burnout, even when they consider other dimensions. There was a high prevalence of emotional exhaustion. Figure 2 shows its finding in Community B (green). As for associated comorbidities, the evidence is robust regarding depression and anxiety disorders related to work stress factors. Other studies point out that it is essential to emphasize that the studies do not present evidence of depression or anxiety as symptoms of burnout but rather as comorbidities that are more likely to be associated with some cases of this syndrome (not necessarily all), musculoskeletal pain (low back pain), chronic emotional exhaustion, and health problems. Figure 2 shows that Community A (red) also describes related comorbidities as depression related to stress at work in occupational groups such as nurses, nursing assistants, technicians, and intensive care units. Also, Community B (green) describes psychological factors such as job satisfaction and low personal accomplishment.

### Assessments Used to Evaluate Burnout in the Studies.

In general, MBI is the most widely used inventory to assess burnout, with 70,6% (36/52) studies reporting the General Survey version ( $n = 24$ ) and the Human Services Survey ( $n = 12$ ). The other measurement tools reported were The Copenhagen Burnout Inventory workplace burnout scale ( $n = 1$ ), the Oldenburg Burnout Inventory (OLBI) ( $n = 1$ ), and a variety of scales. There were also adapted questionnaires ( $n = 14$ ) based on the Maslach Inventory Burnout. By default, all studies presented the definition ventilated to the tool used to assess burnout or based on the Maslach Burnout Inventory conceptualization of burnout. Comparing papers published before and after COVID-19, we find that just five from 2021 mentioned COVID-19 as an analysis variable. Three of those five used the Maslach Burnout Inventory on healthcare workers. They presented results on the effect of the pandemic on burnout symptoms levels and variables such as worker-leader exchange, engagement, indolence factor, levels of concern and anguish about the future, in addition to higher levels of stress, mental tiredness, irritation, anxiety, depression, and fatigue. The other two articles from 2021 used the Oldenburg Burnout Inventory (OLBI) and the Burnout Inventory (CESQT).

So, according to the cluster analysis at N-Vivo, it was noticed the existence of two clusters: (1) associated factors (sociodemographic, risk, and protection) and (2) symptomatology (emotional exhaustion) and related comorbidities (anxiety and depression).

### Discussion

The primary aim of this study was to understand the state of the art of burnout studies among healthcare professionals in LA. Our study findings revealed that using the gold

standard tool known as the Maslach Burnout Inventory (MBI) influenced the conceptualization used by the authors of the analyzed studies. This dominance of the MBI created a circularity of concept and assessment that hinders fresh and innovative research that increases our understanding of burnout. It was noted that, in none of the papers, the authors just used the definition of Burnout offered by the MBI, despite the robust recent international research, based on a more accurate conceptualization and new measurement measures (De Beer et al., 2022a; De Beer et al., 2022b; Hadžibajramović et al., 2022; Schaufeli, 2018; Sinval et al., 2022). As demonstrated, we did not find a more accurate definition of burnout or other advances in our sample. Neither of these aspects was applied to the healthcare professionals in LA, as it is possible to observe in the recent and sturdy international studies (Schaufeli et al., 2020; Vazquez et al., 2019).

Regarding sociodemographic factors, the articles present significant correlations between male and female gender and marital status, married or with a partner. It can be observed that there is a more substantial number of articles on the prevalence of Burnout Syndrome in women, younger people, singles and workers with children. However, there needs to be a consensus among the studies regarding these factors, with divergent findings or no significant associations between these sociodemographic factors. Some articles also point out other aspects of the higher prevalence of the syndrome, such as higher education, shorter time of service, work shift, number of jobs, hours of sleep, workplace, and economic situation.

Despite this, some significant findings highlight the main psychosocial risk and protective factors as antecedents, the symptom of emotional exhaustion as a central characteristic, and depression and anxiety disorders as comorbidities significantly associated with burnout. That state of the art is essential to the LA context, although we consider the relevance of improving research to understand the burnout phenomenon better. Our findings draw attention to the associated factors (sociodemographic, risk, and protective), revealing that personal and social resources significantly impact the analyses and therefore gain relevance in constructing knowledge about burnout.

It is important to emphasize that the studies do not present evidence of depression or anxiety as symptoms of burnout but rather as comorbidities that are more likely to be associated with some cases of this syndrome (not necessarily all). According to Vaisman et al. (2020) argue, for anhedonia and depression, approximately 1 out of 10 surveys reported feeling worse more than half of the days of the month. The variables corresponded to diagnostic criteria for a depressive episode, which can be helpful for differential diagnoses. Vasconcelos et al. (2018) found a correlation in which the higher the level of emotional exhaustion and depersonalization, the greater the depressive symptomatology, and the lower the professional achievement (inversely proportional), the greater the depressive symptomatology. For Alves et al. (2021), there was a statistically significant association between BS and depression. Zanatta and Lucca (2015) found that 23.2% of the sample reported at least one sick leave in the last two years, mainly low back pain, stress, and depression. These mental disorders may be associated with triggers or precursors to burnout.

According to our finding in different countries there are robust data that show the association between burnout and other health symptoms or comorbidities on healthcare workers, as: felt more emotionally drained, present significant scores for emotional exhaustion and high levels of stress, and

felt depression, anxiety and stress, in the high and low strain categories (Castro et al, 2020; Gallegos & del Carpio Toia, 2016; Silva et al, 2015). A. S. D. Santos et al. (2017) compared the means of depressive symptoms ( $m = 7.3$ ), and alcohol use ( $m = 2.4$ ) were also significantly higher ( $p \leq .05$ ) for workers from public hospitals compared to professionals from private hospitals, which presented, respectively,  $m = 5.5$  and  $m = 1.6$ .

Regarding burnout symptoms, there was a high prevalence of emotional exhaustion. For Astudillo et al. (2018), emotional exhaustion leads to emotional and cognitive detachment in daily activities, with a consequent inability to respond to demands and make room for personal fulfillment since personal fulfillment is at average levels runs the risk of reaching emotional exhaustion. Lorenz et al. (2018) found an increase from 28 to 38.7% of these nurses in professional exhaustion. A significant correlation was shown between emotional exhaustion and the intention to leave the job. Corroborating results were already seen among primary care and intensive care professionals. This brings up the question about the depersonalization and the lack of professional effectiveness as aspects that make up dimensions of the burnout phenomenon. Even in the empirical studies investigated that used this definition operationalized by the MBI, the data do not robustly confirm these variables (De Beer et al., 2022b). On the other hand, Pereira and Gomes (2016) demonstrate that the lower the sense of control experienced, the higher the levels of job stress, higher burnout, and more significant symptomatology. Rodriguez and Carlotto (2017) also found that self-efficacy was present in all dimensions of burnout, indicating that its development can delay the onset of this syndrome. The emotional exhaustion dimension was the one that contributed most to the result, which suggests the need to review the working conditions of these professionals. Furthermore, the results indicate that medical measures and comorbidities need to be further investigated in future research to assist in the symptomatology of clinical pictures and no symptomatology development of early medical models.

The first limitation is related to the number of papers selected, which were very few ( $n = 52$ ) due to the limited research on this specific topic in the LA context. The second is that as no automation tool was used in the selection and review process, there is a risk of potential selection and interpretation biases for the results of the qualitative analysis conducted by the authors. The implications of the results for practice, policy, and future research of this systematic review are that it was able to identify and summarize the findings of burnout studies in LA, evidence about the lack of innovative and in-depth studies to justify the need for increased the production of research on the topic to help decision-makers in dealing with the burnout development and prevention.

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