



Review article

Burnout Syndrome in health professionals during the SARS CoV-2 pandemic: integrative literature review

Síndrome de Burnout em profissionais da saúde no período da pandemia de SARS CoV-2: revisão integrativa da literatura

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Abstract

Objective: to evaluate the prevalence of symptoms compatible with Burnout syndrome in healthcare professionals during the SARS-CoV-2 pandemic. **Materials and Methods:** this study is an integrative literature review using the following platforms: LILACS (Latin American and Caribbean Health Sciences Literature), PubMed (National Library of Medicine) and Scientific Electronic Library Online. The eligibility criteria included scientific articles on SARS-CoV-2 infection and Burnout syndrome among healthcare professionals from 2020 to 2021. The articles were analyzed by two independent authors and a moderator. **Results:** after exclusion and inclusion criteria, 25 articles were selected. The main themes addressed were Burnout syndrome, anxiety, and depression. **Conclusion:** this study reveals that frontline healthcare workers during the COVID-19 pandemic are experiencing an overwhelming burden, leading to an increase in the rates of Burnout syndrome, anxiety, and depression. Psychological strategies and support groups are crucial for improving the quality of life of these professionals.

Keywords: Burnout syndrome. COVID-19. SARS-CoV-2.

Resumo

Objetivo: avaliar a prevalência de sintomas compatíveis com a síndrome de Burnout em profissionais da saúde no período de pandemia do SARS-CoV-2. **Materiais e Métodos:** trata-se de uma revisão integrativa da literatura. Utilizaram-se as plataformas: Literatura Latino-americana e do Caribe em Ciências da Saúde (LILACS), PubMed (*National Library of Medicine*) e *Scientific Electronic Library Online*. Como critérios de elegibilidade, foram incluídos artigos científicos sobre infecção pelo SARS-CoV-2 e síndrome de Burnout entre profissionais da saúde, no período de 2020 a 2021. A análise dos artigos foi realizada por dois autores independentes e um moderador. **Resultados:** após critérios de exclusão e inclusão, foram selecionados 25 artigos. Os principais temas abordados foram Síndrome de Burnout, ansiedade e depressão. **Conclusão:** ficou evidente a sobrecarga dos trabalhadores da área da saúde em linha de frente na pandemia de COVID-19, fato que contribuiu para o aumento dos índices de síndrome de Burnout, ansiedade e depressão, sendo importantes as estratégias psicológicas e grupos de apoio para a melhora na qualidade de vida desses profissionais.

Palavras-chave: Esgotamento psicológico. COVID-19. SARS-CoV-2.

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Introduction

In December 2019, the World Health Organization released in Wuhan, China, the identification of a new viral strain: SARS-CoV-2. Most infected individuals manifested symptoms of common cold. However, a large number of patients evolved seriously, progressed to severe acute respiratory syndrome and sepsis, and required intensive care, which mainly affected the elderly population and those with chronic diseases. Therefore, measures of social isolation and vaccination have become important in order to reduce the transmissibility of the virus¹⁻³.

In pandemic times, the workday of health professionals is intensified, which overloads the physical and mental condition of this group of workers. Together, the need for self-protection, fear of contamination and systematic use of personal protective equipment by these professionals generate intense occupational stress in their work environment^{4,5}.

Moreover, factors such as insufficient health services, little concrete information about the disease and the lack of psychological preparation to deal with increasing numbers of deaths acted as a cause of physical and mental exhaustion^{4,5}.

Burnout Syndrome (BS) had its first studies in Brazil in 1960. This is a work-related disease that affects individuals who have contact with other people, as seen in health professionals and caregivers. It is a disease characterized by the individual's response to work stressors in which anxiety, depression and exhaustion can be identified. This mental disorder compromises the activities performed by the worker and is directly related to the intensity of labor demand, low autonomy^{1,5,6}.

In atypical periods, such as the COVID-19 pandemic, there is an increase in diagnoses of BS by health professionals who deal directly with infected people, since they are exposed to numerous stressful situations, subject to the development of this disease. In this period, attention is focused on curing the disease and reducing deaths, which neglects the well-being of frontline professionals. In addition to long working hours and low pay, there is the development of psychosocial disorders associated with poor preparation for coping with these situations^{4,7-12}.

Given this context, this study becomes relevant in the current scenario. Therefore, it aims to evaluate, in the medical literature, the prevalence of symptoms compatible with BS in health professionals who are at the frontline of COVID-19 and how this exposure interferes with the development of BS and the quality of their work.

Materials and Methods

This study is characterized by an integrative literature review, covering the following stages: identification of the topic with the choice of the question to be researched; the search for the studies,

their evaluation, according to the eligibility and exclusion criteria; analysis of the results and possible biases and synthesis of the data found in the selected articles.

The PICO strategy was used, in which Population was defined as health workers (doctors and nurses); Interest, the prevalence of symptoms compatible with Burnout Syndrome in these professionals; Context was the COVID-19 pandemic period, asking the question: what is the prevalence and impacts of Burnout Syndrome in health professionals, doctors and nurses, during the COVID-19 pandemic?

The search for articles was conducted in the period between January and October 2021, through the platforms PubMed (National Library of Medicine), Latin American and Caribbean Health Sciences Literature (LILACS) and Scientific Electronic Library Online (SciELO). For the research, the following descriptors were used, selected by the platform Health Sciences Descriptors: “Health worker”, “COVID-19”, “Burnout”, “Physicians” and “Nurses”.

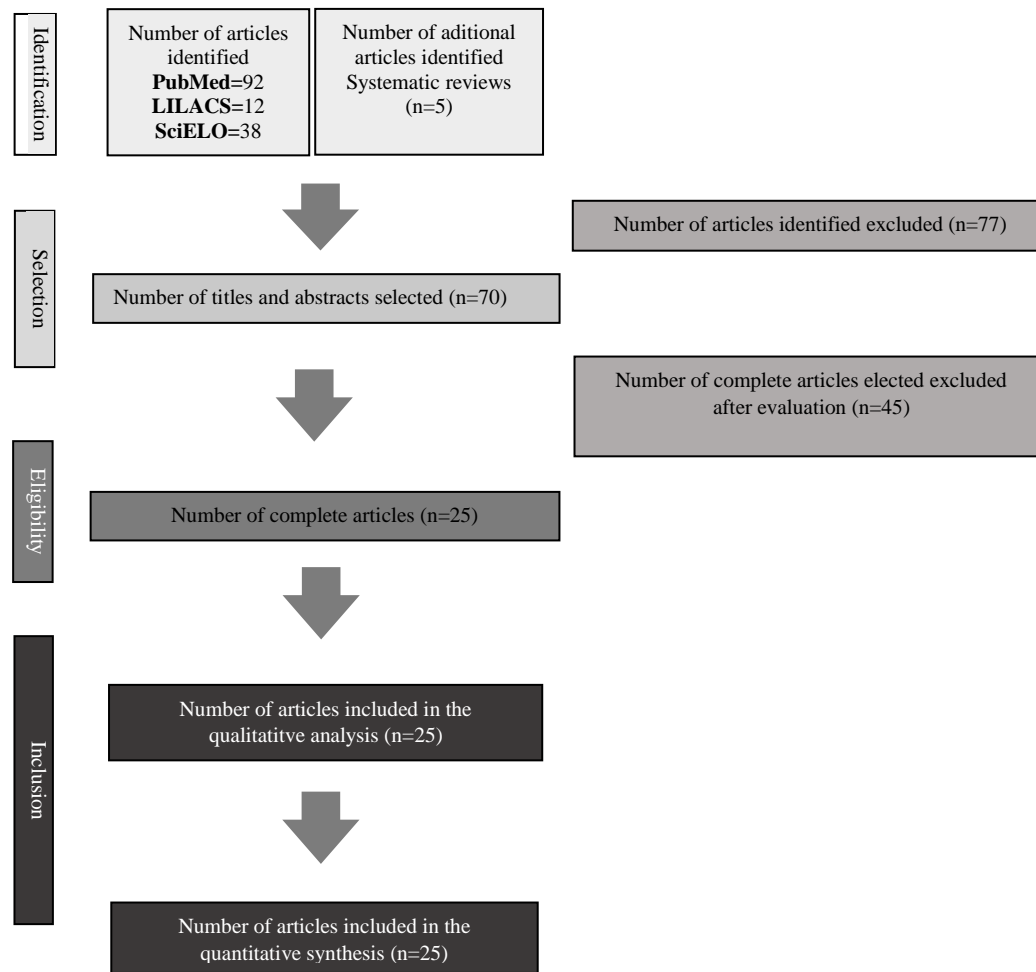
Inclusion criteria included scientific articles published in Portuguese, English and Spanish from 2020 to 2021. From the exclusion criteria, the theoretical articles, literature reviews, reflective texts and letter to the reader were disregarded, in addition to those that did not cover the research question, those that did not include doctors and nurses, and duplicate articles were counted only once.

The analysis of the articles was performed by two independent authors, R.A.C and G.F.V, author 1 and 2, respectively, simultaneously, respecting the citations, ethical aspects, concepts and definitions provided by the authors. In case of evaluative doubt, this study has the moderator (M.J.S.M.) to mediate the evaluation. The KAPPA Index was used to qualify the identification process of the articles, with a value > 0.7 . The assessment of quality and risk of bias was performed using the Downs & Black score, which presents 27 items for scoring.

Results

Initially, 147 articles were selected by the two authors in a simultaneous search. In PubMed database, 46 articles were found by each author and 19 articles were selected by author I and 17 articles, by author II, with 11 compatibles. In the SciELO database, 18 articles were found by author I, and 20 articles, by author II, selecting 10 articles, with 7 articles compatible. Finally, in the LILACS database, 12 articles were found, and 8 were selected by each author, with all 8 articles compatible; of these, 5 articles were excluded for being integrative literature reviews. Totaling 44 articles analyzed, being 74% compatible, so that the KAPPA Index was 0.74. Among the 25 articles selected, 23 are cross-sectional studies and two prospective cohort studies (Figure 1).

Figure 1. Selection of the articles.



According to the articles analyzed, 40% of them were performed in Western European countries, 28% in North American countries, 12% in Brazil and 20% in other countries, located in South America, the Middle East and Asia. The most prevalent type of study was the cross-sectional study (92%), followed by a cohort (8%) (Chart 1)^{1-3,7-9,13-19,23,24,28-35}.

Chart 1. Articles selected regarding the occurrence of Burnout Syndrome in healthcare professionals during the period of the SARS COV-2 pandemic, in relation to the type of study, objective, approach, country and method applied.

Author	Study	Objectives	Approach	Country	Method*
Al Mahijari <i>et al.</i> 2020	Cross-sectional study	To investigate the mental health of healthcare professionals who cared for patients with COVID-19.	Burnout Syndrome, Occupational Stress, Anxiety and Well-being.	Oman	GAD-7, PSS
Barello <i>et al.</i> 2020	Cross-sectional study	To describe the BS levels of a sample of Italian healthcare professionals involved in managing the COVID-19 pandemic.	Burnout Syndrome.	Italy	MBI
Chavez <i>et al.</i> 2020	Cross-sectional study	To determine the demographic, work and psychological impact on healthcare professionals dealing with the COVID-19 pandemic.	Burnout Syndrome, Anxiety and Depression.	Paraguay	MBI, GAD-7, PHQ
Correia <i>et al.</i> 2020	Cross-sectional study	To define whether organizational justice, professional identification, empathy and meaningful work protect against BS in doctors and nurses.	Burnout Syndrome, Perception of Justice, Empathy, Workload.	Portugal	CREATED
Dogru-Huzmeli <i>et al.</i> 2021	Cross-sectional study	To reveal the level of anxiety and exhaustion, attitudes, thoughts and behaviors of healthcare professionals regarding COVID-19.	Burnout Syndrome and Anxiety.	Turkey	MBI, BAI, SAI
Dugani <i>et al.</i> 2021	Cross-sectional study	To provide a longitudinal framework to monitor the well-being of Internal Medicine healthcare professionals and evaluate response to support programs.	Burnout Syndrome, Anxiety and Well-being.	USA	CREATED
Farì <i>et al.</i> 2021	Cohort study	To assess the mental health burden on healthcare professionals during the COVID-19 pandemic.	Burnout Syndrome, Anxiety and Depression.	Italy	MBI, GAD-7, PHQ
Firew <i>et al.</i> 2020	Retrospective	To evaluate factors that contribute to infection and psychological distress among healthcare professionals who dealt with the COVID-19 pandemic.	Burnout Syndrome, Anxiety and Psychological Suffering.	USA	GAD-7, PHQ
Freitas <i>et al.</i> 2021	Cross-sectional study	To evaluate the prevalence and existence of BS predictors in nursing technicians in ICUs during the pandemic.	Burnout Syndrome.	Brazil	MBI
Horta <i>et al.</i> 2021	Cross-sectional study	Investigate the effects of frontline work by healthcare workers during the COVID-19 pandemic.	Emotional Stress.	Brazil	PSS, OBI, SRQ-20
Lasalvia <i>et al.</i> 2020	Cross-sectional study	Determine BS levels and associated factors among healthcare professionals during the COVID-19 pandemic.	Burnout Syndrome.	Italy	MBI
Norful <i>et al.</i> 2021	Cross-sectional study	To understand the physical and psychological impact of high-stress clinical environments and contributing factors to Burnout on the multidisciplinary healthcare workforce during the initial COVID-19 outbreak.	Burnout Syndrome and Stress	USA	CREATED

Norman <i>et al.</i> 2021	Cross-sectional study	To identify common dimensions of moral distress due to COVID-19 and examine the relationship between moral distress and positive screening for symptoms, Burnout, and functional working and interpersonal difficulties related to post-traumatic stress disorder (PTSD) related COVID-19.	Burnout Syndrome and Anxiety	USA	MBI PFI
Önen <i>et al.</i> 2021	Cross-sectional study	To determine the levels of anxiety and Burnout and related risk factors in healthcare professionals and assistant staff at a tertiary reference university hospital.	Burnout Syndrome	Turkey	MBI HADS
Real-Ramirez <i>et al.</i> 2020	Cross-sectional study	To describe sociodemographic and psychological characteristics of health professionals who dealt with the COVID-19 pandemic.	Burnout Syndrome	Mexico	EPWBI
Rodriguez <i>et al.</i> 2021	Cross-sectional study	To assess symptoms of anxiety and BS and risk of PTSD in coronavirus-specific work.	Burnout Syndrome and Anxiety	USA	DSM-V
Santos <i>et al.</i> 2021	Prospective cohort study	To analyze the prevalence of symptoms of depression, anxiety and associated factors in nursing team professionals during the COVID-19 pandemic.	Burnout Syndrome, Anxiety and Depression	Brazil	GAD-7, PHQ
Servinic <i>et al.</i> 2021	Cross-sectional study	To measure anxiety and BS levels among healthcare professionals in ICUs during the COVID-19 pandemic.	Burnout Syndrome and Anxiety	Turkey	MBI BAI
Stocchetti <i>et al.</i> 2021	Cross-sectional study	To investigate the prevalence of distress (anxiety, depression and insomnia symptoms), BS and resilience in healthcare professionals during the COVID-19 pandemic	Burnout Syndrome, Anxiety and Depression	Italy	MBI HADS
Sung <i>et al.</i> 2021	Cross-sectional study	To investigate the occurrence of BS, acute stress disorder, anxiety disorder and depressive disorder among healthcare professionals during the COVID-19 pandemic.	Burnout Syndrome, Anxiety and Depression	Taiwan	CREATED
Tiete <i>et al.</i> 2021	Cross-sectional study	To assess differences in mental health between healthcare professionals working and not working in the COVID-19 sector.	Burnout Syndrome, Anxiety and Depression	Belgium	PFI DASS
Torrente <i>et al.</i> 2021	Cross-sectional study	To evaluate the prevalence of BS in healthcare professionals who worked on the front lines during the COVID-19 pandemic.	Burnout Syndrome	Spain	MBI
Veloz <i>et al.</i> 2020	Cross-sectional study	To determine the occurrence and intensity of BS in Ecuadorian doctors and nurses during the COVID-19 pandemic period.	Burnout Syndrome	Ecuador	MBI
Weilenmann <i>et al.</i> 2021	Cross-sectional study	To explore the mental health of healthcare professionals during the COVID-19 pandemic in Switzerland.	Burnout Syndrome, Anxiety and Depression	Switzerland	MBI, GAD-7, PHQ
Zerbini <i>et al.</i> 2021	Cross-sectional study	To investigate the psychosocial burden of doctors and nurses, depending on their degree of contact with patients with COVID-19.	Burnout Syndrome and Stress	Germany	MBI, PHQ

*Methods: BAI: Beck Anxiety Inventory; DASS: Depression, Anxiety and Stress Scale; DSM-V: Diagnostic and Statistical Manual of Mental Disorder – fifth edition; EPWBI: Extended Physician Well-being Index; GAD-7: General Anxiety Disorder-7; HADS: Health, Anxiety and Depression Scale; MBI: Maslach Burnout Inventory; OBI: Oldenburg Burnout Inventory; PFI: Stanford Professional Fulfillment; PHQ: Patient Health Questionnaire; CREATED: Developed by the authors of the article; PSS: Perceived Stress Scale; SAI: State Anxiety Inventory; SRQ-20: Self-Reporting Questionnaire.

According to sociodemographic analysis, the most prevalent age group among respondents was 40 to 50 years (84%), followed by 30 to 40 years and above 50 years, totaling 8% each. The most prevalent sex was female, with the majority (more than 70%) in about 72% of the studies. The profession most found was nurses (44%), followed by doctors (20%), other health professionals totaled 36% of respondents; among them, the most relevant are nursing technicians. Most of the studies were conducted in Europe (40%), the United States (28%) and Brazil (12%), other countries comprised 20% of the sample (Chart 2).^{1-3,7-9,13-19,23,24,28-35}

Chart 2. Sociodemographic analysis of health professionals working on the front line of COVID-19 in the pandemic context presented by the selected articles in relation to the occurrence of Burnout Syndrome.

Author/ Year	Total assessed (n)	Profession	Sex*	Mean Age
Al Mahiyjari <i>et al.</i> 2020	150	Nurse: 60.6% (n:86) Doctor: 39.3% (n:59)	F: 77.3% (n: 116) M: 22.6% (n: 34)	24-63 years Mean: 37 years
Barello <i>et al.</i> 2020	532	Nurse: 81.5% (n:327) Doctor: 19.9% (n:106)	F: 75% (n: 399) M: 25% (n: 133)	22-77 years Mean: 41years
Chavez <i>et al.</i> 2020	137	Nurse: 36.5% (n:50) Doctor: 63.5% (n:87)	F: 65% (n: 89) M: 35% (n: 48)	20- >50 years Mean: 30-39
Correia <i>et al.</i> 2020	497	Nurse: 54% (n: 268) Doctor: 46% (n: 229)	F: 63.4% (n: 315) M: 36.6% (n: 182)	23-70 years Mean: 36 years
Dogru-Huzmeli <i>et al.</i> 2021	66	Nurse: 33% (n:22) Doctor: 28% (n:19)	F: 75.5% (n: 50) M: 24.5% (n: 16)	22- 46 years Mean: 31years
Dugani <i>et al.</i> 2021	154	Doctor: 54% (n:84)	F: 56% (n: 85) M: 44% (n: 69)	<40 years: 56.9% >40 years: 43.1%
Fari <i>et al.</i> 2021	68	Nurse: 14.7% (n:100) Doctor: 55.8% (n:38)	F: 67% (n: 46) M: 34% (n: 22)	Mean: 35.8 years
Firew <i>et al.</i> 2020	2040	Nurse: 26% (n:530) Doctors: 31.1% (n:632)	F: 70% (n: 1428) M: 30% (n: 612)	Mean: 39.5 years
Freitas <i>et al.</i> 2021	94	Nursing technician 100%	F: 74% (n: 69) M:26% (n: 25)	Mean: <37 years
Horta <i>et al.</i> 2021	123	Nurse: 76% (n:93)	F: 81% (n: 100) M: 19% (n: 23)	NA
Lasalvia <i>et al.</i> 2020	1961	Nurse: 35% (n:687) Doctor: 14% (n:286)	F: 74% (n: 1463) M: 25% (n: 492)	Media:36-55 years
Norful <i>et al.</i> 2021	55	Nurse: 38% (n: 21) Doctor: 21% (n:12)	F: 75% (n: 41) M: 25% (n: 14)	Media: <40 years
Norman <i>et al.</i> 2021	2579	Nurse: 42% (n:1082) Doctor: 15.3% (n:394)	F: 73.6% (n: 1897) M: 26.4% (n: 688)	Media 18-34 years
Önen <i>et al.</i> 2021	66	Nurse: 33.3% (n:22) Doctor: 28.8% (n:19)	F: 75% (n:50) M: 25% (n:16)	Mean: 22-46 years
Real-Ramirez <i>et al.</i> 2020	507	Nurse: 24.8% (n:126) Doctor: 34.5% (n:175)	F: 75.15% (n:381) M: 24.65% (n:125)	Mean: 30-39 years
Rodriguez <i>et al.</i> 2021	1606	Nurse: 26% (n:410) Doctor: 40% (n:638)	F: 63.4% (n: 1018) M: 36.2% (n: 581)	NA

Santos <i>et al.</i> 2021	490	Nurse: 59.6% (n:292) Nursing technician: 40.4% (n:198)	F: 86.7% (n: 425) M: 13.3% (n: 65)	21-30: 30.6% 31-36: 37.8% >37: 31.6%
Servinic <i>et al.</i> 2021	204	Nurse: 41.3% (n:43) Doctor: 25% (n: 26)	F: 70.2% (n: 143) M: 29.8% (n: 61)	Mean: 27-36 years
Stocchetti <i>et al.</i> 2021	136	Nurse: 62% (n:84) Doctor: 38% (n:52)	F:59% (n: 79) M: 41% (n: 55)	Mean: >35 years
Sung <i>et al.</i> 2021	1795	Nurse: 59.3% (n:1064) Doctor: 19.9% (n:357)	F: 80% (n: 1435) M:20% (n: 360)	Mean: 36.7 years
Tiete <i>et al.</i> 2021	647	Nurse: 72.3% (n:468) Doctor: 27.7% (n:179)	F: 78.4% (n: 507) M: 21.6% (n: 140)	31-40a: 27.7% 41-50a: 24.3% >50a: 25%
Torrente <i>et al.</i> 2021	643	Nurse: 26.8% (n:172) Doctor: 63.5% (n:408)	F: 73.4% (n: 472) M: 26.6% (n: 171)	Mean: 31-41years
Vinueza-Veloz <i>et al.</i> 2020	224	Nurse: 33% (n:73) Doctor: 67% (n:151)	F: 70.9% (n: 159) M: 29.1% (n: 65)	Mean: 28-31years
Weilenmann <i>et al.</i> 2021	1406	Nurse: 61% (n: 857) Doctor: 39% (n:549)	F: 61% (n: 990) M: NA	29-46 years
Zerbini <i>et al.</i> 2021	110	Nurse: 68% (n:75) Doctor: 32% (n:35)	F: 70% (n: 77) M: 30% (n: 33)	NA

*F: female; M: male; NA: Not assessed.

The qualitative analysis revealed that 14 (56%) of the studies used the Maslach Burnout Inventory (MBI) tool to identify Burnout Syndrome, which covers three dimensions: emotional exhaustion (9 items), depersonalization (5 items) and emotional fulfillment (8 items), being evaluated by the three-variable Likert scale: low, medium and high¹². The Oldenburg Burnout Inventory (OBI) tool was used for the analysis of Burnout symptoms in one (4%) article, with two dimensions: exhaustion (8 items) and depersonalization (8 items), presenting Likert scale from 1 (totally disagree) to 5 (totally agree); the other articles did not use validated tools, but questionnaires created by the authors for their research (Chart 3)^{1-3,7-9,13-19,23,24,28-35}.

Chart 3. Parameters evaluated in the selected studies regarding the occurrence of Burnout Syndrome in healthcare professionals working in the COVID-19 pandemic.

Author/ Year	Anxiety	Depression	BS	Stress	Others
Al Mahyijari <i>et al.</i> 2020	M:11.6% F: 88.4% Doctors:41.9% Nurses:58.1%	NA	NA	M:16.7% F: 83.3% Doctors:41% Nurses:59%	NA
Barello <i>et al.</i> 2020	NA	NA	NA	41%	NA
Chavez <i>et al.</i> 2020	M: 54.2% F:36% Doctors: 39.1% Nurses:48%	M: 39.6% F:29.2% Doctors:32.2% Nurses:34%	M:29.2% F:20.2% Doctors:19.5% Nurses:32%	NA	NA
Correia <i>et al.</i> 2020	NA	NA	Doctors: 36% Nurses:42%	NA	NA

Dogru-Huzmeli <i>et al.</i> 2021	Moderate	NA	Low	NA	NA
Dugani <i>et al.</i> 2021	24%	NA	NA	NA	NA
Fari <i>et al.</i> 2021	48.5%	41.7%	50%	NA	NA
Firew <i>et al.</i> 2020	NA	>80%	NA	NA	NA
Freitas <i>et al.</i> 2021	NA	NA	25.5%	NA	NA
Horta <i>et al.</i> 2021	NA	NA	41%	60%	NA
Lasalvia <i>et al.</i> 2020	NA	NA	Doctors: 72% Nurses: 50%	NA	NA
Norful <i>et al.</i> 2021	NA	NA	NA	NA	NA
Norman <i>et al.</i> 2021	NA	NA	52%	NA	NA
Önen <i>et al.</i> 2021	60%	NA	47%	NA	Fear: 80%
Real-Ramirez <i>et al.</i> 2020	NA	NA	Doctors: 34.9%	NA	PTSD: 68%
Rodriguez <i>et al.</i> 2021	64%	NA	46%	NA	PTSD: 18%
Santos <i>et al.</i> 2021	39.6%	38%	62.4%	NA	EH: 78.5%
Servinic <i>et al.</i> 2021	Mild: 58.8% Severe: 44.2%	NA	MBI: Moderate	NA	NA
Stocchetti <i>et al.</i> 2021	53%	45%	39.7%	NA	Insomnia: 61.5%
Sung <i>et al.</i> 2021	89.7%	45.5%	40.3%	3.2%	Mex: 12.5
Tiete <i>et al.</i> 2021	41.8%	28.8%	45.6%	25.1%	NA
Torrente <i>et al.</i> 2021	NA	NA	43.4%	NA	EH: 58%
Vinueza-Veloz <i>et al.</i> 2020	NA	NA	Doctors: 95.36% Nurses: 95.89%	NA	NA
Weilenmann <i>et al.</i> 2021	25.9%; n: 364	20.6%; n: 290	NA	NA	NA
Zerbini <i>et al.</i> 2021	NA	NA	NA	At work: 37.5% Psychosocial: 16.3%	Uncertainty: 30% Risk of infection: 12.5%

F: female; M: male; BS: Burnout Syndrome; EH: Extra hours (+40 weekly hours); NA: Not assessed.

Discussion

After the high rates of infection by SARS COV-2 and the need for support from primary and hospital care, the workday of health professionals was intensified, adding to other stressors, which increase the prevalence of anxiety and depressive symptoms, in addition to physical and mental exhaustion in these professions^{4,5}. Several points were analyzed in this study, such as sociodemographic aspects, labor aspects, aspects of mental health and impacts on the personal and professional lives of health professionals^{4,5}.

BS is an occupational syndrome and its precursor is stress. This factor was triggered in health professionals at the front line to combat COVID by the high physical and psychological demand of patients. This is also associated with the suspension of the holidays of health professionals during the pandemic. Thus, the coronavirus pandemic amplified the neglect and absence of public policies that contemplate the mental health of health professionals, a group that is constantly exposed to biological, physical and environmental risks¹⁰.

Regarding the SB assessment instruments, the Maslach Burnout Inventory-MBI was the most identified in this review. The MBI is the gold standard for the investigation of this mental disease¹². Currently, there are three versions of the MBI to be applied to professionals. It is a self-administered scale that presents affirmative statements about the feelings and attitudes of professionals in relation to their work¹¹. Concerning the prevalence of BS according to the patient's sex, this integrative review identified a higher prevalence of BS in women, which is corroborated by other studies^{2,3}.

Regarding the most affected age group, the present study revealed that younger professionals, aged between 30 and 40 years, were the most affected by BS. According to cross-sectional studies conducted in Ecuador and northeastern Brazil, nursing professionals and younger doctors had a greater predisposition to BS, which could be explained by inexperience and difficulty in solving high demand situations^{2,32}. On the other hand, a Brazilian study involving nursing technicians, with a more advanced age group and with greater work experience revealed a tendency to develop BS possibly due to the greater weight of years of service and the older age that is a risk factor for the development of mental disorders¹⁹.

Concerning the influence of salary as a risk factor for BS, it can influence anxiety and depressive symptoms. These symptoms were 41% more prevalent in those with a monthly income between three and four minimum wages, to the detriment of those who earned more. The low valuation of these health professionals drives them to increase employment ties, which promotes physical and mental exhaustion and the emergence of BS².

Regarding the factors associated with BS, the presence of elevated levels of depressive, anxiety and stressful symptoms among the participants of the studies that composed the research was visible in this review, which was corroborated by numerous studies. In relation to international studies, the cross-sectional study conducted by Firew *et al.*¹⁸ involving more than 2000 health workers in the United States, revealed that one of the main stressors was the fear of infection associated with inadequate access and lack of training in the use of personal protective equipment¹⁸. According to the cross-sectional study by Norman *et al.*²⁵ conducted in the United States, there was severe distress of participants due to social isolation, added to the lack of family and friends and the fear of infecting someone, who saw the situation as abandonment, further promoting mental exhaustion²⁵. In a study conducted in Italy by Lasalvia *et al.*²³, BS was identified in the participating workers with symptoms compatible with emotional exhaustion, being more prevalent among those who witnessed a traumatic event at the front line and among workers with previous psychological disorders and among nurses and resident doctors, due to overload in the workday²³. According to Al Mahyijari *et al.*⁸ and Fari *et al.*¹⁷, their clinical studies respectively conducted in Arab countries and Italy, involving doctors and other health professionals, showed levels of stress considerably higher than other studies in periods before the COVID-19 pandemic, in which one third of participants had moderate to severe anxiety symptoms, especially frontline professionals in coping with COVID-19^{8,17}.

According to the Brazilian study by Freitas *et al.*¹⁹ involving nursing technicians from an intensive care unit, a large part of the participants had, as factors that generate stress, the sociodemographic conditions, working conditions and social isolation¹⁹.

The association between work overload among health professionals and the emergence of BS was pointed out in this review. In a cross-sectional study with professionals from the frontline of attention to the pandemic carried out in Brazil by Horta *et al.*⁷, BS was present in 41% of the professionals evaluated; 60% obtained scores for exhaustion and 49% reported difficulty of concentration in work activities. In the study, the average workload of high work suggested that overload in the working day possibly acted as a source of illness⁷. Another study that lists worker overload as a risk factor for BS is the work carried out in Paraguay by Chavez *et al.*¹³, in which doctors and nurses with a weekly workload of three to five days of service or more reported more anxious symptoms, depression and exhaustion than other workers¹³.

The studies analyzed used several tools for the investigation of BS, thus, there is no consensus on their use. Another limitation is that the diagnosis of BS is performed by medical consultation and not through the use of questionnaires alone. Finally, the existence of few randomized clinical trials used in this review compromises a comparative analysis with better quality among the participants.

Conclusion

This study revealed the physical and mental overload of health workers on the front line in the COVID-19 pandemic, whether they are professionals from the intensive care unit or the wards. The exhaustive work demand, the long working hours, the scarcity of materials and personal protection equipment, and the fear of contaminating themselves or their families contributed to the significant increase in the rates of Burnout syndrome of these professionals.

That said, there is an evident relationship between BS and health professionals working on the frontline of COVID-19 by the factors listed above. Given the above, it is urgent to promote public policies that contemplate the mental health of these professionals in their institutions so that they do not feel helpless in the face of adversities, such as the coronavirus pandemic, and able to act healthily even under pressure and in the face of critical decision-making.

Authors' contributions

The authors approved the final version of the manuscript and declared themselves responsible for all aspects of the work, including ensuring its accuracy and completeness.

Conflict of interest

The authors declare no conflicts of interest.

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