

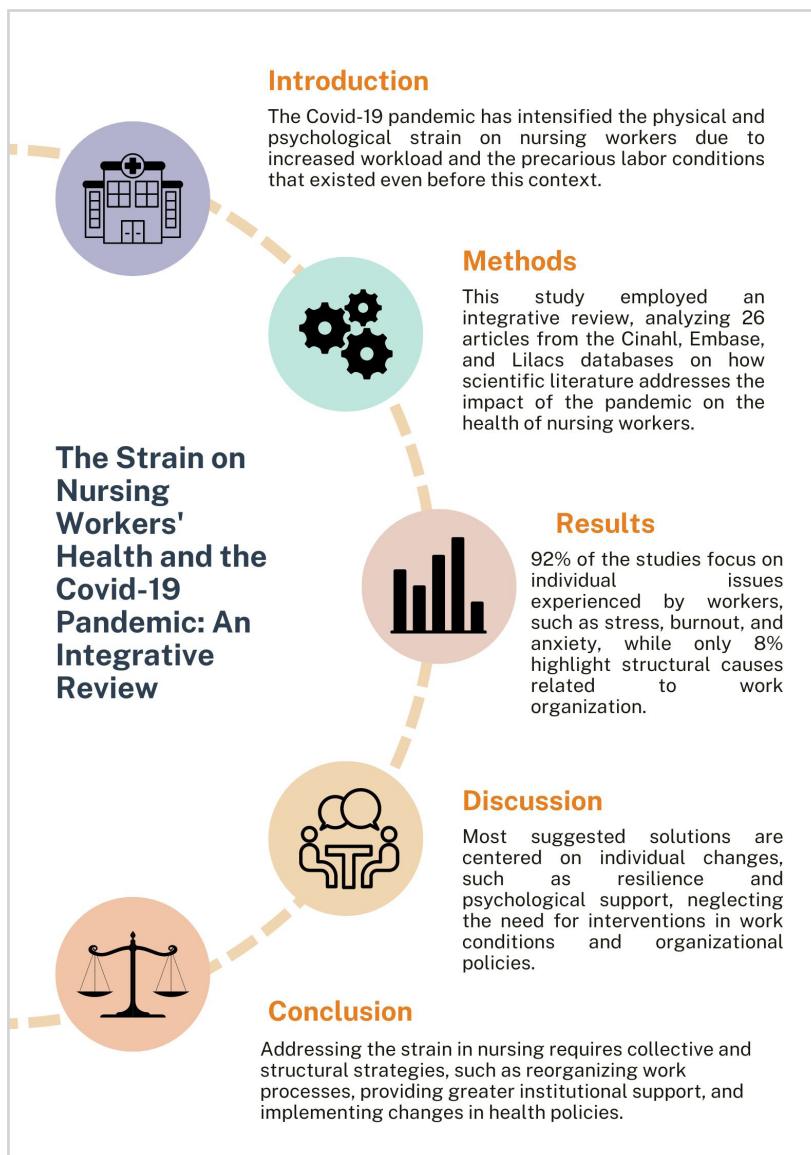
The strain on nursing workers' health and the Covid-19 pandemic: an integrative review

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Graphic Abstract



Abstract

This study addresses the debate on the intensification of strain on the health of nursing workers in the context of the Covid-19 pandemic, highlighting the increase in workload as an additional factor in the precarization of working conditions. It is anchored in the field of Occupational Health, which is based on the concept that suffering and illness depend on how workers are integrated into the production process. The objective was to identify the scientific literature related to the strain faced by nursing workers during the Covid-19 pandemic and explore the possibilities for coping with this strain. An integrative review was conducted, examining databases such as Cinahl, Embase, and Lilacs, using the following descriptors: "Saúde do Trabalhador", "Saúde Ocupacional", "Occupational Health", "Salud Laboral", "Pandemia de Covid-19", "Covid-19", "2019 coronavírus" "2019 New Coronavirus" e "Enfermagem", "Equipe de Enfermagem", "Técnicos de Enfermagem", "Auxiliares de Enfermagem", "Enfermeros no Diplomados", "Licensed Practical Nurses", "Assistentes de Enfermagem", "Nursing Assistants", "Asistentes de Enfermería", resulting in the selection of 26 studies for analysis. The majority of the works were based on the theoretical framework of occupational health (92%), relating strain to individual risks and behaviors, while a minority adopted the perspective of worker health (8%), linking strain to the organization of work processes. The results indicated a tendency toward an individualizing approach to the problems, neglecting the structural causes of illness. It is concluded that the scientific literature has approached the strain on the health of nursing workers in the context of the pandemic through a multifactorial approach that, despite advances in understanding the problem, tends to result in solutions that are disconnected and place the responsibility for illness on the worker themselves, disregarding the influence of structural changes in the work process.

Keywords: Worker Health. Nursing. Covid-19.

INTRODUCTION

The Covid-19 pandemic, caused by the novel coronavirus SARS-CoV-2, spread rapidly across the globe, leading the World Health Organization (WHO) to classify it as a pandemic on March 11, 2020. With the rapid transmission of the virus, significant challenges emerged, such as overcrowded hospitals, shortages of protective equipment, extended work hours, a lack of qualified personnel, and mental and physical health issues among healthcare professionals. In Brazil, the pandemic-specific difficulties, combined with pre-existing processes of precarization in the working conditions of nursing professionals, particularly due to the chronic underfunding of the Unified Health System (SUS), resulted in both physical and psychological strain. An example of this occurred in 2021 in the city of Manaus, where the high demand for oxygen in intensive care units led to a widespread shortage of this essential resource for treating infected patients, forcing healthcare teams to make difficult decisions about who would receive priority for oxygen therapy.

This episode caused intense suffering for local healthcare teams¹.

In this study, it is assumed that both the physical and psychological suffering of workers are manifestations of strain, which present differently across the heterogeneous profiles of social reproduction, understood as "the entirety of social life characterized by the ways of working and consuming, [as well as the] relationships that human beings establish with each other to produce social life (...)" (p.133)². It is important to highlight that the dynamics of social relations reproduction differentially impact nursing technicians, nurses, and nursing assistants³. The social inequality among these categories results in varying levels of illness and death within the same professional sector³.

In the pandemic context, issues related to healthcare workers' working conditions intensified. The risk of death and contamination for workers and their families led to complications in patient care and resulted in illness among nursing professionals. It is

estimated that one-third of the deaths in this professional category worldwide occurred in Brazil⁴. Due to the shortage of professionals, workers had to extend their work hours to meet the increased demand for their services, leading to health and safety issues at work³. With the start of mass vaccination, there was an increase in repetitive tasks for healthcare professionals across all units.

The scientific literature describes healthcare workers as a risk group for the development of musculoskeletal disorders⁵. In this regard, it is assumed that the current context of illness among nursing workers, marked by unequal class insertions, is expressed not only in psychological terms but also physically³. Therefore, it is necessary to highlight the relationship between working conditions and the worsening of illness among nursing workers during the pandemic, also considering the legal changes related to nursing work that worsened the situation even before the health crisis³.

To discuss the complex relationship between working conditions and illness, it is necessary to distinguish between the fields of Occupational Health (OH) and Worker Health (WH). Occupational health, developed from a critique of the strictly biological and medical approach focused on occupational medicine, is anchored in the theoretical perspective of the multicausality of the health-illness process, where the worker's illness is linked to biological, environmental, and behavioral risk factors⁶.

This approach presents limitations as it conceives the cause-and-effect relationship of illness without considering historical and material conditions. It focuses on addressing symptoms without tackling the root causes of strain—namely, the precarization of

working conditions. The occupational health model proves insufficient as it views the worker merely as an object of prevention and treatment actions, emphasizing behavioral changes and new work habits aimed at reducing work-related risks⁶. In this perspective, strain is caused by some deficiency or limitation that the worker is responsible for overcoming through effort, creativity, and resilience. Despite its multidisciplinary perspective, it has remained focused on ensuring corporate interests and increasing productivity⁷.

The field of Worker Health (WH) is anchored in a different conception of the health-illness process, based on the understanding that suffering and illness depend on how workers are integrated into the production process, rather than on their lifestyle or individual habits^{6,7}. It is supported by the framework of the social determinants of the health-illness process and is based on the idea that strengthening worker health occurs through their participation in decisions about their working conditions, in contrast to the positivist view of health, which holds that science, if well applied, can solve all health problems without the involvement of all those who make up the workforce. In this perspective, worker participation is indispensable, as their reflection and critique of their work process are essential for addressing strain⁷.

From this perspective, the present study aimed to analyze the discussion surrounding the intensification of straining experienced by nursing workers during the pandemic, as well as the causes of this strain and the proposed coping strategies, with the goal of contributing to the debate on work organization and how it can exacerbate the strain on the health of nursing workers.

METHODOLOGY

This study was developed based on an integrative review of the scientific literature⁸. Reviews of this nature follow specific steps: a) formulation of the guiding question, which must be clear and specific; b) comprehensive literature search in databases; c) data collection from the selected material; d) critical analysis of the included studies; e) discussion of the results; and f) presentation of the integrative review.

Based on the Health Sciences Descriptors (DeCS/MeSH), the descriptors for the research were selected. For each database (Cinahl, Embase, and Lilacs), a search equation was created using Boolean operators so that the combination of terms would retrieve what had been produced on the topic up to that point.

- Cinahl: ("Occupational Health" OR "Worker Health" OR "Salud Laboral" OR "Saúde do Trabalhador" OR "Saúde Ocupacional") AND ("COVID-19" OR "Pandemia de Covid-19" OR "2019 coronavirus" OR "2019 New Coronavirus") AND ("Nursing" OR "Nursing Staff" OR "Nursing Team" OR "Técnicos de Enfermagem" OR "Auxiliares de Enfermagem" OR "Nurses, Licensed Practical" OR "Licensed Practical Nurses" OR "Nursing Assistants" OR "Assistentes de Enfermagem" OR "Asistentes de Enfermería") = 306 publications.

- Embase: ('occupational health'/exp OR 'worker health'/exp OR 'salud laboral' OR 'saude do trabalhador' OR 'saude ocupacional') AND ('covid-19'/exp OR 'covid-19 pandemic'/exp OR '2019 coronavirus'/exp OR '2019 new coronavirus') AND ('nursing'/exp OR 'nursing staff'/exp OR 'nursing team'/exp OR 'tecnicos de enfermagem' OR 'auxiliares de enfermagem' OR 'licensed practical nurse'/exp OR 'nursing assistants'/exp OR 'asistentes de enfermería') = 310 publications.

- Lilacs: ("Saúde do Trabalhador" OR "Saúde Ocupacional" OR "Salud Laboral" OR

"Occupational Health") AND ("Pandemia de Covid-19" OR "Covid-19" OR "2019 coronavirus" OR "2019 New Coronavirus") AND ("Enfermagem" OR "Equipe de Enfermagem" OR "Técnicos de Enfermagem" OR "Auxiliares de Enfermagem" OR "Enfermeros no Diplomados" OR "Licensed Practical Nurses" OR "Assistentes de Enfermagem" OR "Nursing Assistants" OR "Asistentes de Enfermería") = 99 publications.

Using the PCC strategy (Population: nursing workers; Concept: intensification of work strain and coping strategies; Context: post-pandemic period), this study formulates the research question: "What strain did nursing workers experience during the pandemic, what were its causes, and what coping strategies were employed?"

Searches were conducted from August 2022 to February 2023 in the Cinahl, Embase, and Lilacs databases. Articles published in Spanish, English, and Portuguese that could be accessed in full were included. Studies addressing professionals other than nursing, as well as materials considering periods prior to the pandemic, were excluded. Initially, 715 articles were identified. Of these, only 40 proceeded to screening after title selection. Subsequently, 34 studies advanced to the final stage after abstracts were read, and 8 studies were excluded from the review for including other professionals besides nursing in their research or due to lack of access to the full text. Thus, 26 studies were included. This process involved the participation of two researchers.

The study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA)⁹, which allowed the material used to be organized through a flowchart. This method consists of the steps of identification, screening, eligibility, and inclusion, as indicated in Figure 1.

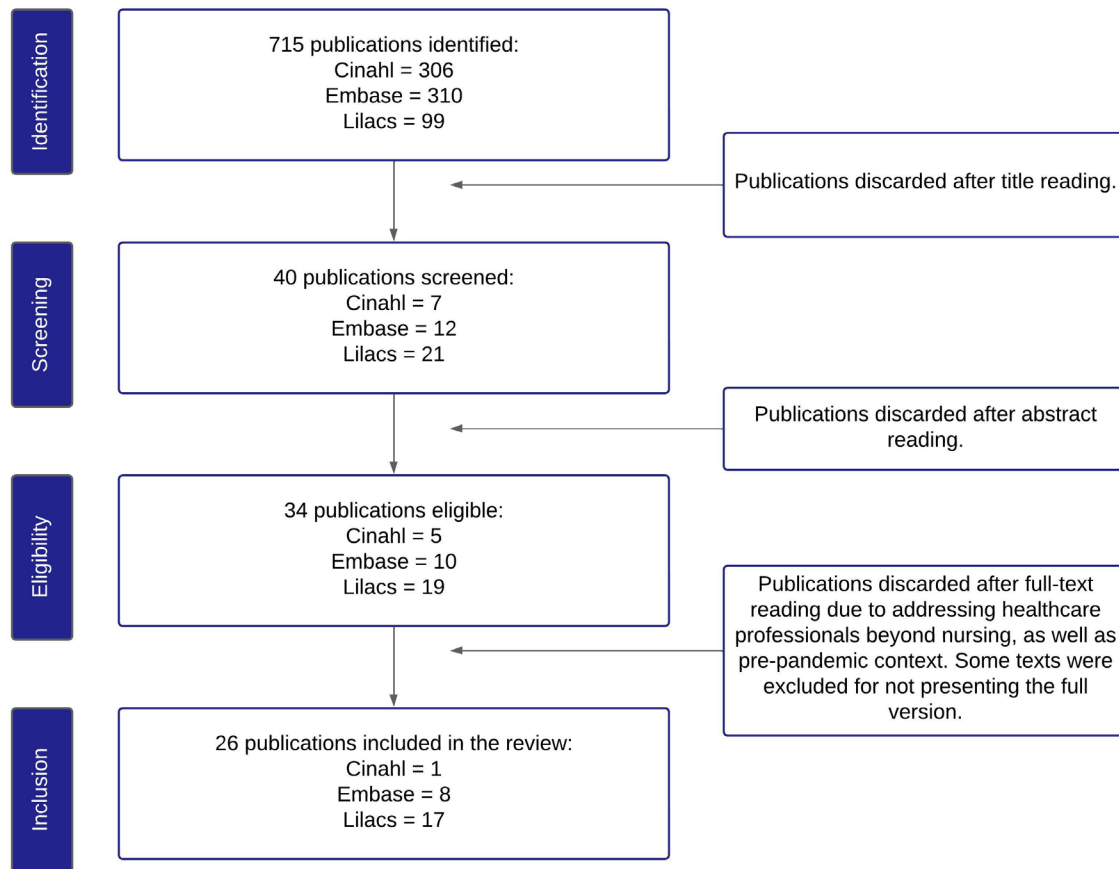


Figure 1 - Preferred Reporting Items Systematic reviews and Meta-Analysis extension for Scoping Reviews (PRISMA). São Paulo, 2024.

Using Excel software, information from the 26 selected studies was recorded in an extraction table organized into columns with the fields: number, title, strain, causes of strain, coping proposals, and theoretical perspective. To analyze the results, the studies were

evaluated to determine whether they aligned with the multifactorial risk factors perspective that guides the Occupational Health framework or with the social determination of the health-illness process perspective, which anchors the Worker Health framework.

RESULTS

Table 1 - Synthesis of strain, its causes, and coping proposals related to Nursing Worker Health. São Paulo, 2024.

| Number | Title | Strain | Cause of strain | Coping proposals | Theoretical Perspective |
|--------|---|---|---|---|--------------------------------------|
| 1 | The health of the worker: Nursing's approach in facing the Covid-19 pandemic* Albertina Souza, Jéssica Brito <i>et al.</i> , 2022. | Psychological problems, exhaustion | Workforce shortage, fear of infection, misinformation | Prevention measures, psychological support, adequate hospital structure | Multifactorial - Occupational Health |
| 2 | The impact of Covid-19 on the physical well-being of Nursing and Medical professionals: An Integrative Review*. Carolina Pretto, Karen de Moraes <i>et al.</i> , 2022.. | Sleep deprivation, headaches, skin lesions | Poor sleep quality, mental disorders, continuous use of PPE | Investment in research to improve working conditions | Multifactorial - Occupational Health |
| 3 | Ethical-emotional support for Nursing professionals in the face of the Covid-19 pandemic: An experience report* | Sleep deprivation, headaches, skin lesions | Poor sleep quality, mental disorders, continuous use of PPE | Investment in research to improve working conditions | Multifactorial - Occupational Health |
| 4 | Impacts of the Covid-19 pandemic on the life, health, and work of nurses* | Fear of infecting family, lack of PPEs, anxiety, stress, exhaustion | Novelty of the disease, lack of information, overcrowding, ethical dilemmas | Novelty of the disease, lack of information, overcrowding, ethical dilemmas | Multifactorial - Saúde Ocupacional |
| 5 | Common mental disorders and associated factors in nursing workers in COVID-19 units* Alexa Centenaro, Andressa de Andrade <i>et al.</i> , 2021 | Stress, anxiety, depression, burnout | Socio-labor characteristics, health conditions | Psychological support, strengthening resilience | Multifactorial - Occupational Health |
| 6 | Health-related quality of life of nursing professionals in Bahia during the Covid-19 pandemic* - Maria Rocha, Fernando Carvalho <i>et al.</i> , 2020 | Long shifts, intense pace, devaluation, interpersonal conflicts | Work in private institutions, lack of social support | Planning actions to improve quality of life | Multifactorial - Occupational Health |
| 7 | Experiences of nursing professionals in high-risk obstetric emergencies during the COVID-19 pandemic* - Marta Herculano, Maria Torre <i>et al.</i> , 2021 | Lack of information, restlessness, fear, anguish, stress | Institutional neglect, uncertainty, psychological suffering | Safe working conditions, psychological support, defined care flows | Multifactorial - Occupational Health |

| Number | Title | Strain | Cause of strain | Coping proposals | Theoretical Perspective |
|--------|--|--|--|--|--------------------------------------|
| 8 | Physical exhaustion of nursing professionals in combating COVID-19* - Fabiana Santos, Jessica Pessoa <i>et al.</i> , 2021 | Physical exhaustion, lack of resources | Lack of staff, PPEs, diagnostic tests, devaluation | Improving hiring mechanisms, training, and appreciation | Multifactorial - Occupational Health |
| 9 | Covid-19 and its psychological influences on the perception of the nursing team in oncology palliative care* - Endi Kirby; Alex Sandro Siqueira <i>et al.</i> , 2020 | Tachycardia, fatigue, anxiety, burnout | Unfavorable work environment, fear of the unknown, lack of recognition | Encouraging support and trust, peer consultation and supervision opportunities | Multifactorial - Occupational Health |
| 10 | Mental health repercussions for nursing professionals working in the fight against Covid-19: An integrative review* - Magda Faria, Kalyane França <i>et al.</i> , 2021 | Anxiety, depression, stress, post-traumatic stress disorder, burnout | Gender, age, prior mental disorder, stress, work sector change | Conducting new investigations, strategies for mental health support | Multifactorial - Occupational Health |
| 11 | Work-related quality of life of nursing professionals: Reflection on the impacts of COVID-19* - Claudio Fonseca, Bianca Aguiar <i>et al.</i> , 2021 | Physical and mental suffering, low pay, lack of PPE | Poor physical environment conditions, long shifts, lack of safety | Demonstrating and analyzing factors affecting quality of life at work | Multifactorial - Occupational Health |
| 12 | Perceptions and experiences of nurses regarding their performance during the COVID-19 pandemic* - Elisabete Borges, Cristina Queirós <i>et al.</i> , 2020 | Anxiety, anguish, fear, stress, insecurity | Changes in physical space, hours, and work nature | Raising awareness about health promotion at work | Multifactorial - Occupational Health |

| Number | Title | Strain | Cause of strain | Coping proposals | Theoretical Perspective |
|--------|--|---|--|---|--|
| 13 | Repercussions of covid-19 on the mental health of nursing workers* - Emanuelli Luz; Oclaris Munhoz <i>et al.</i> , 2020 | Occupational stress, burnout, mental disorders, moral suffering | Underfunding of SUS, devaluation, job instability, long shifts, low salaries | Mental support investments, monitoring of workload, psychological support, with worker involvement in strategic decisions and discussions on work process organization, allowing workers to contribute with their perspectives and experiences. | Social determination of the health-illness process - Worker Health |
| 14 | Occupational health of intensive obstetric nursing teams during the Covid-19 pandemic* Adriano Belarmino; Karina de Mendonça <i>et al.</i> , 2020 | Dermatological lesions, PPE shortage, mental suffering | Fear of contamination, deterioration of social relations | Measures to reduce morbidity and mortality, increase protection, improve quality and safety | Multifactorial - Occupational Health |
| 15 | From caregiver to patient: During the Covid-19 pandemic, who defends and cares for Brazilian nursing? - Samira Soares, Norma Souza <i>et al.</i> , 2020 | Irritability, stress, sleep disturbances, obesity, hypertension, gastritis, burnout | Neoliberal economic policies, lack of resources, workforce shortage, high patient demand | Multidisciplinary discussions involving the participation of the entire professional team in decision-making processes related to work planning and policies for investment in research. | Social determination of the health-illness process - Worker Health |
| 16 | Stress factors among nursing professionals in combating the COVID-19 pandemic: A synthesis of evidence* - Diogo Barbosa, Márcia Gomes <i>et al.</i> , 2020 | Workload, depression, anxiety, fear, exposure to the virus | New safety protocols, reduced self-care, lack of information, family concerns | Psychological evaluation and intervention, social support, effective communication, flexible schedules, psychosocial assistance | Multifactorial - Occupational Health |
| 17 | Working conditions and the impact on the health of nursing professionals facing Covid-19* - Fernanda Miranda, Leni Santana <i>et al.</i> , 2020 | Psychological harm, physical illness, moral damage | Long shifts, intense pace, devaluation, interpersonal conflicts | Reinvention and learning, support from councils and professional associations | Multifactorial - Occupational Health |

| Number | Title | Strain | Cause of strain | Coping proposals | Theoretical Perspective |
|--------|---|---|--|--|--------------------------------------|
| 18 | Challenges Facing Nurses toward Providing Care for Patients at Intensive Care Units during the Pandemic of Coronavirus Disease - Jameel Yousif Khalaf, Serwan Jafar Bakey, 202 | Labor shortage, workload, role conflicts | Large number of patients, lack of infrastructure, tension and stress, lack of hierarchical support | Encourage support for nurses, reduce stressful working conditions | Multifactorial - Occupational Health |
| 19 | Working conditions and perceptions of nursing professionals who work to cope with covid-19 in Brazil - Michelle Fernandez, Gabriela Lotta <i>et al.</i> , 2020 | Medo, irritabilidade, sobrecarga de trabalho, tristeza, solidão | Alteração dos processos de trabalho, demanda por maior vigilância nas medidas de prevenção | Necessidade de análises científicas mais profundas, revisão das medidas governamentais pontuais para lidar com os problemas ocasionados pela pandemia. | Multifactorial - Occupational Health |
| 20 | Nurses Burnout, Resilience, and Its Association With Socio-Demographic Factors During COVID-19 Pandemic - Majid Heidari Jamebozorgi, Ali Karamoozian, Tayebe Ilaghinezhad Bardsiri, Hojjat Farahmandnia | Burnout, emotional exhaustion, reduced personal accomplishment | Workload, lack of staff and equipment, risk of infection | Implement national and local policies to support nurses during the pandemic | Multifactorial - Occupational Health |
| 21 | Evaluation of the relationship between occupational stress and hospital support among nurses caring for COVID-19 patients - Somayeh Fazaeli, Mehdi Yousefi <i>et al.</i> , 2021 | Mortality, workload, conflicts, inadequate preparation | Insufficient support resources, professional conflicts, treatment uncertainty | Incentive policies, meeting nurses' needs, training and psychological support, reduced working hours | Multifactorial - Occupational Health |
| 22 | Burnout among nurses during coronavirus disease 2019 outbreak in Shiraz - Mahhsa Kamali, Ahhhmad Sadati <i>et al.</i> , 2020 | Burnout, emotional exhaustion, stress, exhaustion | Physical and psychological pressure, workload | Incentive policies, meeting needs, adequate personal protection, staff training, psychological services, reduced working hours | Multifactorial - Occupational Health |

| Number | Title | Strain | Cause of strain | Coping proposals | Theoretical Perspective |
|--------|--|--|--|--|--------------------------------------|
| 23 | Factors influencing hospital anxiety and depression among emergency department nurses during the COVID-19 pandemic: A multi-center cross-sectional study - Naif S. Alzahrani, Abdulaziz Almarwani <i>et al.</i> , 2020 | Depression and anxiety | High workload, adverse events, erratic schedules | Management measures to alleviate symptoms and improve treatment | Multifactorial - Occupational Health |
| 24 | Relationship between work stressors and mental health in frontline nurses exposed to COVID-19: A structural equation model analysis - Shaohua Hu, Qing Dai <i>et al.</i> , 2020 | Psychological problems, depression, emotional pressure | Workload, lack of PPE, lack of support | Implementation of mental health education programs focused on safety and support | Multifactorial - Occupational Health |
| 25 | Anxiety, Depression, and Their Contributing among Nurses Infected with COVID-19 in Iran: A Cross-sectional Study - Amir Behnoush, Navid Ahmadi <i>et al.</i> , 2020 | Depression, anxiety, malaise, fatigue, headache | Fear of infecting family, lack of PPE, long shifts | Strengthening nursing guidance and competencies, social support | Multifactorial - Occupational Health |
| 26 | Impact of the COVID-19 Pandemic on the Mental Health of Nurses and Auxiliary Nursing Care Technicians - Eduardo Sánchez-Sánchez, J. Ángel García-Álvarez <i>et al.</i> , 2021 | Depression, anxiety, insomnia, stress | Confusion, lack of information and training, lack of PPE, high infection rates | Provision of facilities and administrative support from the government to improve psychological health | Multifactorial - Occupational Health |

* Translator's note: the titles of the articles were translated for the convenience of the international reader, followed by the original title in brackets.

Among the works from August 2022 to February 2023, it was identified that 30% of the articles corresponded to international literature. These articles are indicated by the synthesis table numbers: 19 (Baquba, Pakistan, and Switzerland), 21 and 27 (Switzerland), 22 and 23 (Iran), 24 (Saudi Arabia), 25 (China), and 26 (Estonia and Iran). These publications demonstrate significant geographic variety in the discussions on

the intensification of straining on workers' health due to the pandemic. Although there are publications from other countries, 69% of the studies analyzed in the review were conducted in Brazil. These national studies varied methodologically, using reviews, theoretical reflections, experience reports, mixed methods, and qualitative studies.

With regard to the strain addressed in the

studies, it can be classified into physical and psychological/emotional. Physical strain was present in 19% of the articles and included dermatological lesions^{10,11}, tachycardia¹², obesity, gastritis, hypertension, changes in menstrual flow, musculoskeletal diseases¹², fatigue, malaise, headaches, and deaths due to COVID¹³. Psychological/emotional strain, presented in 81% of the studies, included: exhaustion^{14,15,16}, sleep deprivation^{12,17,18,19}, depression^{17,18,19,20,21,22,23,24}, post-traumatic stress^{17,20}, burnout^{11,12,14,17,25}, stress^{17,18,20,25,26,27}, anxiety^{11,12,17,18,19,20,21,22,24,27}, feelings of failure²⁸, restlessness¹⁰, moral dilemmas due to difficult choices such as deciding who would receive oxygen²⁵, anguish and fear^{11,18,21,26,27}, and other various psychological issues^{15,23,28}.

The causes of the strain mentioned earlier were classified according to their theoretical perspectives. It was found that 92% of the studies were aligned with the Occupational Health perspective, which focuses on symptoms and risk factors without addressing the causes of strain related to the precarization of working conditions. From this perspective, the following were identified: unfavorable work environment/unsanitary working conditions^{11,18,29}, deterioration of social relationships due to social isolation and fear of infecting family members²⁴, ethical dilemmas about who would receive treatment¹⁶, stress, lack of social support³⁰, lack of equipment^{10,11,13,25,26,28,31,32}, inadequate worker training¹⁹, shortage of professionals^{18,29}, lack of diagnostic tests^{18,19}, lack of personal protective equipment^{16,23}, lack of information about the disease¹⁶, being female (higher predisposition to anxiety), being younger (insecurity in performing tasks)¹⁷, need for rapid work adaptations due to new safety protocols²¹, risk/fear of infection²⁵.

Only 8% of the articles were anchored in the Worker Health framework, which analyzes the economic, political, and social conditions that influence working conditions. Among the identified strains were moral suffering, occupational stress, and Burnout Syndrome, with their causes alluding to the precarious organization of health work and the underfunding of the Unified Health System (SUS). This lack of budget limits

the availability of resources, such as labor and equipment²⁵.

The lack of resources increases the pressure for productivity and leads to strain. In the study mentioned above, this position is evidenced by a recommendation pointing to the reorganization of the work process and increased investments in the sector to minimize the pandemic's impact on worker health. Additionally, the authors identify Nursing as a category subject to work flexibility and instability, as this profession is impacted by cost-cutting policies (for example, by establishing temporary part-time employment and precarious contracts).

Similarly, Soares *et al.*² indicate that the configuration of work in the health sector, based on neoliberal economic policies, emerges as an underlying factor in the strain faced. Such policies are anchored in public spending cuts, the absence of infrastructure investment, and the shortage of human resources, who are subjected to exhausting work hours, thereby contributing to the increased prevalence of illnesses among workers in this context.

It is important to note that the causes of strain can be analyzed in different ways depending on the framework. From the Occupational Health perspective, for instance, the deterioration of personal relationships may be understood as the result of interpersonal conflicts within the behavior of those involved. In contrast, from the Worker Health perspective, this issue arises from the lack of multidisciplinary discussion spaces that involve reflections on the organization of different work processes across various professional categories and their interconnections.

Consistently, with regard to the proposed strategies for addressing the identified strain, the most predominant ones focused on the individual level, more aligned with the Occupational Health perspective, to the detriment of collective strategies anchored in the Worker Health field. The individual-level coping proposals mainly referred to investments in health promotion^{27,30}, the creation of psychological support programs^{26,33}, investments in continuous education to train the team on how to deal with the new disease¹⁵, and resilience to cope with the adversities brought by the pandemic con-

text^{11,14,16,20}.

The collective-level coping proposals focused on aspects such as unionization (the process by which workers organize into unions to promote and protect their interests as a labor category), the creation and strengthening of support networks (social support mechanisms formed by people or groups that offer help, emotional support, resources, and assistance), and multidisciplinary discussions involving the participation of the entire professional team in decision-making processes related to work planning and policies for investment in research^{12,25}.

DISCUSSION

As a substantial portion of the articles included in this review are related to the multifactorial perspective of occupational health³⁴ (92%), both regarding the identified causes of strain and the proposed coping strategies, it is important to emphasize that occupational health is theoretically grounded in rigid principles of objectivity and causality in explaining phenomena³⁵. Despite the importance of this field in overcoming the theoretical-methodological limits of a strictly biological occupational medicine⁶, it is insufficient for understanding crucial dimensions of workers' health. One of its limitations is the emphasis placed on behavioral change, lifestyle, and individual habits as solutions to address work-related strain. This concept is evident in studies where the proposed solutions focus on fragmented and individualistic approaches for workers, emphasizing creativity and individual resilience in dealing with the pandemic, as presented in studies 4, 5, 15 and 20 of the synthesis table.

It is important to emphasize that these strategies focused on intervening in individuals with already established health problems strengthen companies specializing in occupational health services that prioritize profit over worker health. By outsourcing to companies that provide, for example, ergonomic guidance, productivity is maintained without

From the results, it is identified that the majority of the articles included in this study are based on the multifactorial perspective of occupational health (92%) regarding the identification of strain, its causes, and coping strategies. Only two works are linked to the theoretical perspective of worker health and the social determination of the health-illness process. Thus, most studies present individual-level coping proposals, which suggest changes in behavior, habits, and lifestyle, masking the historical context of the precarization of labor relations in Brazil.

holding employers accountable for promoting changes in work organization. Thus, the multifactorial perspective supports strategies that align with the interests of capitalist exploitation^{6,36,37,38}.

Another point to consider is that the pandemic made explicit the strain caused by work overload, resulting from a reduced number of professionals performing activities whose complexity requires a larger staff. However, the multifactorial perspective of occupational health addresses this overload by proposing the modification and correction of individual limitations to handle excessive work. In contrast, the field of worker health understands that modifying the organization of work, through the collective involvement of workers in planning their own work processes, is the primary strategy to prevent overload from resulting in illness³.

Only two articles are anchored in the field of worker health, which discusses the importance of the relationship between individuals and work, recognizing that suffering and illness are related to how workers are integrated into the production process. Work is considered an organizing element of social life, and authors in the field of worker health focus on understanding how work and life influence health, considering social diversity and the social determination of the health-ill-

ness process³.

These studies strongly discuss the labor precarization produced by the reduction of labor guarantees and rights, such as workplace safety and social protection. The weakening of labor rights mainly harms workers' mental health due to the incessant demand for targets and presenteeism a situation where individuals, even when ill, continue working without seeking treatment for fear of losing their jobs as evidenced by the results of this study. For this reason, mental health should not be separated from overall health and working conditions³⁹. Thus, only structural changes that address the roots of the dismantling of labor rights have the potential to transform the reality of work and the health-illness process.

It is important to highlight that, in the healthcare sector, the precarization of work is related to the deterioration of the Brazilian healthcare system and the rise of neoliberal policies that advocate minimizing state intervention in the economy and promoting free competition³⁸. This doctrine often leads to the privatization of public services and the reduction of social expenditures, resulting in the underfunding of the SUS. The low budget allocation directly affects the health of workers in the sector and the quality of services provided to the population³⁸, considering that 59.3% of nursing professionals work in the public sector⁴⁰.

The limitations on labor social rights and the reduction in social security funding in Brazil can be understood in light of the trend of declining profit rates and the growth of the financial sector. These factors impact social rights and the financing of the Unified Health System (SUS)³⁸. The financialization of the sector leads to work overload and intensification, resulting in low-quality care and the illness of professionals³.

This context directly influences the current scenario of work precarization in nursing, which has its roots in the process of proletarianization. Gradually, the profession became increasingly integrated into the complex capitalist labor relations. This process began during the first Industrial Revolution,

when significant changes occurred in health-care systems and patient care. The institutionalization of health later highlighted the crucial role of nurses in the functioning of these environments, contributing to the recovery of the workforce for industries. The transition to the late 19th and early 20th centuries witnessed the professionalization of nursing, marked by the creation of schools and the standardization of educational practices.

As technological advancements in healthcare continued, more skilled professionals were required to handle increasingly sophisticated procedures, and nursing expanded its scope of practice. It began to play a fundamental role in various services, such as clinics, hospitals, medical offices, home care, and long-term care institutions. As nurses were employed, they became subject to work schedules, supervision, and hierarchies. In this configuration, the physician assumed the role of the professional responsible for diagnosis and prescribing treatments in the healthcare work process, while other health professions, primarily nursing, were positioned as necessary support for the medical profession. In other words, physicians were positioned as responsible for intellectual work, while nurses were entrusted with practical care⁴¹.

In contemporary times, this process of integrating nursing into capitalist relations is subordinated to the dictates of neoliberalism, which is based on individualism and competition in the workplace¹⁵. This model, driven by targets and productivity, distances the worker from the object of their work, producing alienation and overload. In contrast to this perspective, it is argued that it is not enough to address strain solely through actions and programs aimed at changing individual behaviors. Strategies to strengthen workers' health must focus on collective approaches from the worker health perspective and the social determination of health. Thus, proposals should include collective worker mobilization, union organization, and the implementation of public policies. It is suggested that actions be considered to change working conditions and the organi-

zation of health work, as well as to provide comprehensive care and support for workers facing health issues. Additionally, it is important to evaluate the possibility of reformulating the legal system of medical assessments to adopt a broad and contemporary understanding of health. An additional step would be the creation of a worker health observatory, which would allow for monitoring and the collective construction of knowledge³⁶.

Encouraging worker participation in com-

mittees and councils, and promoting meetings dedicated to discussing working conditions, are powerful strategies for addressing strain. Valuing public services and promoting policies aimed at increasing workers' access to healthcare services are also relevant aspects to consider³⁹. The implementation of strategies to strengthen worker health must be based on a participatory approach, allowing workers to express the strain they experience and collectively develop coping proposals⁴².

CONCLUSION

This study identified in the scientific literature that the pandemic highlighted the strain on the health of nursing workers, which had already been historically occurring. It is worth noting that the study presents limitations, such as not addressing the differences in the intensification of strain according to each nursing professional category (nursing assistant, nursing technician, and nurse), nor the distinction between various intra-hospital and extra-hospital work settings.

The multifactorial approach appears to be the dominant perspective in understanding strain and coping strategies. While it may contribute to promoting worker well-being and reducing immediate stress in the short term, such approaches should not be presented as definitive solutions to deeply rooted structural issues in the organization of healthcare work.

The perspective that focuses exclusively on lifestyle changes may inadvertently mask the contradictions present in the work envi-

ronment. Broader issues, such as work overload, lack of adequate resources, and organizational pressures, cannot be resolved solely through individual adjustments. A more comprehensive approach that addresses organizational structures and processes is imperative. A critical view must be directed toward understanding the power relations and external influences that shape the dynamics of work. Adopting this view is essential for considering ways to preserve nursing workers' health and ensure that intervention strategies address the root causes of the challenges faced by nursing workers in the context of contemporary capitalism.

This study highlights the need for strengthening strategies that focus on transforming the healthcare work process, which perpetuates inequalities and strain. By recognizing this perspective, nursing workers can take ownership of the roots of their illness process and demand institutional strategies to address the strain.

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