

ORIGINAL ARTICLE

Risk factors for burnout syndrome in nurses at a public hospital in Mossoró/RN, Brazil

Fatores de risco para a Síndrome de burnout em enfermeiros de um Hospital público de Mossoró/RN, Brasil

Bruna Nogueira Alves¹ , Camilla Cavalcante Freitas¹ , Gabriel Sousa Rocha² , Marco Aurelio M. Freire^{1,*} 

¹Graduate Program in Health and Society, Faculty of Health Sciences. University of the State of Rio Grande do Norte, Mossoró, Rio Grande do Norte, Brazil

²Graduate Program in Biochemistry and Molecular Biology, Faculty of Health Sciences. University of the State of Rio Grande do Norte, Mossoró, Rio Grande do Norte, Brazil

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KEYWORDS

Occupational stress
Burnout syndrome
Nursing

ABSTRACT

Objective: To evaluate the risk factors for the onset of burnout syndrome in nursing workers at the Hospital Regional Tarcísio de Vasconcelos Maia in Mossoró/RN.

Methods: Exploratory, descriptive, quantitative and cross-sectional study with 119 nurses from March to September 2022. Data were collected from the application of a form with socio-organizational information and the Copenhagen Burnout Inventory, containing 19 items that reflect the professional burnout on a scale categorized as low, intermediate and high burnout.

Results: Most respondents were female (81%), with an average age of 36.4 years, married (70%), with specialization in the area (74%) and two jobs (59%). A higher prevalence of high levels of personal burnout (44%) and intermediate levels of work-related (52%) and client-related burnout (50%) were identified. There was a strong positive correlation between the number of employment relationships for the personal burnout ($r = 0.74$; $p = 0.03$) and work-related ($r = 0.81$; $p = 0.02$) dimensions, a strong positive correlation between load hours of work and personal burnout ($r = 0.68$; $p = 0.04$) and a moderate positive correlation between workload and work-related burnout ($r = 0.53$; $p = 0.04$).

Conclusions: Exposure to long working hours resulted in increased levels of physical and mental exhaustion in nurses, negatively interfering with professional and personal aspects. Future studies focusing on strategies to ensure a better working condition for nurses are needed, aiming to provide better occupational health for workers. **Keywords:** Burnout syndrome; Occupational stress; Nursing.

*Corresponding author:

Programa de Pós-graduação em Saúde e Sociedade, Faculdade de Ciências da Saúde. Universidade do Estado do Rio Grande do Norte
Addr.: Av. Miguel Antônio da Silva Neto, s/n - Bairro: Aeroporto. Mossoró, RN, Brasil | CEP 59.607-360
Phone: +55 (84) 99612-9104 E-mail: freire.m@gmail.com (Freire MAM)

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PALAVRAS-CHAVE

Estresse ocupacional
Enfermagem
Síndrome de *Burnout*

RESUMO

Objetivo: Avaliar os fatores de risco para o aparecimento da Síndrome de *burnout* em enfermeiros trabalhadores do Hospital Regional Tarcísio de Vasconcelos Maia em Mossoró/RN.

Métodos: Estudo exploratório, descritivo, quantitativo e transversal com 119 enfermeiros de março a setembro de 2022. Os dados foram coletados a partir da aplicação de um formulário com informações sócio-organizacionais e do *Copenhagen Burnout Inventory*, contendo 19 itens que refletem o *burnout* profissional em uma escala categorizada como *burnout* baixo, intermediário e alto.

Resultados: A maioria dos entrevistados era do sexo feminino (81%), com média de 36,4 anos de idade, casada (70%), com especialização na área (74%) e dois empregos (59%). Identificou-se maior prevalência de níveis elevados de *burnout* pessoal (44%) e níveis intermediários de *burnout* relacionado ao trabalho (52%) e relacionado ao cliente (50%). Houve forte correlação positiva entre número de vínculos empregatícios para as dimensões *burnout* pessoal ($r = 0,74$; $p = 0,03$) e relacionado ao trabalho ($r = 0,81$; $p = 0,02$), forte correlação positiva entre carga horária de trabalho e *burnout* pessoal ($r = 0,68$; $p = 0,04$) e moderada correlação positiva entre carga horária de trabalho e *burnout* relacionado ao trabalho ($r = 0,53$; $p = 0,04$).

Conclusões: A exposição a jornadas de trabalho prolongadas resultou em aumento dos níveis de exaustão física e psíquica nos enfermeiros, interferindo negativamente nos aspectos profissionais e pessoais. Estudos futuros focando em estratégias para garantir uma melhor condição de trabalho ao enfermeiro são necessários, visando proporcionar uma melhor saúde ocupacional aos trabalhadores.

INTRODUCTION

The work environment strongly influences the well-being and quality of professional services provided in various areas. The increase in assignments associated with a high workload can result in physical and emotional exhaustion for the professional, with the inadequacy of the work environment favoring the development of signs of stress, thus compromising labor practice¹.

The stress condition is the feedback of tension overload exerted externally in the work environment. How the professional acts in the face of these conditions that cause stress can trigger professional exhaustion, resulting in physical and emotional illnesses^{2,3}. Among the most common stressors in the work environment are work overload, low pay, difficulty in interactions with colleagues, conflicts with hierarchical superiors, complexity of procedures, lack of appropriate material resources, lack of adequate physical structure and organizational aspects of the teamwork, with lack of autonomy and recognition being the main factors associated with mental illness^{4,5}.

In this way, an environment that induces continuous occupational stress ends up triggering a debilitating state that results in a condition of emotional exhaustion that interferes both in work practice and interpersonal relationships of individuals. Such a state, called Burnout Syndrome (BS) or professional exhaustion syndrome, is defined as a characteristic condition of the work environment, as a process resulting from the response to the chronicity of occupational stress, reflecting in losses both for the individual and for his professional performance and their family and social relationships⁶.

In the mid-1970s, the American psychiatrist and psychoanalyst Herbert Freudenberger, based on observations of volunteers at a medical clinic in New York (USA) who showed signs of demotivation and

gradual mood swings over time, proposed the term Burnout to describe the set of symptoms he observed. BS was conceptualized as a depressive disorder that can be developed in people who experience chronically stressful situations at work⁷, with symptoms of three independent characteristics that can be interrelated: emotional exhaustion, depersonalization, and lack of fulfillment at work⁸. Among the illnesses resulting from BS, the main ones are psychic, such as depression, anxiety disorder, abuse of alcohol, and other addictive narcotic substances, in addition to various situations that compromise collaborative work⁹.

Since February 2022, the International Classification of Diseases (ICD 11) of the World Health Organization (WHO) in its 11th revision has classified BS as an occupational disease triggered by work stress¹⁰. Several factors, both internal and external, actively contribute to this phenomenon, regardless of the environment in which the professional is allocated, which may include sociodemographic, economic, labor, and personal aspects, as well as the relationships established during the process.

The diagnosis of BS among nursing professionals is particularly high due to the numerous stressful situations experienced by this group in the work environment, mainly due to the constant contact with patients in critical condition or with a high degree of suffering¹¹. BS in this group is also due to the recurrent interaction with the patient's relatives, who sometimes present with a great degree of disturbance triggered by the condition of their loved ones¹², with nursing being the profession with the highest incidence of BS among healthcare professionals¹³. Additionally, studies associate BS with turnover and aging of nursing professionals, indicating a high risk of suicide among this group^{14,15}.

A widely used instrument for characterizing BS is the Copenhagen Burnout Inventory (CBI)^{16,17}, which defines the syndrome based on three dimensions: personal, work-related, and patient-related. Personal

burnout is understood as a degree of physical and psychological fatigue and exhaustion experienced by a person. Work-related burnout is a degree of psychological fatigue and exhaustion perceived by an individual connected to his work. Burnout related to the patient or client, in turn, is established as the degree of physical and psychological exhaustion observed by the person about his work with patients¹⁸.

Given the importance of the impacts of BS on the mental health of nursing professionals, questions regarding the quality of the work environment of professional nurses have emerged and their impact on the care provided. It is critical to conduct studies to better understand issues related to this subject. Therefore, the present study aims to evaluate the prevalence of BS in professional nurses at Hospital Regional Tarcísio Maia in Mossoró/RN and identify the correlation between risk factors and burnout in the abovementioned group.

METHODS

Exploratory, descriptive, cross-sectional and quantitative study, with the application of questionnaires to nursing professionals at Hospital Regional Tarcísio Maia (HRTM), in Mossoró, in the western macro-region of the State of Rio Grande do Norte, from May to September 2022, during the morning, afternoon and night shifts. The HRTM, inaugurated in 1986, attends to urgent and emergency care in the municipality of Mossoró and more than 80 other municipalities in the macro-region having approximately 200 beds divided between different clinics and intensive care units (ICUs) at the time of the study.

The population of nurses working at the HRTM is 140, of which 119 were willing to participate in the research, constituting a non-probabilistic and convenience sample based on the fulfillment of the inclusion criteria: professionals who graduated in nursing of both sexes and any age group, who performed their activities in the morning, afternoon or night shifts and performed their functions within their training area at HRTM, and must have at least six months of consecutive professional practice at the institution. Workers who were away from their duties during the data collection period due to vacation or on leave for any reason were excluded from the study.

The selection of participants occurred from an initial approach in the hospital environment, where they were informed about the subject of the study and provided with all clarifications regarding its objectives and possible risks, as well as the benefits their participation could entail. Then, the participants were informed about the secrecy and confidentiality of the collected data to preserve their privacy.

After consent and signing the informed consent form (ICF), the nursing professionals answered a

sociodemographic questionnaire that sought to characterize the profile of the study participants, followed by the Copenhagen Burnout Inventory (CBI) questionnaire, adapted and validated for the Portuguese language¹⁹. The printed form was made available to professionals in their work environment, being answered in a reserved room, air-conditioned and free from external interference, and collected at the end of the filling. The CBI assessed the dimensions of the participants' professional exhaustion, being composed of 19 questions that are analyzed through the frequency of answers used according to the Likert scale²⁰, in which each item is specific to characterize a dimension (personal burnout, work-related burnout, and customer-related burnout) and corresponds to a score that varies according to the responses, from zero (0) to one hundred (100), with the total score of the scale being the average of the scores of the items, thus corresponding to a result that demonstrates the burnout dimensions mentioned above. To identify BS, we adopted the classification used by Madsen et al.²¹, which categorizes burnout into low (< 25), intermediate (25 < score < 50), and high (> 50) levels, allowing comparison between categorical variables. Values equal to or greater than 50 points are considered high BS.

At the end of data collection, the questionnaires were coded and typed, and their information was tabulated in a database using Microsoft Excel® software. The values were then exported to Prism software, version 5.0 (GraphPad Inc., San Diego, CA, USA) where statistical analyzes were performed, with a p-value < 0.05 being considered significant. The relationship between the burnout dimensions and the different evaluated variables was established from Pearson's linear correlation, with r values between -1 (perfect negative correlation) and 1 (perfect positive correlation) and intermediate values defining correlation weak (r between 0 and 0.3), moderate (r between 0.3 and 0.6), strong (r between 0.6 and 0.9) and very strong (r between 0.9 and 1)²².

The present study received approval from the Ethics and Research Committee (CEP) of the University of the State of Rio Grande do Norte (UERN) (CAAE number: 47189021.0.0000.5294, ID# 4.915.042) following the guidelines and regulations ethics advocated by the National Research Ethics Committee (CONEP) (resolution 466/12), complemented by resolution 510/2016 of the National Health Council (CNS).

RESULTS

The evaluated sample corresponded to 119 professional nurses working at the HRTM, mostly females. The mean age range was 36.4 ± 7.5 years, with the minimum age corresponding to 24 years and the maximum age 58. Concerning marital status, most professionals reported having a spouse. Regarding the maximum education completed, most professionals have a specialist title, representing 74% of the total,

with 3% having a doctoral degree. The average income of the interviewees corresponded to BRL 8,588.00, with an income variation between BRL 3,000.00 (minimum) and BRL 30,000.00 (maximum), as shown in Table 1.

Table 1 – Sociodemographic aspects of the sample of nurses analyzed (n = 119), Hospital Regional Tarcísio Maia (HRTM) in Mossoró - RN, May to September, 2022. Values in n (%).

Feature	N
Genre	
Female	96 (81)
Male	23 (19)
Age (years)	
Minimum	24
Maximum	58
Average	36.4
Did not answer	3 (2.5)
Marital status	
With spouse	83 (70)
No spouse	32 (27)
Did not answer	4 (3)
Education	
Graduation	17 (14)
Specialization	88 (74)
Master's degree	11 (9)
Doctorate degree	3 (3)
Family income (in BRL)	
Minimum	3,800.00
Maximum	30,000.00
Average	8,588.00
Time on HRTM (years)	
Minimum	1
Maximum	30
Average	5.3
Intention to retire at HRTM	
Yes	89 (75)
No	27 (22)
Did not answer	3 (2.5)
Number of places of work	
Only on HRTM	40 (34)
Two places	70 (59)
Three places	6 (5)
Did not answer	3 (3)
Time of professional practice (years)	
Minimum	1
Maximum	37
Average	10.62
Did not answer	2 (1.7)
Weekly workload (h)	
Minimum	30
Maximum	89
Average	54.7
Did not answer	1 (1.25)

Regarding the time of work in the HRTM, the nurses interviewed had an average of 5.3 ± 5.47 years of employment. The intention to work at HRTM until retirement was mentioned by 75% of the sample (Table 1).

Most analyzed nurses had two jobs, corresponding to 59% of the sample. The professionals indicated an average time in the profession of 10.62 ± 8 years, with the most recent graduate having 1 year of graduation and the oldest 37 years, with the average weekly workload corresponding to 54.7 ± 9.8 h (Table 1).

There was a predominance of high levels of personal burnout, representing 44% of respondents. Regarding work-related burnout, most professionals had intermediate levels, corresponding to 52% of the sample. Concerning customer-related burnout, 50% of professionals had intermediate levels (Table 2). Figure 1 indicates the percentages referring to the different burnout dimensions evaluated (personal, work-related, and customer-related) in relation to the analyzed levels (high, intermediate, and low).

Pearson's correlation between the burnout dimensions and the investigated variables revealed a strong positive correlation between the number of work relationships and personal burnout ($r = 0.74$, $p = 0.03$) and between the number of relationships and work-related burnout ($r = 0.81$, $p = 0.02$). The same was observed with a strong positive correlation between weekly workload and the personal burnout dimension ($r = 0.68$, $p = 0.04$) and a moderate positive correlation between weekly workload and work-related burnout ($r = 0.53$, $p = 0.04$) (Table 3), indicating a direct correlation between increased weekly workload and burnout levels. It was also possible to observe that the personal and work-related burnout dimensions and the income variable had a negative correlation. This finding is expected since a higher monthly income represents a decrease in the levels of stress that contribute to the onset of BS.

DISCUSSION

Burnout Syndrome (BS) is a limiting factor for workers, especially those who deal directly with the public, with health professions being directly impacted, especially those involved in the care or who are responsible for caring²³.

Despite organizational, social, technological and structural changes in professions, labor relations have changed rapidly over time, notably at the beginning of the 21st century²⁴. Such changes directly impact workers' health, sometimes affected by physical and psychological illnesses²⁵. One of the main factors in this condition is prolonged exposure to environmental stressors, which results in occupational stress, causing increased emotional exhaustion and depersonalization, as well as low professional achievement, with a consequent impact

Table 2 – Scores referring to personal *burnout*, work-related *burnout*, client-related *burnout* and total *burnout* in the analyzed sample of nurses from Hospital Regional Tarcísio Maia (HRTM) in Mossoró - RN (n = 119), May to September 2022.

Dimension	Level	n (%)	Average score
Personal burnout	Low	18 (15)	22.92
	Intermediary	49 (41)	39.55
	High	52 (44)	66.76
Work-related burnout	Low	10 (8)	22.14
	Intermediary	62 (52)	40.90
	High	47 (40)	61.94
Client related burnout	Low	28 (24)	19.38
	Intermediary	60 (50)	39.79
	High	31 (26)	63.71
Total burnout	Low	10 (8.4)	21.48
	Intermediary	61 (51.3)	40.08
	High	48 (40.3)	64.14

Table 3 – Correlation between the dimensions of Burnout and the variables investigated in the analyzed sample of nurses from Hospital Regional Tarcísio Maia (HRTM) in Mossoró - RN (n = 119), May to September 2022.

Dimension	Statistic	Age	Profession time	Income	Time on the H RTM	Number of bonds	Weekly CH
Personal burnout	Correlation	0.01	0.08	-0.06	0.09	0.74	0.68
	p-value	0.91	0.39	0.49	0.31	0.03	0.04
Work burnout	Correlation	0.02	0.09	-0.12	0.07	0.81	0.53
	p-value	0.85	0.34	0.19	0.44	0.02	0.04
Client burnout	Correlation	-0.06	0.00	0.06	-0.05	0.01	-0.05
	p-value	0.53	0.99	0.42	0.61	0.89	0.56

Weak correlation: $r\ 0 < r \leq |0.3|$; Moderate correlation: $r\ |0.3| < r \leq |0.6|$; Strong correlation: $r\ |0.6| < r \leq |0.9|$.

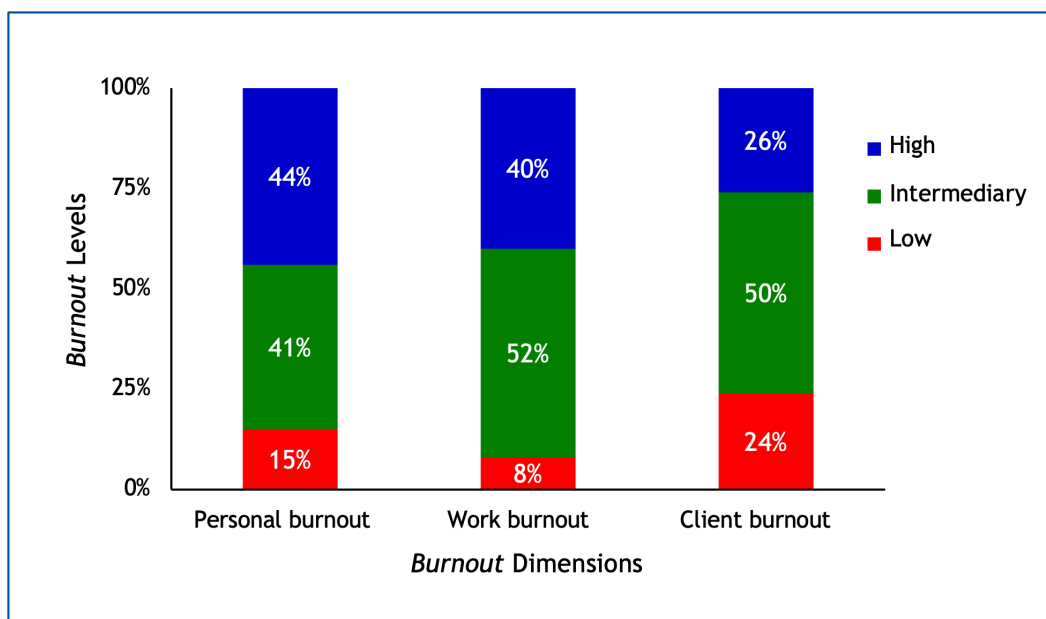


Figure 1 – Chart indicating the dimensions of personal, work-related, and client-related burnout, in percentage. The personal burnout dimension has higher levels than the work-related and customer-related dimensions, which have values predominantly intermediaries.

on quality of life²⁵. Because of all the personal and professional irregularities caused by stress, it is possible to state that some diseases are installed from this condition; BS is one of these²⁶. BS is divided into three phases: emotional exhaustion, depersonalization, and lack of personal involvement in professional practice⁸, being seen as a different type of chronic occupational stress with gradual progress, which can affect all spheres of personal life²⁷.

The sample revealed a majority of female nurses (81%), similar to what has been described in other studies²⁸⁻³⁰, reflecting the foundations of the profession's historical construction that date back to the 19th century, strongly influenced by Florence Nightingale, with the prevailing notion that the woman is more careful in dealing with the patient²⁹.

Dalri et al.³⁰ point out that within the reality of nurses, remuneration for work does not meet the needs to maintain their families, making it imperative to obtain more than one employment relationship, resulting in physical and psychological exhaustion for that worker. Most of the time, nurses do not have time for leisure, socializing, spending time with family members, and performing physical activities, with a direct relationship between the onset of BS and less time spent on vacation by these professionals³¹. In addition, they deal with emotional overload, grief, and the suffering of patients and families during their daily activities. In this way, nursing workers may have a low quality of life, remaining in continuous tension and professional discouragement, which makes them susceptible to chronic stress. In line with this perception, most nurses analyzed in the present study report having two jobs, corresponding to 59% of the sample, and 5% who report having three jobs, a condition directly correlated to the personal burnout dimension, with a significant correlation identified. These findings corroborate the descriptions by Freitas and Freire¹⁷ of nursing workers at a public hospital in Natal/RN, indicating that this is a trend amongst nursing professionals in the State's public sphere.

Another impacting factor on the health of professional nurses is the weekly workload. In the present study, the average weekly workload of the sample corresponded to 54.7 h, which results in a continuous effort by the worker to meet all the demands caused by work, making him more vulnerable to accidents and psychological disorders³².

The workload is directly associated with the search for salary improvement. In the present study, the average monthly income was BRL 8,588.00. However, as previously reported, the effort expended to earn a higher income, associated with the pressures of the work environment and the demands of the profession itself, causes a high physical and psychological exhaustion, which in the medium and long term can result in a stress condition³⁰, which may impact the quality of the service.

Nurses in the emergency department are the most susceptible to developing BS due to a high level

of emotional exhaustion associated with ergonomic risks, exposure to unhealthy environments, and high physical effort³³⁻³⁴. In a study by Meira et al.³⁵ that evaluated nurses working in urgent and emergency services at a hospital in Campina Grande/PB, 45.8% had high levels of emotional exhaustion. In another study assessing nurses in an emergency room at a public hospital in Minas Gerais, Pires et al.³³ reported that 90% of the evaluated sample had moderate to high emotional exhaustion scores, indicating that professional nurses had a significant change in the emotional aspect, which may result in impacts on their work activity. Our results agree with descriptions in the literature, as most of the evaluated professionals had intermediate to high levels of personal and work-related burnout. In this sense, public managers must evaluate the implementation of organizational policies that reduce harm to the mental health of nursing workers.

Concerning education, 74% of the sample has a specialization, given the ever-increasing labor market demands for greater training of professionals³⁶. However, as reported by Monteiro and Carlotto³⁷, there is a relationship between the higher level of education of nursing professionals and the intention to abandon the profession since a greater focus on training can result in discouragement due to frustrated expectations in work practice, causing a higher risk of developing BS in this group.

In the sample of this study, 70% of nursing workers reported having a spouse, a percentage close to that described by Freitas and Freire¹⁷ in nurses at a public hospital in Natal/RN. Having a spouse or partner can act as a protective factor against BS, providing a greater ability to cope with emotional problems³⁸. BS may be comorbid with psychiatric disorders, and the presence of a partner emerges as an essential element for coping with and overcoming this process³⁹.

Based on Pearson's coefficient, it was possible to identify a strong positive correlation between the number of jobs and the personal and work-related burnout dimensions, a strong positive correlation between workload and personal burnout, and a moderate positive correlation between workload and work-related burnout, indicating that exposure to prolonged working hours results in increased levels of physical and psychological exhaustion.

Regarding personal burnout, in a study evaluating nurses in emergency services in Portugal, Nobre et al.⁴⁰ identified that 59.4% had high levels for this domain, establishing a relationship between this and weekly workload. Freitas and Freire¹⁷, evaluating nurses in Natal/RN, showed that 47.5% of the sample had high levels for this domain, similar to the findings of the present study, where 44% of the nurses had high levels of personal burnout. Considering the above, exposure to prolonged working hours may be correlated with an increased risk for the appearance of this domain, given that the increase in workload implies a change in the private routine, reducing the

possibilities of personal interaction and moments of rest, reflecting a greater chance of stress resulting from work⁴⁰.

One of the main elements related to the appearance of BS in nurses is dissatisfaction with the work environment, which is sometimes unhealthy, with poor structure and ergonomic risks, in addition to lack of recognition by managers, situations of embarrassment, and multiple demands of the profession^{3,23,36}. Sá et al.²⁸, evaluating nurses in a public hospital in the Southeast region of Brazil reinforces this notion since greater satisfaction with the structure of the workplace is reflected in less emotional exhaustion and greater professional fulfillment, which indicates the need for managers to implement strategies to ensure better working conditions for professionals.

The main limitation of the present study was the COVID-19 pandemic, which strongly interfered with the work routine of nursing professionals and the hospital structure, making data collection difficult. The increasing stress during the pandemic period opens up perspectives for future studies to identify its

impact on the working conditions of professional nurses.

CONCLUSION

Most nursing professionals evaluated in this study presented high levels of personal burnout and intermediate levels of work- and client-related burnout. There was a strong positive correlation between the number of employment relationships for the personal and work-related burnout dimensions, a strong positive correlation between workload and personal burnout, and a moderate positive correlation between workload and work-related burnout. Prolonged work periods predispose workers to both physical and mental exhaustion, which is reflected in a greater chance of work stress, negatively interfering with their professional performance and personal relationships. Future studies seeking strategies to ensure better working conditions for nurses are required to establish approaches to improve workers' occupational health.

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Conception and design of the study: BNA, CCF, MAMF
Data analysis and interpretation: BNA, CCF, GSR MAMF

Data collection: BNA

Manuscript writing: BNA, CCF, GSR, MAMF

Critical revision of the text: CCF, MAMF

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General responsibility for the study: BNA, MAMF

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