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Burnout Syndrome in Nursing Professionals in COVID -19 Intensive Care

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Abstract: The COVID-19 pandemic evidenced a scenario of increased demands on health professionals that can lead to professional burnout. This study aimed to investigate Burnout Syndrome (BS) and associated factors in nursing professionals working in intensive care units (ICU) of the public service during the COVID-19 pandemic. 157 professionals were evaluated regarding sociodemographic, occupational and working conditions variables, and the Maslach Burnout Inventory (MBI) was used. The prevalence of BS was 45.2%, with some professionals suffering from more than one factor of the syndrome: emotional exhaustion (28.7%), depersonalization (3.8%) and low professional fulfillment (24.8%). Logistic regression analysis in the final model showed that female gender, not having children, statutory bond, professionals who had COVID-19 and declared wanting to leave the ICU environment had a higher risk of BS. The results showed BS in nursing professionals and that new risk factors were added with the advent of the pandemic.

Keywords: occupational stress, nursing, intensive care units

Síndrome de *Burnout* em Profissionais de Enfermagem na Terapia Intensiva de COVID-19

Resumo: A pandemia de COVID-19 evidenciou um cenário de acréscimo de demandas aos profissionais de saúde que pode levar ao esgotamento profissional. Este estudo teve como objetivo investigar a Síndrome de *Burnout* (SB) e fatores associados em profissionais de enfermagem nas unidades de terapia intensiva (UTI) durante a pandemia de COVID-19. Foram avaliados 157 profissionais em relação às variáveis sociodemográficas, ocupacionais e condições de trabalho, e o Maslach Burnout Inventory (MBI) foi utilizado. A prevalência da SB foi de 45,2%, com alguns profissionais em mais de um fator da síndrome: exaustão emocional (28,7%), despersonalização (3,8%) e baixa realização profissional (24,8%). Análise de regressão logística no modelo final mostrou que o gênero feminino, não ter filhos, vínculo estatutário, profissionais que tiveram COVID-19 e que declararam querer sair do ambiente de UTI tiveram maior risco de presença da SB. Os resultados evidenciaram SB nos profissionais de enfermagem e que novos fatores de risco foram acrescidos com o advento da pandemia.

Palavras-chave: estresse ocupacional, enfermagem, unidades de terapia intensiva

Síndrome de Burnout en Profesionales de enfermería en Terapia Intensiva de COVID-19

Resumen: La pandemia de la COVID-19 evidenció un escenario de mayores exigencias a los profesionales de la salud que puede derivar en desgaste profesional. Este estudio tuvo como objetivo investigar el Síndrome de *Burnout* (BS) y factores asociados en los profesionales de enfermería en las unidades de cuidados intensivos (UCI) durante la pandemia. Los 157 profesionales fueron evaluados con relación a las variables sociodemográficas, ocupacionales y condiciones de trabajo, y se utilizó el Maslach Burnout Inventory (MBI). La prevalencia de SB fue del 45,2%, con algunos profesionales que sufren de más de un factor del síndrome: agotamiento emocional (28,7%), despersonalización (3,8%) y baja realización profesional (24,8%). El análisis de regresión logística mostró que el sexo femenino, no tener hijos, la relación laboral reglamentaria, los profesionales que contrajeron COVID-19 y que declararon querer salir del entorno de la UCI tuvieron un mayor riesgo de presencia de SB. Los resultados mostraron SB en profesionales de enfermería y que se agregaron nuevos factores de riesgo con el advenimiento de la pandemia.

Palabras clave: estres ocupacional, enfermeria, unidades de terapia intensiva.

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At the end of 2019, the emergence of an unknown disease affecting the Chinese population was followed in the news. In early 2020, the World Health Organization (WHO) identified and characterized the agent as a new type of coronavirus (SARS-CoV-2), a potential cause of Severe Acute Respiratory Syndrome, declaring a pandemic status. The high transmissibility, associated with the rapid spread and the lack of effective drugs and vaccines, contributed to

the expansion of the disease (COVID-19), the development of variants and the high mortality rate. During two years of pandemic, there were more than 200 million cases and more than five million deaths worldwide (World Health Organization [WHO], 2021).

COVID-19 has sparked a public health crisis with enormous challenges for both systems and healthcare professionals. The rapid evolution and severity of the disease required governments to organize contingency plans and mitigation measures. There was a need to increase intensive care beds, create field hospitals, hire professionals and purchase highly complex equipment, such as mechanical ventilators, and supplies, such as personal protective equipment (PPE), causing a great socioeconomic impact, especially in Brazilian public health.

Regarding healthcare professionals, the presence of COVID-19 exposes them to various occupational hazards, which include, among others: COVID-19 infections; injuries from prolonged use of PPE; stigmatization; discrimination; psychological distress and chronic fatigue (Organização Pan-Americana da Saúde [OPAS], 2021). With the advent of the pandemic, Intensive Care has become a reference to the severe response to COVID-19, and can be classified as a very high-risk environment for exposure.

The exposure of health workers to stressful environments and conditions increases the level of weariness, both physical and mental, which can lead to exhaustion due to excessive individual effort, affecting their quality of life and of their work. During the pandemic, fragility and concern about workers' mental health have been perceived, and nursing was the most affected class. Researches indicate the presence of anxiety, stress, depression, fear, anguish and other diseases caused by work overload, such as Burnout Syndrome (BS) (Morgantini et al., 2020; Prado, Peixoto, Silva, & Scalia, 2020).

BS is defined as a consequence of chronic stress in response to emotional and physical stressors present in the work environment. The weariness that this syndrome causes leads the professional to a physical and mental exhaustion, which causes that his relationship with work lose meaning (Benevides-Pereira, 2003; Ministério da Saúde & Organização Pan-Americana da Saúde no Brasil, 2001).

The syndrome can be characterized in three dimensions, based on a socio-psychological conception: emotional exhaustion, depersonalization and low professional fulfillment. Exhaustion refers to physical and mental tiredness, leading to a lack of energy and indisposition. Depersonalization is an attitude of indifference, cynicism and irony towards others. And low professional fulfillment is evidenced by feelings of dissatisfaction and demotivation with work activities (Benevides-Pereira, 2003).

In the health area, the presence of BS is an aggravating factor, since a sick professional cannot offer quality care to patients. Such behavior generates professional dissatisfaction, discomfort in the working environment and with co-workers, due to the unwillingness to carry out the activities (Benevides-Pereira, 2003). Nursing professionals are more susceptible to developing the syndrome, because of the characteristics of direct patient care (Silva et al., 2020).

Due to the pandemic situation in which these professionals are inserted, there is an exacerbated demand for health services. The lack of structure and inexperience to face a phenomenon of uncertain causes generates disturbances and psychological reactions that can intensify existing mental problems or interfere negatively in the state of mental health, which can cause BS.

Based on the above, this study aimed to investigate Burnout Syndrome (BS) and associated factors in nursing professionals in intensive care units (ICU) during the COVID-19 pandemic.

Method

Participants

The study population consisted of 455 (N) professional nurses and technicians working in the ICUs of state public hospitals in the city of (information hidden to preserve the blind review), with a confidence level of 95% and a sampling error of five percentage points. For the sample size calculation, a finite population was considered based on a 50% chance estimate of the prevalence of BS. The study consisted of 157 (n) nursing professionals working in Intensive Care Units (ICU) COVID-19.

The power of the sample is equivalent to $(1 - \beta)$ 94% (β = 6,15%) and 95% confidence level (α = 5%) to detect areas under the Receiver Operating Characteristic (ROC) curve equal to or greater than 0.50 as significant. All nurses and nursing technicians who work in direct care of COVID-19 patients admitted to the ICU were included. The exclusion criteria were all professionals who did not perform direct care activities for patients.

About the participants, they were between 21 and 56 years old (M = 35.94; SD = 7.08), most were female (127), lived with their partners (68.2%) and had children (72%). Among the nursing staff, those with a technical level prevailed (70.7%), with an emergency institutional bond (51.6%), with a 24-hour shift (79.6%), working time in the ICU ≤ three years and without specialization in intensive care (68.2%). Among the 157 professionals, 68.2% had double employment contracts, 42.5% worked overtime.

Instruments

Sociodemographic and occupational questionnaire. Instrument composed of 15 items that address personal, professional and occupational data, with open and closed questions. Sociodemographic variables included: gender, age, marital status, children and education. Occupational variables were: specialization in ICU, occupational category, institutional bond, shift per hour, professional activity time, working time in the ICU, working hours, work bond, overtime/month and overtime hours/month.

Questionnaire of working conditions during COVID-19. Instrument based on references from Barello, Palamenghi e Graffigna (2020) e Morgantini et al. (2020), related to working

conditions during COVID-19. It consists of the following full questions, with dichotomous answers (yes/no): "did you receive specific COVID-19 training?"; "was there adequate provision of personal protective equipment (PPE) during your interaction with COVID-19 patients?"; "did you use adequate PPE?"; "have you been tested positive for COVID-19?"; "have you been quarantined?"; "was one of your family members found positive for COVID-19?"; "was mental health support provided?"; "do you feel that you are at risk of being infected/reinfected by COVID-19?"; "have you ever thought about leaving the ICU environment during the pandemic?".

Maslach Burnout Inventory - Human Services Survey (MBI-HSS). Instrument developed to assess the presence of Burnout Syndrome in health professionals. The Brazilian version used in the present study was adapted and validated by Trigo et al. (2018). It consists of 22 questions, on a Likert-type scale from 0 to 6 points (0 = never, 1 = a few times a year, 2 = once a month, 3 = a few times a month, 4 = once a week, 5 = a few times a week, 6 = every day). The instrument assesses three dimensions related to the characteristics of the syndrome: emotional exhaustion (EE); depersonalization (DE) and professional fulfillment (RP). In the study by Trigo et al. (2018), Cronbach's alpha values for the dimensions of the MBI instrument were: 0.867 for EE; 0.550 for DE and 0.587 for RP.

Procedures

Data collection. The collection occurred from February to April 2021. A total of 32 on-site visits, 159 approaches and two declared refusals were added. The visits took place through the professionals' work schedule, following the professional safety protocol for COVID-19.

The professionals were approached individually during working hours, with prior authorization and explanation of the purpose of the research, respecting the best time and place for the application of the questionnaire, after accepting to participate in the study, through the Free and Informed Consent Form. The average response time was 12 minutes.

Data were collected from the application of online questionnaires through electronic devices (tablets and smartphones) available to the participants and in the presence of the researcher. Each question was programmed to have mandatory answers, that is, the participant would advance to the next question from the answer to the previous one. For participants who chose to respond on their personal device, the access link was available and, after completion, it was deleted by the researcher.

Data analysis. Independent variables were grouped into sociodemographic (block 1), occupational (block 2) and working conditions during the pandemic (block 3). The analyzes of blocks 1, 2 and 3 present possible confounding variables that were evaluated in the multivariate model. The dependent variable was Burnout Syndrome (BS).

Measures of mean central tendency and standard deviation were performed for each of the BS dimensions, absence (mean low risk <4) and presence (mean high risk ≥4). Subsequently, Cronbach's Alpha test was applied (α) to verify the internal consistency of the instruments.

The analysis of the MBI was based on the calculation of the average in each dimension of the instrument, having as a cut off reference the value four of the Likert scale, referring to "a few times a week". Individuals with an average equal to or greater than "once a week" in the EE or DE dimensions were at high risk for Burnout Syndrome; in the RP dimension, responses below the value four also characterized a high risk for the syndrome. In this study, the presence of BS was classified when a score indicating high risk in any of the dimensions was independently verified (Lima, Farah, & Bustamante-Teixeira, 2018).

The prevalence of BS was calculated based on sociodemographic and behavioral characteristics, according to the working conditions of professionals who worked in ICUs during COVID-19. In order to verify the association between the presence of BS and the aforementioned variables, Chi-square test and Fisher's Exact Test were applied.

With the execution of the logistic regression analysis, four models were tested. Model 1 was composed only of socioeconomic variables; in Model 2, occupational variables were added; Model 3 and Model 4 (final) were made up of sociodemographic, occupational and working conditions during the pandemic variables.

In Models 1 to 3, all the variables chosen were inserted, that is, all variables were considered for the result of the adjusted odds. In the calculation of the final model (model 4), the forward method was used, thus, only statistically significant variables were inserted one by one for the final constitution of the adjusted model. In this model, the adjusted odds ratios were presented with the respective 95% confidence intervals. The final significance level adopted was 5%.

Ethical Considerations

The project was approved by the Research Ethics Committee of the Universidade Federal de Rondônia, CAAE No. 40521220.5.0000.5300, complying with the requirements of Resolutions nº 466/2012 and 510/2016 of the National Health Council.

Results

The MBI instrument showed substantial internal consistency (a = 0.736), however, when analyzed by dimensions, almost perfect consistency was found for emotional exhaustion (a = 0.860), substantial consistency for depersonalization (a = 0.708) and moderate consistency for professional fulfillment (a = 0.600).

A percentage of 45.2% of the inventories analyzed showed results consistent with a high risk of Burnout Syndrome. Regarding the dimensions evaluated, 28.7% responded for high risk of BS for emotional exhaustion, 3.8% for depersonalization and 24.8% for low professional fulfillment.

As shown in Table 1, the sociodemographic variables associated with the greater presence of BS were female gender ($p = 0.040$), not having children ($p = 0.043$) and higher education level ($p = 0.034$). As for the occupational variables, relations were found between BS and the statutory institutional bond ($p = 0.014$), professional experience greater than or equal to three years ($p = 0.047$) and working time in the ICU greater than or equal to three years ($p = 0.036$).

Questions related to working conditions during COVID-19 associated with the presence of BS were: those who tested positive for the disease ($p = 0.003$), those who were quarantined ($p = 0.020$), those who felt at risk of being infected/reinfected by COVID-19 ($p = 0.001$) and those who already thought about leaving the ICU environment during the pandemic ($p < 0.001$).

Table 2 presents the models with progressive adjustments for variables with p value less than 0.2 in the univariate analysis. After adjusting for variables in all domains, it was found that the following sociodemographic variables remained associated with the presence of BS: female gender ($RC = 2.21$; $IC_{95\%}$ 1.16-5.66) and not having children ($RC = 2.48$; $IC_{95\%}$ 1.09-5.47). In the occupational variables, only the statutory institutional bond had a greater chance of the presence of BS ($RC = 1.80$; $IC_{95\%}$ 1.03-3.05). As for working conditions during the pandemic, professionals tested positive for COVID-19 ($RC = 3.17$; $IC_{95\%}$ 1.77-5.61) and those who declared wanting to leave the ICU environment during the pandemic ($RC = 5.69$; $IC_{95\%}$ 2.74-11.79) remained associated with the presence of BS in the final model.

Table 1

Prevalence of Burnout Syndrome according to sociodemographic, occupational and working conditions characteristics during COVID-19 in nursing professionals working in Intensive Care Units (ICU)

Variables	Burnout Syndrome (BS)				
	Presence		Absence		*p-value*
	N	%	*n*	%	
Sociodemographic					
Gender					.040*
Male	11	36.7	19	63.3	
Female	60	47.2	67	52.8	
Children					.043*
Yes	48	42.5	65	57.5	
No	23	52.3	21	47.4	
Education					.034*
Technical level	33	40.2	49	59.8	
Higher level	38	50.7	37	49.3	
Occupational					
Institutional bond					.014*
Statutory	41	53.9	35	46.1	
Emergency	30	37.0	51	63.0	
Professional activity time					.047*
≤3 years	22	40.7	32	59.3	
>3 years	49	47.6	54	52.4	
Working time in the ICU					.036*
≤3 years	39	41.1	56	58.9	
>3 years	32	51.6	30	48.4	
Working conditions during COVID-19					
Have you been tested positive for COVID-19?					.003
Yes	49	45.4	59	54.6	
No	22	44.9	27	55.1	
Have you been quarantined?					.020
Yes	56	46.3	65	53.7	
No	15	41.7	21	58.3	
Do you feel that you are at risk of being infected/reinfected by COVID-19?					.001
Yes	69	46.0	81	54.0	
No	2	28.6	5	71.4	
Have you ever thought about leaving the ICU environment during the pandemic?					<.001
Yes	48	64.0	27	36.0	
No	23	28.0	59	72.0	

Note. *Chi-square test.

Table 2

Association between the presence of BS and sociodemographic, occupational and working conditions variables during the pandemic, according to multivariate logistic regression, in nursing professionals working in Intensive Care Units (ICU)

Category	Model 1 *RC* ($IC_{95\%}$)	Model 2 *RC* ($IC_{95\%}$)	Model 3 *RC* ($IC_{95\%}$)	Model 4 *RC* ($IC_{95\%}$)
Sociodemographic				
Gender				
Male	1	1	1	
Female	1.78 (1.16-4.21)	1.74 (1.17-4.20)	2.33 (1.18-6.19)	2.21 (1.16-5.66)
Marital status				
Live together	1			
Live alone	107 (0.53-2.14)	1.08 (0.53-2.21)	0.88 (0.39-1.97)	-
Children				
Yes	1	1	1	
No	1.71 (1.08-3.65)	1.82 (1.18-3.93)	3.66 (1.38-9.77)	2.48 (1.09-5.47)
Occupational				
Institutional bond				
Statutory		1.79 (1.02-3.04)	1.81 (1.07-3.19)	1.80 (1.03-3.05)
Emergency		1	1	1
Professional activity time				
≤3 years		1	1	
>3 years		1.19 (1.05-2.66)	1.37 (1.13-2.49)	-
Working time in the ICU				
≤3 years		1	1	-
>3 years		1.22 (1.02-2.87)	1.28 (1.04-2.92)	
Working conditions during the pandemic				
Have you been tested positive for COVID-19?				
Yes			2.46 (1.22-4.91)	3.17 (1.77-5.61)
No			1	
Have you been quarantined?				
Yes			1.60 (1.17-5.88)	-
No			1	
Do you feel that you are at risk of being infected/reinfected by COVID-19?				
Yes			1.67 (1.15-7.87)	-
No			1	
Have you ever thought about leaving the ICU environment during the pandemic?				
Yes			6.11 (2.75-13.55)	5.69 (2.74-11.79)
No			1	

Note. $IC_{95\%}$ = 95% confidence interval; BS = Burnout Syndrome; *RC* = odds ratio; Model 1 = sociodemographic variables; Model 2 = sociodemographic, occupational variables; Model 3 = sociodemographic, occupational, working conditions variables during the pandemic; Model 4 = final model, using the Forward LR variable selection method.

Discussion

The results obtained in this study point to a high risk for Burnout Syndrome in 45.2% of the nursing staff who work on the front line of COVID-19 in the ICU of two public hospitals. In studies carried out in other places in Brazil, the prevalence of the syndrome in nursing professionals during the pandemic ranged from 25.5% to 33.7% (Freitas et al., 2021; Salviato & Vasconcelos Filho, 2021). The pandemic also revealed a worldwide exhaustion of professionals, however, it is expected that the variability of criteria used to identify the presence of BS, as well as personal, organizational,

work and social characteristics, can generate different results from the prevalence of the syndrome (Benevides-Pereira, 2003).

Furthermore, in the study by Morgantini et al. (2020), on health professional burnout during the COVID-19 pandemic, half (51.4%) of respondents from 33 countries had exhaustion, and of these, the United States recorded the highest prevalence of Burnout, with a percentage of 62.8%. Superior results occurred in Belgium, with a prevalence of 68%, which corroborates the presence of a high risk of BS in health professionals working in the pandemic (Bruyneel, Smith, Tack, & Pirson, 2021).

Researches indicate that Burnout added to the pandemic is associated with moderate to severe levels of anxiety, depression, impaired sleep quality, work overload and anguish (Dal'Bosco et al., 2020; Sevinc et al., 2021). The authors concluded, with concern, the need for intervention to minimize the illness of these professionals, since they represent more than 50% of the health workforce, impacting direct patient care.

Nursing is among the classes of health professionals most affected by the syndrome, even before the Coronavirus. According to studies by Mota, Figueiredo, Siqueira, Queiroz and Santos (2020) and Silva et al. (2020), nursing showed a medium/high pattern of burnout and one of the main triggering factors is linked to the main characteristic of the profession: caring for others.

Direct care requires a lot of zeal and demands longer care time, leading to work overload and frequent exposure to environmental and emotional stressors, such as pain, suffering and death (Mota et al., 2020; Silva et al., 2020). It is worth mentioning that, when it comes to care within intensive care, the Federal Council of Nursing recognizes the need for longer dedication to critical patient care when compared to other areas of professional practice (Conselho Federal de Enfermagem [COFEN], 2017).

When assessing BS through each dimension, higher scores were found in two of the countries most affected at the beginning of the pandemic. In China, the results of Hu et al. (2020) showed high values in the categories emotional exhaustion (41.5%, $n = 835$) and depersonalization (27.6%, $n = 556$). In Italy, in a sample of 1,153 professionals, EE reached a high-moderate level, with 59.9%, followed by DE, with 50.8%, and low professional fulfillment in 53.2% (Barello et al., 2020).

Research carried out in the Brazilian Southeast region identified that the nursing team had high EE (44.26%), high DE (56.61%) and low RP (27.22%) (Salviato & Vasconcelos Filho, 2021). In the present study, in turn, less expressive situations were identified, with 28.7% for high EE, 3.8% for high DE and 24.8% for low RP, which demonstrates different effects of the pandemic in different locations and periods.

It is worth noting that in this study, as in Barello et al. (2020), Hu et al. (2020) and Salviato and Vasconcelos Filho (2021), the EE dimension was observed as the majority manifestation. Interpersonal demands, work load and pressure are triggers for exhaustion. Although there is no process development order for BS, the professional can either experience all dimensions, or just one.

The DE experienced by the nursing category of the ICU sector may be the last manifested dimension. It is more difficult to identify depersonalization in an environment where there is less space for demonstrating empathy towards the other, since in the ICU, in general, the relationship between the nursing team and the patient may be absent due to the serious situation (coma/unconsciousness). Thus, the connection between the professional identity centered on the notion of care, added to interactions of a more mechanical/operational nature, can lead to greater difficulty in attributing oneself as indifferent towards patients, which could mask the presence of DE.

The work environment plays a mediating role of emotions in daily work and the fear of contracting COVID-19 in the ICU may have negatively affected the levels of EE and DE. The pandemic changed organizational dynamics and generated occupational tension in the face of a public health problem, exposing bottlenecks in the government system and demanding "heroic" actions from already fatigued professionals, exposed to a disease with high rates of infection and death (Borges et al., 2021).

In the present study, in the sociodemographic block, the presence of BS was associated with female gender and not having children. In studies that assess the presence of the syndrome in the nursing class, the predominance of female gender in the profession is observed, as a historical and cultural characteristic of it, due to the association of the essence of care with women. This fact can interfere with the results when associations are made with female gender (Lima et al., 2018; Oliveira et al., 2017). Benevides-Pereira (2003) reports that there is no unanimity regarding the incidence between genders, but levels of emotional exhaustion are high in female gender, either because of the social role that women play, because they more easily express their emotions or because of the burden of the double shift (home and work) to which they are subjected (López-Atanes, Recio-Barbero, & Saénz-Herrero, 2020).

Regarding the association between having children and BS, Salviato and Vasconcelos Filho (2021) found its presence related to the DE domain, with a positive association. In this study, the association was negative, since BS was more present among those who did not have children. This evidence may be related to the development of coping strategies in conflicting and stressful situations. In addition, having children can be a source of motivation for maintaining employment, especially considering the economic crisis that was accentuated during the pandemic context.

In occupational variables, statutory institutional bond was more associated with risk for BS. In this case, an analysis can be made by the following aspects: this category of bond allows a long institutional and professional permanence, favoring the emergence of Burnout, which insidiously consumes the professional in his work activities (Benevides-Pereira, 2003). The structure and functioning of the workplace shape the way in which people interact with each other and carry out their work. The organizational

changes and changes in the physical environment that occurred with the emergence of COVID-19, interfering with hospital routines and the behavior of professionals when having to deal with the risks of the disease, caused insecurity and fear, which may have triggered the syndrome that until then was latent in these professionals.

Length of professional experience and length of work in the ICU were associated with a higher risk of BS in professionals with more than three years of practice. At the beginning of the pandemic, there were admissions of new professionals, and the more experienced were responsible for training and passing routines, which increased their workload. Added to these new attributions, it is considered that years of work in critical sectors provide an intense daily life, predisposing to mental exhaustion (Correia & Almeida, 2020; Dal'Bosco et al., 2020).

The results of this study occurred at a time when nursing professionals were experiencing the second wave of COVID-19, when there was a resurgence of the disease after a reduction in the rate of new cases, hospitalizations and deaths in Brazil. Until the first week of April 2021, in the second wave, 8,246,530 new cases and 209,409 deaths were quantified in the country, with a weekly average reaching 9,105 (Moura et al., 2021).

Considering this time frame, professionals were concerned about their lives and their families, since they were more susceptible to the risk of contamination in the ICU environment when compared to the general population. The analysis of the study showed an association between Burnout and professionals who had COVID-19 and professionals who considered leaving the ICU environment during the pandemic.

Professionals working on the front lines experience constant stressful situations: either at work, being exposed to high rates of contamination, prolonged exposure to the virus and lack of adequate PPE, or in the family environment, with the possibility of becoming infected or contaminating family members and friends, experiencing isolation and the fear of death. In the multivariate regression analysis of the study by Morgantini et al. (2020), the syndrome was associated, in professionals exposed to COVID-19, with a negative impact on quality of life and lack of mental health support.

While professionals wage a war against COVID-19, institutions must promote actions to reduce the negative impacts, in the short and long term, on their emotional well-being and quality of life. Data from the present research showed that 46.2% of professionals affected by Burnout did not receive mental health support. Supporting these workers must be an institutional policy developed by the worker's health sector, as the syndrome is related to the working conditions to which the person is exposed.

The nursing code of ethics protects the professional's right to "exercise activities in workplaces free from risks and damages and from physical and psychological violence to the worker's health" (COFEN, 2017). Political, administrative and economic problems lead professionals to submit to exhausting conditions and, if professionals and institutions are not prepared to handle the problems, the effects of Burnout Syndrome can be intensified (Rabelo & Siqueira, 2021).

A diagnosed case of Burnout is a predictor for the evaluation of the conditions of the professional's work environment, since health organizations have an important influence on the psychological state of the professional and that, after going through negative and conflicting experiences, he may present mental disorders. It is noteworthy that the absence of so-called psychiatric disorders does not ensure adequate mental health, and that the apparent adaptation to work during a pandemic process cannot always indicate a state of well-being.

Mourão, Costa, Silva and Lima (2017) conclude that, despite many researches and scientific publications on Burnout Syndrome in the context of nursing, few studies carry out reflections and notes on possible strategies and solutions for coping with and minimizing this syndrome in the organizational environment, including in the ICU. In addition to the scientific contribution, it is expected that the results of this study can guide institutions to planning risk management in pandemic contexts, as well as to the development of evidence-based strategies and to reflections and attitudes towards workers' health.

The results of this study showed the presence of BS in nursing professionals during a phase of the COVID-19 pandemic. In this scenario, it was found that old risk factors remained associated with BS: female gender and having a longer professional experience. On the other hand, a factor previously identified as protective (not having children) became a risk factor. And having a statutory bond, having a longer time working in the ICU, tested positive for COVID-19 and the desire to leave the ICU during the pandemic, proved to be added factors in the pandemic context.

The study has some limitations. As it is a syndrome, it is noteworthy that the MBI should not be considered a diagnostic tool, since it is necessary to evaluate other clinical criteria, such as work history and the association of depressive and/or anxious syndrome (Ministério da Saúde & Organização Pan-Americana da Saúde no Brasil, 2001). In addition, the cross-sectional study does not allow an analysis of cause and effect, but the correlations allow the identification of possible predictors for Burnout, enabling the development of individual strategies aimed at the risk factor.

Finally, the absence of an instrument to assess the impact of the pandemic on the exhaustion of professionals leads to the use of adapted tools. With the continuation of the pandemic and the intensification of stressful processes, it is recommended to carry out studies in different periods of the pandemic, to track causal and protective factors for BS and direct health actions both in the preventive and curative scope.

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