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Working Conditions and Common Mental Disorders in Nurses Facing Covid-19

By José Maria Ximenes Guimarães

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Working Conditions and Common Mental Disorders in Nurses Facing Covid-19

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I. Introduction

Since December 2019, the world has been facing the Coronavirus Disease 2019 (COVID-19), initially identified in Wuhan, China. With the growth of cases and deaths, the outbreak of the disease was declared a public health emergency of international concern in January 2020 by the World Health Organization (WHO). In March 2020, COVID-19 was recognized by the WHO as a pandemic, considering its rapid expansion around the world. In Brazil, a public health emergency of national importance was declared in March 2020, and in May, the country reached second place in the world ranking of recorded COVID-19 infections (Frota et al., 2022; Ramos-Toescher, Tomaschewisk-Barlem, Barlem, Castanheira, Toescher, 2020).

COVID-19 represents the biggest public health emergency faced globally in decades, with an overload of health systems (Vieira-Meyer, Morais, Campello, Guimarães, 2021; Ramos-Toescher et al., 2020), arising from the high demand for complex care, especially for critically ill patients, requiring large-capacity hospital units and intensive care beds. Given the challenges above, the need to expand services and reorganize work processes was imposed.

In addition to the impact on physical health, the pandemic has harmed the mental health of populations and healthcare professionals, especially those who work on the front line in health services (Schmidt, Crepaldi, Bolze, Neiva-Silva, Demenech, 2020; Fiorillo, Gorwood, 2020). Researchers have been concerned that epidemics can contribute to the emergence of psychological distress in the population, with repercussions that can be more lasting and prevalent than the epidemic itself, besides the immensurable psychosocial and economic impacts (Ornell, Schuch, Sordi, Kessler, 2020). Therefore, the risk of COVID-19 triggering, in parallel, a second pandemic corresponding to mental health crises in communities and health services is highlighted.

Among the work-related mental health problems, there are Common Mental Disorders (CMD), which do not fully meet the anxiety and depression diagnosing criteria but include symptoms including insomnia, fatigue, irritability, difficulty in concentration, forgetfulness, and somatic complaints among others, which can trigger significant functional loss, in addition to psychosocial harm (Urbanetto et al., 2013; Kirchhof, Magnago, Camponogara, Griep, Tavares, Prestes, Paes, 2009; Santos, Alves, Goldbaum, Cesar, Gianini, 2019).

Studies carried out in different countries show that providing health care for patients with COVID-19 is a cause of distress, resulting in symptoms of anxiety, depression, anguish, and insomnia, especially among nurses (Lai et al., 2020; Rossi et al., 2020; Chersich et al., 2020; Paiano et al., 2020; Moreira, Sousa, Nóbrega, 2020). Similar results were found in studies carried out in Brazil (Silva-Costa, Griep, Rotenberg, 2022), identifying processes of mental illness in nurses working in different settings during the pandemic (Oliveira et al., 2022; Dal'Bosco, Floriano, Skupien, Arcaro, Martins, Anselmo, 2020).

It is noteworthy that nursing professionals represent 50% of the health workforce in the world, corresponding to approximately 28 million professionals according to the WHO (World Health Organization, 2020), of which 2 million and 400 thousand work in Brazil (Peduzzi, Cabral, 2021). These professionals work in different public, private or philanthropic services, located at all levels of care in the health systems facing major challenges in their work process, including low prestige, non-recognition of the relevance of their work, overload, unsatisfactory working conditions, the precariousness of employment relationships, and exposure to situations of significant distress. Indeed, the Covid-19 pandemic has made these problems even

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more evident (Souza, Rossetto, Almeida, 2022; Peduzzi, Cabral, 2021).

During the pandemic, nursing professionals stood out for their work on the front line of health services providing care to patients, which exposed them to suffering arising from aspects such as work overload, risk of health system collapse, insufficient training in the initial phase of the pandemic, shortage of materials and personal protective equipment (in quantity and quality), and lack of clear biosafety standards (Souza, Rossetto, Almeida, 2022; Miranda, Santana, Pizzolato, Saquis, 2020). These aspects put professionals in job insecurity, causing fear of contamination, becoming a source of transmission for family, and causing physical/psychological exhaustion (Miranda, Santana, Pizzolato, Saquis, 2020).

The evidence in the literature on the implications of the COVID-19 pandemic for the mental health of health workers and nursing professionals is unequivocal. However, there are few empirical studies in the Brazilian scenario, particularly in Ceará. It is noteworthy that the first cases of the disease in the territory were registered in March 2020, with high morbidity and mortality and risk of health system collapse (Vieira-Meyer, Morais, Campello, Guimarães, 2021), which led the Government to adopt social isolation measures. Amidst this chaos, health professionals have been summoned to face the pandemic, starting at the beginning of the first wave. This study aimed to analyze working conditions and their impact on the mental health of nurses facing COVID-19.

II. Methods

A cross-sectional web survey was conducted to obtain primary data using the Internet, a feasible strategy for conducting research during the COVID-19 pandemic when social isolation measures were established (Boni, 2020). This article is an excerpt from a larger work on the repercussions of the COVID-19 pandemic on health workers' work processes and mental health, developed during Brazil's first pandemic wave. The study was conducted with nurses working on the front line during the COVID-19 pandemic in Ceará, Brazil - the State with the highest rate of deaths per 100,000 inhabitants in the Northeast of Brazil from May to July 2020 and the second highest death rate in the country, in June 2020 (Portal COVID-19 Brasil, 2020). Data collection took place from April to July 2020. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines were followed (Von et al., 2008).

a) *Participant Recruitment Process*

A convenience sample was recruited through an invitation sent via text messages to health professionals who were found to participate in groups on the following social networks: WhatsApp, Instagram, and Facebook. Nurses who agreed to participate in the study were recruited, considering the following inclusion criteria: having an open/accessible social network for receiving messages (Facebook, Instagram, or WhatsApp) and providing health care to COVID-19 patients in health services such as primary care units, emergency rooms, and hospitals.

b) *Data Collection*

A structured, self-administered questionnaire was used for the data collection, with variables related to participants' sociodemographic characteristics and work processes. These variables were presented in a categorical format, mostly dichotomous. The Self-Reporting Questionnaire (SRQ-20) was used to assess the participants' mental health status. This validated instrument detects increased risk of common mental disorders (CMD) (Gonçalves, Kapczinski, 2008).

Regarding COVID-19 prevention protocols, data collection was operationalized using Google Forms. Text messages containing the general description of the study and the questionnaire link were sent to the public of interest through the social networks mentioned before. The instrument was divided into four screens: (1) informed consent, (2) sociodemographic data, (3) questions about the work processes, and (4) the SRQ-20. All questions were required to be answered, and no changes after submission were allowed.

All those who agreed to participate in the research completed the questionnaire. The Google Forms platform was configured to request an access login per participant, avoiding duplicate entries. No identification of the participants was made. The Checklist for Reporting Results of Internet E-Surveys (CHERRIES) (Eysenbach, 2004) was used to increase the transparency of the methods and interpretation of the results.

c) *Data Analysis*

Initially, a univariate analysis was performed to estimate the absolute and relative frequencies of the variables of interest. Bivariate analysis was also conducted to test the association between the dependent and independent variables, applying Pearson's chi-square or Fisher's exact test. A p-value ≤ 0.05 was considered significant. Data were analyzed using the Data Analysis and Statistical Software (STATA) version 15.0.

The presence of a greater than usual risk for CMD – a value obtained through the SRQ-20 - was defined as the dependent variable, with a cutoff point of 7 points or more (Gonçalves, Kapczinski, 2008). Demographic, social, and work-related characteristics were chosen as independent variables.

d) Ethical Consideration

All participants voluntarily agreed to participate in the study after reading explanations about the purpose of the study and completing the online consent form. The research was approved by the Research Ethics Committee of the University of Fortaleza (opinion No. 3.997.242).

III. Results

A total of 192 nurses working in the direct care of COVID-19 patients were included in the study. There was a predominance of females (85.5%), aged 30-39 (39.6%), married (65.1%), with more than 10 years of university education (49.0%), and with an income of up to five minimum wages (62.5%). Table 1 presents the sociodemographic characteristics of the sample and correlations between these characteristics and suspected CMD.

A rate of 53.1% (95%CI: 45.8–60.4%) of the sample had results indicating suspected common mental disorders. The bivariate analysis revealed a significant correlation between gender and suspected CMD (Table 1).

Table 1: Sociodemographic profile of nurses at risk of developing Common Mental Disorders

Variables (n)	Participants		Suspected CMD		p-value
	n	%	n	%	
Gender					
Female	164	85.4	94	92.2	0.005
Male	28	14.6	8	7.8	
Total	192	100.0	102	100.0	
Age					
20 – 29	39	20.3	20	19.6	
30 – 39	76	39.6	40	39.2	
40 – 49	54	28.1	32	31.4	0.648
50 – 59	20	10.4	8	7.8	
>= 60	3	1.6	2	2.0	
Total	192	100.0	102	100.0	
Marital status					
Married	125	65.1	65	63.7	
Single	65	33.9	36	35.3	0.903
Widowed	2	1.0	1	1.0	
Total	192	100.0	102	100.0	
Monthly income					
1 - 5 min wages	120	62.5	65	63.7	
6 - 10 min wages	65	33.8	34	33.3	0.833
>= 10 min wages	7	3.7	3	2.9	
Total	192	100.0	102	100.0	
Length of time since bachelor's degree attainment					
< 1 year	13	6.8	7	6.9	
1 - 5 years	41	21.3	22	21.6	0.694
6 - 10 years	44	22.9	20	19.6	
> 10 years	95	49.0	53	52.0	
Total	192	100.0	102	100.0	

Regarding the work-related variables (Table 2), most participants worked in the capital city (58.3%), in public services (94.8%), and the Family Health Strategy (49.5%). Most participants reported that adaptations were made in order to serve patients with COVID-19 during the pandemic (86.5%), recognized themselves as front line workers (75.5%), reported not having been trained (59.9%), and reported working with insufficient personal protective equipment (PPE) (40.1%). It was also observed that most participants did not consider

the PPE used in their facilities good enough to avoid getting infected (58.9%) and reported lacking biosafety standards (49.5%). Therefore, it can be inferred that these professionals acknowledge that they were at risk of getting COVID-19 in their facilities (90.6%) and of transmitting the disease to family members (92.2%). Most participants also reported having observed staff members with symptoms of COVID-19 (74.0%), but the majority also reported not having observed the presence of the infection among family members (81.2%).

The association between work-related characteristics and suspected CMD was tested through bivariate analyses (Table 2). The variables female gender ($p<0.005$), insufficient personal protective equipment ($p<0.006$), low quality protective equipment ($p<0.006$), insufficient biosafety standards ($p<0.045$), being at risk of transmitting COVID-19 to a family member ($p<0.001$), and having a family member with symptoms of COVID-19 ($p<0.029$) were related with the outcome.

Table 2: Association between work-related characteristics and suspected common mental disorders

Variables	Participants		Suspected CMD		p-value
	N	%	n	%	
Location of work					
Capital	112	58.3	60	58.8	
Countryside	80	41.7	42	41.2	0.883
Total	192	100.0	102	100.0	
Type of work management					
Private	10	5.2	4	3.9	
Public	182	94.8	98	96.1	0.393
Total	192	100.0	102	100.0	
Type of facility					
Hospital	83	43.2	40	39.2	
Primary care unit	95	49.5	54	52.9	0.490
Emergency unit	14	7.3	8	7.8	
Total	192	100.0	102	100.0	
Have you notice any adaptation in your workplace to serve patients with Covid-19?					
No	26	13.5	15	14.7	0.616
Yes	166	86.5	87	85.3	
Total	192	100.0	102	100.0	
Have your working hours increased?					
No	157	81.8	84	82.4	0.824
Yes	35	18.2	18	17.6	
Total	192	100.0	102	100.0	
Are you a front-line worker?					
No	47	24.5	23	22.5	0.508
Yes	145	75.5	79	77.5	
Total	192	100.0	102	100.0	
Have you received training on infection control procedures during the COVID-19 pandemic?					
No	115	59.9	65	63.7	0.249
Yes	77	40.1	37	36.3	
Total	192	100.0	102	100.0	
Do you consider the quality of PPE provided for the health workers in your facility to be enough?					
No	113	58.9	71	69.6	0.006
Yes	43	22.4	17	16.7	

Partially	36	18.7	14	13.7	
Total	192	100.0	102	100.0	
Do you consider the quantity of PPE provided for the health workers in your facility to be enough?					
No	77	40.1	49	48.0	
Yes	40	20.8	13	12.7	0.006
Partially	75	39.1	40	39.2	
Total	192	100.0	102	100.0	
Do you consider the biosafety standards adopted in your facility to be enough?					
No	95	49.5	59	57.8	
Yes	22	11.5	9	8.8	0.045
Partially	75	39.0	34	33.3	
Total	192	100.0	102	100.0	
Do you think that you are at risk of contracting COVID-19?					
No	1	0.5	0	0.0	
Yes	174	90.6	97	95.1	0.065
Maybe	17	8.9	5	4.9	
Total	90	100.0	102	100.0	
Do you think that you can transmit COVID-19 to other people?					
No	1	0.5	0	0.0	
Yes	177	92.2	101	99.0	0.001
Maybe	14	7.3	1	1.0	
Total	192	100.0	102	100.0	
Have you observed any staff member with symptoms of COVID-19 in your facility?					
No	38	19.8	20	19.6	
Yes	142	74.0	78	76.5	0.354
Maybe	12	6.2	4	3.9	
Total	192	100.0	102	100.0	
Have you observed the presence of the infection among family members?					
No	156	81.2	77	75.5	
Yes	36	18.2	25	24.5	0.029
Total	90	100.0	102	100.0	

The group of symptoms with the highest frequency of affirmative answers was decreased vital energy (Factor II), with 502 responses (33.3%), followed by somatic symptoms with 449 (29.8%) - a result very close to depressive-anxious mood, with 448 (29.7%). Regarding the SRQ-20 questions, the highest frequencies of affirmative answers occurred in the following items: "Do you feel nervous, tense, or worried?" (76.6%), "Do you feel unhappy?" (68.2%), "Do you sleep badly?" (64.1%), "Do you feel tired all the time?" (52.1%), "Do you often have headaches?" (50.5%), "Do you find it difficult to enjoy your daily activities?" (49.5%), "Do you feel tired all the time?" (45.3%), "Do you cry more than usual?" (44.8%), "Are you easily frightened?" (43.8%), "Do you have uncomfortable feelings in your stomach?" (43.8%), "Is your digestion poor?" (40.6%) and "Do you find it difficult to make decisions?" (40.6%).

IV. Discussion

This study has identified a high frequency of suspected CMD among nurses in different healthcare settings. The rate of suspected CMD in our study was higher than that of 30% estimated by the WHO (World

Health Organization, 2001). Other studies that have also used the SRQ-20 questionnaire in periods that preceded the COVID-19 pandemic and in different settings (primary care units, hospitals, and universities) revealed frequencies of suspected CMD lower than those of the present study, ranging from 14.6% to 35.0% (Kirchhof et al., 2009; Dilélio et al., 2012; Araújo, Aquino, Menezes, Santos, Aguiar, 2003; Tavares, Beck, Magnago, Zanini, Lautert, 2012; Oliveira et al., 2020; Pinhatti, Ribeiro, Soares, Martins, Lacerda, 2018; Rodrigues, Rodrigues, Oliveira, Laudano, Sobrinho, 2014).

Since the first wave of the pandemic, several studies have shown an increasing incidence of CMD among health professionals, especially nurses. High depression, anxiety, insomnia, and distress rates have been reported in studies in China (Lai et al., 2020) and Italy (Rossi et al., 2020). However, unlike the studies above, our investigation was not limited to front line nurses.

Several studies have been conducted on the physiological and psychological effects of the COVID-19 pandemic on Brazilian healthcare staff. A study with nursing professionals (nurses and assistant nurses) from a hospital in Ponta Grossa, Brazil (Dal'Bosco et al., 2020) identified high anxiety and depression exceeding the acceptable levels for the profession. Another study with nurses from Pelotas, Brazil (Oliveira et al., 2022), in which the SRQ-20 was used, found a prevalence of suspected CMD of 44%. Indeed, in our study, the prevalence of suspected CMD was higher than that reported in studies conducted in Brazil and other countries. For example, a study with Pakistani doctors found a prevalence of suspected CMD of 42.7%, based on the SRQ-20 (Amin, Sharif, Saeed, Durranni, Jilani, 2020). Therefore, our study confirms that nurses and health professionals are more susceptible to develop CMD than non-healthcare professionals.

It should be noted that the instruments adopted for screening anxiety, depression, and other signs and symptoms of CMD differ between studies due to their heterogeneity (populations and measures), which can interfere with the outcomes (Dal 'Bosco et al., 2020). It is relevant to consider that the instruments used do not provide a diagnosis. Many answers in these instruments characterize adaptive processes to a tensiogenic situation, hence alerting to the non-pathologization of conditions that could be resolved by improving working conditions and providing emotional support (Oliveira et al., 2022).

In addition to representing half the health workforce in the world, the nursing profession is predominantly female. In Brazil, 85% of nurses are women (Peduzzi, Cabral, 2021). This predominance refers to historical and cultural dimensions related to the care exercised in daily work activities, including meeting the demands of children and partners and taking responsibility for household chores, which can favor the emergence of psychic burden in this group (Dal'Bosco et al., 2020; Sena, Lemes, Nascimento, Rocha, 2015). Similar to our findings, a significant association between the female gender and the presence of signs and symptoms of anxiety and depression was found in studies carried out in China (Lai et al., 2020), Italy (Rossi et al., 2020), and in Southeast Brazil (Dal'Bosco et al., 2020), during the COVID-19 pandemic. Contrastingly, when investigating CMD among nurses from Ponta Grossa (PR), an inverse association with males was found (Oliveira et al., 2022). However, in some pre-pandemic scenarios, no statistically significant relationship was identified between gender and CMD (Dilélio et al., 2012).

It is recognized that the social role of gender permeates the work context, in which women face an imbalance between life and work (Dal'Bosco et al., 2020). This aspect is observed, above all, in Brazilian nurses, who frequently lack professional appreciation, and are affected daily by work overload, lack of time, and adequate space for rest, in addition to low wages, leading them to work in more than one job. Such aspects exacerbate the implications of the pandemic for women, especially health professionals, for whom the domestic burden was more intense, reflecting the inequality of the pandemic effects. The context described above contributes to the weakening of mental health with the emergence of anxiety, depression, sleep and cognition disorders, and physical discomforts (Oliveira et al., 2022; Vieira, Anido, Calife, 2022).

Also noteworthy are associations between work-related variables (inadequate quantity and quality of PPE and lack of biosafety standards) and suspected CMD. Besides, most participants recognized they were at risk of getting and spreading COVID-19, although no significant correlation was found between these variables. A positive relationship was identified between being afraid of transmitting the disease to family members, having a family member with symptoms of COVID-19, and suspected CMD.

The findings above are consistent with a previous study carried out in the southern region of Brazil, in which associations between suspected COVID-19 infection and suspected CMD were found, in addition to the association between lack of PPE and depressive episodes (Oliveira et al., 2022). A positive association between exposure to COVID-19 and depression was reported in Italy (Rossi et al., 2020). Besides, studies carried out in European countries have identified that adequate provision of PPE is an important predictor of better mental health outcomes (Sampaio, Sequeira, Teixeira, 2020; Felice, Di Tanna, Zanus, Grossi, 2020).

Regarding the risk of contamination, it is interesting to note that health professionals who provide direct care to patients with COVID-19 are often afraid of getting sick and, therefore, are a vulnerable group to mental suffering. A survey in Italy showed that approxi-

mately 59% of workers perceived they were at risk of getting COVID-19 (Puci et al., 2020). In a study carried out in Brazil, associations were found between risk perception and symptoms of depression and anxiety – healthcare staff with high perception were at greater risk for severe symptoms of anxiety (OR: 4.35) and depression (OR: 4.67) (Silva-Costa, Griep, Rotenberg, 2022).

Being a nurse during a worldwide pandemic affected the mental health of these professionals, especially during the first wave when the high transmissibility of COVID-19 was recognized. Little knowledge was available about the treatment and control of the disease, there were recurrent changes in clinical protocols, insufficient PPE, and recurrent biosafety threats, triggering uncertainties, fear, and impotence, putting professionals in a situation of vulnerability.

Regarding the predictive symptoms of CMD, the anxious-depressive mood was prevalent (Factor I, assessed through the question "Do you feel nervous, tense, or worried?"), similar to a prior study (Oliveira et al., 2020). In the face of the pandemic, anxiety symptoms seem to have worsened due to daily challenges such as dealing with uncertainties and unpredictability regarding the disease, the need to adopt disease control measures, facing suffering and death daily, and being constantly concerned with the risk of disease contamination and transmission, among other aspects.

Regarding the reduction of vital energy (Factor II, assessed through the questions "Are you easily tired?" and "Do you find it difficult to enjoy your daily activities?"), our findings differed from those of a study carried out in the pre-pandemic period (Oliveira et al., 2020). The high patient demands generated a collapse of health services, reflected in the insufficiency of beds, equipment, and supplies. Consequently, healthcare workers have become overloaded by activities involved in patient care, such as walking more than usual from one unit to another, performing duties that demand heavy physical effort, and lifting heavy loads. The need to perform repetitive tasks rapidly and remain standing or in uncomfortable positions for long periods leads to physical and psychological exhaustion (Kirchhof et al., 2009; Humerez, Ohl, Silva, 2020).

Somatic predictors of CMD (Factor III) were also found in our study through affirmative answers to the questions "Do you sleep badly?" and "Do you often have headaches?". The above findings were similar to those of Oliveira et al. (2020). There is a direct relationship between the physical demands of work and the prevalence of psychosomatic problems (Kirchhof et al., 2009). Thus, somatic complaints and their implications in work processes must be considered, as they can compromise the attention required in the execution of care practices, causing incidents that jeopardize patient safety (Oliveira et al., 2020; Urbanetto et al., 2013), negatively affecting the professional performance and the quality of health care.

The prevalence of depressive symptoms (Factor IV) was generally low. However, there was a high prevalence of "Have you lost interest in things?". This finding is similar to that of Oliveira et al. (2020). However, it differs from a study carried out in a hospital in the southern region of Brazil (Urbanetto et al., 2013), in which the question "Are you unable to play a useful part in life?". The daily working routine and the resulting exhaustion linked to the pandemic crisis, combined with sanitary measures (such as social isolation) and reduction of leisure activities, account for the emergence of the symptoms, as mentioned earlier.

In sum, this study reinforces that work-related aspects have harmed the mental health of healthcare professionals (even more in the pandemic crisis) putting them at risk of CMD that, in turn, compromise essential components of healthcare quality (interpersonal relationships, care management, and decisions).

Table 3: Distribution of nurses according to the group of symptoms and positive answers to the SRQ-20 questionnaire

SQR-20 Factors	Yes		No	
	n	%	n	%
Factor 1 - Anxious depressive mood				
Do you feel nervous, tense or worried?	147	76.6	45	23.4
Are you easily frightened?	84	43.8	108	56.2
Do you feel unhappy?	131	68.2	61	31.8
Do you cry more than usual?	86	44.8	106	55.2
Factor II - Decreased vital energy				
Are you easily tired?	100	52.1	92	47.9
Do you find it difficult to make decisions?	78	40.6	114	59.4
Do you find it difficult to enjoy your daily activities?	95	49.5	97	50.5
Do you have trouble thinking clearly?	72	37.5	120	62.5
Is your daily work suffering?	70	36.5	122	63.5
Do you feel tired all the time?	87	45.3	105	54.7
Factor III - Somatic symptoms				
Do you have uncomfortable feelings in your stomach?	84	43.8	108	56.2
Is your appetite poor?	35	18.2	157	81.8
Do you often have headaches?	97	50.5	95	49.5
Do you sleep badly?	123	64.1	69	35.9
Is your digestion poor?	78	40.6	114	59.4
Do your hands shake?	32	16.7	160	83.3
Factor IV - Depressive thoughts				
Have you lost interest in things?	58	30.2	134	69.8
Are you unable to play a useful part in life?	23	12.0	169	88.0
Do you feel that you are a worthless person?	19	9.9	173	90.1
Has the tough of ending your life been on your mind?	9	4.7	183	95.3

[a]

V. Conclusions

The findings of this study indicate the need to adopt health protection measures and adequate dimensioning of nursing staff. Nurses need better working conditions, an adequate workload, sufficient PPE, adequate biosafety standards and protocols, and ongoing support of continuing education since there is a need for continuous learning to keep up to date in current practice. Thus, psychological, emotional, and social support to mitigate the repercussions of work on mental health is of utmost importance to overcome the psychological suffering of nurses and other health care professionals.

The study revealed some work-related aspects that compromise nurses' mental health. However, some study's limitations must be considered, including the cross-sectional design (that does not allow the analysis of working conditions and their repercussions over time) and the fact that the data collection was carried out online, which may have caused the low response rate (20%). The possibility of response bias is also highlighted, as the questionnaire was self-administered.

Authors' Contributions

JMXG worked on the conception, design, analysis, and interpretation of data, manuscript writing, and approval of the final version to be published. APGFVM and CGF worked on the analysis and interpretation of data, critical review of the manuscript, and approval of the final version to be published. EPAA, APPM, AMCP, and JJCS worked on the critical review and approval of the final version to be published.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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