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PSYCHOLOGICAL CHANGES IN NURSING PROFESSIONALS BELONGING TO THE RISK GROUP FOR COMPLICATIONS OF COVID-19

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ABSTRACT

Objective: to identify psychological alterations in nursing professionals belonging to and not belonging to the risk group for complications of COVID-19.
Methods: multicenter cross-sectional study with 845 nursing professionals from four hospitals in southern Brazil between August and October 2020. Data collection was performed through an electronic form containing the Self-Reporting Questionnaire and the Maslach Burnout Inventory. Descriptive and inferential statistics were used.
Results: among the 845 participants, 214 belonged to the risk group. These presented higher means in emotional exhaustion and depersonalization scores ($p<0.05$), and higher percentages of Minor Psychiatric Disorders (55.2%). Minor Psychiatric Disorders and being part of institution B explained in 10.0% the variability of Professional Achievement. Minor Psychiatric Disorders, use of medications, impact on mental health and being part of institutions A, B and C explained in 38.7% the variability of Emotional Exhaustion. Minor Psychiatric Disorders, impact on mental health and being part of institutions A and B explained in 23.1% the variability of Depersonalization.
Conclusions: the risk group presented greater exposure to psychological alterations. The regression model did not identify a difference between being or not of the risk group regarding Burnout Syndrome. The study contributes to the planning of protective labor interventions within institutions and public health policies, aiming to reduce possible factors related to the involvement of Burnout Syndrome and Minor Psychiatric Disorders.

DESCRIPTORS: Professional exhaustion. Mental disorders. Nursing. Pandemics. Coronavirus infections. COVID-19. Worker health. Nursing professionals.

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ALTERAÇÕES PSÍQUICAS EM PROFISSIONAIS DA ENFERMAGEM PERTENCENTES AO GRUPO DE RISCO PARA COMPLICAÇÕES DA COVID-19

RESUMO

Objetivo: identificar as alterações psíquicas em profissionais da enfermagem pertencentes e não pertencentes ao grupo de risco para complicações da COVID-19.
Métodos: estudo transversal multicêntrico, com 845 profissionais de enfermagem de quatro hospitais do Sul do Brasil, entre agosto e outubro de 2020. A coleta dos dados foi realizada por intermédio de um formulário eletrônico contendo os instrumentos *Self-Reporting Questionnaire* e o *Maslach Burnout Inventory*. Utilizou-se estatística descritiva e inferencial.
Resultados: dos 845 participantes, 214 pertenciam ao grupo de risco. Estes apresentaram maiores médias nos escores de Desgaste Emocional e Despersonalização ($p<0,05$), e maiores percentuais de Distúrbios Psíquicos Menores (55,2%). Distúrbios Psíquicos Menores e fazer parte da instituição B explicaram em 10,0% a variabilidade da Realização Profissional. Distúrbios Psíquicos Menores, uso de medicações, impacto na saúde mental e fazer parte das instituições A, B e C explicaram em 38,7% a variabilidade do Desgaste Emocional. Distúrbios Psíquicos Menores, impacto na saúde mental e fazer parte das instituições A e B explicaram em 23,1% a variabilidade da Despersonalização.
Conclusões: o grupo de risco apresentou maior exposição a alterações psíquicas. O modelo de regressão não identificou diferença entre ser ou não do grupo de risco quanto à Síndrome de *Burnout*. O estudo contribui no planejamento de intervenções laborais protetivas no âmbito das instituições e das políticas públicas de saúde, visando diminuir possíveis fatores relacionados ao acometimento da Síndrome de *Burnout* e dos Distúrbios Psíquicos Menores.

DESCRITORES: Esgotamento profissional. Transtornos mentais. Enfermagem. Pandemias. Infecções por coronavírus. COVID-19. Saúde do trabalhador. Profissionais de enfermagem.

CAMBIOS PSÍQUICOS EN PROFESIONALES DE ENFERMERÍA PERTENECIENTES AL GRUPO DE RIESGO PARA COMPLICACIONES DEL COVID-19

RESUMEN

Objetivo: identificar los cambios psíquicos en profesionales de enfermería pertenecientes y no pertenecientes al grupo de riesgo de complicaciones por COVID-19.
Métodos: estudio transversal multicéntrico, con 845 profesionales de enfermería de cuatro hospitales del sur de Brasil, entre agosto y octubre de 2020. La recolección de datos se realizó mediante un formulario electrónico que contenía el Self-Reporting Questionnaire y el Maslach Burnout Inventory. Se utilizó estadística descriptiva e inferencial.
Resultados: de los 845 participantes, 214 pertenecían al grupo de riesgo. Presentaron mayores puntuaciones medias en Agotamiento Emocional y Despersonalización ($p<0,05$), y mayores porcentajes de Trastornos Psíquicos Menores (55,2%). Los Trastornos Psíquicos Menores y el ser parte de la institución B explicaron en un 10,0% la variabilidad de la Realización Profesional. Los Trastornos Psíquicos Menores, el uso de medicamentos, el impacto en la salud mental y el ser parte de las instituciones A, B y C explicaron en un 38,7% la variabilidad del Agotamiento Emocional. Los Trastornos Psíquicos Menores, repercusión en la salud mental y ser parte de las instituciones A y B explicaron en un 23,1% la variabilidad de la Despersonalización.
Conclusiones: el grupo de riesgo presentó mayor exposición a alteraciones psíquicas. El modelo de regresión no identificó diferencia entre estar o no en el grupo de riesgo con respecto al Síndrome de Burnout. El estudio contribuye para la planificación de intervenciones laborales protectoras en el ámbito de las instituciones y políticas públicas de salud, con el objetivo de reducir posibles factores relacionados con la participación del Síndrome de Burnout y Trastornos Psíquicos Menores.

DESCRIPTORES: Burnout profesional. Desórdenes mentales. Enfermería. Pandemias. Infecciones por coronavirus. COVID-19. Salud del trabajador. Profesionales de enfermería.

INTRODUCTION

The COVID-19 pandemic, caused by the SARS-CoV-2 virus, began in December 2019 in China. Highly contagious droplets and aerosols contributed to the rapid spread of the disease around the world, and although most carriers are asymptomatic or oligosymptomatic, some may progress to severe form, with the presence of severe pneumonia and multisystemic complications[1]. The spread of the disease and the growing demand for hospital beds required the restructuring of health services and teams, affecting the work routines of nursing professionals[2] and the high exposure to the risk of contamination.

Brazil occupies the world's first position in terms of the number of deaths of nursing professionals due to COVID-19[3]. By February 8, 2022, 872 deaths of nursing professionals were confirmed by COVID-19[4]. The World Health Organization (WHO) has recommended, since the beginning of the pandemic, the removal of health workers belonging to risk groups. Among the criteria that define the risk for developing the severe form of COVID-19 infection, with higher mortality rates, are: being 60 years or older and having health conditions such as diabetes, cardiovascular diseases, high-risk pregnant women and the immunosuppressed[5].

Despite the recommendation, in a study conducted in May 2022 through the platform of the Federal Nursing Council, the Nursing Observatory, there are 926 reported cases of COVID-19 in professionals aged 61 to 80 years. Among these, 156 died, representing a 16.8% lethality rate in elderly professionals[4]. In the general population of nursing professionals, the mortality rate represents 2.6%[4], demonstrating that professionals from the risk groups were performing their professions and were inserted in places of exposure to the virus, with a high risk of contracting the illness and possible death.

Thus, working under the circumstances of a pandemic can cause high stress and damage to psychological health. At first, when little was known about the disease, about the emergence of possible variants, with the inexistence of a vaccine, the unpreparedness of professionals and institutions to deal with the continuous use of personal protective equipment and its scarcity, the high mortality and the overcrowding of health services showed the challenging scenario, reflected in the fear and insecurity of these professionals. In addition, there are limitations extended to the general population, such as social and leisure restrictions in public spaces. Therefore, this set of factors, associated with the stressful work routines of nursing teams, can contribute to the development of psychological distress[6–7], evidenced in the identification of Minor Psychiatric Disorders (MPDs) and Burnout Syndrome.

Minor Psychiatric Disorders cause relevant psychological suffering and strong negative impacts on the quality of life of individuals. They result in manifestations of depressive symptoms, anxiety, fatigue, irritability, insomnia, loss of memory and concentration or somatizations[8].

Regarding burnout syndrome, it is characterized by three dimensions: emotional exhaustion, depersonalization and low professional achievement. Its manifestation results in response to a chronic stress related to the occupational context unsuccessfully managed[9].

An Italian study highlighted that professionals directly involved in the care of patients with COVID-19 presented high levels of emotional exhaustion (37%), irritability (58.8%) and nervous breakdown (37.8%)[6]. In a Brazilian study, workers in the risk group for COVID-19 (26%) presented greater impairment in mental health during the pandemic[7]. Furthermore, a cohort study conducted in Portugal showed that the fear of being infected and infecting other people increased psychological symptoms in nurses by around 20% during the Covid-19 outbreak[10].

In view of the above, regarding nursing professionals from risk groups working in the pandemic, the fear of increased contamination can cause psychological distress and damage to the health of these workers[10]. Although studied in recent months, little is known about the mental health impairment of nursing professionals belonging to the risk groups who work in the front line of the pandemic and who are exposed to illnesses as a result of COVID--19[5,9].

This study is relevant for the advancement of knowledge, since it will highlight the need for intervention, with a view to promoting occupational health in a population vulnerable to risks. In addition, despite the advance of vaccination, health teams continue to face challenges in favor of stability and care improvement regarding COVID-19. The construction of evidence focusing on the mental health of actively working professionals during the COVID-19 pandemic is necessary to understand this process, as the damages brought by the pandemic on mental health are extensive and can perpetuate on the nursing work routines, in addition to being a gap in knowledge. Considering these factors, it is questioned: is there a relationship between the psychological changes in nursing professionals belonging and not belonging to the risk group for complications of COVID-19?

METHOD

This is a multicenter cross-sectional study, led by the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) tool, conducted in four hospital institutions, located in the State of Rio Grande do Sul, a reference in care in the Brazilian Unified Health System (SUS), which adapted care flow for patients affected by Covid-19. In this study, they will be called HA, HB, HC and HD, in order to ensure the anonymity of the institutions. HA is a public general teaching hospital, with 784 beds; HB is a public teaching hospital and reference in trauma, with 237 beds; HC is a public general teaching hospital, with 850 beds; HD is a public general teaching hospital with 403 beds.

The study population consisted of 6,899 nursing professionals from these four hospitals. Among these,2,962 belonged to the HA hospital;707, to the HB hospital;2,278, to the HC hospital; and 952, to the HD hospital. The sample consisted of 845 participants, including nurses, nurse technicians or nursing assistants, who worked in hospital care during the COVID-19 pandemic period. The exclusion criterion was being on leave during the covid-19 pandemic period, i.e., from March 2020 to the date of data collection, since they would not be exposed to possible factors of occupational illness.

All professionals linked to the four institutions were invited to respond to the electronic research form. The professionals received the research instrument, via Google Forms®, and had access to the Free Prior and Informed Consent Form. The list with the nursing professionals´ contacts was made available by the nursing coordination of the respective services of each hospital, and all emails were sent simultaneously. As a data collection strategy, the researchers visited all units to reinforce the professionals' research.

Considering the representativeness of this number of responses in relation to the population, the power of the sample was calculated using version 18.0 of the SPSS tool to detect differences in the means between groups, with a difference of 0.29, considered relevant for the study[9]. Considering power of 80%, significance level of 5% and standard deviation of 0.86, a minimum sample of 278 subjects was reached, with 139 in each group (belonging and not to the risk group).

Data collection took place from August 3 to October 23, 2020. Due to the adhesion of professionals to respond to the survey, the data collection was finalized after the new respondents ceased and all units were visited in person, making sure that the teams received the invitation to the survey. The online Google forms® was used to fill out the research instrument. Sociodemographic, occupational and health data were collected: age, sex, marital status, smoking, physical activity, work institution, working time, position, time in the profession, other employment relationship, work shift, working time in the sector/unit, reallocation of sector during the pandemic, specificity of the unit for cases of

COVID-19, use of medication due to the pandemic, days of leave due to suspicion or confirmed case of COVID-19, belonging to the risk group, self-assessment of the impact of the pandemic on physical and mental health (on a self-reported scale from 1 to 5).

To define whether the participant belonged to the risk group, self-reporting on the presence of respiratory, cardiovascular and endocrine diseases was considered. Also included in the risk group were people aged 60 years or older, pregnant women and the immunosuppressed[5]. Other workers who did not meet the above mentioned criteria were listed as not belonging to the risk group. All sectors were considered, regardless of whether the unit was specifically used for Covid-19 patients, as exposure to the risk of contamination by COVID--19, with no minimum length of stay with the patient for exposure.

The Maslach Burnout Inventory (MBI) instrument, validated in Brazil, was used to evaluate burnout syndrome which contained a five-point Likert scale: (1) Never; (2) A few times a year; (3) A few times a month; (4) A few times a week; (5) Daily, composing 22 questions. Among these, nine questions assess emotional exhaustion (questions 1,2,3,6,8,13,14, 16 and 20), five assess depersonalization (questions 5,10,11, 15 and 22) and eight evaluate, with reverse score, professional performance (questions 4,7,9,12,17,18, 19 and 21)[9]. The overall Cronbach's Alpha was 0.80. For the scale domains, 0.68 was obtained for Depersonalization, 0.82 for Professional Achievement, and 0.90 for Emotional Exhaustion.

The Self-Reporting Questionnaire (SRQ-20), recommended by WHO and validated for the Brazilian population, was used to track Minor Psychiatric Disorders (MPDs). There are 20 questions about symptoms and problems that occurred in the 30 days prior to responding the questionnaire. Each alternative has a score from zero to 1, in which score 1 indicates that symptoms were present in the last month, and zero, when absent. The cutoff point used was seven or more affirmative answers for men or women[8,11].

The data were saved on spreadsheets and later analyzed in the SPSS program (version 18). The Shapiro-Wilk normality test was used to verify the distribution of variables, asymmetry values and kurtosis. Categorical variables were presented in absolute and relative frequency, and continuous variables in central tendency and dispersion. Student's t test was used for association between variables with symmetric distribution and, for asymmetric ones, the Mann-Whitney test was used. The Chi-Square test was used, with residual adjustment for the association between the categorical variables. Data with a two-tailed "p" lower than 0.05, or with a confidence interval of 95%, were considered as statistically significant differences. For the multivariate linear regression analysis, variables that presented statistical significance for the factor under study (risk group) and for the outcome (dimensions of Burnout and Minor Psychiatric Disorders) ($p<0.05$) were selected.

Ethical prerogatives involving human beings were met, according to Resolution 466 of 2012 of the National Health Council. The research was approved by the National Research Ethics Council. The study participants received the Informed Consent Form made available online, considering the completion of the research instrument as the acceptance of participation in the study. To ensure the anonymity of the institutions, the hospitals were named HA, HB, HC and HD.

RESULTS

The sample consisted of 845 nursing workers, 214 (25.3%) of them belonged to the risk group. Among the diseases related to the risk group, 87.8% (n=188) of the professionals reported having respiratory diseases, 57.4% (n=123), cardiovascular diseases and 32.7% (n=70), endocrine diseases. The elderly represented 9.3% (n= 20) of the sample. The distribution of socio-labor data, life habits and health of workers from the four hospitals belonging to or not belonging to the Risk Group are presented in Table 1.

According to the data presented in Table 1, it is identified that the highest percentage (36.4%) of the nursing professionals belonging to the risk group were from HC (p=0.001), and 34.1% claimed to use medications that they had not used prior to the pandemic (p<0.001). The professionals in the risk group presented higher medians in working time, age and time of work in the profession (p<0.05) compared to workers who did not belong to the risk group.

Professionals belonging to the risk group presented higher medians in relation to the scores on the perception of the impact of the pandemic on physical and mental health, higher averages in the emotional exhaustion and depersonalization scores (p<0.05), and higher percentages of MPDs (55.2%) in relation to workers who did not belong to the risk group.

Table 1 - Bivariate analysis of socio-labor characteristics, life habits and health of workers belonging or not belonging to the Risk Group. Rio Grande do Sul, Brazil, 2020. (n=845)

Variable	Risk Group		p-value
	No	Yes	
Institution*			**0.001**
HA†	101 (16.0)	54 (25.2)	
HB†	59 (9.4)	31 (14.5)	
HC†	289 (45.8)	78 (36.4)	
HD†	182 (28.8)	51 (23.9)	
Working time at the institution (years)‡	6,9 (2.2-14)	11 (6-18.2)	**<0.001**
Age (years)‡	40 (35.8-46)	45 (39-53)	**<0.001**
Gender*			
Female	533 (84.5)	184 (85.9)	0.594
Male	98 (15.5)	30 (14.1)	
Marital status*			
Single or without a partner	165 (26.1)	55 (25.7)	0.897
Married or with companion	466 (73.9)	159 (74.3)	
Position*			
Nurse	278 (44.1)	97 (45.3)	
Nursing technician	329 (52.1)	104 (48.6)	0.312
Nursing assistant	24 (3.8)	13 (6.1)	
Smoke*			
No	583 (92,4)	197 (92.1)	0.873
Yes	48 (7,6)	17 (7.9)	
Time of work in the profession (years)‡	15 (1-20)	18 (12-18.3)	**0.043**
Other employment*			0.051
No	539 (735)	92 (82.1)	
Yes	194 (26.5)	20 (17.9)	0.151
Work shift*			
Morning	155 (24.6)	65 (30.4)	
Evening	157 (24.9)	59 (27.6)	0.071
Night	187 (29.7)	54 (25.2)	
Morning and evening	99 (15.6)	31 (14.5)	
Day and night (temp staff and others)	33 (5.2)	5 (2.3)	

Table 1 - Cont.

Variable	Risk Group		p-value
	No	Yes	
Relocated to another sector/unit during the COVID-19 pandemic*			
No	465 (73.7)	144 (67.3)	**0.012**
Yes	166 (26.3)	70 (32.7)	
Covid-19*specific unit			
No	462 (73.3)	175 (81.8)	**<0.001**
Yes	169 (26.7)	39 (18.2)	
Physical activity			
No	422 (72.8)	158 (27.2)	0.058
Yes	209 (78.9)	56 (21.1)	
Use of medications that not used before the pandemic*			
No	499 (79.1)	141 (65,9)	
Yes	132 (20.9)	73 (34,1)	0.061
Days absent from work due to suspicion/ confirmation of COVID-19? ‡	7 (4-14)	8 (7-14)	
Assessment of the impact of the COVID-19 pandemic on physical health‡	3.5 (3-4)	3.7 (1-5)	**0.018**
Assessment of the impact of the COVID-19 pandemic on mental health‡	3.9 (3-5)	4.1 (1-5)	**0.004**
Minor Psychiatric Disorders			**0.05**
No	332 (52.6)	96 (44.8)	
Yes	299 (47.4)	118 (55.2)	
Burnout§			
Emotional distress	2.61±0.84	2.90±0.93	**<0.001**
Depersonalization	1.83±0.71	1.97±0.83	**0.014**
Professional realization	3.94±0.75	3.97±0.67	0.568

*Values expressed in absolute and relative frequency - n(f); †Adjusted residue >2 indicates statistically significant difference; ‡Values expressed in median and interquartile range; §Values expressed in ± standard deviation

Table 2 shows the results of the multiple analysis according to the variables that entered the final model. The variable MPDs have the greatest inverse influence on Professional Achievement, representing a decrease of 2.87 units for the outcome (p<0.001). The variable explains in 10.0% the variability of Professional Achievement.

Regarding the MPDs variables, the use of medications, impact on mental health and being part of the HA, HB and HC institutions had greater influence on Emotional Exhaustion. The MPDs increased by 6.03 units, use of medications by 1.51 units, impact on mental health by 1.27 units, and being part of the institutions HA, HB and HC, by 3.66 units, 4.33 units and 1.95 units, respectively. These variables explain the variability of Emotional Exhaustion in 38.7%.

Depersonalization was influenced by the DPMs variables, impact on mental health and being part of the HA and HB institutions. The DPMs increased the impact on mental health by 2.13 units by 0.45 units and belonged to the HA and HB institutions in 1.13 units and 1.69 units, respectively. These variables explain in 23.1% the variability of Depersonalization.

Table 2 - Multivariate linear regression model, output variables of the final model related to Professional Achievement, Emotional Exhaustion and Depersonalization. Rio Grande do Sul, Brazil, 2021. (n=845)

	Standardized beta	b adjusted	p-value	R^2
Emotional exhaustion				0.387
Minor Psychiatric Disorders	6.033	0.379	**<0.001**	
Use of medications not used before the pandemic	1.517	0.088	**0.047**	
Assessment of the impact of the COVID-19 pandemic on mental health	1.276	0.174	**0.001**	
Institution*				
HA	3.668	0.205	**<0.001**	
HB	4.334	0.161	**0.001**	
HC	1.956	0.123	**0.035**	
Depersonalization				0.231
Minor Psychiatric Disorders	2.134	0.285	**<0.001**	
Assessment of the impact of the COVID-19 pandemic on mental health	0.456	0.132	**0.026**	
Institution*				
HA	1.134	0.135	**0.035**	
HB	1.693	0.040	**0.016**	
Professional Achievement				0.100
Minor Psychiatric Disorders	-2.872	-0.246	**<0.001**	
HB	-3.079	-0.156	**0.009**	

DISCUSSION

The results show the presence of psychiatric alterations in nursing professionals belonging to and not belonging to the risk group for complications of COVID-19, as well as associated factors related to the first year of the pandemic, a period of little knowledge about the disease, variants and the unavailability of vaccines.The data obtained show age as an important factor of the risk group among workers during the pandemic. According to a Brazilian study, the elderly accounted for 71.4% of deaths and 39.2% of hospitalizations due to COVID-19[12]. In addition, a cohort study with 138 patients hospitalized due to COVID-19 in Wuhan, China, found the median age of 56 years (42-68 years), reinforcing that hospitalization due to the disease tends to affect this group[13]. Another data, from this same study, highlights that patients in need of hospitalization in intensive care had a median age of 66 years, conferring greater susceptibility of the elderly to severe forms of the disease. These findings emphasize high health risk to these workers, who, in addition to the marked risk for contracting the severe form of the disease, need to deal with the psychological impact caused by fear of contamination and illness.

Regarding health conditions, a meta-analysis conducted in China with 1,576 patients highlighted the increased risk in hypertensive, diabetic, respiratory and cardiovascular diseases for the severe form of COVID-19[14]. Authors report that, in individuals with comorbidities, the need for intensive care represented 72.2% of patients, which requires attention for this group[13]. It is emphasized that these

diseases are frequent in the population, and may affect different groups whose need for leave can impact on the labor force. Furthermore, with the overcrowded health services, socioeconomic losses, scarcity of personal protective equipment and limited human resources, the need to work required that these professionals continued to work during the pandemic while being vulnerable to physical and psychological damage.

Older professionals are also evidenced in the significant relationship between the time of profession and being in the risk group while actively working in care during the pandemic. The experience in the profession, the vocation and the bond with the health teams may be related to the need to serve as support in a conflicting moment in the health field. Authors report that frontline professionals with a history of illness from other diseases experience fear, anxiety, stress and concern regarding a relatively new virus that causes illness and the death of professionals. Therefore, this context provides solidarity among health professionals, because everyone recognizes themselves as a collectivity, based on professional responsibility in the face of COVID-19, and share their experiences about the limitation of their bodies and emotions in professional practice[15].

From this perspective, a study with the objective of analyzing content focused on nursing during the pandemic by COVID-19 found positive highlights regarding the profession. Among the findings, empathy and altruism appear as motivators to professionals for care, reaffirming that protecting nursing is to protect the life and health of the country[16]. This example is seen as cultural issues intrinsic to the profession can overlap with the health and safety of workers.

This study identified that, in a higher percentage (55.2%), the workers of the risk group were exposed to the MPD, and this same group presented higher Emotional Exhaustion and Depersonalization scores. Due to the pandemic, many more experienced professionals increased their workload, since they assumed the task of supervising and training new professionals in view of the complexity of care and high demand for health services, which confers greater stress and vulnerability to changes in psychiatric health[17]. Moreover, in the context of the pandemic, the presence of health problems can also cause panic among workers, since they fear the situation worsening and not recovering from the disease.

Associated with this, other issues may be associated with psychiatric changes in these professionals, such as the stigma of the population when being “labeled” as a risk group. The various government decrees aimed at guiding the members of the risk group to remain in home isolation, in addition to causing concerns about their own health, and adding to anguish regarding the organization of basic daily activities[18–19]. The impact of restrictions to social activity is corroborated in a study conducted with nurses, in which burnout was related to the restriction of leisure activities, even before the pandemic[20].

Social isolation is capable of increasing stress and anxiety, besides causing concern with self-care and the health of family members due to distancing, loss of appetite, insomnia, difficulty concentrating, worsening of chronic and mental problems as consequences of feeling confined and lonely[21]. A Brazilian study also showed an impact on health due to social isolation, with both physical and psychological repercussions, which included depression, diseases and physical pain not experienced before[22].

When submitted to the linear multivariate regression model, no difference was identified between being or not being in the risk group with the burnout dimensions, therefore, they would not be more vulnerable to the development of the syndrome. Study suggests that there was an increase in burnout rates among employees during the COVID-19 pandemic, however, all levels of the healthcare workforce are susceptible to burnout. That is, not only professionals allocated on the front line, but also in other sectors[23].

A study identified that nurses who cared for patients suspected or infected with COVID-19 during the pandemic in surgical units had a moderate level of fear of COVID-19. Nurses who lost a patient due to COVID-19, who were older and experienced in nursing, also had high levels of fear, but receiving covid-19-related training decreased this fear[24].

The HA and HB institutions proved to be the greatest exposure of professionals to depersonalization and emotional exhaustion. This finding reinforces that the work environment and organizational culture can interfere in workers' health, as well as psychological and organizational support measures have been pointed out as fundamental in maintaining worker health[25].

The introduction of medications during the pandemic was associated with greater exposure to emotional distress. In a pandemic, it is possible that professionals end up resorting to drug therapies to relieve symptoms caused by work overload, whether physical or emotional. A study conducted in Taiwan found that nursing professionals had a four-fold higher risk of drug overdose than other health professionals[26], also related to high workloads, which has an impact on emotional exhaustion.

In addition, the increase in work demands, changes and restructuring at work, related to the pandemic context, can culminate in emotional distress. In a Brazilian study[27], the use of psychotropic drugs was associated with Burnout syndrome. Among burnout cases, the majority occurred among professionals in work situations characterized by high work demand and low autonomy.

The MPDs increased exposure to the three dimensions of burnout. A systematic review with meta-analysis showed that working on the front line in the fight against COVID-19, being infected with coronavirus and presenting chronic diseases were associated with a higher risk of anxiety. In addition to the high prevalence of anxiety among health professionals, the risk was increased in women and nurses[28]. Another study, conducted with nurses, showed depressive, anxious and somatic symptoms associated with Burnout Syndrome[29]. Moreover, tiredness, the desire to leave work, and insomnia were also linked to burnout. These factors may have been intensified during the COVID-19 pandemic.

The professional from the risk group remains continuously concerned during their work activities due to the increased risk of illness in case of contamination, which may result in psychological losses. The perception of the impact of the pandemic on mental health conferred greater exposure to emotional distress and depersonalization. The rapid spread of the virus, isolation measures and feelings of fear and insecurity in the face of contamination, illness and death have impacted the mental health of nursing professionals, exposing them to the development of MPDs and Burnout. A study also highlighted the influence of MPDs on job satisfaction, reduced work ability and burnout[30].

Reverse causality bias is conceived as an inherent limitation of the cross-sectional study, in which it is not possible to conclude the direction of causal relationships. It is also not possible to accompany these workers before and after the pandemic. In addition, since this is a study focused on professionals belonging to the risk group for the severe form of COVID-19, the effect of the healthy worker must be considered. This is because workers on leave, who may have suffered the effects of the pandemic, were excluded.

Some professionals who did not accept to participate in the research justified the decision due to lack of time, because they were overloaded with double working hours, in addition to the increase in family demand, since, due to isolation, their nuclear family was present at home. Additionally, the results are also influenced by the results of professionals who were healthy to be working in the pandemic and who could still organize themselves, in view of the high demand for work, to answer the research.

One of the limitations of the study was the lack of publications on workers belonging to the risk group. Thus, it is evident the need for studies of longitudinal designs aimed at monitoring this population, in favor of greater evidence related to the health of nursing workers in the risk group

and the care provided to patients during the COVID-19 pandemic, especially at the current time of the pandemic.

In the academic context, the findings of this research can support further investigations about the psychological repercussions in the population studied in the face of COVID-19, or another pandemic situation. In addition, it can make students aware of the theme and its relevance and impact on future professional performance, in order to develop a critical view focused on vulnerabilities related to the health of workers since graduation.

In the field of management, it allows a different look both at this most vulnerable group and at possible factors that contribute to the involvement of Burnout Syndrome and Minor Psychological Disorders. Finally, in the care field, increasing knowledge on the subject, enabling the identification of risk factors for illness in professional practice, in addition to seeking psychological support strategies at work, aimed at workers' health, reducing absenteeism and improving care.

CONCLUSIONS

The results showed that the workers of the risk group presented a higher prevalence of Minor Psychiatric Disorders, and higher scores in the burnout, emotional exhaustion and depersonalization domains in relation to the other professionals. The multivariate regression model did not identify differences in being or not being part of the risk group with burnout. The MPDs had a greater influence on emotional exhaustion, depersonalization, and professional achievement. The use of medications had an influence on emotional exhaustion. The impact on mental health and the institution to which they belonged influenced emotional exhaustion and depersonalization.

The results of this study show important evidence for hospital management, especially for groups with greater vulnerability to complications of COVID-19. It also contributes to the discussion about nursing workers working in the care of different hospitals, inserted in the context of the COVID-19 pandemic and exposed to stressful factors, with the possibility of causing psychological changes in the practice of the profession.

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NOTES

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