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Implications of Covid-19 on the working conditions of nursing professionals: a descriptive study

Implicações da Covid-19 na condição de trabalho de profissionais de enfermagem: estudo descritivo

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ABSTRACT

Objective: to analyze the working conditions of nursing professionals in the context of the Covid-19 pandemic in a hospital in the interior of Mato Grosso State. **Method**: descriptive, cross-sectional, quantitative study with data collection performed through a questionnaire using the Likert scale. Data were obtained between November 2020 and January 2021 and tabulated on Microsoft Excel®. **Results**: sample composed of 50 nursing professionals. The majority of the participants 48 (96.00%) performed direct care to Covid-19 patients and ensured they had received individual PPE equipment. Regarding training, 41 (82.0%) stated that they had obtained training in the work environment and 42 (84.00%) professionals noticed changes in work due to the pandemic situation. **Conclusion:** the participants recognized that there were changes in the work routine resulting from the Covid-19 pandemic, potentiating the physical and mental strain associated with work.

Keywords: Working conditions; Nursing Team; COVID-19.

RESUMO

Objetivo: analisar as condições de trabalho dos profissionais de enfermagem no contexto de pandemia da Covid-19 em um hospital do interior de Mato Grosso. **Método:** estudo descritivo, transversal, de abordagem quantitativa com coleta de dados realizada por meio de um questionário onde a escala de *Likert* foi atribuída. Os dados foram obtidos no período entre novembro de 2020 a janeiro de 2021 e tabulados por meio do Microsoft Excel®. **Resultados:** amostra composta por 50 profissionais de enfermagem. A maioria dos participantes 48 (96,00%) realizaram atendimento direto aos casos de COVID-19 e asseguram ter recebido equipamentos de paramentação individual para assistência. Em relação a capacitações, 41 (82,0%) afirmaram ter obtido no ambiente de trabalho e 42 (84,00%) profissionais perceberam alterações no labor decorrente da situação pandêmica. **Conclusão:** os participantes reconhecem que houve alterações na rotina laboral decorrente da pandemia da Covid-19, potencializando os desgastes físicos e mentais associados ao trabalho.

Descritores: Condições de Trabalho; Equipe de Enfermagem; COVID-19.

INTRODUCTION

At the end of 2019, the circulation of a new virus was identified, with high potential for contagion and transmission, belonging to the coronavirus family in individuals who had a history of contact with the seafood market in Wuhan city, China, called SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2). This condition is responsible for signs and symptoms such as: sneezing, rhinorrhea and odynophagia. About half of the infected individuals present dyspnea, and may evolve to the most severe condition with severe pneumonia and hypoxemia[1].

The number of cases confirmed by viral infection showed exponential growth in a short period of time, reaching several countries worldwide. The situation was declared as a public health emergency on January 30, 2020 by the World Health Organization (WHO) and on March 11 of the same year, it was understood as a pandemic condition[2].

With the increase in worldwide dissemination rates and the high number of

affected individuals, the reality of the pandemic reached Brazil. Thus, problems that the national health system already faced, such as little investment in infrastructure, irregular working conditions and insufficient human resources, amid the growing number of users in health services, in addition to the implications of both care and the health of these employees in the face of the condition caused by Covid-19[3].

It was evidenced on May 28, 2020 by the Federal Nursing Council (COFEN) and the International Nursing Council (ICN) that Brazil was the country where most nursing professionals died as a result of Covid-19. According to the COFEN Crisis Management Committee, health professionals are assigned as a high-risk group for contamination with the virus, because they work on the front line, placing themselves in greater vulnerability to contagion and possible illness[4].

These professionals experienced a new chapter that brought new challenges in their work environments resulting from the effects of the pandemic. Work overload, exposure to the virus and uncertainties are factors responsible for the development of psychological side effects in these professionals. The impacts generated on the physical and mental health of nursing professionals come from the constant situations of death and stress that these professionals experiences and also from the stress related to care both in technical procedures and in the rigorous gowning and disgowning procedures[4-5].

One of the main problems faced during the pandemic was the high rate of infected or killed essential service

as a result of the new coronavirus, especially those working in the health sector, a decisive factor for the success of coping with the pandemic. The justification of the present study lies in the fact that nursing professionals are exposed to physical and mental health problems resulting from the work process.

Thus, the development of research with the following guiding question is considered relevant: What are the implications on the working conditions of frontline nursing professionals in the context of the Covid-19 pandemic?

Considering the scientific evidence, it was hypothesized that these workers face implications in their work routine related to the high number of hospitalizations, reduction of human and material resources, which can have a direct influence on their physical, mental health and consequently their work performance. In this context, the present study aims to analyze the working conditions of nursing professionals in the context of a pandemic in a hospital in the interior of Mato Grosso State.

METHOD

This is a quantitative, descriptive cross-sectional study. It was carried out in a philanthropic hospital in the interior of Mato Grosso State that became a reference for the care of patients affected by Covid-19.

The population was composed of the nursing professionals of the hospital and the sample was composed of all professionals who were working in the front line caring for patients with Covid-19 from the three hospitalization units, i.e.: General Intensive Care Unit, Covid-19 Intensive Care Unit and Covid-19 Infirmary.

The inclusion criteria of the study consist of: nursing professionals, nurses, nurse technicians and nursing assistants; who are employed at the hospital institution; departments for the care of Covid-19 cases in the hospital unit.

On the other hand, the exclusion criteria were: those professionals who during the data collection period were on vacation or who are unable to participate in the interview after three consecutive attempts.

Data collection occurred between November 2020 and January 2021, through an individualized approach, in a reserved place, within the institution itself and during working hours, provided that it did not interfere with the participants' work activity. However, during this stage it was necessary to re-adjust the method, according to the biosafety standards for coping with the pandemic. Due to the access restriction to the care/hospitalization sectors of patients affected by Covid-19, the questionnaires were made available to the participants to answer by themselves. Telephone contact with the researcher was made available to the participants in the event of questions or doubts regarding the questionnaire.

The data collection questionnaire, composed of 30 closed questions, was submitted to a pilot test with nursing team professionals from other sectors and multiprofessional residents of the institution, aiming to identify possible inconsistencies where there was no need for change. The questionnaire had questions about the following aspects: availability of personal protective equipment (PPE) to nursing professionals, whether they use the PPE according to the manufacturer's recommendations; on the provision of specific

training in the work environment, about the feeling safe while performing their work tasks; questions related to the adequacies of the work environment, changes in the availability of material resources (MR), and human resources (HR), and if they noticed any new feelings regarding working in the context of a pandemic. In addition, it was possible to outline the profile of the interviewees and their perception of working conditions.

The questionnaire responses were structured using the five-point Likert scale. Thus the answers were requested in frequency degree in which the interviewees agree or disagree with the questions, selecting an option, as specified: Totally agree (1), I agree (2), I do not agree or disagree (3), Disagree (4), I totally disagree (5). Enabling the quantitative representation of the variables under study[6].

The data obtained were numerically organized through absolute (n) and relative (%) frequencies, and tabulated using a Microsoft Excel® spreadsheet. To ensure the confidentiality, the participants were coded by a numerical sequence: "1, 2, 3...". for the systematization of the answers presented.

The present study is part of the matrix project "Events associated with the coronavirus pandemic in a public hospital in the municipality of Rondonópolis/MT from the perspective of the nursing team", approved by the Ethics and Research Committee with Human Beings (CEP), with Certification of Presentation and Ethical Appreciation (CAAE) no. 33496120.1.0000.8088, in compliance with National Health Resolution No. 466/2012 and the guidelines and regulatory standards of research involving human beings. In order to perform the data collection, the objectives of the research were presented to the participants, the Informed Consent Form (TCLE) was read, and, after agreeing to participate in the research, two copies of the signature of this form were requested, leaving one way with the participant and another with the researcher.

RESULTS

The study sample consisted of 50 professionals, of these, 43 (86.0%) were nursing technicians and 7 (14.0%) nurses, predominantly female (88.0%), aged between 34 and 39 years (34.0%). The practice sites of the professionals were: Adult ICU, COVID ICU and Covid Infirmary. It is noted that 48 (96.00%) of the participants of this study stated that they performed direct care for suspected or confirmed Covid-19 cases. When asked about the availability of PPEs to perform nursing care for patients affected by Covid-19, 48 (96.0%) of the professionals certified that they had received the material (Table 1). Tissue apron 39 (81.25%) was the most cited PPE, followed by surgical mask 38 (79.17%), procedure gloves 38 (79.17%) and goggles 38 (79.17%). The Shield face mask, N95 mask and filtering half mask (PFF), were mentioned by 35 (72.93%), 34 (70.83%), 31 (64.58%) interviewed, respectively. The least used PPE was the waterproof apron, with 30 (62.50%) citations.

Similarly, related to the use of PPE, 42 (84.0%) study participants declared that they respect the time required to use each PEE (Table 1). However, the majority (73.81%) ensured that they followed the determinations of the time of use established by the institution where they work, whereas, only 8 (19.05%) professionals followed the rules regarding the validity determined by the manufacturers of the products (Figure 1).

Regarding the professional training process, 41 (82.0%) stated that they had received training in the work environment, where the theme included PPE before COVID-19. Among the participants of the study, 18 (43.90%) expressed that the training was performed before and shortly after the first admission of affected patients and 11 (26.83%) highlighted that the training process only occurred when they were already providing care to these patients.

In this directive, when asked about their feelings regarding safety at work, considering the pandemic context and the training offered in the work environment, according to Table 2, 22 (53.66%) of the professionals interviewed stated that they fully agree and 12 (29.27%) partially agreed, confirming that the majority feel safe to perform direct care to the patient.

When asked if they knew any co-worker who had presented signs and symptoms related to the clinical pictures of the condition, 43 (86.00%) professionals expressed affirmatively, clarifying that all contaminated colleagues were removed due to suspected manifestations of Covid-19.

In view of possible changes in the number of employees in the sectors of activity, 34 (68.00%) reported a reduction, 11 (22.00%) perceived an increase and 5 (10.00%) professionals said that the team remained the same as before the pandemic outbreak. Among the interviewees, 10 (29.41%) believe that the reduction occurred due to the removal of team members, 5 (14.71%)

Table 1 - Frequency of answers about the availability of personal protective equipment for nursing professionals. Rondonópolis, MT, Brazil, 2020-2021 (n=50)

Issues	Yes		No		They did not respond	
	N	(%)	N	(%)	N	(%)
Have you received PPE for providing care?	48	96.00	2	4.00	-	-
Have you respected the time of use for each PPE?	42	84.00	7	14.00	1	2,00

Source: Prepared by the authors, 2021.

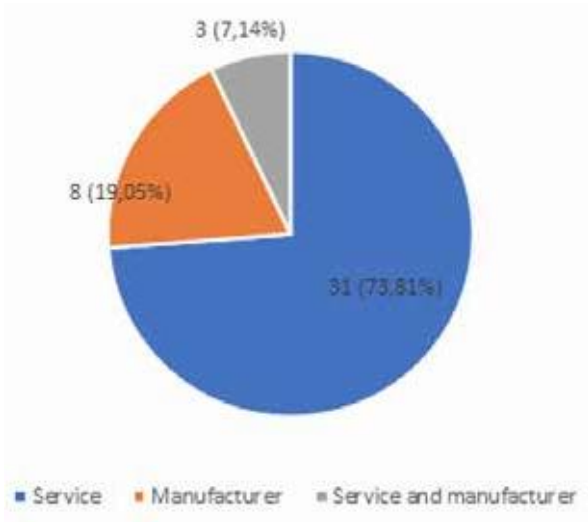

Figure 1 - Frequency of answers regarding the determination of the time of use of personal protective equipment for nursing professionals. Rondonópolis, MT, Brazil, 2020-2021

Source: Prepared by the authors, 2021.

due to remanagement to other sectors of the hospital and 5 (14.71%) related to deaths. Regarding the increase, 9 (81.82%) cited the occurrence of new hires.

Regarding the material resources (MR) provided by the institution, 26 (52.00%) collaborators reported an increase in the availability of the resources used in patient care and 16 (32.00%) mentioned a restriction in the availability of such resources. Regarding the equipment, 26 (52.00%) professionals reported an increase in supply. Regarding the structure of the institution, 25 (50.00%) described structural changes after the beginning of the pandemic.

When asked about working conditions, most of the respondents ensure that the current working conditions are adequate (Table 2). It is important to mention that, most of the study participants, 42 (84.00%) noticed some change in the work environment due to the implications of the pandemic situation. 35 (83.33%) reported an increase in the number of admissions of confirmed or suspected individuals in the sectors intended for patients affected by the virus.

Regarding working hours, 9 (21.43%) professionals reported an increase in the day and 2 (4.76%) stated having a more turbulent routine with loss of co-workers (deaths). Regarding rest periods for the nursing team during 12-hour shifts, 16 (38.10%) professionals report changes in time, of which 13 (81.25%) stated a reduction in the time allocated to rest. It is possible to observe that more than half of the interviewees highlighted higher levels of tiredness at work, in which 27 (54.00%) fully agreed with the statement, according to Table 2.

Given the pandemic context, it is possible to identify that the majority of the interviewees, 45 (90.0%), reported presenting new feelings and sensations regarding work. They cite psycholo-

Table 2 - Frequency of answers about the working conditions of nursing professionals. Rondonópolis, MT, Brazil, 2020-2021 (n=50)

Issues	I fully agree		I partially agree		I don't agree or disagree		I partially disagree		I strongly disagree		I couldn't answer	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Do you feel safer with training?	22	53.6	12	29.2	5	12.2	2	4.8	0	0.0	0	0.0
Do you believe that the current working conditions are adequate?	25	50.0	20	40.0	5	10.0	0	0.0	0	0.0	0	0.0
Relational: do you consider it exhausting?	27	54.0	20	40.0	2	4.0	0	0.0	0	0.0	1	2.0
Do you feel any new feelings or sensations?	45	90.0	4	8.0	0	0.0%	0	0.0	0	0.0	1	2.00
Are you more aware about the use of PPE?	39	78.0	7	14.0	2	4.0%	1	2.0	1	2.0	0	0.0
Do you think you can get sick on duty?	45	90.0	2	4.0	2	4.0	0	0.0	1	2.0	0	0.0

Source: Prepared by the authors, 2021.

gical alterations 49 (98.0%), 42 (84.0%) concerns, 33 (66.00%) fear, 32 (64.0%) anxiety, 26 (52.0%) fear of becoming contaminated, 24 (48.0%) sadness and 22 (44.0%) insecurity.

Furthermore, it is possible to observe that most employees agreed that they are more attentive to the use of PPE. They recognize the potential of being more exposed to the risk of contamination and development of some health problem due to the pandemic scenario.

DISCUSSION

It was observed in the present study that the professionals who performed direct care for suspected or confirmed COVID-19 cases were mostly women aged between 34 and 39 years. A result similar to the study[7], which sought to trace the profile of nursing professionals working on the front line of Covid-19 by identifying 110 (86%) women, aged between 30 and 39 years 45 (35.16%). The predominance of the female sex is justified by the historical context, because it is a hegemonically feminine profession, which strengthened the idea of feminization of health[7]. It is evident that the health sector faces several challenges that are associated with problems already recurrent in the health system and the consequences of the current pandemic are furthermore added to this[8]. The literature reinforces that the situation of scarcity and reuse of PPE triggers feelings of anxiety among health workers, resulting in a high number of infected professionals[9-10]. Emphasizing that the availability of these equipment for the work strengthens the performance of the team, reducing the possible risks of physical and psychological injuries[10]. It is noticed that in view of the findings in the present study, the scarcity of PPE for the provision of care was not a reality in the work context of these professionals. The results show that most of the participants had access to basic protective equipment, a factor that is a determining factor to ensure safety and mitigate the risk of developing physical and mental health problems among these workers, who mostly meet the institution's recommendations to exchange or dispose of these materials.

The main recommendation to ensure the prevention of Covid-19 infection is the proper use of PPE. In this scenario, the reuse of respirators, N95 or equivalent, is considered before the state of preservation and packaging of the mask. Thus, health institutions are responsible for determining protocols regarding the exchange or reuse of these equipment, in addition to defining and providing appropriate locations for their packaging[11].

The proper use of masks is relevant for the protection of the general population, regardless of the context. The choice of the appropriate material, the form of use and reuse are essential factors when thinking about the risk of contamination. Among the types of masks available at the institution, the use of surgical masks was more recurrent when compared to the use of the N95 mask or similar, the latter recommended for aerosol-generating procedures[11].

It is possible to observe in the results of the study that these professionals are more attentive to the adequate use of PPE during work from the perspective of the pandemic context. A study conducted in the interior of the state of Ceará[12] showed that 972 (87.9%) professionals ensured that they use PPE whenever they will provide care to patients confirmed or suspected by Covid-19. However, there are cases where health professionals do not use PPE properly, either from the perspective of gowning and disgowning, ignoring biosafety guidelines and protocols[12].

In view of the recommendation regarding the adoption of standard contact precaution and droplets in the context of the pandemic, all professionals should wear, in addition to private clothing, waterproof surgical aprons, gloves, caps, surgical masks and facial protection (goggles, face shield)[11-12]. In the present study, the participants reported being more attentive to the use of all PPE, however, it was observed that the waterproof surgical apron is among the least cited PPE, which may increase the risks of contamination in the work environment.

Health professionals working in high-risk sectors, such as ICU and emergency and emergency sectors, are more exposed to the development of physical, emotional and stress exhaustion. They are exposed to mental and physical pressure and frustrations, factors that are associated with the development of various disorders, such as sleep, anxiety and depression, directly influencing professional performance[10,13].

Given these occupational risks, training in the work environment aimed at promoting biosafety is even more necessary. In addition to the guidelines on the use of appropriate PPE, it is essential that all professionals are instructed on the proper removal and disposal of these contaminated equipment[11]. The literature highlights that professionals who work in the front line of the pandemic are unprepared regarding standard precaution, highlighted as another factor that predisposes these professionals to the increased risk of being infected during work[7,9 -10].

As soon as the pandemic began, the hospital under study carried out educational actions about the gowning and disgowning of PPE in the context of Covid-19 for the nursing team. Faced with questions regarding the influences of the training performed by the institution in the perception of safety at work, the majority presented positive responses. However, insecurity is mentioned by participants when asked about possible changes in the work environment and about the emergence of new emotions.

Another study that sought to determine the knowledge and attitudes regarding prevention and control of Covid-19 infection in 286 professionals working on the front line at different levels of care in South Africa showed that the majority of respondents received training on infection prevention and control, occupational safety and health and training on the correct use of PPE. However, only half of the trained professionals reported feeling prepared to care for Covid-19 patients[14].

As in the study[15] that outlined the prevalence and factors related to anxiety among multiprofessional health residents (22.40% nurses) during the pandemic, it showed that 77.60% of the participants received specific training to perform direct care to patients affected by Covid-19. However, the highest proportion (59.70%) did stated that they did not feel safe in a technical or scientific way to provide such assistance[15].

Insecurity to provide care can influence the performance of these professionals. The number of health professionals infected with the virus is alarming, as they are more vulnerable to Covid-19 because they consider the comprehensive care they are responsible for[9]. Studies highlighted the following as factors that contributed to the occurrence of virus infection: the absence of protocols, institutional training and the scarcity of PPE[9-10].

The findings of the present study expose a high number of participants who reported knowing co-workers infected by Covid-19, where in all cases of infection it was necessary for the workers to enter isolation. This is a conduct already guided by the MS, which recommends the removal of any worker who presents symptoms suggestive of Covid-19[11]. In this way, nursing team workers become overloaded due to the reduced number of human resources and high demand.

On June 23, 2022, COFEN registered a number of 5,321 professionals infected with Covid-19 in

the Midwest region. The state of Mato Grosso had the highest number of deaths of nursing workers in the Midwest region, with 51 recorded deaths. This is the fifth state with the highest number of deaths recorded in the country[16].

Rondonópolis recorded 982 cases of deaths, up to the same date, according to the epidemiological panel N° 538 Covid-19, prepared by the State Department of Health of Mato Grosso. Female nursing technicians or assistants are the health professionals most affected by the condition in the municipality, corresponding to 32.40% of death records. Nurses occupy the second place in this ranking of death records with 16.63%[17].

Even in view of the burden presented by the health care network, when the interviewees were asked about the perceptions about the current working conditions, the majority fully agreed that the working conditions are adequate. However, they reported some changes in the work environment due to the implications of the pandemic situation including changes in the staff, increased working hours due to admissions, turbulent routine, loss of co-workers, insecurity and reduced time off.

Most interviewees agree that there was the emergence of new feelings and sensations resulting from working during the pandemic scenario. Worry, fear, anxiety, sadness and insecurity were the most cited feelings. The results observed are in line with the findings of another study[18], where the most cited feelings were: fear, anxiety, obligation, sadness and insecurity.

Work related anxiety is mostly mentioned by nursing assistants who work in sectors classified as critical. In Wuhan, a research aimed to identify the factors associated with mental health impairment of 1,257 professionals working in the front line of the Covid-19. It showed a severe degree of anxiety in professionals working in hospital units, highlighting a high proportion, 964 (76.7%), of female professionals who reported symptoms of depression 634 (50.4%), anxiety 560 (44.6%), insomnia 427 (34.0%) and anguish 899 (71.5%) [19]. These symptoms are associated with the development of Burnout Syndrome.

By trying to understand[20] the process of coping with the Covid-19 pandemic from the perspective of nursing professionals and municipal health managers in view of the characteristics of work, it was found that the challenges faced at work associated with psychological aspects such as emotional exhaustion and the feeling of devaluation, causes more intense suffering at work. These facts are consistent with taking into account not only the training to act against Covid-19, but also the emotional health of these professionals who are working on the front line[7].

The limitation of the present study lies in the fact that the research takes place in a single hospital institution, evidencing the implications of a specific reality that may be distinct from other scenarios. Furthermore, it is important to look at the workload of these professionals with the perspective of preventing physical and mental exhaustion.

CONCLUSION

The objective of analyzing the working conditions of nursing professionals in the context of a pandemic was achieved in the present study. It is possible to observe that nursing professionals present greater emotional exhaustion resulting from work overload due to the pandemic. It is perceived that the mental health of these workers is compromised, as insecurity, fear, anxiety and sadness were the feelings most mentioned in the study. Confirming the hypothesis of the present study that there were changes in the care routine resulting from the Covid-19 pandemic, which enhanced the wear and tear associated with work in these professionals.

Finally, the results obtained can contribute to the continuity of scientific studies aimed at this theme, enabling the construction of new knowledge and strategies aimed at formulating policies that promote safety and value these professionals. In this directive, to reduce the incidence of occupational health problems in the work environment, it is necessary to implement strategies that provide protection and preserve the physical and mental health of these professionals.

CONFLICT OF INTEREST

The authors have declared that there is no conflict of interest.

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