Survey on occupational protection and profile of workers in regional reference hospitals for covid-19

Survey on occupational protection and profile of workers in regional reference hospitals for COVID-19

Encuesta sobre protección ocupacional y perfil de trabajadores en hospitales regionales de referencia para COVID-19

RESUMO

Objetivo: caracterizar as medidas de proteção ocupacional e o perfil dos trabalhadores de hospitais regionais de referência para atendimento COVID-19. Método: Pesquisa transversal, descritiva, por inquérito com profissionais de saúde de dois hospitais de referência macrorregional para COVID-19, Uberaba, Minas Gerais, no período entre julho e outubro de 2021. Resultados: 102 participantes, maioria dos respondentes foi equipe de enfermagem (67,7%), sexo feminino (89,2%), média de idade de 35 anos, vínculo empregatício estável (60,8%). Realizam assistência com procedimentos invasivos (60,8%). Relatou treinamento para COVID-19 (77,5%); disponibilidade de EPIs (88,2%) e intensificação das precauções pela instituição (93,1%). Conclusão: observa-se a intensificação das precauções como medida de proteção ocupacional mais frequente relatada pelos trabalhadores dos hospitais de referência para COVID-19, o que demonstra a preocupação institucional com a proteção do profissional que está na linha de frente da pandemia e com a qualidade da assistência.

DESCRITORES: COVID-19; Pessoal de Saúde; Equipamentos de Proteção Individual; Saúde do Trabalhador; SARS-CoV-2

ABSTRACT

Objective: to characterize the occupational protection measures and the profile of workers in regional referral hospitals for COVID-19 care. Method: Cross-sectional, descriptive research by survey with health professionals from two macro-regional reference hospitals for COVID-19, Uberaba, Minas Gerais, in the period between July and October 2021. Results: 102 participants, most respondents were nursing staff (67.7%), female (89.2%), mean age of 35 years, stable employment relationship (60.8%). They provide assistance with invasive procedures (60.8%). Reported training for COVID-19 (77.5%); availability of PPE (88.2%) and intensification of precautions by the institution (93.1%). Conclusion: there is an intensification of precautions as the most frequent occupational protection measure reported by workers in reference hospitals for COVID-19, which demonstrates the institutional concern with the protection of professionals who are on the front line of the pandemic and with quality of care.

DESCRIPTORS: COVID-19; Health Personnel; Personal Protective Equipment; Occupational Health; SARS-CoV-2.

RESUMEN

Objetivo: caracterizar las medidas de protección ocupacional y el perfil de los trabajadores de los hospitales regionales de referencia para la atención de COVID-19. Método: Investigación descriptiva transversal mediante encuesta con profesionales de la salud de dos hospitales macrorregionales de referencia para COVID-19, Uberaba, Minas Gerais, en el período comprendido entre julio y octubre de 2021. Resultados: 102 participantes, la mayoría de los encuestados eran personal de enfermería (67,7%), mujeres (89,2%), edad media 35 años, relación laboral estable (60,8%). Brindan asistencia con procedimientos invasivos (60,8%). Entrenamiento reportado para COVID-19 (77.5%); disponibilidad de EPP (88,2%) e intensificación de las precauciones por parte de la institución (93,1%). Conclusión: existe una intensificación de las precauciones como la medida de protección ocupacional más frecuente reportada por los trabajadores en los hospitales de referencia por COVID-19, lo que demuestra la preocupación institucional con la protección de los profesionales que se encuentran en la primera línea de la pandemia y con la calidad de la atención.

DESCRIPTORES: COVID-19; Personal de Salud; Equipo de Protección Personal; Salud Laboral; SARS-CoV-2.

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INTRODUCTION

In December 2019 the first cases of COVID-19 were registered in Wuhan, Hubei Province in China 1 caused by Coronavirus Severe Acute Respiratory Syndrome. 2 In March 2020, the World Health Organization (WHO) changed the classification from an epidemic outbreak to a pandemic of COVID-19, the highest level of alert provided for in the International Health Regulations. 3 This confrontation has been challenging for health systems worldwide. Health professionals have been faced with a demanding work environment that impacts their physical and mental health. 4,5

The frontline care teams at COVID-19 require, in addition to the number of specialized professionals, conditions for the quality of care for a large volume of patients. They deal with social changes and emotional stressors faced by the entire population. In addition, they face greater risk of exposure, extreme workloads, moral dilemmas and a different environment than they were familiar with. 6

Brazil's public policy is the Unified Health System (SUS), with a model of regional networks that integrates health promotion actions, basic health care, specialized outpatient and hospital care, health surveillance and work management and health education. The care of COVID-19 cases carried out in the SUS respects the complexity of the cases, with the most serious ones being referred to reference hospitals for admission, with wards and Intensive Care Units (ICU). Above all, health professionals need to be trained for complex and specialized care. 7,8

However, they face difficult situations, such as decisions regarding therapeutic conduct; the absence of colleagues, due to illness by COVID-19, which causes overload of activities; the fear of contamination, illness and death, among other factors. Therefore, offering adequate working conditions is crucial for the quality of health of these professionals during the pandemic. 9

Among the appropriate working conditions to protect the health of professionals, it is essential to prevent the transmission of COVID-19 in health facilities and in the community, the adoption of infection control protocols and provision of Personal Protective Equipment (PPE). 5 In addition to PPE, there is a need for training, as the use of PPE can have different interpretations and diverge in the indication. 10

Due to the rapid and easy spread of the virus, combined with the need for intensive care and intensive care technologies, there were changes in work flows, in care protocols and in expenditure on materials, especially with PPE. 11

In this context, several countries, including Brazil, have registered failures in the protection of health workers. The care scenario at COVID-19 ended up exposing precariousness such as: lack of PPE, weakness for effective infection control in health services, long working hours, professional training needs to face this crisis and uncertainties about therapeutic measu-

res. Working conditions that were already harmful tend to worsen with the ongoing pandemic. 12

In this way, understanding how these factors impact health professionals, especially those in hospitals working in an intensive care environment, is important for the development of measures and strategies that minimize the negative impacts of this pandemic, preserving a healthy and adequate workforce. 12

Even in the face of an adequate general awareness of the disease among those professionals who work in reference hospitals for COVID-19, as evidenced in the literature 13, there are still some questions about the profile of hospital workers attending COVID-19 and what occupational protection measures are adopted. From this perspective, this article aims to characterize the occupational protection measures and the profile of workers in regional reference hospitals for COVID-19 care.

METHOD

This is an observational, cross-sectional, descriptive, exploratory study. Study conducted in the municipality of Uberaba, a hub of the Southern Triangle Health Macroregion, Minas Gerais, with an estimated population of 325,279 inhabitants in 2016. 14 Regarding the tertiary care service, at the time of data collection, Uberaba/MG had two public hospitals, responsible for caring for patients with COVID-19. The José Alencar Regional Hospital (h1) and the Clinical Hospital of the Federal University of Triângulo Mineiro (h2). In these institutions, there were 142 infirmary beds and 55 Intensive Care Unit (ICU) beds for COVID-19 care.

The population consisted of health professionals with secondary and higher education, working in these hospitals: nurses, physiotherapists, physicians, nursing technicians, pharmacy technicians, radiology technicians, making a total of 553 together. Professionals who were on vacation or on leave/time during the period of data collection and professionals who did not attend after three attempts were excluded from the study.

Table 1 – Representation for each stratum of professional category according to the estimated population of regional reference hospitals for COVID-19 care. Uberaba, Minas Gerais, 2021.

Professional Category	h1	h2	Total	Representation (%)
Nurse	**27**	**33**	**60**	**10,8**
Physiotherapist	25	5	30	5,4
Doctor	222	16	238	43,0
Nursing technician	135	71	206	37,3
Radiology technician	4	3	7	1,3
Pharmacy Technician	10	2	12	2,2
Total	423	130	553	100,0

Source: The authors, 2021.

The sample considered was proportionally stratified, according to professional category, with random selection. The number of professionals in the sample was initially 227 professionals, calculated with a view to obtaining estimates of population proportions of interest, considering 95% confidence, 5% margin of error and a priori information on the proportions of interest as "non-informative" , that is, equal to 50%. 15 According to the sampling plan, the representation (%) for each professional category, in relation to the population, is detailed (Table 1).

Data collection was carried out by interviewers trained by the research team in terms of filling out the instruments and approaching the respondent. The period of data collection was from July to October 2021. Depending on the epidemiological situation at the time of data collection, it was carried out using a self-answered printed questionnaire or a questionnaire sent by email or WhatsApp® message application, online using the Google Forms® platform. The application of digital questionnaires was prioritized in isolation sectors with a high flow of patients.

There was prior awareness of the research coordination with senior management and technical heads of hospitals, who were responsible for transmitting information to professionals about the development of the research, as well as providing e-mail and WhatsApp® contacts. Participants were able to self-report the questionnaires in the workplace.

The data collection instrument, of the self-applicable survey type, was developed in both its physical and digital versions, by the group responsible for the research. Contains sociodemographic variables, aspects of occupational protection measures, professional training on the topic COVID-19 and labor and mental health characteristics during the pandemic - link to the questionnaire available at: https://forms.gle/Q7i22zsvSaNd5BdG8. In the present study mental health data were not used. A database was organized in Excel® by double typing independently of physical forms and by extracting data from digital forms. For statistical analysis, the database was transferred to SPSS version 20. Descriptive statistics were used, with measures of central tendency and dispersion for numerical variables and frequencies (absolute and relative) for categorical variables.

This study was carried out in accordance with Resolution No. 510/16. Before starting the questionnaire, the research was explained and the Informed Consent Form (ICF) was obtained. The research was approved by the Ethics Committee for Research with Human Beings at UFTM, CAAE: 30901020.0.0000.5154/2021.

RESULTS

A total of 102 hospital workers who worked in the care area exclusively for CO-

VID-19 participated in the study, 45% of the initial sample for the total number of professionals. In addition, when analyzed by professional category, the nursing staff and physiotherapists participating in the research achieved the expected representation by stratum, in accordance with the sampling plan. Most respondents were from the nursing team (67.7%), with a stable relationship. However, the study points to the participation of temporary employment bonds, exclusive contracts to work in the COVID-19 pandemic of 39.2% (Table 1).

As for the occupational profile, the average working time at the hospital was 2.6 years (± 4 years; minimum of 1 month and maximum of 18 years). In relation to the length of professional experience in the field, an average of 9.4 years (± 7.3 years; minimum of 1 month and maximum of 27 years). Regarding the length of work with patients with COVID-19, it was not informed by 39.2% of the participants. Among respondents, the mean was 1 year (± 6 months; minimum of 1 month and maximum of 2 years). The workers' mean age was 34.9 years (standard deviation ±8.6 years; minimum 19 years and maximum 56 years). The majority were women (89.2%), without a partner (53.9%), with complete higher education (69.6%) and reported being of Spiritist religion (41.2%) (Table 2).

Regarding the characteristics of occupational activities, most respondents reported performing care with invasive procedures (60.8%). Regarding the workload of shifts, the majority mentioned having between 6 and 24 hours of regular shifts (71.6%), without characterizing an increase in the workload among 68.6% of respondents. As for protective measures, 77.5% of respondents reported having received specific training, 88.2% considered the available PPE to be sufficient and 93.1% perceived an intensification of precautions by hospital institutions (Table 3).

DISCUSSION

This research refers to an overview of how the SUS has been organized to meet a demand for an emergency pandemic situation. It was verified through the reports of health professionals from regional public hospitals of reference that the services sought to adapt to the pandemic situation, offering training to the multidisciplinary team and PPE.

A study carried out in Ceará on permanent education actions with the nursing staff during the COVID-19 pandemic carried out the preparation of standard operating procedure (SOP) and realistic workshops, which enabled the acquisition of practical skills for using PPE, however it emphasized that the high turnover of professionals and precarious links were a challenge. Continuing education in public hospitals to adapt to this new reality can reflect positively on undergraduate, technical and residency education in several aspects. Among them, training future health professionals able to work in similar situations, these being local institutions for internships in the health area courses. This preparation can generate an optimization of the care process and safety at work, which can reflect positively on the provision of care to the patient. 16

The professional category that most participated in the survey was the nursing

Table 1 – Occupational profile of health workers at regional reference hospitals for COVID-19 care. Uberaba, Minas Gerais, 2021.

Aspects of the Occupational Profile	n	%
Professional Category		
Nursing Technician	39	38,3
Nurse	30	29,4
Physiotherapist	27	26,5
Doctor	2	1,9
Radiology Technician	0	0
Pharmacy Technician	0	0
Did not inform	4	3,9
Employment relationship		
Stable (CLT; Statutory)	62	60,8%
Temporary (CLT with fixed time or temporary selection process)	40	39,2%

Source: The authors, 2021.

Table 2 – Sociodemographic characteristics of health workers from regional reference hospitals for COVID-19 care. Uberaba, Minas Gerais, 2021 (n=102). Gerais, 2021 (n=102).

Sociodemographic Characteristics	n	%
Gender		
Female	91	89,2
Male	11	10,8
Marital Status		
Married or with a partner	47	46,1
Single	44	43,1
Separated or divorced or widowed	11	10,8
Education		
Complete higher education	71	69,6
Complete high school	23	22,5
Incomplete higher education	6	5,9

team (38.3% nurses and 29.4% nursing technicians), which was also the professional category with the highest number of professionals, making up the team in hospitals (60 nurses and 206 nursing technicians). 89.2% of the participants were women, a fact that corroborates with Teixeira et al. (2020) 5 , which talks about the feminization of the health workforce, since most professionals are women and they accumulate working hours. Furthermore, there is a preponderance of female professionals (84.6%) in Brazilian nursing. 17

It was possible to observe that 39.2% of the professionals who participated in the survey were temporarily hired to assist COVID-19 during the pandemic. Probably due to the emergency hirings carried out by the institutions to meet the growing demand of patients with COVID-19 in the region. 18 The temporary workforce was seen as an adverse factor to assistance during the pandemic. 16

Regarding the availability and use of PPE, and the provision of specific training to care for patients with COVID-19, most participants considered these to be sufficient and adequate. This fact demonstrates the concern of hospital institutions with regard to promoting adequate working conditions for professionals at this time of pandemic. The importance of the correct use of PPE was demonstrated in some works. 19–21 In China, health professionals who were exposed to aerosol-generating procedures, wore a mask (85% surgical mask and 25% N95 mask), sanitized their hands and followed the SOPs that protected them from infections, reinforcing the importance of protective measures for prevent infection by the virus. 22

One of the factors that can lead to failure in the use of PPE is work overload. Huang and collaborators 23 found that, even with intense training, nurses sometimes became careless while caring for patients, especially after long working hours, when they felt tired and stressed. In the present study, most participants (68.6%) reported not having increased their workload during the pandemic, however, 60.8% of them performed or assisted in invasive procedures, which require concentration, control and asepsis standards, it can also lead to physical and

Complete primary education	2	1,9
Religion		
Spiritist	42	41,2
Catholic	36	35,3
Evangelical	11	10,8
Does not have religion	8	7,8
Other religion	5	4,9

Source: The authors, 2021.

Table 3 – Characteristics of the occupational activities of health workers and description of the occupational protection measures of the regional reference hospitals for assistance to COVID-19. Uberaba, Minas Gerais, 2021.

Aspects	n	%
Characteristics of Activities		
Performed activities*		
Assistance with invasive procedures	62	60,8
Motor and/or respiratory physiotherapy	25	24,5
Collection of material for laboratory examination	24	23,5
Assistance without invasive procedures	23	22,5
Screening/reception	10	9,8
Home visit	3	2,9
Consultation	2	2,0
X-ray	2	2,0
There was an increase in the workload		
No	70	68,6
Yes	30	29,4
Did not inform	2	2,0
Occupational protection measures		
Specific training for COVID-19		
Yes	79	77,5
No	22	21,6
Did not inform	1	0,9
Sufficient availability of PPE		
Yes	90	88,2
No	10	9,8
Did not inform	2	2,0
Intensification of precautions by the institution		
Yes	95	93,1

No	3	2,9
Did not inform	4	4,0

*Respondent's Relative Frequency could check more than one option

Source: The authors, 2021.

emotional overload.

As a limitation of the study, it was observed that 44.9% of the sample answered the data collection instrument and the low adherence of the medical team, as observed in the literature. 24 The health team's low adherence to answering the instruments should be investigated in terms of aspects: work overload, excess of forms to be filled out in the routine, among others. Another limitation was that the data collection instrument was not validated, but it was developed by a group of researchers with experience in the field of epidemiology and considering the emergence of the topic for public and workers' health, its use is important.

CONCLUSION

It was observed that most health professionals who worked in reference hospitals for the care of COVID-19 in the Southern Triangle region of Minas Gerais and participated in the survey are female, of the nursing professional category, during the assistance performed more frequently invasive procedures and had no increase in workload during the pandemic.

Even given the limitations of the present study, the results found are considered relevant for better organization of work in SUS equipment, and portrays the reality of reference hospitals for the protection of workers in the face of pandemic emergencies.

Regarding workers' health, regarding occupational protection measures, the majority reported having received specific training for COVID-19 and sufficient availability of PPE, concomitant with the intensification of precautions to reduce contamination by COVID-19 by the institutions. This demonstrates the institutional concern with protecting professionals who are on the front line of the pandemic and with the quality of care provided. Future researches that address stressful labor factors and the mental health of professionals working in this scenario are oriented.

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