Profile of professionals from a public hospital in the federal district who tested positive for COVID-19

RESUMO | Objetivo: analisar o perfil e a categoria profissional dos trabalhadores da saúde de um hospital público do Distrito Federal que testaram positivo para COVID-19. Métodos: trata-se de um estudo transversal, descritivo, retrospectivo em relação à coleta de dados e de análise documental, com abordagem quantitativa. Resultados: a população foi composta por 667 trabalhadores que fizeram a testagem para COVID-19 no período de abril a novembro de 2020. As classes mais afetadas pela COVID-19 foram a equipe de enfermagem, médicos e técnicos administrativos. Conclusão: a suscetibilidade a contaminação pela COVID-19 foi mais evidente entre os profissionais mais expostos ao atendimento direto à população. Ações de apoio voltadas ao fortalecimento da capacidade de enfrentamento ao cenário pandêmico são vitais.
Descritores: Perfil de saúde; Profissionais da saúde; Trabalhadores da saúde; Coronavírus.

ABSTRACT | Objective: analyzing the profile and professional category of health workers at a public hospital in the Federal District who tested positive for COVID-19. Methods: this is a cross-sectional, descriptive, retrospective study regarding data collection and document analysis, with a quantitative approach. Results: the population was composed of 667 workers who tested positive for COVID-19 in the period from April to November 2020. The classes most affected by COVID-19 were nursing staff, physicians, and administrative technicians. Conclusion: susceptibility to contamination by COVID-19 was more evident among the professionals most exposed to direct care to the population. Support actions aimed at strengthening the ability to face the pandemic scenario are vital.
Keywords: Health Profile; Health Professionals; Health Workers; Coronavirus.

RESUMEN | Objetivo: analizar el perfil y la categoría profesional de dos trabalhadores da salud en un hospital público del Distrito Federal que testaram positivo para COVID-19. Methods: trata-se de um estudo transversal, descritivo, retrospectivo em relação à coleta de dados and de análise documental, com abordagem quantitativa. Results: a população foi composta for 667 trabalhadores that fizeram a testagem for COVID-19 no period of April a novembro de 2020. As classes mais afetadas pela COVID-19 foram a equipe de enfermagem, medical and technics administrativos. Conclusión: a suscetibilidade a contaminação pela COVID-19 foi mais evidente between os profissionais mais expostos ao atendimento direto à população. Ações de apoio voltadas ao fortalecimento da capacidade de enfrentamento ao cenário pandêmico são vitais.
Palabras claves: Perfil de saúde; Profissionais da saúde; Trabalhadores da saúde; Coronavirus.

Simone Rodrigues da Silva Araújo
Nurse. Master in Gerontology. PhD student in Gerontology. Academic of Medicine. Catholic university of Brasilia.
ORCID: 0000-0002-4184-7625

Leozenito Corado de Freitas
Teacher. Specialist in Educational Law. Academic of Medicine. University of Rio Verde.
ORCID: 0000-0001-9003-5044

Mayara Paty Galdino de Sousa
Nurse. Specialist in Urgency and Emergency. University Center of the Central Plateau Apparecido dos Santos.
ORCID: 0000-0003-1531-817X

Raíra Castilho Gomes Nascimento
Nurse. Specialist in Urgency and Emergency. Master's student of the Medical Pathophysiology program. University of Brasilia.
ORCID: 0000-0003-4226-2351

Henrique Salmazo da Silva
Gerontologist. Master of Science. Doctor in Neuroscience and Cognition. Catholic University of Brasilia.
ORCID: 0000-0002-3888-4214

Mirian Minotto Marques
Pediatrician. Specialist in Occupational Medicine and Medical Expertise. University of Brasilia.
ORCID: 0000-0003-2924-9347

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INTRODUCTION

Currently, the topic that dominates the most different regions of the world is the pandemic resulting from the coronavirus and the impacts on populations caused by this disease. Thus, in January 2020, the World Health Organization (WHO) identified the emergence of an outbreak of the new coronavirus in China. After several debates and the search for evidence, in March of that year, the aforementioned Organization changed its position on the outbreak and conside-

red it a pandemic, as it is a public health emergency of international concern, in which this was evidenced by Coronavirus Disease 2019 - COVID-19. [1- 2- 3]

Prior to this scenario of public calamity, universal health systems and the expansion of access increased the number of years lived. Thus, in the world and in Brazil, this change was marked by an epidemiological transition in which a situation of triple burden of diseases prevails, in which there is a coexistence of high prevalence of chronic conditions, burden of external causes and the non-overcoming of infectious diseases. [1-2] In this scenario, it is necessary to mention that for a health system to handle all these demands effectively, it is necessary that several workers, with different professional training, be committed, and at the same time, valued so that the planned actions can be carried out with quality and excellence. [1]

As COVID-19 refers to a new disease, everyone is vulnerable to this infection, especially healthcare professionals who are on the front lines of patient care. [4]

It was estimated that approximately 3.5 million health professionals are directly involved in providing care to individuals in Brazil, both in primary care units, in specialized services, and in hospitals, whether in the public or private network. [5-6]

In this sense, these professionals, in carrying out their activities, are susceptible to several risks, including being infected by the new coronavirus, as well as the stress related to the care provided to individuals suspected or confirmed of this disease. In view of this, a cross-sectional cohort study analyzed 16,630 health professionals regarding mental status and sleep quality and showed depression in 14%-15%; anxiety in 12%-24%; psychological disorder in 30%-39%; and sleep disturbance in 8%-60%. [4]

Thus, considering the Public Health Emergency of International Interest scenario and the importance of knowing the profile and professional category of health workers in order to subsidize support, planning and management support actions in the face of COVID-19, this research is justified, as the lessons learned from this pandemic can be transposed to new waves of the disease or even to other viruses that may appear.

Thus, this study aims to analyze the profile and professional category of health workers at a public hospital in the Federal District who tested positive for COVID-19.

METHODS

This is a cross-sectional, descriptive, retrospective study in relation to data collection and document analysis, with a quantitative approach. To guide this research, first, the guiding question was defined, what is the profile and professional category of health workers at a public hospital in the Federal District who tested positive for COVID-19?

Thus, the population consisted of 667 workers who worked in a public hospital in the Federal District. To this end, only active professionals who performed RT-PCR in the period from April to November 2020 were included and retired servers, those who performed another type of exam and those who performed RT-PCR outside the mentioned period were excluded.

The variables for characterization were in the epidemiological surveillance database of that hospital and were the source for the research. Thus, variables such as: sex (male and female); age (20 to 25 years old, 26 to 30 years old, 31 to 35 years old, 36 to 40 years old, 41 to 45 years old, 46 to 50 years old, 51 to 55 years old, 56 to 60 years old, 61 to 65 years and 66 to 70 years); function (administrator, concierge agent, public policy analyst, operational agent for various matters, advisor, biologist, cook, dentist, nurse, biochemical pharmacist, physiotherapist, speech therapist, doctor, driver, nutritionist, litter carrier, psychologist, resident physician, resident nurse, laboratory technician, administrative technician, maintenance technician, nutrition technician, nursing technician or assistant, clinical pathology technician, radiology technician, telephone operator, occupational therapist, dental hygiene technician and vigilant); sector that develops the activities (emergency management, administrative unit, internal medicine unit, surgical center unit, gynecology unit, obstetric center unit, adult intensive care unit - ICU, nutrition and diet center, patient removal support center, orthopedic and outpatient treatment unit).

The other hospital sectors were grouped and described as “others” (Brasilia security, medical residency committee, hospital pharmacy nucleus, hospital epidemiology nucleus, sterilized material nucleus, regional home care nucleus, cytopathology and pathological anatomy nucleus, clinical pharmacy unit, hematology and hemotherapy unit, clinical pathology unit, functional health unit, radiology and imaging unit, surgical clinic unit, cardiology unit, nephrology unit and this pulmonology unit); presence of comorbidity and its description; and final outcome of the case (hospitalization, cure and death).

Data processing was performed using the IBM SPSS Statistics 22.0 platform and the analysis was performed using descriptive statistics, since it describes the variables of a set of observed characteristics and inferential statistics to verify the relationship between these variables, using Fisher's Exact and V-Cramer tests, with a significance level of 0.05. [7]

Data collection only started after approval by the Research Ethics Committee of the Foundation for Teaching and Research in Health Sciences (FEPECS) as recommended by the National Health Council Resolution 466/2012 and Resolution 510/20168-9. As this was a document analysis study, the Free and Informed Consent Term (FICT) was waived.

RESULTS

The studied population consisted of 667 workers, who perform their work activi-

ties in a public hospital in the Federal District. Of these, most were female (70.3%). Age ranged from 20 to 69 years (median = 44.00; SD = 9.12). When verifying the existence of an association between the age of the professionals and the results of the tests for COVID-19, it was found that there is no statistically significant correlation between these variables (Fisher's Exact Test = 20.24; p= 0.280) (Figure 1).

Regarding the professional category, the most affected classes were nursing technicians/assistants, nurses, doctors and administrative technicians. Data that can be seen in Table 1

When analyzing the relationship between the professional category and the positive result of the tests for COVID-19, it was found that there is a statistically significant association (V-cramer=0.59; p=0.000) (Figure 2).

In this study, it was found that professionals who tested for COVID-19 were mainly assigned to emergency management (22.8%) (Figure 3).

When checking whether there was a correlation between these variables (worker capacity and positive test in RT-PCR for COVID-19), it was found that there is a statistically significant correlation (V-Cramer = 0.601; p=0.000) (Figure 4).

Regarding the test results of the population studied, 51.4% were confirmed, 46.5% were discarded and 2% cases were inconclusive, with RT-PCR being the test used for diagnosis.

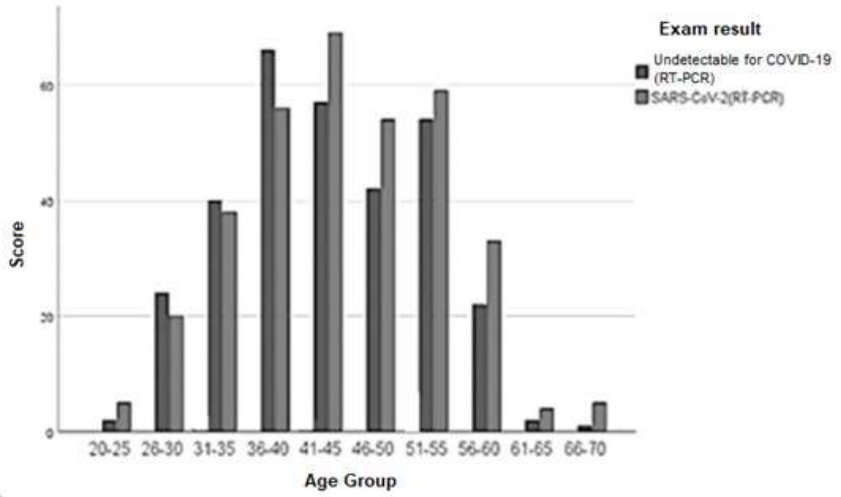
In line with the final outcome of the case, the majority did not require inpatient treatment (95%). Nevertheless, 4.8% were hospitalized, and there was one death. Most professionals did not have comorbidities (87.1%). Of those who had comorbidities, the main ones were chronic cardiovascular disease (11.2%), obesity (5.2%), chronic respiratory disease (3.6%) and metabolic disease (3.6%).

As for the incidence of cases, this study revealed that it was higher in the month of July (33.4%) and lower in March (0.7%)..

DISCUSSION

The studied sample consisted of 667 workers, the majority being female. This finding is a reflection of the insertion of women in the labor market in the health sector, which is a growing reality that has been studied in order to understand the expansion in the world of work and the peculiarities of this scenario. [10]

Figure 1- Result of the RT-PCR of workers at a public hospital in the Federal District who were tested for COVID-19 between April and November 2020 by age group (N=667).



Source: Epidemiological Surveillance (2020)

Table 1- Frequency of workers at a public hospital in the Federal District who underwent RT-PCR between April and November 2020 by professional category (N=667).

Function	Quantity	Function	Quantity
Administrator	1	Litter Carrier	2
Concierge agent	3	Psychologist	1
Public policy analyst públicas	2	Resident (physician)	11
OAVM	27	Resident (nurse)	2
Advisor	2	Laboratory technician	3
Biologist	1	Administrative technician	31
Chef	1	Maintenance technician	2
Dentist	2	Nutrition technician	11
Nurse	87	Nursing technician or assistant	323
Biochemical pharmacist	7	Clinical pathology technician	10
Physical therapist	16	Radiology technician	10
Speech therapist	1	Telephone operator	1
Physician	82	Occupational Therapist	2
Driver	7	DHT	1
Nutritionist	14	Vigilant	4
		Total	**667**

OAVM: operational agent for various matters DHT: dental hygiene technician

Source: Epidemiological Surveillance (2020)

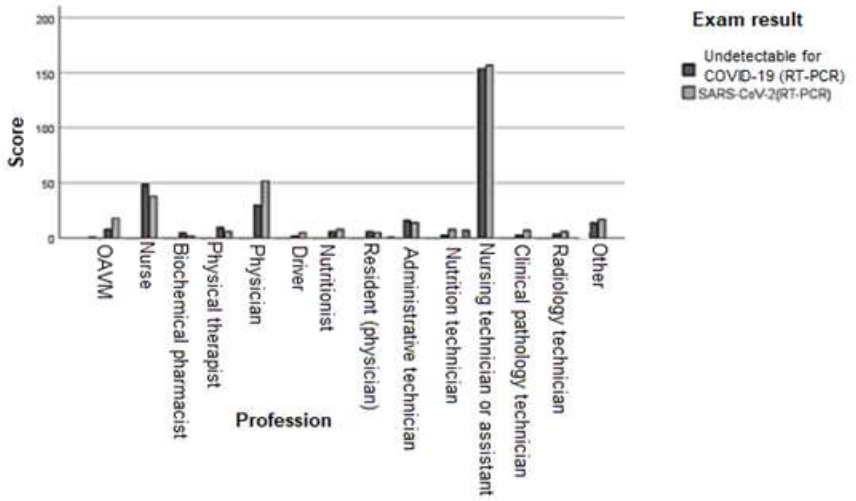
Regarding the professional category, the fact that the most affected classes are nursing technicians, nurses and doctors is in line with what is evidenced by the WHO, since it states that most health professionals who provide direct (face-to-face) care with patients and users will have a greater chance of contact with people infected with coronavirus and, consequently, of becoming infected. [3]

In the context of the multidisciplinary team, nursing technicians/assistants and nurses comprise the majority, whether in public or private services, as they are essential for humanized and quality care. According to a recent report by the WHO and the International Council of Nurses (ICN) in the world, there are about 28 million nursing professionals. [11] Data indicate that, in Brazil, there are more than two million of these professionals, who are distributed in all organizational structures of the health system, that is, hospitals, outpatient clinics, clinics, family health units, emergency care units, mobile emergency service, among others. [12-13-14]

A study carried out in China showed that approximately 3,300 health professionals were infected and 22 died. [15] A survey carried out in a referral hospital with 3,300 beds, which used a retrospective cohort with health professionals, mainly with clinical doctors and nurses, found the existence of 72 professionals infected with COVID-19 who worked on the front line. This work identified a relationship between increased working hours, inadequate hand hygiene and the risk of contracting the infection. [16]

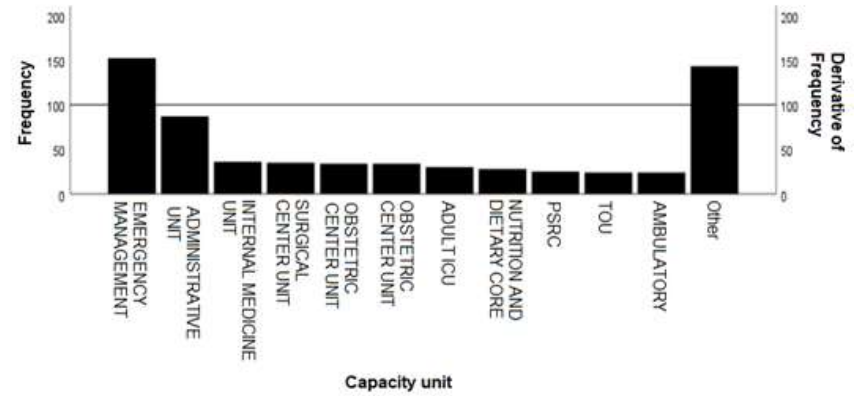
Regarding the capacity of the most affected professionals, emergency management stood out as the sector where there was a greater frequency of workers who tested positive for COVID-19. The hypothesis raised is that in that sector, there is still no effective control of the people who enter and leave the unit, in addition, there is a high number of professionals working in this scenario, which may have favored the circulation of the virus with greater intensity and, consequently, a greater number of cases among professionals.

Figure 2- Result of the RT-PCR of workers at a public hospital in the Federal District who tested for COVID-19 between April and November 2020 by professional category (N=667).



OAVM: operational agent for various matters DHT: dental hygiene technician
Source: Epidemiological Surveillance (2020)

Figure 3- Frequency of workers at a public hospital in the Federal District who were tested for COVID-19 between April and November 2020 per capacity unit (N=667).



TOU:Traumatology and Orthopedics Unit PSRC: Patient Support and Removal Center
Source: Epidemiological Surveillance (2020)

A study carried out at Tongji Hospital to identify coronavirus infection in doctors found 54 individuals affected by the virus. Of these, 72.2% performed their activities in clinical wards, 18.5% in medical technology and only 3.7% worked in the emergency department. A possible explanation for this finding is that due to the various atypical clinical manifestations of COVID-19, patients can go to different wards, which favors the contamination of professionals. As for the severity of the infection, it was observed that 11 were classified as common, 40 as severe and 3 as critical. The age distribution showed a significant difference between the common type and the severe type (mean age 47 years X 38 years; p= 0.0015). Professionals with more advanced ages were in the group with less severe infection. There was no statistical difference in relation

to sex. [17]

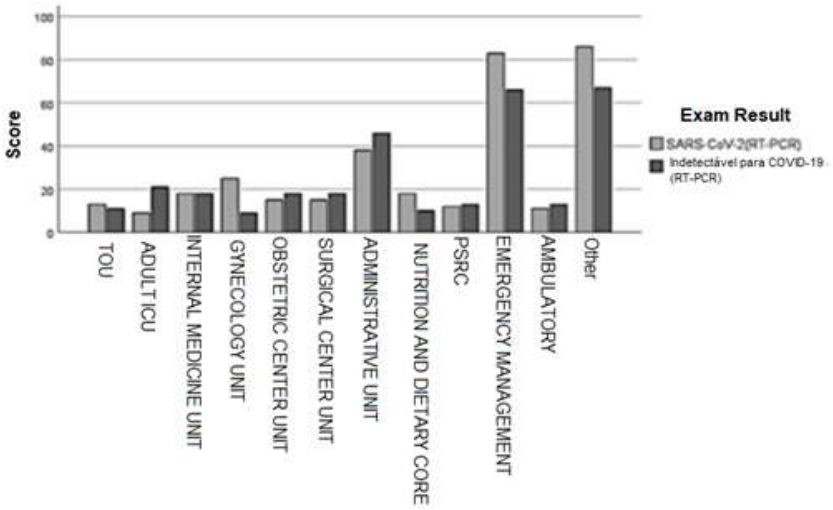
In our study, the test used for the diagnosis of COVID-19 was RT-PCR, for being the gold standard test for the diagnosis of COVID-19, since it is able to detect the RNA of the SARS-CoV-2 virus. Thus, it is recommended that the ideal time for its collection is between the 3rd and 7th day after the onset of symptoms, by collecting a swab from the naso or oropharynx. [4]

As for the final outcome of the cases, in this study, there was only one death. In contrast, until March 22, in Italy, 4,824 health professionals were infected by the coronavirus (9% of the total cases) with 24 deaths of doctors. These numbers are worse than those identified in China (3,300 infected and 22 deaths of doctors), this situation led the Italian Federation of Health Professionals to consider that a hospital-centered model proved ineffective in dealing with the COVID-19 pandemic. Thus, it was found that epidemics must be neutralized through well-planned local community surveillance, identifying and isolating suspected cases from confirmed cases. [18]

A review study showed the varied frequency of infection by the new coronavirus among health professionals, with 6.4% in the Netherlands, 3.8% in China and 5.1% in Wuhan, showing a higher incidence when compared to the general population. [19] As for the proportion of severe cases that require critical care, the literature points to a variation with values between 1.6%, 13% to 15.6% and a case fatality rate of 0.3%.[4]

The fact that most of the population studied did not need inpatient treatment can be explained by analyzing comorbidities, since most professionals did not have them. Regarding the influence of comorbidities on the outcome of cases, a Brazilian study pointed out that comorbidities (diabetes mellitus, cardiovascular diseases, chronic kidney disease and chronic lung diseases) are prevalent among patients hospitalized for Severe Acute Respiratory Syndrome (SARS-COVID) in Brazil, being higher than the estimates for the general Brazilian population, evidencing the hypothesis that people affected by these diseases are more likely to be hospitalized for the disease.[20]

Figure 4 - Result of the RT-PCR of workers at a public hospital in the Federal District who tested for COVID-19 between April and November 2020 per capacity unit (N=667).



Source: Epidemiological Surveillance (2020)

The prevalence of diabetes mellitus among individuals hospitalized for SARS-COVID in Brazil (25%) was higher than that observed for patients hospitalized in Wuhan (19%) and Lombardy (17%). However, it was lower than that observed in New York (34%), as was the prevalence of chronic kidney disease (4%, 1%, 3% and 5%, respectively) and other chronic lung diseases (4%, 3%, 4 % and 5%, in that order). [21-22-23-24]

The prevalence of cardiovascular disease among those hospitalized for SARS-COVID in Brazil (41%) was higher than that identified for Systemic Arterial Hypertension (SAH) (30%) and coronary heart disease (8%) in Wuhan, however, it was lower than that observed for SAH among individuals in Lombardy (49%) and New York (57%). [21-22-23]

Disparities in the characteristic of comorbidities are identified for the general population of Brazil and the United States of America (USA). The prevalence of diabetes in Brazilian adults in 2013 (6.2%, 95%CI: [5.9-6.6]) was lower compared to the US (10.2%, 95%CI: 9.3-11.2). For the years 2013-2016, the prevalence of SAH was also lower (21.4% vs. 41.7%), which corroborates the differences observed in the profiles of individuals hospitalized as a result of COVID-19 in these two countries.[23-24]

The present research showed that the incidence of cases was higher in July and lower in March, evidence similar to data extracted from the COVID-19 observatory bulletin after six months of the pandemic in Brazil. In relation to the lowest number of cases recorded in March, this finding can be justified by the fact that the COVID-19 pandemic was declared on March 11th, 2020.[25]

A study conducted in Spain, of a total of 6,800 employees of a hospital, 2,085 (30.6%) were tested for the new coronavirus in March 2020. Of those tested, 791 were positive for the disease, representing 11.6% of all employees in the organization. Even in the face of the high probability of transmission to health professionals, cases are not limited to individuals who carry out their activities in areas of high risk of exposure, a fact that confirms the importance of contacts in the community or at home, as they are

also sources of contamination for health professionals. [26-27-28]

Finally, it is important to mention that the COVID-19 pandemic has raised weaknesses in health services around the world and highlighted the urgent need for changes and adaptations so that care is of quality, equitable and comprehensive. [29]

CONCLUSION

This work showed the reality of a public hospital in the Federal District, where the relationship between workers affected by COVID-19 and their capacity unit and also their professional category was seen. It is observed that susceptibility to contamination by COVID-19 was more evident among professionals most exposed to direct care to the population. Therefore, support actions aimed at strengthening the capacity to face the pandemic scenario are vital.

When it is found that there is an association between these variables, it becomes evident that consistent investments are needed in secondary care health units. In this sense, it is important to adapt the locations and the number of professionals, as well as the provision of personal protective equipment and better working conditions.

Thus, it is essential to search for alternatives for the management of such a situation, aiming at maintaining the health of these workers and, consequently, their well-being. Only in this way will it be possible to minimize the direct and indirect consequences imposed by this pandemic disease and other resulting situations, such as dissatisfaction with the work environment, depression and anxiety.

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