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ORIGINAL ARTICLE

Cases of Covid-19 among healthcare workers in the state of Bahia, 2020 to 2021

Casos de Covid-19 entre trabalhadoras (es) de saúde do estado da Bahia, 2020 a 2021

Casos de Covid-19 entre trabajadoras (es) de la salud en el estado de Bahía, 2020 a 2021

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ABSTRACT

Background and Objectives: Health workers were among the main risk groups during the Covid-19 pandemic, therefore, understanding the profile of infected workers and monitoring exposure of illness and the evolution of the disease in the workforce is determinant so that we may recognize the different forms of risk and vulnerabilities related to the Covid-19 pandemic. This study aimed to describe the epidemiological profile of suspected cases of Covid-19 among healthcare workers in the state of Bahia. **Methods:** Epidemiological, cross-sectional and descriptive study, with health workers in the state of Bahia between May 2020 and December 2021. This is a census of workers, with data presented according to the results of Covid-19 tests: positive, negative or inconclusive. **Results:** Among the 45,173 tests, 24.7% had a positive result and 0.3% were inconclusive, with the majority of women (70.7%), aged 33-47 years old (46.9%), with vocational education (45.0%), self-declared non-white (61.1%) and with an outsourced work contract (48.2%). There were not relevant differences in the profile according to test results. **Conclusion:** The data reinforces the need to monitor and improve public strategies not only for detection, but also for the protection of health workers in the fight against the Covid-19 pandemic.

Keywords: Covid-*19. Workers Health Surveillance. Health Personnel. Workers Health. Epidemiology*.

RESUMO

Justificativa e Objetivos: Trabalhadoras(es) de saúde (TS), estiveram entre os principais grupos de risco durante a pandemia do Covid-19, desta forma compreender o perfil dos trabalhadores infectados e realizar o monitoramento da exposição, do adoecimento e da evolução da doença na força de trabalho possibilitam o reconhecimento dos determinantes das

diferentes formas de risco e vulnerabilidades relacionadas à pandemia Covid-19. O objetivo deste estudo foi descrever o perfil epidemiológico dos casos suspeitos de Covid-19 entre TS do estado da Bahia. **Métodos:** Estudo epidemiológico, transversal e descritivo, com TS do estado da Bahia, entre maio de 2020 e dezembro de 2021. Trata-se de censo de TS, com dados apresentados segundo resultados dos testes Covid-19: positivo, negativo ou inconclusivo. **Resultados:** Dentre os 45.173 testes, 24,7% tiveram resultados positivos e 0,3% inconclusivos, com maioria de mulheres (70,7%), na faixa etária de 33-47 anos (46,9%), de escolaridade nível técnico (45,0%), autodeclaradas pardas (61,1%) e com vínculo de trabalho terceirizado (48,2%). Não apareceram diferenças relevantes no perfil segundo resultados dos testes. **Conclusão:** Os dados reforçam a necessidade do monitoramento e aperfeiçoamento de estratégias públicas não só de detecção, mas também, de proteção a trabalhadores de saúde no combate à pandemia do Covid-19.

Descritores: Covid-*19. Vigilância em Saúde do Trabalhador. Pessoal de Saúde. Saúde do trabalhador. Epidemiologia.*

RESUMEN

Justificación y Objetivo: Las (os) trabajadores (ras) de la salud estuvieron entre los principales grupos de riesgo durante la pandemia de Covid-19, por lo que comprender el perfil de los trabajadores infectados y monitorear la exposición, la enfermedad y la evolución de la enfermedad en el personal permite reconocer los determinantes de las diferentes formas de riesgo y vulnerabilidades relacionadas con la pandemia de Covid-19. El objetivo de este estudio fue describir el perfil epidemiológico de los casos sospechosos de Covid-19 entre los trabajadores de la salud (TS) del estado de Bahía. **Métodos:** Estudio epidemiológico, transversal y descriptivo, con TS, de Bahía, entre mayo de 2020 y diciembre de 2021. Se trata de un censo de trabajadores, con datos según los resultados de las pruebas de Covid-19:positivas, negativas o poco concluyente. **Resultados:** Entre las 45.173 pruebas, el 24,7% tuvieron resultados positivos y el 0,3% no concluyentes, siendo la mayoría mujeres (70,7%), edades entre 33 y 47 años (46,9%), de nivel educativo técnico (45,0%), autodeclaradas. mestizas (61,1%) y trabajo subcontratado (48,2%). No aparecieron diferencias relevantes en el perfil según los resultados de las pruebas. **Conclusión:** Los datos refuerzan la necesidad de monitorear y mejorar las estrategias públicas no solo para la detección, sino también para la protección de los trabajadores de la salud en la lucha contra la pandemia de Covid-19.

Palabras Clave: Covid-*19. Vigilancia de la Salud del Trabajador. Personal de Salud. Salud de los trabajadores. Epidemiología.*

INTRODUCTION

Healthcare workers (HTW) were on the front lines of care for COVID-19 cases and, especially in the first year of the pandemic, until access to vaccination was available, they were among the main risk groups for illness and death from the disease. Healthcare, including medical and hospital services, was considered an essential activity, indispensable to meeting the community's urgent needs, according to Decree 10.2821, from March 20th, 2020, of the Brazilian Federal Government, causing some categories of workers, such as healthcare workers, food production and distribution workers, public safety workers, transportation workers, and urban cleaning workers, among others, to be working in-person under increased risk of exposure to COVID-19 since the most acute phase of the pandemic. Other categories of

workers, although not regulated as essential activities, were forced to work in person, as they have historically been part of vulnerable and precarious groups, such as Brazilian domestic workers.[1-4]

Therefore, since the beginning of the Covid-19 pandemic, investments in strategies to protect the health of these workers has become essential to prevent contamination and transmission of Covid-19 in health services and their homes, including the provision of Personal Protective Equipment (PPE), training, testing of suspected cases, use of infection control protocols and early vaccination of workers. Thus, seeking to understand the profile of infected workers and monitoring exposure, illness, and disease progression in the workforce makes it possible to identify the determinants of the different forms of risk and vulnerabilities related to the Covid-19 pandemic and possible cases of Post-Covid Syndrome.[2]

According to the report by the World Health Organization (WHO), by the end of May 2023, 766,895,075 confirmed cases of Covid-19 had been reported in the general population, including 6,935,889 deaths, mainly affecting the regions of Europe and the Western Pacific, followed by the Americas. By September 2020, the year in which the pandemic was declared, Brazil had accumulated a total of 181,886 infected health workers, and among the states, in absolute numbers, Bahia had the highest number of professionals infected by the virus (24,568 cases). The risk of contracting COVID-19 was estimated to be three times higher in SW in the first year of the pandemic, when compared to the general population, although the lethality of the disease in this group was lower, because it depends on other social determinants, such as race/skin color and access to social protection. The estimated prevalence of SARS-CoV-2 infection in health professionals was 11% (95% CI: 7-15) and 7% (95% CI: 4-11), varying by the type of laboratory analysis. Nursing professionals were the most affected (48%, 95% CI: 41-56).[1,5-7]

Despite the current existence of vaccines with more than 13 billion doses administered worldwide, the beginning of the pandemic was marked by the absence of immunizers and effective treatments, with the social distancing strategy being the most effective to prevent the circulation of SARS-CoV-2. However, healthcare workers directly involved in caring for patients infected with COVID-19 were unable to follow these recommendations, constituting a risk group among the general population, being exposed to high viral load and risk of contamination by the disease in their work environment.[8,9]

Among the vulnerabilities that emerged during the pandemic period among workers, there were precarious working and employment conditions, work overload, professional exhaustion and development of mental disorders and other illnesses; the shortage of PPE, the risk of illness and death from the new disease and the possibility of transmission to their family

members. In addition to the crisis that demonstrated the precariousness of working conditions and health problems related to work overload, studies have indicated a higher prevalence of long COVID in health workers when compared to other occupations, with prevalence rates reaching 30% of those tested positive for COVID-19.[10-12]

In Brazil, the effects of the pandemic on the health of health workers demanded swift action by municipal and state governments to protect the health and lives of these professionals. However, the lack of guidance from the national health authority, such as a health and safety program for health workers, resulted in specific actions by states and municipalities, especially those with greater management, governance, and budget capacity, which were discontinued with the reduction in the incidence of Covid-19 in the country, especially after the start of vaccination.[4,6]

In Bahia, during the pandemic period, the Directorate of Labor and Education Management and Health (DGTES) of the Bahia State Health Department (Sesab), together with the health surveillance areas, prepared the Sesab Workers' Contingency Plan. It was the country's first plan, which structured a series of actions and strategies for the prevention and protection of health workers working to combat the Covid-19 pandemic. Actions were taken to reorganize services to assist people considered to be suspected and confirmed cases, guidelines were provided for dealing with the disease, and health care flows and actions were implemented for workers in the fight against Covid-19. In addition, testing centers were created to detect Covid-19 and an emergency psychological support service was implemented for workers at the Secretariat and, later, vaccination services.[13]

Therefore, the objective of this study is to describe the epidemiological profile of suspected cases of Covid-19 among health workers in the state of Bahia.

METHODS

This is an epidemiological, cross-sectional and descriptive study, carried out with Sesab workers during the period from May 2020 to December 2021. The time frame was defined considering the availability of data on workers in the state of Bahia. Data collection, carried out by Sesab, was based on the completion of a questionnaire developed by DGETS/Sesab.

Study context

In the state network, DGETS/Sesab is the department responsible for planning and implementing worker health actions, including the Comprehensive Health Care Program for Health Workers (PAIST), acting on the problems of relationships, conditions, links and processes of and at work, contributing to the defense of humanized, dignified and safe working conditions and relationships in the SUS-BA. It is worth noting that during the period of analysis there were 48,894 health workers linked to the state network of Sesab.[14]

Data collection procedures

In order to monitor suspected and confirmed cases of Covid-19, DGETS/Sesab, together with other agencies, implemented the Covid-19 Testing and Reception Center (CTA) and, subsequently, 76 Local Testing Centers (LTC) distributed among the care units, directly and indirectly managed, located in the capital of Bahia, metropolitan region and cities in the interior of the state, seeking to expand the offer of diagnostic tests for the new coronavirus in the population of TS, enabling the monitoring of cases in Bahia.[13]

When tested through the Integrated Workers' Health Care Services (Siast), health workers were submitted to a questionnaire in order to obtain information regarding their health conditions and guide the preparation of the epidemiological bulletins issued by Sesab. In the absence of these, the Health Work Management Centers (Nugtes), the unit's human resources department or even the reference worker were responsible for sending the data to DGETS on a weekly basis.[14]

The study population consisted of health workers from the different Sesab health services, including management workers, such as institutional support workers, those from the Regional Centers and Operational Bases, as well as specialized care services, such as the hospital network and the Emergency network, such as the Mobile Emergency Care Service and Emergency Care Units. This is a case study with workers who were tested for Covid-19. It is worth noting that workers may have been tested on more than one occasion, considering their continuous exposure to the risk of Covid-19 infection during the data collection period. This study considers health workers to be all those who perform their activities or functions in public or private health services, based on the 2005 NOB/RH-SUS reference. The population of SESAB health workers includes 48 occupations, including public health agents, kitchen assistants, engineers, security guards and health professionals, such as nurses and nursing technicians, doctors, and other occupations providing direct health care, which represent the majority of the population. However, it is worth noting that the study did not propose to perform an analysis according to occupations.[15]

The primary data were recorded in a Microsoft Excel spreadsheet, totaling 45,195 records of tests performed on workers. For this research, the criteria for inclusion of the records were: a) data on health workers tested by Siast (including duplicate data due to some workers having more than one employment contract and working in different units, being tested more than once, in different periods). Twenty-one records were excluded if the COVID-19 test result was not provided.

The variables chosen for sociodemographic data were: sex (female and male); age group (17-32 years old, 33-47 years old, 48-62 years old, >63 years old); race/skin color (white, Asian, mixed race, indigenous and black); occupational data, such as: educational background (completed high school, vocational education and higher education), employment relationship (statutory, CLT, outsourced, scholarship holder) and questions related to health conditions and COVID-19 testing. The nine Regional Health Centers of the state were also considered (Central West, Central North, Extreme South, East, Northeast, North, West, Southwest and South). All variables were presented according to the test results (positive, negative and inconclusive).

Data analysis

The data were extracted from the Microsoft Excel platform (version 2017) into the Statistical Package for the Social Sciences (SPSS) program in version 17.0, in which the variables were categorized. A descriptive analysis of the variables was performed, obtaining the simple and relative frequencies for the categorical variables.

Ethical aspects

This study is integrated into the umbrella research entitled "Creation of an Index for Monitoring the Work Environment and Process in Hospitals of the State SUS Network", and was approved by the Research Ethics Committee of the School of Nursing of the Federal University of Bahia (UFBA) under Certificate of Presentation for Ethical Consideration (CAAE): 38382320.9.0000.5531, and number 4,605,131, with approval date 03/22/2021. The study complied with the Ethics Criteria for Research with Human Beings, in accordance with Resolution No. 466/2012 of the National Health Council at all stages.

RESULTS

A total of 45,173 COVID-19 tests were recorded among healthcare workers in the state of Bahia, whether symptomatic or not, of which 24.7% had positive results and 0.3% were inconclusive. Of the total number of cases tested, the majority were female (70.7%), aged 33 to 47 years old (47.0%), had a job based on their vocational studies (45.0%) and were

outsourced (48.2%). When looking at data on race/skin color, the majority declared themselves to be brown (61.1%), followed by black (21.8%) and white (15.3%). Considering black people as the group of people who declare themselves to be black and brown, the population of black workers represented 82.9% of the total suspected cases tested, as well as 82.3% with a positive test (Table 1).

Table 1. Sociodemographic and occupational characteristics of healthcare workers tested for Covid-19, according to test results, Sesab, Bahia, 2020-2021

Sociodemographic and occupational characteristics (N)	Positive N (%)	Negative N (%)	Inconclusive N (%)	Total N (%)
Gender				
Female	7.897 (70,7)	23.977 (70,7)	71 (70,0)	31.945 (70,7)
Male	3.278 (29,3)	9.919 (29,3)	31 (30,0)	13.228 (29,3)
Age Group[a]				
17-32 years old	2.673 (26,8)	8.324 (20.5)	30 (0,1)	11.027 (27,2)
33-47 years old	4.704 (47,2)	14.252 (35,2)	49 (0,2)	19.005 (47,0)
48-62 years old	2.375 (23,8)	7.103 (17,5)	17 (0,0)	9.495 (23,4)
>63 years old	219 (2,2)	748 (1,8)	2 (0,0)	969 (2,3)
Functional level[b]				
High School	2.092 (19,5)	6.438 (19,9)	21 (21,4)	8.551 (19,8)
Vocational studies	4.832 (45,1)	14.586 (45,0)	39 (39,8)	19.458 (45,0)
College	3.784 (35,3)	11.372 (35,1)	38 (38,8)	15.194 (35,2)
Race/skin color[c]				
White	1.221 (15,3)	3.788 (15,4)	14 (16,9)	5.023 (15,4)
Asians	186 (2,3)	645 (2,6)	2 (2,4)	833 (2,6)
Browns	4.825 (60,5)	15.082 (61,3)	53 (63,9)	19.960 (61,1)
Indigenous	4 (0,1)	21 (0,1)	0 (0,0)	25 (0,1)
Black	1.742 (21,8)	5.063 (20,6)	14 (16,9)	6.819 (20,8)
Employment bond [d]				
Statutory	2.517 (25.5)	7.699 (25,6)	32 (33.3)	10.249 (25,6)
CLT	2.397 (24.2)	7.186 (23,9)	19 (19,8)	9.602 (24,0)
Outsourced	4.753 (48,1)	14.523 (48,3)	40 (41,7)	19.316 (48,2)
Scholarship holders (student relationship)	221 (2,2)	664 (2,2)	5 (5,2)	890 (2,2)

[a] Missing data for 4,677 individuals without registration in the age group variable. b Missing data for 1,970 individuals without registration in the functional level variable. c Missing data for 12,513 individuals without registration in the race/skin color variable. d Missing data for 4,677 individuals without registration in the

Among the symptoms presented by suspected cases, headache (14.0%), cough (11.5%) and runny nose (10.3%) were the values that stood out the most, with no difference in expressivity between positive, negative and inconclusive cases (Table 2).

Table 2. Symptoms presented by healthcare workers tested for Covid-19, according to test results, Sesab, Bahia, 2020-2021

Symptoms	Positive N (%)	Negative N (%)	Inconclusive N (%)	Total N (%)
Headache				
Yes	2.139 (19,1)	4.183 (12,3)	12 (11,8)	6.334 (14,0)
No	9.036 (80,9)	29.713 (87,7)	90 (88,2)	38.839 (86,0)
Cough				
Yes	1.767 (15,8)	3.437 (10,1)	9 (8,8)	5.213 (11,5)
No	9.408 (84,2)	30.459 (89,9)	93 (91,2)	39.960 (88,5)
Runny nose				

Yes	1.535 (13,7)	3.108 (9,2)	12 (11,8)	4.655 (10,3)
No	9.640 (86,3)	30.788 (90,8)	90 (88,2)	40.518 (89,7)
Sore throat				
Yes	1.436 (12,9)	3.097 (9,1)	17 (16,7)	4.550 (10,1)
No	9.739 (87,1)	30.799 (90,9)	85 (83,3)	40.623 (89,9)
Fever				
Yes	1.173 (10,5)	1.948 (5,7)	11 (10,8)	3132 (6,9)
No	10.002 (89,5)	31.948 (94,3)	91 (89,2)	42.041 (93,1)
Sneezing				
Yes	912 (8,2)	1.927 (5,7)	6 (5,9)	2.845 (6,3)
No	10.263 (91,8)	31.969 (94,3)	96 (94,1)	42.328 (93,7)
Fatigue				
Yes	957 (8,6)	1.786 (5,3)	5 (4,9)	2.748 (6,1)
No	10.218 (91,4)	32.110 (94,7)	97 (95,1)	42.425 (93,9)
Diarrhea				
Yes	708 (6,3)	1.551 (4,6)	6 (5,9)	2.265 (5,0)
No	10.467 (93,7)	32.345 (95,4)	96 (94,1)	42.908 (95,0)
Loss of smell				
Yes	927 (8,3)	1.205 (3,6)	7 (6,9)	2.139 (4,7)
No	10.248 (91,7)	32.691 (96,4)	95 (93,1)	43.034 (95,3)
Loss of taste				
Yes	820 (7,3)	1.043 (3,1)	7 (6,9)	1.870 (4,1)
No	10.355 (92,7)	32.853 (96,9)	95 (93,1)	43.303 (95,9)
Difficulty Breathing				
Yes	429 (3,8)	867 (2,6)	3 (2,9)	1.299 (2,9)
No	10.746 (96,2)	33.029 (97,4)	99 (97,1)	43.874 (97,1)

Considering the clinical profile, it can be observed that 30,541 (67.6%) of the suspected cases had contact with a confirmed case of Covid-19, only 160 (0.4%) were hospitalized and 45,170 (99.9%) out of the suspected cases evolved to cure (Table 3).

Table 3. Clinical characteristics of healthcare workers tested for Covid-19, according to test results, Sesab, Bahia, 2020-2021

Clinical profile	Positive N (%)	Negative N (%)	Inconclusive N (%)	Total N (%)
Contact with confirmed case				
Yes	7.408 (66,3)	23.071 (68,1)	62 (60,8)	30.541 (67,6)
No	3.767 (33,7)	10.824 (31,9)	41 (39,2)	14.632 (32,4)
Was there hospitalization				
Yes	87 (0,8)	72 (0,2)	1 (1,0)	160 (0,4)
No	11.088 (99,2)	33.823 (99,8)	102 (99,0)	45.013 (99,6)
Outcome (cure/death)				
Cure	11.174 (100,0)	33.894 (100,0)	102 (100,0)	45.170 (100,0)
Death	1 (0,0)	2 (0,0)	0 (0,0)	3 (0,0)

In relation to the records according to Regional Health Centers, the East Center had a higher percentage of testing of suspected cases (64.2%), followed by the Central West Center (11.0%) and the South Center (8.3%) (Table 4)

Table 4. Distribution by Regional Health Centers of health workers tested for Covid-19, according to test results, Sesab, Bahia, 2020-2021.

Regional Health Center	Positive N (%)	Negative N (%)	Inconclusive N (%)	Total N (%)
Midwest	1.181 (10,9)	3.594 (11,0)	10 (10,2)	4.785 (11,0)
Midwest North	199 (1,8)	786 (2,4)	3 (3,1)	988 (2,3)
Far South	198 (1,8)	585 (1,8)	0 (0,0)	783 (1,8)
East	6.968 (64,2)	20.898 (63,9)	64 (65,3)	27.930 (64,0)
Northeast	122 (1,1)	439 (1,3)	2 (2,0)	563 (1,3)
North	202 (1,9)	613 (1,9)	1 (1,0)	816 (1,9)
West	240 (2,2)	869 (2,7)	1 (1,0)	1.110 (2,5)
Southwest	790 (7,3)	2.254 (6,9)	6 (6,1)	3.050 (7,0)

[a]Missing data for 1,525 individuals without registration in the Regional Health Center variable.

DISCUSSION

The epidemiological profile of health workers tested for Covid-19 at Sesab was characterized by a higher incidence of females, young adults, black people, vocational workers, outsourced workers and those working in services at the Eastern Regional Center, where the state capital is located. Most cases had contact with a suspected case and were cured without the need for hospitalization, regardless of the test result.

The female profile is the most representative in health occupations, which is equivalent to approximately 70% of health and social service work teams. Considering the feminization of the health workforce, the conditions of greater exposure to the risk of contamination by Covid-19 and the accumulation of working hours, it is assumed that female workers presented a greater risk and vulnerability to illness from Covid-19.[4,16]

Regarding age group, the young adult population, economically active, with less social protection and possibility of social distancing, was the most affected group. In addition, there is a low representation of SW in the age group over 63 years old, due to the mandatory removal of SW over 60 years old from their work activities, according to Ordinance No. 52 of 03/12/2020, who are considered part of the high-risk group for developing severe forms of the disease and deaths.[17]

Regarding self-declared race/skin color among SW, the contingent of black people (83%), when black and brown people are added, is consistent with the population characteristics of the state of Bahia. According to the Continuous National Household Sample Survey (PNADC), carried out in June 2022, among the 15 million Bahians, 80.8% were black people, 23.9% were black people, and 56.9% were brown people. This study highlights a higher frequency of suspected and tested cases of COVID-19 among the black population, including black women, compared to other nationwide studies with healthcare workers and the general population or conducted in other states, which present a total number of suspected cases more representative in the self-declared white population, which may also reflect the invisibility of

black healthcare workers. The association between black race/skin color and increased risk for COVID-19 was the strongest evidence found in a literature review on the social determinants related to the incidence of the disease, based on findings from three large observational studies conducted with the general population, without a specific focus on occupation.[18-20]

Regarding the functional level, the largest sample was observed among vocational workers. This result may be related to the nature of the activities performed by these professionals, which may involve direct and prolonged contact with patients. The literature points to disparities between the different categories of healthcare professionals, showing that vocational workers, for example, may face specific risk conditions, even when their functions are not directly related to healthcare.[21]

The prevalence of Covid-19 found in the population of the present study, of 24.7%, was higher than that found in other studies with healthcare workers, as well as the prevalence of asymptomatic individuals (who did not present any of the symptoms investigated), of approximately 80%, was also higher than that of previous studies. As in the population of healthcare workers at Sesab, fever and cough were the most frequent symptoms in the findings of previous studies with healthcare professionals. In a systematic review with meta-analysis, it was observed that among health professionals who tested positive for Covid-19, 40% (95% CI: 17-65) were asymptomatic at the time of diagnosis, and, among those who were symptomatic, the most frequent symptoms were fever (56%, 95% CI: 50-64), dry cough (57%, 95% CI: 50-65), malaise (43%, 95% CI: 26-61) and myalgia (48%, 95% CI: 35-62). Serious clinical complications developed in 5% (95% CI: 3-8) of health professionals who tested positive for Covid-19 and 0.5% (95% CI: 0.02-1.3) died.[1,22]

Considering the distribution of Covid-19 cases by location, the Eastern Regional Health Center had a higher percentage of suspected and tested cases. The Eastern region includes the city of Salvador, the state capital, with a significant population density, representing 19.1% of the population of the state of Bahia. Thus, the volume of cases of community transmission in this territory stands out, as well as a greater concentration of health services and hospitals, with a significant number of health workers in relation to other cities in the state.[13]

The State Government adopted measures to deal with the emergency in Bahia in March 2020, where employees were 60 years old or over, with a history of respiratory and chronic diseases, pregnant women and those using immunosuppressive medications, due to greater risk, began to work remotely. In this study, it can be observed that only 3 of the suspected cases of Covid-19 evolved to death, and this number can be justified by the removal of more vulnerable health workers, and, based on Technical Note No. 53 of the Bahia Health

Emergency Operations Center, by better access to health services and the protection provided, such as the distribution of PPE and testing, by the services.[23,24]

Among the suspected cases, the outsourced relationship was noticeable as being more expressive among workers, which may be related both to the outsourcing process in Public Health and to the precariousness and vulnerability of these workers, when compared to statutory workers. In Bahia, temporary hiring has increased, surpassing the percentage of public career workers in 2022. Workers with temporary employment bond represented 37.0% of jobs in establishments linked to the SUS, compared to 34.0% of public career workers. Although the population of this study is diverse, including all workers involved in all activities of health services, such as security guards, receptionists and direct health care professionals, it is recognized that the majority of the population are vocational workers or health assistants, followed by those with higher education.[25]

Among the limitations of the study, a significant frequency of under-reporting of information and missing data was observed, due to the lack of a pilot experience, in addition to the lack of training of professionals to fill out the spreadsheet due to the state of emergency in obtaining this data, which may interfere with the quality of the results. However, the results presented allow for the understanding of information that characterizes the occurrence of the disease among health workers and its relationship with working conditions and may serve as a subsidy for assistance policies for the protection and prevention of worker health.

Therefore, it is essential to strengthen the continuous monitoring of influenza-like syndromes in health services, as well as to improve and ensure adherence to individual and collective protective measures, aiming at the prevention of new cases and the mitigation of severe forms of COVID-19 among health workers. The implementation of strategies aimed at reducing the exposure of the most vulnerable professionals, such as older professionals, should be considered a priority in the formulation of health policies, especially given the possibility of new epidemics.

In addition, promoting health equity requires the adoption of measures that ensure effective protection for black workers, outsourced workers and vocational workers, groups that face additional challenges due to structural inequalities. Addressing these vulnerabilities requires the formulation of specific policies, the strengthening of supervision in health institutions and the development of continuous actions to ensure safer and fairer work environments. Thus, by expanding the perspective on these inequalities, and on occupation in health, the study contributes to the improvement of institutional strategies for prevention and protection of health workers, reinforcing the commitment to the safety, equity and appreciation of these essential workers.

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AUTHORS' CONTRIBUTIONS

Sara de Santana Vieira contributed to the writing of the abstract, introduction, methodology, construction of results and discussion, and final review. **Rafaella Santiago Coutinho Santos** contributed to the analysis and interpretation of results, writing and critical review of content. **Milena Maria Cordeiro de Almeida** contributed to data analysis, construction of results and discussion, completion of the text, and final review. **Samilly Silva Miranda** contributed to planning, organization of the database, analysis, and review of the text. **Handerson Silva Santos** contributed to data analysis, completion of the text, and final review. **Luciano de Paula Moura** contributed to completion of the text and final review. Bruno Guimarães de Almeida contributed to the conception and design of the study. **Tatiane Araújo dos Santos** contributed to the final review.

All authors approved the final version to be published and are responsible for all aspects of the work, including ensuring its accuracy and integrity.