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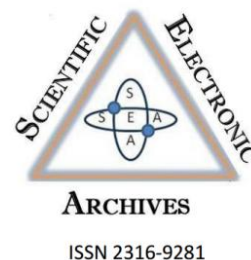
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# COVID-19 in Brazil: The challenges to face the pandemic by health professionals

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**Abstract.** In December 2019, a new coronavirus was sparked in China, which was named the following year by the World Health Organization as Coronavirus Disease (COVID-19). The pandemic installed because to Covid-19 brought interference from social and governmental aspects, such as social isolation and the closing of borders, as strategies to reduce exposures of populations to the virus. In contrast, health professionals live a time of exposure and vulnerability, facing challenges on a daily basis. This paper aimed to discuss the scenario of Covid-19 in Brazil and the challenges experienced by health professionals. This is a bibliographic review of complete scientific articles, published in the Scielo, BVS and WHO virtual libraries, between 2019 and 2020, in English or Portuguese languages, being articles in the Health Sciences area. Search for the keywords “coronavirus infections and healthcare personnel”, “coronavirus infections and Brazil”, and “coronavirus infections”. Were found 696 articles and 21 of relevant content were selected for the present review. Complementary official government data were also used. It is concluded that frontline health professionals in Brazil and other countries in the world face personal and professional challenges, related to degrading feelings, insufficient guidance on handling contaminated materials and practices with transitory truths and little scientific basis. It is observed the importance of professional valorization in typical days, bigger operational investments and care with the physical and mental health of the health professionals.

**Keywords:** Coronavirus Infections, Health Personnel, Occupational Health.

## Introduction

In December 2019, in the city of Wuhan, China, cases of pneumonia caused by a new coronavirus were reported, which was termed as severe acute respiratory syndrome of coronavirus 2 (SARS-CoV-2) (Zu et al., 2020). SARS-CoV-2 manifests itself differently from other viruses, with the sources of contagion and prevention still unclear (Yuen et al. 2020).

On February 12, 2020, SARS-CoV-2 was named by the World Health Organization as Coronavirus Disease (COVID-19), (WHO, 2020). Currently, the COVID-19 pandemic has resulted in a high number of deaths, standing out among the most important scientific discussions at the moment.

Interference and readaptation to everyone's daily lives has been constant. In this sense, strategies such as social isolation, the closing of borders in some countries, as well as the planning and adoption of measures to face the crisis have been adopted by government officials (Correia et al., 2020). On the other hand, these practices are not

applicable to health professionals, as they are necessary in coping with the disease in precarious conditions and long working hours, thus exposing these workers to those infected with the new coronavirus (Quintão et al., 2020; Shigemura et al., 2020).

In addition to increased exposure to the disease, health professionals face numerous obstacles, including the sparse production of reliable literature. Thus, a literature review that contextualizes the pandemic of COVID-19 in Brazil, as well as reports the experiences of these professionals in coping with the disease, in addition to contributing to the production of scientific information, possibly will serve as a basis for operational readjustments of health systems. and improvements in professional practices.

The purpose of this review was to discuss Covid-19 in the Brazilian scenario, as well as to report the needs and challenges experienced by health professionals in facing the pandemic.

## Methods

This review was carried out in the databases with access via the Internet, between 20 and 31 May 2020. For the selection of articles, the following criteria were established: published articles indexed in the virtual libraries: VHL (Virtual Health Library), and WHO (COVID-19: Global literature on coronavirus disease). Only full-text scientific articles between the years 2019 and 2020, in English or Portuguese, in the area of Health Sciences, were included. The keywords used were: "Covid", "Health Professionals", "Brazil", "Coronavirus Infections", "Health Personnel". The focus of the research was "infections by coronavirus and health professionals", "infections by coronavirus and Brazil" and, only "coronavirus infections". Of the 696 articles found, 20 were selected for the present review according to the focus of the study. Also, 10 complementary official government data were used, such as the Ministry of Health of Brazil, the World Health Organization and the National Health Council.

## Contextualization and analysis

The Brazilian Ministry of Health officially reported the first case of COVID-19 on February 26, 2020 (BRASIL, 2020c). The patient was a 61-year-old man, residing in São Paulo, with a history of traveling to Lombardy, Italy. The patient was treated at Hospital Israelita Albert Einstein on February 25, showing signs and symptoms compatible with the suspicion of the disease. After three months of the first confirmed case, Brazil was already the second country with the highest number of people infected by COVID-19. The Panel of the Center for Systems Science and Systems Engineering (CSSE), which is constantly updated by researchers from Johns Hopkins University, showed that, on May 25, 2020, Brazil had more than 363 thousand confirmed cases, with approximately 23,000 deaths (Johns Hopkins University & Medicine, 2020).

This worrying podium, puts to the test the structure of epidemiological surveillance in Brazil, which has suffered the effects of investment reductions in the Unified Health System (SUS) by Constitutional Amendment 95 (BRASIL, 2016), in addition to a reduction in research funding, that could collaborate with the detection and development of disease control strategies (Lana et al., 2020). The association of epidemiological and genomic surveillance is fundamental for the agile identification and establishment of functional strategies for Covid-19 cases, both in Brazil and in other countries (Jesus et al., 2020).

Monitoring epidemic curves is essential for epidemiological surveillance services in epidemic situations, as they measure the population's rate of illness and the disease's ability to reproduce. The world experiences pointed out the need for social isolation, in order to control the speed of progress of the curve, since it does not vaccinate to control the pandemic (Rafael et al., 2020). Testing and

vaccinating the professionals involved has already been described by Chersich et al. (2020) with a fundamental strategy in the Ebola epidemic in Africa, however, for COVID-19 the tests are restricted and it is not yet possible to adopt this strategy. Several factors can influence the implementation of disease control practices, such as social behavior, belief systems, information campaigns and local health practices (Feigenbaum et al., 2019).

In February 2020, more than 3 million health professionals throughout Brazil were registered in the National Register of Health Establishments (CNES). The CNES predicts that about 10% (122,000 to 365,000) of these employees will be on leave due to Covid-19, either due to contagion, illness or death from the disease (CNS, 2020). In Italy, damage expectations exceeded Brazilian estimates, as 20% of health workers who acted against the coronavirus became infected or died (The Lancet, 2020). Therefore, treating sick patients with COVID-19 becomes a very serious matter, offering risk to the professionals involved.

Unlike European and Asian countries, Brazil has little experience with catastrophes and calamities, and there is no local culture for preventing these situations (Lima et al., 2020). Action strategies become more complex due to the territorial dimension and regional differences (CONASS, 2020). As in Africa, that great geographical distances make it difficult to transfer health workers from rural areas to facilities with a high demand for patients, at the secondary and tertiary levels of urban centers (Chersich et al., 2020).

In India, ICUs are scarce in the public sectors and in the private sectors they lack sufficient preparation to care for patients in serious and / or highly infectious conditions (Misra, 2020). Similarly, in Brazil the number of ICUs is insufficient in certain regions. Moreira (2020) demonstrated that in the North and Northeast of Brazil they had reduced number of ICU beds, both in the Unified Health System (SUS) and in private hospitals, yet, in SUS, an insufficient number of mechanical ventilators was reported (93 , 3% in the North Region and 81.2% in the Northeast Region).

At this time of pandemic, there is a greater focus on the care of the hospital network, however, reducing the importance of Primary Health Care in SUS can be mistaken in view of the increase in cases of COVID-19 (Souza et al., 2020). In crises, society realizes the importance of investments in science and technology focused on the universal right to health (Werneck & Carvalho, 2020).

As the number of cases of patients with COVID-19 increases, more worrying and more necessary is the use of Personal Protective Equipment (PPE) for health professionals (Chersich et al., 2020; The Lancet, 2020). The health team is prioritized in many countries, but the shortage of PPE has been described in the most affected

facilities. Some medical teams, because they do not have adequate equipment, are exposed to high risk when treating possible infected people (The Lancet, 2020). In this way, health professionals face the daily challenge of promoting satisfactory care for sick individuals, and at the same time maintaining their own safety during work (Moock & Mello, 2020).

The PPE recommended for frontline servers against COVID-19 in Brazil, consist of: surgical mask, when operating at a distance less than 1 meter from the patient, tissue masks are not recommended; respiratory protection mask, when performing procedures with risk of aerosol in patients with suspected or confirmed infection, with minimum efficiency in the filtration of 95% of particles (type N95, N99, N100, PFF2 or PFF3); gloves for non-surgical procedures, when there is a risk of contact of the server's hands with blood, body fluids, secretions, excretions, mucous membranes, unhealthy skin and contaminated articles or equipment; eye protection or face protection, when there is a risk of exposure to blood, body secretions and excretions; and, long-sleeved cloak / apron, mesh or elastic cuff and waterproof back opening, when there is a risk of blood spatter, bodily fluids, secretions and excretions, to avoid contamination of workers' skin and clothing (BRASIL, 2020b). However, many professionals do not have adequate working conditions, with the appropriate PPE, and sometimes receive insufficient guidance on the safe use of materials during the management of the infected patient, which makes them highly vulnerable to self-contamination by the virus (FIOCRUZ, 2020).

In this context, the team is exposed to risks of contact with pathogens, long hours of work, psychological suffering, fatigue, professional exhaustion, stigma and physical and psychological violence (WHO, 2020). Countless professionals are overwhelmed by physical and mental stress (Huang et al., 2020; Jackson et al., 2020; The Lancet, 2020).

Após When placing the complete PPE in ICUs, workers are restricted for about 6 hours, without stopping to drink, eat or go to the bathroom and, at the end of the day, there is still the risk of self-contamination during the removal of PPE (Misra, 2020). Verbeek et al. (2020) found that changes in the design of PPE can reduce the risk of contamination, such as the presence of flaps to facilitate the placement and removal of equipment, instructions spoken during the removal, and the use of gloves to disinfect materials, can reduce contamination and protect workers more.

In addition to physical exhaustion, professionals live with various degrading feelings, which involve fear, frustration, anguish and insecurities, even referring to family life and the possibility of infectious transmission (BRASIL, 2020a; Kang et al., 2020; Lu et al., 2020; Misra, 2020; Xiang et al., 2020). The teams often presented fear and anxiety, in addition to the

uncertainties regarding the conduct they should take when patients do not cooperate with treatments, feeling helpless in the face of critical patients (Chen et al., 2020). In addition, the daily losses of patients and coworkers impact even more (Jackson et al., 2020; The Lancet, 2020).

Lu and colleagues (2020), in a study of 2042 medical teams and 247 administrative teams at Fujian Provincial Hospital, China, found that the medical staff in the respiratory, emergency, ICU and infectious diseases department had twice as much chances of suffering from anxiety and depression than the management team. Thus, workers who care for infected patients need to be evaluated on their mental health regularly, especially in relation to depression, anxiety and suicidal ideation (Ornell et al., 2020).

Liu et al. (2020) also reported on the mental health impacts that Chinese health teams have suffered due to changes in work practices during the pandemic. Aiming at mental care, the online monitoring of mental health of these employees has been carried out, through social networks or smartphones. Still, they highlighted the importance of building rest places for workers (Liu et al., 2020). Resting places must be supplied with water, supplies, protective equipment, in addition to being constantly reinforced and kept organized by the Chinese government (Lu et al., 2020).

Therefore, it is observed that the protection of physical and mental health adopted in developed countries, as well as solid public policies that aim to improve the practices of those workers, must be examples to be followed by Brazil during the pandemic. Such measures can minimize the damage done to workers after the pandemic.

Resources such as Telemedicine, which have a relatively lower cost, are tools that can be put in place to reduce the risks of contamination between professionals and patients (Chersich et al., 2020). Health institutions should also strengthen the team's psychological skills training (Chen et al., 2020). These commitments must be assumed by managers at all levels (BRASIL, 2020b).

Currently, in Brazil, there are few scientific studies on epidemiological data and intervention models focused on the mental health of health professionals involved against COVID-19. Most studies on the topic were carried out in China, which brings limitations to the applicability in Brazil with regard to language, socio-cultural characteristics and minor economic situation, which limits resources to projects (Ornell et al., 2020).

Furthermore, in the face of uncertainties, medical teams may feel unprepared for clinical intervention due to the lack of well-established clinical protocols or treatments (Huang et al., 2020). On the other hand, at the same time that evidence-based news is reduced and in a slow process of publication, false information and mistaken recommendations are advancing rapidly through social media. This false

information, sometimes, even passes through communications from official publicly supported entities, bringing up myths such as the use of antiviral teas for the treatment of the virus, as a result, this information disorient and increase the risk to the population (Lana et al., 2020).

## Conclusions

In general, the COVID-19 pandemic triggered changes in social habits worldwide and resulted in adversities to the health systems and professionals involved.

In Brazil, the notification systems for epidemiological surveillance have limitations that compromise the prevention and control of COVID-19. A major crisis, in addition to rampant infection, is occurring. Health teams are exposed to the operational weaknesses of hospitals that care for patients with COVID-19, including the lack of PPE. Furthermore, the training of these teams for the use of infected equipment is sometimes insufficient, which results in self-contagion and risk of death. Brazilian health professionals are physically and mentally exhausted, facing daily difficulties, with transitory truths and scarce scientific evidence, while the media quickly disseminates false information that instigates the population and poses risks to public health.

It is important to value health professionals on typical days, because at times like this, teams take risks and go beyond efforts on behalf of everyone.

In Brazil, more operational investments are needed for health workers, as well as support from institutions for physical and mental health, since there may be permanent negative consequences related to the process of coping with the pandemic.

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