

Covid-19 pandemic and health professionals: practical approaches.

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Abstract

COVID-19 disease is a pandemic, with severe clinical manifestations, high lethality and which has reached at least 128 countries. In this sense, the bioprotection of health professionals is a fundamental principle in preserving the lives of those who work in the direct care of patients who are victims of SARS-CoV-2. Each day the number of confirmed cases exceeds the most optimistic estimates, which cause severe damage and overload in the infrastructure of health systems. The present study addressed the main dilemmas and difficulties faced by health professionals in combating the pandemic. A literature review was carried out in the Embase, Scopus, Pubmed / Medline, Web of Science, Scielo, Cochrane Library, and Google Scholar databases, where 28 articles were selected after independent peer review. The most recent and relevant studies on the need for effective bioprotection were included. For this reason, we put the step by step for the reader to understand and execute. Besides, the indiscriminate use of personal protective equipment (PPE) was analyzed, what to do in the absence of such material, and the role of the professional as a health educator in the optimization of available resources. In conclusion, it is recommended to use PPE's with parsimony and telehealth as a useful device in the emergency support of professionals working on the front lines in the fight against coronavirus.

Keywords: covid-19 pandemic, sars-cov-2 infection, covid-19 pandemic, coronavirus, personal protective equipment, healthcare workers.

1. Introduction

The respiratory infection caused by a new strain of coronavirus not previously identified in humans, SARS-CoV-2, has been named Coronavirus 2019 or COVID-19. It appeared in December 2019 as "pneumonia of unknown cause" in the city of Wuhan, Hubei province, China. COVID-19 quickly spread to other regions in China and Asian countries [1,2].

In January 2020, the World Health Organization's International Emergency Committee officially declared the outbreak as a "public health emergency of international interest," and the disease has reported a pandemic on March 11, 2020 [2]. The pandemic has an uncertain future, depending on experts' estimates, it presents itself in several clinical forms, from mild to severe cases, such as acute respiratory failure. Several other structural problems of the public health system are added, such as the Brazilian Unified Health System [2-4].

Transmission occurs during exposure, on average, 1.5m, to a person infected with COVID-19, through droplets containing the virus when the infected person coughs or sneezes. Droplets can reach the mouth, nose, and eyes of people close by entering the lungs. The contribution of small particles, called aerosols or droplet nuclei to transmission by proximity, is currently uncertain. However, transmission by air from person to person over long distances is unlikely [3,4].

Ferguson et al. demonstrated that the best way to contain the pandemic, its transmission, and minimize the burden on health services is the alternative mitigation policy (the combination of case isolation, home quarantine, and social distance from the population) for at least three months. This measure would reduce the number of deaths predicted by the epidemic by more than half, and the peak demand for health services by 66% [5].

The big question is: how to balance a system that was already experiencing difficulties to overcome the new challenges that arose with COVID-19? From this aspect, the current social reality is to discuss fundamental points of daily life, such as the use of personal protective equipment; provide adequate care, without fear of contamination; immediate assistance for severe cases, and treating infected patients equally [4-6].

The COVID-19 pandemic produces ethical dilemmas for the healthcare system, managers, and healthcare equipment suppliers. Perhaps the most difficult is how to equitably distribute scarce resources, such as ICU beds and mechanical respirators, as this decision can determine who lives and who dies. We all experience the dizzying newness of socially distanced lives and feel that 'things are different now' [6].

How do traditional ethical principles apply to these new circumstances? COVID-19 reflects a recent situation of an old problem: ensuring fair access to health services sparingly to ensure the law of equity. Also, it puts into question all issues of good hygiene practices of the population and the safety routine of health professionals [7-9].

As part of the front line in the fight against the pandemic, the multi-professional health team is a crucial response force. From this perspective, it is understood that measures are necessary to enable effective bioprotection since the compromised composition of health teams in quantity and quality can generate a notable economic and social impact on the country affected by the pandemic [8-10].

From the perspective obtained through arctic published on the subject and information based on scientific evidence, the present study aimed to analyze, describe and elucidate the main challenges faced by health professionals in the face of the COVID-19 pandemic, as well as to present and discuss on the strategies implemented around the world to combat it.

2. Methods

The research was carried out in the Embase, Scopus, Pubmed / Medline, Web of Science, Scielo, Cochrane Library, and Google Scholar databases, considered "gray literature" as it does not contain peer-reviewed articles. The selected studies involved health professionals and the pandemic of the new coronavirus (COVID-19), with the most recent being considered. The studies were chosen by combining the following keywords: COVID-19 pandemic, SARS-CoV-2 infection, COVID-19 pandemic, Coronavirus, Personal Protective Equipment, and Healthcare Workers. All relevant studies published in the year 2020, in the cohort, systematic review, meta-analysis, case-control, cross-sectional and case series studies were included in the selection analysis. The filters chosen were studies carried out in humans and complete articles. The report, review, and selection of articles was carried out in pairs, separately and blindly, based on the reading of the title and summary of the study, with a third reviewer in case of disagreement among the others. From a total of 87 pre-selected, 30 articles were included in this review.

3. Results and Discussion

Analyzing the pandemic from the health system offered to the population, notable countries with excellent public care services have a higher capacity to deal with health threats. However, as Ceukelaire et al. stated, the privatization of health services and the individualization of risks reduce the ability to deal with this and future global pandemics [3].

Private health systems are unable to coordinate appropriate collective responses, which is why the governments of the United States of America and Italy invest in individual people's responsibilities. Thus, social distance has become the cornerstone of their mitigation plans for COVID-19. In this regard, Brazil's health system is different due to the

principles of universal service. However, the distribution of resources does not guarantee security [3-5].

Treating patients with COVID-19 requires training, correct use of PPE, availability of a modern ICU, and the presence of trained and dedicated health staff. [8] Health professionals are at high risk of falling ill while fighting the COVID-19 pandemic. Nosocomial outbreaks among these professionals are not uncommon [9-11].

In a hospital in China, about 3019 health workers were infected with COVID-19; 1716 cases confirmed by nucleic acid testing, and at least 6 of these professionals died, including the doctor who warned about the new coronavirus, Dr. Li Wenliang. Therefore, urgent interventions are recommended to protect health professionals, such as the use of appropriate personal protective equipment to face the pandemic [9].

Although the aggravating shortage of mechanical respirators and Intensive Care Units (ICU) beds, the number of critical cases only increases, and such structures will not be useful unless there is an adequate workforce [4,10].

With the scarcity of health professionals in the fight against the pandemic due to its increasing contamination, health students, recent graduates, and residents are called to work on the front line. The practice can be seen in several countries like the United States, Italy, and Canada. However, placing such individuals without adequate training is a risk to public health. In this sense, the American Heart Association (AHA) is clear that we must protect our interns and not send them to act in the epidemic [10].

Furthermore, the risks are not inherent only to those who receive and treat infected patients, but it also affects surgeons who, even working in a restricted field of the hospital, are at the mercy of the disease, due to the possibility of dissemination during surgery, even if minimally invasive, particle aerosols, as well as by hematogenic route [11].

Regarding aerosol transmission, it is worth emphasizing the necessary precaution to perform aerosol-generating procedures, such as the use of a nasal catheter (CN), venturi masks, non-invasive ventilation (NIV), orotracheal intubation, nebulization, among others. The use of CN can spread particles that reach up to one meter. That is, procedures previously commonly performed without concern by professionals in their health services need more attention to avoid exponential contagion of the virus, causing emotional and psychological stress [12,13].

Thus, it is evident the need to use surgical masks, social isolation, the negative pressure in the beds where infected and hospitalized patients are. It is also worth emphasizing the importance of the health professionals' follow-up of the protocols created for the vesting and de-vesting, to reduce the risk of intra-hospital infection by COVID-19 [10,12].

The different epidemiological characteristics of these viruses (SARS-CoV-2 and SARS-CoV-1) probably occur due to other factors, such as high viral loads in the upper respiratory tract, as well as the spread of the virus by asymptomatic infected people. SARS-CoV-2 remains viable and infectious in aerosols for hours, while it persists for several days on some surfaces [14-16]. Some necessary care measures should be discussed, as well as training for health professionals, helping them to recognize suspected cases and demonstrate adequate use of PPE's [9].

It is essential that all institutions cancel elective procedures, use telehealth when possible, limit points of entry and visitors, encourage patients to use hygiene habits and use face masks, and screen patients for respiratory symptoms daily. Because many times, patients who seek health care for different reasons can manifest respiratory symptoms that deserve to be reviewed [15].

Some essential points have been changing the routine of health professionals and are related to safe vestment, previously indicated routinely. Still, due to the pandemic and generalized anxiety, it has been assuming a fundamental role in stopping the coronavirus. The correct vestment and the respiratory etiquette bring good results for both the health professional and the population [15-17].

3.1. Health professional safety

Health professionals are facing a higher risk of exposure, extreme workload, moral dilemmas, and a continually evolving practice environment that differs significantly from habitual. [4].

Training on personal and interpersonal protection is essential to avoid contamination of professionals, from the step-by-step re-approach to correct hand hygiene and the five crucial moments for cleanliness to the correct placement and removal of PPE's [16,17].

Some tertiary and secondary hospitals face a lack of PPE, so healthcare professionals need to improvise using plastic (photographic film, plastic film, file bag, etc.) to create a simple PPE that makes all the difference in the face of COVID-19 contamination. [9].

In a study on which fears and anxieties afflicted the professionals, continuous fear of access to appropriate personal protective equipment and exposure to COVID-19 at work and bringing the infection to their family was revealed [4]. Without adequate protective gear, some doctors in the UK are considering leaving medicine as a profession [18]. In India, some intensive care doctors have resigned. [8]

As a reference, a hospital in Shanghai, China, provided adequate medical supplies to ensure the work of the health team under full protection, but also offered mental well-being and psychological support, given that professional well-being promotes effective exercise and with quality of function beyond patient safety [16].

Following the same principle, the Brazilian Ministry of Health prepared recommendations for managers about the mental health and psychosocial care of health workers. Knowledge about the disease and training in the proper use of PPE's, excellent quality communication, mutual encouragement and encouragement among team members, the alternation between high and low voltage activities, regular rest monitoring, adequate space for food, rest is essential, as well as individual and group psychological support [19].

Given the above, recognizing sources of anxiety allows health managers and organizations to develop targeted approaches to address these challenges and provide specific support to their health workforce. For this reason, professionals created the table called "Requests from health professionals to your organization during the 2019 coronavirus disease pandemic" with five requests: listen to me, protect me, prepare me, support me and take care of me [4].

3.2. Recommendations for professionals suspected of infection

The US Centers for Disease Control and Prevention considers an epidemiological risk for asymptomatic health professionals exposure to patients diagnosed with coronavirus [3].

It is recommended that professionals in medium or high-risk situations, that is, that without the use of any PPE's or a mask/respirator, maintained prolonged close contact with a COVID-19 patient, whether or not using a face mask, should be suspended from work for 14 days after exposure [20]. Similar behavior was adopted in Brazil, in which isolation was recommended when in household contacts with asymptomatic persons [7].

The health professional must guarantee the afebrile and asymptomatic condition before presenting for work. Therefore, if there are fever or respiratory symptoms consistent with COVID-19, one should immediately isolate oneself and notify the institutional health authority immediately, so that the necessary care can be taken [20].

In the eighth Epidemiological Bulletin of Brazil, the Ministry of Health indicated that antibodies against SARS-CoV-2 should be tested for health professionals, including health professionals, as a priority when symptomatic. This measure allows greater precision and assertiveness in maintaining or returning to the health service [7].

3.3. Use of Masks in Hospitals

The universal use of masks is already a practice in Hong Kong, Singapore, and other parts of Asia. Many American hospitals have recently adopted it. However, there is a question as to whether it should be universally indicated for all health professionals [1-3].

What is known is that wearing a mask outside the health service facilities offers low protection against infections since to be considered a significant exposure, it is necessary to stay in contact for 1.5 meters for approximately 10 to 30 minutes [1,16-18].

Added to this is the fact that cotton masks offer reduced protection against COVID-19. Their use is not encouraged, according to Ferioli et al. The correct way is to use the N95 mask, composed of polypropylene microfiber as a significantly more effective protection filter, which will remove 95% of all particles with a diameter greater than 0.3µm [12, 21,22].

The use of other facial mask options, in the absence of the N95, is recurrent, whether surgical or cotton. Although not ideal, they can be used to minimize the risk of exposure to COVID-19, as long as they are used with caution, removed correctly, adjusted with a facial seal, and associated with appropriate hand hygiene techniques, non-prolonged use and not reuse. For reuse, it is necessary to confirm the mask's integrity [22,23].

For the professional who is in contact with symptomatic patients with viral respiratory infections, the mask is a central component of personal protective equipment (PPE), along with an apron, gloves, and eye protection. The mask in this situation is recommended and well recommended.

The question that is being discussed is whether, in this case, the mask would offer any additional protection in the health system scenario in which the professional is not in direct contact with the symptomatic patient? [1].

According to Klompas et al., two scenarios are indicative for the use of a mask, even if there is no direct contact with the suspected patient [1]:

- Covid-19 cases not yet recognized: The cover will reduce the risk of contagion; however, it does not protect against droplets that may enter the patient's eyes or fomites;
- in cases of asymptomatic or minimally symptomatic health professionals with COVID-19: This is an important point that must be addressed. We do not yet know about the potential for infectivity.

The prevalence in patients with Covid-19, symptomatic or not, evacuated from Wuhan during the peak of the epidemic was only 1-3%. Assessing the behavior of the disease in Wuhan, it was noted the importance of identifying undiagnosed infections in the spread of Covid-19, recognizing that the risk of transmission in this population is probably less than the risk of spreading by symptomatic patients, but it exists [1,2].

However, it is not possible to extend the use of the mask as a guarantee of protection if it is not accompanied by careful hand hygiene, eye, face protection, gloves, and apron [1,22].

There is an overuse of masks, but this act can promote higher transmission of Covid-19 if we do not pay attention to the implementation of fundamental infection control measures, such as hand washing [1-3]

Contraindicates indiscriminate use is the future lack of masks for professionals who need it. The use of a mask is a reflection of population anxiety; however it serves as an alert for social distance and increases people's sense of security [1,22].

According to Klomps et al., the indication of protocols for expanded use of masks is useful to alleviate anxiety, above any function that may act in reducing the transmission of Covid-19 itself [1].

3.4. Lack of resources and pandemic

According to Emanuel et al., the best recommendations for managing health inputs during the Covid-19 pandemic are: maximize benefits; prioritize health professionals; do not allocate on a first-come, first-served basis; act according to the evidence; recognize participation in research. Apply the same principles to positive or negative Covid-19 patients [18,23,24].

The importance of prioritizing the health professional ensures that he is not contaminated and is unable to perform his role. Assisting health professionals means thinking more and more about the population [18,21-23].

The availability of health system resources must be sufficient, and their use must be regulated so that no health professional is individually responsible for which patients pay the most attention and which do not [18,25].

3.5. The Professional and Health Education

Inherent in health education, professionals must adopt an educator role, even if it does not fit their profile. In this sense, it has been a challenge for some civil servants to assume this role of educator concerning well-oriented social isolation policies [13-15]

The entire multidisciplinary health team must be able to guide the population, clarify doubts, and fight false news about the disease. Therefore, emphasis should be placed on a step-by-step guide for proper handwashing with soap and water, hygiene with gel alcohol, cough etiquette. Who is at risk, who needs to wear masks and how to use them, when looking for the health unit, online health care, and the importance of home quarantine and social distance [5,16].

It is up to these professionals to instruct patients to call ahead and discuss the need to reschedule the appointment if they develop symptoms of respiratory infection (cough, fever, and sore throat) [15].

3.6. Communication between levels of health care

Each health professional (PS) must maintain a good dialogue with the other teammates. The fear of not exposing oneself exists and, to avoid or minimize it, it is interesting to adopt some behaviors that contribute to the flow of activities together [15-17].

A chain of actions is essential, starting with the screening site with reduced numbers of professionals and, if possible, the patient should try to call informing that he is looking for the service so that the PS can organize the best care. [8,15]

If the patient requires emergency transport, the emergency team must notify the hospital. This will allow prior preparation by the unit that will receive the patient and will avoid euphoria and stress [15,24].

3.7. Use of insulating vest

North American recommendations indicate the use of insulating clothing, which has not yet become a reality in many places in Brazil. The use of insulating robes should be chosen for professionals [7-9].

They will perform procedures that generate aerosols (intubation), care activities where contact with sprays or secretion droplets is expected, and events of high contact with patients that offer the risk of transferring pathogens to the hands and clothes. Such as dressing, bathing, transfers, hygiene care, changing sheets, underwear, or help with trips to the bathroom and wound care [10-12,15]

The use of the insulating garment must follow specific recommendations. After wearing the full PPE, as required in the ICU, for example, it is not allowed to drink, eat, or go to the bathroom for about 6 hours. The removal of PPE after working hours requires training and excellent care, so as not to become infected [4-6,8]. It is necessary to discard the garments before leaving the patient's room [14,15].

3.8. Ideal vestment

The instructions from the Ministry of Health and the Clinical Management Protocol for the New Coronavirus (SARS-CoV-2) advise that masks type N95, N99, N100, PFF2 or PFF3 should be used whenever aerosol-generating procedures are performed (intubation or tracheal aspiration, non-invasive ventilation, cardiopulmonary resuscitation, manual ventilation before intubation, sputum induction, nasotracheal sample collections, and bronchoscopy) (Table 1).

Clothing	
Before entering the coronavirus patients' room	After entering the insulation sector
Hand washes with alcoholic preparation, for at least 20 seconds, using the technique recommended by ANVISA / Ministry of Health.	Clean your hands with alcoholic preparation, for at least 20 seconds.
Put on the waterproof apron. Perform the lashing on the inside and the back of the body.	Put on the tightly fitting gloves over the apron cuff.
Put on the N95 / PFF2 mask, taking the strips. Place them properly, not interlaced. Adjust the mask by the nasal clamp and perform the sealing test.	Optimal disenfranchisement
Put on goggles or face shield.	
Put on the cap.	

Disparation	
Insulation sector	Outside the insulation sector
<p>Remove the first glove safely with the opposite hand, touching the outside to pull it, inverting it inside out when removing. With the ungloved hand, remove the other mitt, taking the uncontaminated part from the inside, also reversing it for removal.</p> <p>Hand washes with alcoholic preparation, for at least 20 seconds.</p> <p>Untie the apron securely without sudden movements to avoid droplets. Remove inside out and also handle inside out to discard it with each use.</p> <p>Hand washes with alcoholic preparation, for at least 20 seconds.</p>	<p>Clean your hands again with alcoholic preparation, for at least 20 seconds.</p> <p>Remove the cap from the back of the head, without touching the face, and discard it.</p> <p>Remove the glasses from the sides.</p> <p>Remove the mask by the strips avoiding touching the front.</p> <p>Hand hygiene with alcohol preparation, for at least 20 seconds, using the Hand Hygiene technique.</p> <p>Clean the goggles or face shield with water and soap/detergent and disinfection.</p> <p>Hand hygiene with alcohol preparation, for at least 20 seconds, using the Hand Hygiene technique.</p>

Table 1. Pre-defined order of vestment

3.9. Surgery Center

In a study by Sarah L et al., it was observed that the most appropriate and consolidated conduct among surgeons is, primarily, to protect the health of professionals. Patients should be screened as needed for surgery [11].

Thus, elective surgeries should be postponed, and the others classified according to the risk of urgency and emergency and the probability of generating aerosols during the surgical procedure. All patients undergoing emergency procedures are considered to be infected with COVID-19 until proven otherwise [17,22].

Therefore, for safety reasons, all members of the operating room must wear an N-95 respirator mask and be equipped with an anti-droplet suit (gown, gloves, and goggles) [17-19].

In patients with positive COVID-19, unless it is an emergency with a risk of death, non-operative treatment, and delayed surgery until recovery are advocated [9-11,17]. Furthermore, the cleaning team of the operating room must also be equipped with droplets to avoid cross-contamination. [11,17].

3.10. Technology to combat the COVID-19 pandemic

Amid the emergence of the coronavirus pandemic, in the momentary absence of a specific treatment or vaccine, measures such as domestic isolation, city blocking, and traffic restrictions have been implemented worldwide [1-2,13].

Besides, medical services and outpatient consultations were canceled in several hospitals during this period. As a result, thousands of patients were left without constant care, at risk of a possible worsening of their health conditions, especially those with chronic diseases [5-7].

To mitigate these problems, countries like China have adopted "Internet Hospitals", which offer virtual treatments. Without contact, with efficient distribution of resources and low cost, seeking to maintain the first contact with patients who do not have direct assistance in this challenging moment of global health [8-10,25].

Fortunately, many Internet hospitals, such as WeDoctor and Haodf.com, offered free online advice on COVID-19 and home quarantine guidance during the pandemic [16,23]

These ritual treatments are known as telemedicine, a health area that offers support to patients remotely, with the help of Information and Communication Technologies (ICTs). Since the mid-90s, the World Health Organization (WHO) has recognized the importance of telemedicine, especially when the distance is a critical factor for the continuity of health care [24-26].

Most hospitals canceled in-person outpatient consultations and converted them exclusively to telehealth consultations. This rapid expansion of telemedicine during this pandemic may imply long-term access to healthcare by remote means, facilitating access to health for people living in rural communities, for example[24]

In China, more than 20,000 doctors offer online medical services to 200,000 Internet users daily. The assistance involves, among other actions, guidance on medications for chronic use, home delivery of drugs, monitoring by multidisciplinary teams, and 24-hour mental health care [23, 25-27].

In Brazil, interstate telemedicine is allowed between patients and professionals from different states. Usually, the health professional, the provider of telemedicine, is only allowed to attend patients where their license is active. However, with high demand, Medicaid services needed to be less rigorous [12,25].

Unfortunately, a detailed physical evaluation of the health professional cannot perform an adequate physical examination following all the propaedeutic methods (inspection, palpation, percussion, and auscultation). Some patients are not used to using remote technologies when consulting with a professional, so a simulated visit is recommended so that the patient can become familiar with the chosen platform [25,26-28].

The health professional and the provider need to be prepared to help patients with their doubts regarding telemedicine: how to log in to

the platform, how to start a video call, among other questions that may arise. An excellent solution to avoid this type of problem is to send instructions to patients even before the simulated visit. An appropriate location for telemedicine should be chosen, such as an office, if possible [14, 25]

Not all patients have devices that perform a video call. So the professional can use the voice flame to complete the consultation because of the social distance of the patients. Health workers should be considered a priority in this pandemic [23-25]

Thus, it is essential to highlight the importance of these alternative services, such as the case of telemedicine, at such a delicate moment in global health. Its use is vital today, and it will undoubtedly be indispensable not only for COVID-19 but also for future outbreaks of infection if they occur again [29].

3.11. The student in the care against COVID-19

A large number of contagions, the existence of employees in risk groups, and the possibility of professionals carrying the virus asymptomatic raise an alert regarding the possible lack of teams for patient care. The chaotic scenario in small and large medical care centers, the needs of a more extensive medical staff are increasingly discussed [20-22].

As a result, support from students in the health field, preferably from the last year, has been discussed as a mechanism to assist in the care and enable doctors to perform more specific tasks in the care of suspected patients or patients with coronavirus [13,14-16].

The American Association of Medical Schools (AAMC) instructed medical schools to suspend student internships. The AAMC recommended that "unless there is a critical health workforce, locally, we strongly suggest that medical students do not get involved in no direct patient care activity." AAMC framed its orientation by pointing out that "medical students are students, not employees" [26].

However, students, if allowed to work in clinical functions, always with the support of a superior professional, can assist patient care. Actions like this have been seen at historical events. During the 1918 flu outbreak in Spain, medical students at the University of Pennsylvania cared for patients as doctors [28-30].

In 1952 polio epidemic in Denmark, groups of medical students were tasked with manually ventilating patients. In the current pandemic, medical schools in the US, Italy, and the UK are graduating medical students from the beginning to serve as frontline doctors [3,26].

Students can assist in routine outpatient clinical care, perform checklists on the COVID-19, offer care and attention to the patient, as well as assist with inpatient services—all of this under the supervision of a resident or attending physician [7,13].

Besides, the presence of students from the last years of the course contributes to a higher number of clinicians available to treat patients with the emerging virus, reducing the overall burden of clinical staff. It is worth noting that the risks resulting from student involvement may be less than the risks for retired clinical volunteers, who are more susceptible to COVID-19 complications due to age. [26,27]

It is imperative to remember that these students are future health professionals who have responsibilities to patients and may be allowed to perform their duties as such. In addition to the benefits for patients and the health system, their participation reinforces essential values, such as altruism, care in times of crisis, and solidarity [25-28].

3.12. Other exposures to COVID-19

It is necessary to highlight other situations of potential transmissions, such as contact between colleagues health professionals. The shift transfer, discussions of clinical cases, lunch or rest times, considering that most of the time they work in confined spaces where it is not possible to guarantee a distance of one and a half meters [14-16].

Besides, there is a risk of transmission outside the hospital environment, since health professionals at the end of their shifts maintain contact with other individuals such as family and friends. Therefore, it is essential to keep adequate preventive measures in case of contact with co-workers, even if they are not in the presence of patients, in addition to adopting protective measures outside the hospital context to obtain protection for all [10,11, 27].

3.13. Prevention of "device-related pressure injury."

Health professionals need to wear masks, glasses, and other personal protective equipment during their working hours, often overlapping [8-10].

Prolonged use, in addition to the physical effort of the long workday, leads to excessive compression of the skin. The compression, in turn, causes poor blood circulation and results in ischemia and local tissue hypoxia, which cause skin diseases, characterized by pain, local redness, and tissue damage, mainly in areas with less adipose tissue, such as head, face, neck [11, 28].

The use of hydrocolloids, foam dressings, and leaf hydrogel as preventive methods are significant. They can be used to change pressure points of equipment and thus cause pressure relief in other parts, promote repair of wounds under pressure, hydration wound bed, fluid absorption, surface cooling, and pain control [29,30].

For adequate protection and obtaining favorable results, it is recommended beforehand to clean the dressing application site, cut the dressing according to the face contour, adopt a tension-free gluing method, and then put on the PPE. The removal should start at the corners and remove slowly, including if necessary, the use of a specific remover [28-30].

4. Conclusion

In conclusion, the general well-being of the multidisciplinary health team must be guaranteed so that care for the patient's health is possible and useful. In this perspective, adequate attire, the use of correct hand washing techniques and gel alcohol, increased attention to risks of exposure, warning signs and symptoms among patients and teammates, as well as safety and education conducts in with a focus on COVID-19 are paramount to tackle the pandemic.

The use of masks should be universally balanced against future risks of lack of stock of masks; however, it is imprudent just not to indicate, but to indicate controlled since there is benefit in oligosymptomatic people and those who do not have diagnosed COVID-19 yet.

It is essential to delimit separate environments, well-ventilated screening areas, to place patients with suspected or confirmed COVID-19 in different rooms, with the door closed and private bathroom, as well as isolation rooms with negative pressure for patients undergoing generation procedures of aerosols.

Finally, the use of new technologies to contain the epidemic, such as telehealth, is an essential practice for guiding and organizing the flow at the primary, secondary and tertiary levels. Even during the social isolation necessary to fight the pandemic, it makes it easier for health professionals to continue the treatment of their patients at a distance. Thus, health professionals must be used to technology to use telemedicine as an indispensable tool in the face of this pandemic.

Compliance with ethical standards

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There are no conflicts of interest to declare by any of the authors of this study.

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