TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

COVID-19: NURSING CARE FOR SAFETY IN THE MOBILE PRE-HOSPITAL SERVICE

Lorraine Cichowicz Marques[1]
Danieley Cristini Lucca[1]
Everson Orlandini Alves[2]
Gisele Cristina Manfrini Fernandes[3]
Keyla Cristiane do Nascimento[3]

[1]Universidade Federal de Santa Catarina, Programa de Pós-graduação em Enfermagem. Florianópolis, Santa Catarina, Brasil.
[2]Universidade Estadual do Norte do Paraná. Bandeirante, Paraná, Brasil.
[3]Universidade Federal de Santa Catarina, Departamento de Enfermagem. Florianópolis, Santa Catarina, Brasil.

ABSTRACT

Objective: to describe the actions performed by nurses from the mobile pre-hospital service before, during, and after consultations and transfers of suspected and/or confirmed patients of Covid-19, and the limitations found by these professionals on reducing exposure to the disease.
Method: a descriptive-reflective study about the actions performed by nurses from the mobile pre-hospital service in a capital city in southern Brazil to increase safety during consultations or transfers of suspected and/or confirmed patients of Covid-19.
Results: the study allowed us to reflect on the multidimensionality of actions necessary for the prevention and control of the pandemic. Attitudes were identified to ensure instrumental safety in mobile units, professional safety, and patient safety in mobile pre-hospital care.
Conclusion: regarding the nurses, concern with the safety of the professionals and patients was identified, since they adopted conducts for the prevention and control of the pandemic through the use of equipment, materials, and preparation of the ambulance. Subjective aspects of the professionals involved must be considered, such as technical and psychological preparation, which is a fundamental aspect both for serving the population and for the safety of the patient and the professional in terms of exposure to the virus.

DESCRIPTORS: Pandemics. Nursing professionals. Emergency nursing. Coronavirus infections. Patient safety. Nursing care.

HOW CITED: Marques LC, Lucca DC, Alves EO, Fernandes GCM, Nascimento KC. Covid-19: nursing care for safety in the mobile pre-hospital service. Texto Contexto Enferm [Internet]. 2020 [cited YEAR MONTH DAY]; 29:e20200119. Available from: https://doi.org/10.1590/1980-265X-TCE-2020-0119

COVID-19: CUIDADOS DE ENFERMAGEM PARA SEGURANÇA NO ATENDIMENTO DE SERVIÇO PRÉ-HOSPITALAR MÓVEL

RESUMO

Objetivo: descrever as ações realizadas por enfermeiros do serviço pré-hospitalar móvel antes, durante e após atendimentos e transferências de pacientes suspeitos e/ou confirmados para Covid-19 e as limitações encontradas por esses profissionais para diminuir a exposição à doença.
Método: estudo descritivo-reflexivo acerca das ações realizadas por enfermeiros do serviço pré-hospitalar móvel de uma capital no Sul do Brasil para aumentar a segurança durante os atendimentos ou transferências de pacientes suspeitos e/ou confirmados para Covid-19.
Resultados: o estudo permitiu refletir sobre a multidimensionalidade de ações necessárias para prevenção e controle da pandemia. Foram identificadas condutas para garantir a segurança instrumental nas unidades móveis, a segurança profissional e a segurança do paciente em atendimento pré-hospitalar móvel.
Conclusão: por parte dos enfermeiros, identificou-se preocupação com a segurança dos profissionais e pacientes, uma vez que adotaram condutas para a prevenção e controle da pandemia mediante a utilização de equipamentos, materiais e preparo da ambulância. Aspectos subjetivos dos profissionais envolvidos devem ser considerados, como o preparo técnico e psicológico, sendo este um aspecto fundamental tanto para o atendimento à população como para a segurança do paciente e do profissional na exposição ao vírus.

DESCRITORES: Pandemias. Profissionais de enfermagem. Enfermagem em emergência. Infecções por coronavírus. Segurança do paciente. Cuidados de enfermagem.

COVID-19: CUIDADOS DE ENFERMERÍA PARA LA SEGURIDAD EN LA ATENCIÓN DEL SERVICIO PRE-HOSPITALARIO MÓVIL

RESUMEN

Objetivo: describir las acciones llevadas a cabo por enfermeros del servicio prehospitalario móvil antes, durante y después de consultas y transferencias de pacientes sospechosos y/o confirmados respecto del Covid-19 y las limitaciones encontradas por estos profesionales para reducir la exposición a la enfermedad.
Método: estudio descriptivo-reflexivo sobre las acciones realizadas por enfermeros del servicio móvil prehospitalario en una ciudad capital del sur de Brasil para aumentar la seguridad durante las consultas o transferencias de pacientes sospechosos y / o confirmados de Covid-19.
Resultados: el estudio nos permitió reflexionar sobre el carácter multidimensional de las acciones necesarias para la prevención y el control de la pandemia. Se identificaron conductas para garantizar la seguridad instrumental en las unidades móviles, la seguridad profesional y la seguridad del paciente en la atención prehospitalaria móvil.
Conclusión: de parte de los enfermeros, se identificó una preocupación por la seguridad de los profesionales y pacientes, ya que adoptaron conductas para la prevención y el control de la pandemia mediante el uso de equipos, materiales y preparación de la ambulancia. Se deben considerar los aspectos subjetivos de los profesionales involucrados, como la preparación técnica y psicológica, que es un aspecto fundamental tanto para atender a la población como para la seguridad del paciente y del profesional en términos de exposición al virus.

DESCRIPTORES: Pandemias. Profesionales de enfermería. Enfermería de emergencia. Infecciones por coronavirus. Seguridad del paciente. Cuidados de enfermería.

INTRODUCTION

Pandemic is the term used to indicate that an epidemic has spread to two or more continents with sustained transmission from person to person.[1] It is a global risk factor, with impacts on the population's survival and important effects on the economy, in addition to imposing significant changes in social life and causing an increase in deaths and poverty. This scenario observed worldwide since the identification of the New Coronavirus has mobilized researchers to develop studies aimed at fighting the pandemic and contributed directly to changes in health care practices.

The first alert about the new viral agent which causes a serious respiratory disease, identified as Covid-19, or Coronavirus 2019, occurred in December 2019, in the city of Wuhan (Hubei, China). This disease, which was transmitted from person to person mainly through the respiratory system, quickly spread throughout China and to more than 200 countries, which led the World Health Organization (WHO) to issue an international health alert: the Declaration of Public Health Emergency of International Concern of January 30th, 2020.[2–3]

After this Declaration, the Ministry of Health (MoH), through Ordinance Nº. 188 of February 3rd, 2020, declared a Public Health Emergency of National Concern (*Emergência em Saúde Pública de Importância Nacional*, ESPIN), due to Human Infection with the new Coronavirus (2019-nCoV), recognizing that the situation demands the urgent use of measures for the prevention, control, and containment of risks, harms, and grievances to public health. The complexity of this situation mobilized a joint effort by all the services of the health network of the Unified Health System (*Sistema Único de Saúde*, SUS) to identify the etiology and to adopt measures proportional and restricted to the risks.[4]

In Brazil, the first case of the disease was confirmed on February 26th, 2020, in São Paulo – SP. The patient, a 61-year-old man, presented a history of having traveled to Italy, a region previously affected. Since then, the country has been taking measures to control the spread of the virus, currently present in 26 states and in the Federal District.[5]

Particularly in the state of Santa Catarina, the first cases of Covid-19 were confirmed on March 12th, 2020. The spread of the disease to some cities in the state led the government to enact Decree Nº. 515 on March 17th, 2020, which determined the closure of non-essential services. In addition, the population was instructed to stay at home and avoid crowding, in order not to increase the number of people infected by the disease.[6–7]

At that moment, both the hospital and pre-hospital urgency and emergency care services also started preparing to receive patients affected by Covid-19. It is highlighted that the majority of the urgency and emergency institutions already had overcrowding of care due to other diseases that affect the population.

The Mobile Emergency Care Service (*Serviço de Atendimento Móvel de Urgência*, SAMU) was created as a component of the Emergency Policy, after the establishment of the National Emergency Care Policy in September 2003, through Ordinance MS 1863/03. It is configured as mobile pre-hospital care.[8]

The objective of the SAMU is to provide an adequate response and early care to the needs of the population, through guidance and by sending teams to respond to the urgencies, which can be of a clinical, traumatic, surgical or psychiatric nature. These are cases in which there is a risk of sequelae, suffering or which may subsequently lead to death, and it is necessary to ensure prompt service and adequate transport to a referral hospital unit.[9]

Worldwide, the demand for pre-hospital care has increased due to several factors, including increases in urban violence, and in the number of car accidents and of clinical conditions, such as acute myocardial infarction. In this context, this service becomes even more relevant, as it works to reduce death rates for these and other conditions, ensuring qualified and resolute care for small,

medium, and large emergencies, referring them to appropriate references. In addition, it performs inter-hospital transportation for reference and counter-reference, both for SUS and private units.[10–11]

In such situations, like this pandemic, it is necessary to set measures that promote greater safety for the professionals who perform this type of care, in view of the imminent risk of contagion through the handling of biological materials and chemical products that increase the susceptibility to health harms. In addition, some stressors such as emotional tensions and severity of care, as well as difficulty in accessibility and dangerousness in certain situations, added to inadequate work conditions, can put the safety of these professionals and patients at risk.[11–12]

Worldwide, Patient Safety is defined in Ordinance Nº. 529/2013 of the Ministry of Health, as the reduction, to an acceptable minimum, of the risk of unnecessary harm associated with health care.[13]Therefore, it is essential to provide care and to offer safe conditions to the professionals who are at the front line of pandemics, such as the current Covid-19 one.

In the current context, after the first months of the pandemic in Brazil, this study proposes a critical and reflective analysis on the role of nurses who are at the front line of pre-hospital mobile care to patients with suspected and/or confirmed cases of Covid-19, as well as on the limitations they encounter daily to reduce the exposure of patients and professionals to this disease.

It is noteworthy that the high transmissibility of the virus makes it essential to reflect on which nursing care measures are necessary to preserve the safety of the professionals who work in this service during primary care and inter-institutional transfers of confirmed and/or suspected patients of Covid-19. In addition, the lack of preparation of the health system in general, even in other countries, compromises the coping with the harms and demands resulting from the current pandemic. At the same time, still incipient in this regard, scientific knowledge makes it difficult to access studies and to develop regulations for the services that take into account local peculiarities and allow preserving the professionals' physical and emotional integrity as much as possible, as well as minimizing feelings of insecurity in the team.

Thus, based on these considerations, this reflective description was prepared about the actions performed by nurses from the mobile pre-hospital service of a capital in southern Brazil before, during, and after the care and transfers of suspected and/or confirmed patients of Covid-19, as well as about the limitations they encounter to reduce exposure to this disease.

It is important to mention that this service works continuously and uses Advanced Life Support Units for patient care. In the city under study, the four advanced support units available are responsible for serving approximately 500,000 inhabitants.

This reflection was developed by nurses working at the front line of the current Covid-19 pandemic since the month when the first calls for care for suspected or confirmed cases of Covid-19 were made to the mobile pre-hospital service in Santa Catarina.

It is considered essential to discuss contemporary measures, trends, and challenges for nursing care in the face of this pandemic, since such a discussion contributes to the strengthening of health and nursing praxis.

INSTRUMENTAL SAFETY IN MOBILE UNITS

When directed to the emergency site through radio activation, the team receives detailed information about the service that will beprovided, the level of severity of the patient, their gender, age, and location and, in case of need for transportation, the place where they will be taken to. However, when it comes to primary care, the patient's destination is only defined on the spot by the regulating physician, after recognition of the condition and clinical grievance.

Thus, mobile service teams work in different situations, often not being possible to predict whether or not they will be assisting suspected and/or confirmed cases of Covid-19, which makes it

essential to implement comprehensive preventive measures before, during, and after these services. In situations where the team is called to assist a suspected or confirmed case of Covid-19, it is mandatory to prepare the ambulance for the due care, as well as the professionals.

Also, with the purpose of protecting the teams and ensuring adequate assistance to the patients, some changes were set in routine procedures exclusively for suspected or confirmed cases of Covid-19 infection. The cleaning of the ambulance, for example, started to be done by a cleaning clerk from a hired company and/or by the team on duty, along with the cleaning of the materials and equipment.

In addition, the teams prepare the ambulance by cleaning the surfaces with neutral detergent, followed by disinfection with disinfectant solutions. This disinfection can be done with 70% alcohol, sodium hypochlorite or a disinfectant indicated specifically for this purpose.[14]The cleaning is performed both in the ambulance room and in its cabin, after each service or transportation of a patient with symptoms or confirmed for COVID-19. At the end of the cleaning and disinfection procedures, all the cloths used are discarded as infectious waste and the cleaning utensils (buckets, for example) are cleaned with hypochlorite and stored for spontaneous drying. These measures meet the recommendations adopted by the *Agência Nacional de Vigilância Sanitária* (Anvisa) for the prevention and control of the pandemic.[15]

Other measures adopted were to wrap the ambulance's front seats with a plastic bag[16]and to protect equipment and other waterproof items with a transparent PVC film (0.40 mm) to facilitate subsequent cleaning. Plastic boxes, a washable material, organized with essential materials like syringes, needles, and venipuncture catheters, also started to be used. Materials not essential to care were placed in a closed compartment at the top, in order to reduce the risk of contamination and the time spent in the final cleaning after transportation.[17]However, even if the ambulance is "wrapped", after the care or transportation of patients with symptoms/confirmed for COVID-19,the plastic bag is removed in order to clean and disinfect all the internal surfaces, equipment, and places that were accessed by the professionals.

To reduce contact with the backpacks that contain materials and medications used for all the calls, it was decided to remove them from inside the ambulance. Thus, easy-to-clean plastic containers were assembled, containing kits for vital signs, peripheral venipuncture, and orotracheal intubation. Furthermore, during the pandemic period, the use of air conditioning in the ambulance is avoided- with or without the presence of patients, as well as the use of surgical masks for patients with suspected Covid-19 infection during the entire service and transportation, as recommended by the Anvisa and by the Ministry of Health.[18–19] When traveling with patients, the windows are kept open and the ambulance exhaust fan is switched on to improve the vehicle's internal ventilation.[14–20]

At the end of the service, the records are detailed and any notes are only made after disposing the gloves and cleaning the hands with alcohol gel, avoiding contamination of cards, clipboards, and pens. The notification of the suspected case is made by the fixed pre-hospital units or by the hospital units. The mobile care service performs the internal registration for control and mapping.

In this context, the presence of limitations related to the lack of specific materials for preparing the ambulance and packaging materials in the care of patients who need biological containment is noted, as well as the incipience of studies, protocols, and regulations that can guide the best conducts and actions taken by the team and by the managers. The recommendations evidenced on this topic are considered as C degree of evidence (limited evidence or expert opinion).

Professional safety in times of Covid-19

Staff safety is a key aspect in all pre-hospital mobile services. The responsible, supportive and correct use of Personal Protective Equipment (PPE) must be adopted by everyone. It is understood that

the management of the current pandemic situation requires criteria, since the world scenario signals risks of shortages and the number of cases may exceed the operational capacity of health services.[19]

In the case of services that provide pre-hospital care in the studied municipality, the correct preparation of the professionals regarding their attire and equipment begins shortly after the ambulance is activated. For this, specific PPE are available: surgical mask, N95mask, face shield masks, procedure gloves, disposable caps, and sterile waterproof surgical aprons with long sleeves (100% polypropylene) and 100% cotton wrist.

As it is a mobile pre-hospital service, in which there is contact with patients from different places, some of which are difficult to access, the need to adapt some materials to the realities faced by these teams was identified. The apron made available and recommended by institutions such as the Ministry of Health, for example, creates a feeling of insecurity in the pre-hospital context, as it does not allow covering the entire body extension, especially in the case of taller professionals. In addition, when they bend down, the exposed area increases, as the apron is attached at the back to the cervical region and tied by the waist.

For these reasons, the Brazilian Association of Emergency Medicine (*Associação Brasileira de Medicina de Emergência*, ABRAMEDE) and other institutions[21] suggest that professionals in pre-hospital care use overalls with head protection (360º protection), made of high density polyethylene, with wrists and ankles made of elastic material (for example, Tyvec/tychen). These measures aim to expand the protection of those who provide pre-hospital care and, therefore, who daily enter already saturated environments, with contaminated surfaces and where multiple contacts are present, requiring superior protection.

In addition, it is necessary to routinely wear service overalls, with long sleeves, goggles, and closed and waterproof boots/shoes, considered routine PPE. After the service, the goggles and face shields are washed with soap and water and, when dry, subjected to rubbing with 70% alcohol. The boots are cleaned by spraying 1% sodium hypochlorite, followed by rubbing with a damp cloth. It is strongly recommended that all the team professionals do not use adornments.

However, in addition to these measures, the safety of the professionals depends on actions aimed at promoting patient safety, as the lack of compatible inputs for qualified and safe care for the individual may increase the adverse risks caused by the professionals. This is a worrying situation, since the professionals inserted in a context of insecurities and uncertainties regarding their own safety end up opposing the objectives of ensuring patient safety, which permeates the proposal for measures to reduce risks and mitigate adverse events.[13]

Another strongly adopted measure has been hand hygiene, preferably with soap and water, by means of friction movements that contemplate palms and fingers, including rubbing thumbs, fingertips, and wrists separately. The hands must be washed between calls for different patients, after the end of each appointment, and before removing N95 masks and goggles. Given any impossibility to wash them, 70% alcohol preparations can be used. It is suggested to put a moderate amount on the hands and rub them with the same movements as if washing with soap and water, as this is the friction that guarantees cleaning. Applying a large amount of the product without rubbing does not produce the expected effect.[14–18]

These actions corroborate the prevention and control measures recommended by the Anvisa[14], since the health professionals who perform care for suspected or confirmed cases of Covid-19 infection are instructed to wash their hands with 70% alcohol or to wash them with water and liquid soap. In addition, they must wear protective goggles or a face shield, surgical mask, apron, procedure gloves, and caps.

Since the transmission of Covid-19 happens by droplets or through contact, the correct use of personal protective equipment is essential. Thus, for procedures such as orotracheal intubation,

aspiration of secretions, extubation, nebulization, manual ventilation, and cardiopulmonary resuscitation, which generate aerosols, the same specific precautions are adopted for Covid-19, regardless of the clinical diagnosis. Thus, the professional who performs these procedures must use an N95 or FFP2 mask.[14]

Considering that the nursing team represents the large contingent of human resources at different levels of health care and, in most cases, is directly responsible for care[22], it is necessary to reflect on the relevance of adopting safety measures at this level of care and about their effects on the performance of the nurses who provide mobile pre-hospital care to confirmed or suspected patients of Covid-19. This becomes especially important in view of the countless uncertainties caused by the pandemic, since this is a totally new virus and studies on this subject are still scarce, with no proven adequate treatment, and due to the high rate of deaths. All these factors together leave the health professionals, who are at the front line of fighting this pandemic, with the fear of contamination and, often, of dealing with the patients themselves, as well as psychologically quite shaken, as the whole population.

In this context, it is necessary to value the experience of an unprecedented crisis situation in public health for the generation of professionals, which implies different psychological reactions to cope with the stressful routine during the Covid-19pandemic. It is possible that psychological pressure, given the constant adaptations in the routine of the care practice and the insecurities and fears linked to personal life, in addition to experiences of crisis and psychological or psychiatric morbidities in the past history of some health professionals, reflect in depressive reactions, exacerbation of anxious symptoms, and (un)willingness to work.[22]

In more extreme situations, nurses and other workers of the health teams and essential services recently left their homes to live in another place, or even in their cars, as a way to avoid contact with their family members and in an attempt to protect them from any contagion. In the daily work of the mobile emergency services teams, care during this pandemic period has been offered as carefully as possible to the patients and family members and, at the same time, seeking to protect all the professionals from possible contagion.

According to the biosafety recommendations in mobile pre-hospital care, health professionals who have symptoms suggestive of Covid-19, such as fever accompanied by cough, sore throat or respiratory discomfort, should be set aside and submitted to collection of oral secretions for examination. If any of them present symptoms related to Covid-19, they must inform the respective coordinators.[23]

It is worth recalling that the protocols followed by health services to prevent infection in the professionals and to minimize the risks to which they are exposed include precautions for contact with secretions (use of PPE and hygiene) and environmental care, in view of the treatments and procedures performed and of the risks of contagion via aerosol. The WHO recommends that these measures must be complemented by others that promote safety and health at work, such as offering psychosocial support, maintaining adequate staffing levels and clinical rotation, in order to reduce distress, to promote safe and healthy work environments, and to respect the rights of the health workers under such working conditions, including that of setting them aside.[1]

Patient safety in pre-hospital care

Patient safety is of great relevance with regard to the quality of care worldwide and depends on the provision of safe care.[13]

In order to promote it in the pre-hospital context, during primary care or inter-hospital transportation of suspected or confirmed cases of Covid-19, it is sought to obtain as much information as possible about the patient's condition, so that the entire team can plan the care to be provided. This planning includes separation of thenecessary PPE, preparation of the ambulance, and prevision of possible

interventions/procedures to be performed. It is an essential stage to promote patient safety in a particular context, such as that experienced by urgency and emergency teams, especially those inserted in mobile pre-hospital care units.

Upon arrival at the service/transportation location, the physician and nurse clinically assess the patient, analyzing the clinical stability in suspected and/or confirmed cases of Covid-19. They also verify the presence of classic alterations such as fever, cough, coryza, tachycardia, shortness of breath or drop in saturation in ambient air, assessing the need for supplementation by oxygen therapy.[24–25]

Then, they seek to gather information about signs and symptoms presented, the main ones being fever and respiratory complaints, to determine the severity of the case and the preparation for intervention, if necessary. During this approach, the nurse seeks to collect information directly from the patient and/or family members about previous comorbidities, drug allergies, and recent surgical interventions, for example, in order to minimize the risk of errors during care. Dialog between the team members (physician and first aider) is also prioritized, so that actions are always carried out safely.

During the transportation of the patient to the reference unit, the team performs cardiac monitoring and monitors the vital parameters. The literature recommends that the physician and the nurse responsible for this monitoring be able to recognize possible respiratory discomfort and, if necessary, deploy a high flow mask. If respiratory discomfort persists, it is up to the physician to perform orotracheal intubation and keep the patient on Mechanical Ventilation (MV).[18–24]

For MV patients, it is necessary to pay attention to some precautions during transportation, such as checking the need for aspiration of the orotracheal tube (OTT), if it is in a closed system, assessing cuff pressure and fixing the OTT, adjusting and reinforcing circuit connections. In addition, the infusion pumps must be checked, set the FiO_2 value at 100% and connect the MV to the oxygen cylinder directly on the valve of the cylinder itself.[26]

The ultimate goal of the care/transportation of a suspected or confirmed patient of Covid-19 is to take them safely to a referral hospital unit and, for that, all the professionals involved must be properly attired and equipped, both those in pre-hospital care and those in the hospital. After transportation, the team of the mobile unit must use the PPE until returning to their base, where complete disinfection of the ambulance and materials will be carried out, as well as disposal of the equipment.[27]

During the Covid-19 pandemic, the patient is informed about the need to use a surgical mask and, if the patient does not have one, they should receive one for immediate use. Caregivers of patients over 18 years old cannot travel with the health team in the ambulance.[19–29]In addition to these measures, family members and patients receive guidance on measures to prevent contagion.

According to the Anvisa, if there is a need for a companion in suspected or confirmed cases, the patient and the companion should wear a surgical mask throughout the journey, in addition to tissues if they need to cough and/or sneeze, with subsequent hand hygiene with 70% alcohol.[17]In patients using oxygen therapy, the disposable mask should be used over the oxygen cannula.[20–28]

By adopting all these measures in favor of qualified care in times of pandemic, the professionals inserted in the pre-hospital context seek to promote their own safety and that of the patient, ensuring correct identification and evaluation, as well as investing in improving communication among the professionals, increasing safety in the prescription, use, and administration of medications and strengthening hand hygiene.[13]

All the measures are essential in this critical moment because, in addition to the numerous risks to which patients and professionals are exposed during the performance of invasive or non-invasive procedures, there is a concern to reduce exposure to biological risks. Thus, when primary care or inter-hospital transportation is performed, priority must be given to the quality of care through the provision of trained and safe care that ensures, in the best possible way, the well-being and safety of the patients and professionals until the final destination is reached.

As a limiting factor, the exposure of only one lived reality is signaled; in other regions, there may be different realities from the one herein reported. It is hoped that this reflection can contribute to a new look in relation to the nursing care performed by nurses in the pre-hospital mobile service to promote the safety of the professionals and patients amid so many difficulties currently experienced to reduce exposure to Covid-19.

CONCLUSION

The actions described in this article allow us to reflect on the work performed by the nurses in the pre-hospital mobile service during the pandemic caused by Covid-19.Amidst so much information, it is sought to work in the best possible way for the benefit of the patient, the population, and the teams involved in these services. The importance of deepening the discussion on these topics at the international level is emphasized, given the scarcity of articles on all the spheres directly or indirectly affected by this disease.

Regarding the nurses, there is concern to ensure the safety of the professionals and patients by adopting the best conducts to prevent and control the pandemic, which include the use of protective equipment, materials, and preparation of the ambulance. These are fundamental measures, since there is little evidence of effective actions to mitigate risks related to the safety of the equipment of mobile units and the official protocols regarding this care are limited.

Finally, the subjective aspects of the professionals involved must be considered, such as technical and psychological preparation to deal with adverse situations such as pandemics, catastrophes, and other unpredictable and stressful events.

REFERENCES

1. World Health Organization. Coronavirus disease (COVID-19) Pandemic. [Internet]. 2020 [cited 2020 Mar 22]. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019
2. Deng SQ, Peng HJ. Characteristics of and public health responses to the Coronavirus disease 2019 outbreak in China. J Clin Med. [Internet]. 2020 [cited 2020 Mar 22];9(2):e575. Available from: https://dx.doi.org/10.3390/jcm9020575
3. Ralph R, Lew J, Zeng T, Francis M, Xue B, Roux M, et al. 2019-nCoV (Wuhan virus), a novel Coronavirus: human-to-human transmission, travel-related cases, and vaccine readiness. J Infect Dev Ctries. [Internet]. 2020 [cited 2020 Mar 22];14(1):3-17. Available from: https://jidc.org/index.php/journal/article/view/12425
4. Ministério da Saúde (BR). Portaria nº188 de 03 de fevereiro de 2020: Declara Emergência em Saúde Pública de importância Nacional (ESPIN) em decorrência da Infecção Humana pelo novo Coronavírus (2019-nCoV). [Internet]. [cited 2020 May 05]. Available from: http://www.in.gov.br/web/dou/-/portaria-n-188-de-3-de-fevereiro-de-2020-241408388
5. Ministério da saúde (BR). Brasil confirma primeiro caso de Coronavírus 2019. [Internet]. [cited 2020 Mar 22]. Available from: https://www.saude.gov.br/noticias/agencia-saude/46435-brasil-confirma-primeiro-caso-de-novo-coronavirus.
6. Brasil. Secretaria da Saúde de Santa Catarina. Coronavírus. [Internet]. [cited 2020 Mar 22] Available from: http://www.saude.sc.gov.br/coronavirus/doenca.html.
7. Brasil. Decreto nº 515, de 17 de março de 2020. Declara situação de emergência em todo o território catarinense, nos termos do COBRADE nº 1.5.1.1.0 – doenças infecciosas virais Florianópolis, SEA 3147/2020. [Internet]. [cited 2020 Feb 20]. Available from: https://www.sc.gov.br/images/DECRETO_525.pdf

8. Ministério da Saúde (BR). Portaria MS 1863/03, de 29 de setembro de 2003. Institui a Política Nacional de Atenção às Urgências, a ser implantada em todas as unidades federadas, respeitadas as competências das três esferas de gestão. [Internet]. [cited 2020 May 03]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2003/prt1863_26_09_2003.html

9. Ministério da Saúde (BR). Manual instrutivo da rede de atenção às urgências e emergências no Sistema Único de Saúde. Brasília, DF(BR). [Internet]. 2013 [cited 2020 May 01]. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/manual_instrutivo_rede_atencao_urgencias.pdf

10. Sousa BVN, Teles JF, Oliveira EF. Perfil, dificuldades e particularidades no trabalho de profissionais dos serviços de atendimento pré-hospitalar móvel: revisão integrativa. Enfermería Actual de Costa Rica [Internet]. 2020 [cited 2020 Mar 23];38:245-60. Available from: https://dx.doi.org/10.15517/revenf.v0i38.36082

11. Cabral CCO, Bampi LNS, Queiroz RS, Araujo AF, Calasans LHB, Vaz TS. Quality of life of nurses from the mobile emergency care service. Texto Contexto Enferm [Internet]. 2020 [cited 2020 Mar 23];29:e20180100. Available from: https://dx.doi.org/10.1590/1980-265x-tce-2018-0100

12. Brasil. Conselho Federal de Enfermagem (COFEn). Resolução Nº 375, de 24 de março de 2011. Diário Oficial da União, 64 – 04/04/11 – Seção 1, p. 91. [Internet]. [cited 2020 Mar 02]. Available from: http://www.cofen.gov.br/resoluo-cofen-n-3752011_6500.html

13. Ministério da Saúde (BR). Portaria Nº 529 de 1 de abril de 2013: institui o Programa Nacional de Segurança do Paciente (PNSP) [Internet]. [cited 2020 Mar 02]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529_01_04_2013.html

14. Agência Nacional de Vigilância Sanitária (BR). Nota GVIMS/GGTES/ANVISA Nº 05/2020. Orientações para serviços de saúde: medidas de prevenção e controle que devem ser adotadas durante a assistência aos casos suspeitos ou confirmados de infecção pelo novo Coronavírus (sars-cov-2). Brasília, DF(BR) [Internet]. [cited 2020 Mar 02]. Available from: https://www20.anvisa.gov.br/segurancadopaciente/index.php/alertas/item/nota-tecnica-n-05-2020-gvims-ggtes-anvisa-orientacoes-para-a-prevencao-e-o-controle-de-infeccoes-pelo-novo-coronavirus-sars-cov-2-ilpi?category_id=244

15. Secretaria do Estado da Saúde de Santa Catarina (SES). Nota Técnica nº 004/2020. Revoga as Notas Técnicas Nº 001 e 002 SAMU/DAPM/SUE/SES e atualiza recomendações de biossegurança no atendimento pré hospitalar móvel durante pandemia do novo Coronavírus. Florianópolis, [Internet]. 2020. [cited 2020 Feb 26]. Available from: http://www.saude.sc.gov.br/coronavirus/arquivos/Nota_Tecnica_004-2020_SAMU-DAPM-SUE-SES_COVID-19_atualizada_30_03.pdf

16. Associação Brasileira de Medicina de Emergência (ABRAMED): recomendações para o atendimento de pacientes suspeitos ou confirmados de infecção pelo novo Coronavírus (SARS-CoV-2) pelas equipes de atendimento pré-hospitalar móvel. Arril 2020. [Internet]. [cited 2020 May 03]. Available from: http://abramede.com.br/wp-content/uploads/2020/04/RECOMENDACOES-APH-220420.pdf

17. Gov UK. Guidance COVID-19: guidance for Ambulance Trusts. Updated 13 March 2020. [Internet]. [cited 2020 May 03]. Available from: https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts/covid-19-guidance-for-ambulance-trusts

18. Ministério da Saúde (BR). Protocolo de manejo clínico para o novo Coronavirus (2019-nCoV). [Internet]. 2020 [cited 2020 May 03]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html

19. Agência Nacional de Vigilância Sanitária (BRASIL). Nota técnica GVIMS/GGTE/ANVISA nº 04/2020. Orientações para serviços de saúde: Medidas de prevenção e controle que devem ser adotadas durante a assistência aos casos suspeitos ou confirmados de infecção pelo novo corona vírus (SARS-CoV-2). [Internet]. 2020 [cited 2020 Apr 28]. Available from: http://portal.anvisa.gov.br/documents/33852/271858/Nota+T%C3%A9cnica+n+04-2020+GVIMS-GGTES-ANVISA/ab598660-3de4-4f14-8e6f-b9341c196b28

20. Centers for Disease Control and Prevention. Interim guidance for emergency medical services (EMS) systems and 911 public safety answering points (PSAPs) for COVID-19 in the United States, 2020. [Internet]. 2020 [cited 2020 Apr 28]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidancefor-ems.html

21. Associação Brasileira de Medicina de Emergência (ABRAMED). Recomendações para prevenção e controle de exposição no atendimento a pacientes portadores de Covid-19 para profissionais do atendimento pré-hospitalar e transporte de pacientes. [Internet]. 2020 [cited 2020 Mar 03]. Available from: http://abramede.com.br/recomendacoes-para-prevencao-e-controle-da-exposicao-no-atendimentos-portadores-de-covid-19-para-profissionais-do-atendimento-pre-hospitalar-e-transporte-de-pacientes/

22. Costa DB, Ramos D, Gabriel CS, Bernardes A. Patient safety culture: evaluation by nursing professionals. Texto Contexto Enfermagem [Internet]. 2018 [cited 2020 Mar 03];27(3):e2670016. Available from: http://dx.doi.org/10.1590/0104-070720180002670016

23. Tsamakis K, Rizos E, Manolis AJ, Chaidou S, Kympouropoulos S, Spartalis E, et al.Impact of covid-19 pandemic on mental health of healthcare professionals. Exp. Ther. Med. [Internet] 2020 [cited 2020 Mar 03];19:3451-53, Available from: https://doi.org/10.3892/etm.2020.8646

24. Xiaobo Y, Yuan Y, Jiqian X, Shu H, Xia J, Liu H, et al. Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. Lancet Respir Med. [Internet] 2020 [cited 2020 Mar 03]. Available from: https://www.thelancet.com/action/showPdf?pii=S2213-2600%2820%2930079-5

25. Dawei W, Bo H, Chang H, Fangfang Z, Xing L, Jing Z, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. JAMA Internal Medicine [Internet]. May 07, 2020 [cited 2020 Mar 03];23(11):1061-9. Available from: https://jamanetwork.com/journals/jama/fullarticle/2761044

26. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Infect [Internet]. 2020 [cited 2020 Mar 03];104:246-51. Available from: https://dx.doi.org/10.1016/j.jhin.2020.01.022

27. Empresa Brasileira de Serviços Hospitalares (EBSERH). Protocolo: transporte intra-hospitalar de pacientes em ventilação mecânica com COVID-19. [Internet]. 2020 [cited 2020 Mar 03]. Available from: http://www2.ebserh.gov.br/documents/147715/0/PROTOTOCOLO+TRANSPORTE+3.pdf/2904c025-6e50-4875-ada2-706ff88275ac

28. Livingston E, Desai A, Berkwits M. Sourcing Personal Protective Equipment During the COVID-19 Pandemic. JAMA Internal Medicine [Internet]. March 28, 2020 [cited 2020 Mar 03]; 323(19):1912–1914. Available from: https://jamanetwork.com/journals/jama/fullarticle/2764031

NOTES

CONTRIBUTION OF AUTHORSHIP

Study desing: Marques LC, Lucca DC, Alves EO.
Data collection: Marques LC, Lucca DC, Alves EO.
Data analysis and interpretation: Marques LC, Lucca DC, Alves EO, Fernandes GCM, Nascimento KC.
Discussion of the results: Marques LC, Lucca DC, Alves EO.
Writing and/or critical review of content: Marques LC, Lucca DC, Alves EO.
Review and final approval of the final version: Marques LC, Lucca DC, Alves EO, Fernandes GCM, Nascimento KC.

ACKNOWLEDGMENTS

We thank our work colleagues, for all the companionship and discussion over the best way to promote security during the servicing of COVID-19 patients. Due to the pandemic and several insecurities if there was to be no discussions about it, adaptations and improvement we wouldn't have arrived to the conclusion of this article, the restlessness for better performance has met this end.

CONFLICT OF INTEREST

There is no conflict of interest.

HISTORICAL

Received: April 8, 2020.
Approved: May 18, 2020.

CORRESPONDING AUTHOR

Lorraine Cichowicz Marques
lorrainecichowiczmarques@gmail.com