SAMU NURSING PROFESSIONALS' PERCEPTION ON SAFETY IN CARE FOR PATIENTS WITH COVID-19

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ABSTRACT

Objective: to understand SAMU nursing team professionals' perception on safety in the care for patients suspected or confirmed for COVID-19. **Method**: this is descriptive research with a qualitative approach carried out with nurses and nursing technicians from the Mobile Emergency Care Service in a municipality in northern Paraná. Data collection took place through audio-recorded interviews carried out between February and May 2021. After full transcription, the material was submitted to content analysis by *the Interface de R pour les Analyzes Multidimensionnelles de Textes et de Questionnaires* software. **Results:** four main categories emerged on the perception of professionals in relation to safety in care: working conditions, family safety, care in clothing and future expectations. **Final considerations**: the study made it possible to reflect on health professionals' main perceptions during the pandemic, such as greater concern with safety during consultations, resulting in changes in pre-hospital care flow and the implementation of new behaviors and actions aimed at the nursing team safety.

Keywords: Nursing Team. Pandemic. Worker's Health. Emergencies.

INTRODUCTION

The Mobile Emergency Care Service (SAMU - *Serviço de Atendimento Móvel de Urgência*) represents one of the gateways to the Unified Health System (SUS - *Sistema Único de Saúde*) and is responsible for meeting high emergency demands, such as in cases of accidents and urban violence, situations that have been growing over time. Moreover, they play a crucial role for victims of health problems and ordering care flow[1].

This service becomes even more relevant because it works mainly to reduce deaths, ensuring qualified and resolute care for small, medium and large emergencies. Therefore, it is SAMU's duty to provide the population with an adequate response and early care to their needs in order to ensure safe transport to hospital units[2]. In this scenario,

emergency services have been facing a major public health problem in the country[3] due to the COVID-19 pandemic, an infectious disease caused by the SARS-CoV-2 virus that can trigger respiratory problems and, in general, is associated with flu-like illness, whose signs and symptoms are fever, headache and cough, and may remain asymptomatic in the initial phase, and in more severe cases progress to critical conditions of pneumonia, dyspnea, acute respiratory failure and even lead to death. Its form of transmission is through droplets and aerosols and the speed of its propagation is fast, causing a large number of people to become contaminated and need hospital care. This situation overloads the SUS even more, due to the high demand for care in hospitals and, consequently, in pre-hospital care services[4].

This problem requires a series of measures to

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prevent and control risks, damages and health problems. In particular, pre-hospital care (PHC), which has a series of specificities and characteristics in health care, that can pose greater risks to the professionals who work in this service, requiring even more rigorous care in their care[3]. In addition to this, it can be said that other factors can put these professionals at risk, such as emotional tensions, severity of care, difficulty of accessibility and dangerousness in certain situations as well as inadequate working conditions that lead to professionals' lack of safety in the service; with this the high risk of disease contagion, since the places of care in the pre-hospital service are not always suitable for providing assistance, making the development of damage to the health of these workers more likely[2].

The great impact that the disease has had on organization of work and on ordering SAMU care flow is observed, such as the demand for a new form of donning for workers with personal protective equipment (PPE), adequate training to deal with occurrences, misinformation about suspected or confirmed cases of COVID-19, changes in the profile of calls and the great demand for assistance caused by the pandemic, which directly interfered with the response time of the occurrences provided. Such changes, caused by the disease emergence in the PHC scenario, exacerbated existing problems in emergency services and made the weaknesses related to patients' and workers' safety more evident[5].

Faced with this new process, this study is justified by its innovative potential in contributing to scientific production and its relevance in supporting reflections on the care needed to safeguard the safety of professionals working in SAMU services during primary care and hospital transfers of confirmed and/or suspected patients for COVID-19. The high virus transmissibility makes it essential to create actions aimed at ensuring workers' health, in order to contribute to the elaboration of strategies aimed at strengthening measures to protect these professionals' health[5]. In view of this, the following guiding question emerged: did the SAMU nursing team working feel safe in assisting patients diagnosed or suspected of having COVID-19?

Therefore, this study aimed to understand SAMU nursing team professionals' perception on safety in the care for patients suspected or confirmed for COVID-19.

METHODS

This is a descriptive and qualitative study with a phenomenological approach, as it aims to capture the essence from the lived experiences and the need to broaden perceptions about different social realities, through meanings, cultures, aspirations, attitudes, beliefs and values[6]. The description of the study results sought to meet the steps recommended by the COnsolidated criteria for REporting Qualitative research (COREQ).

The research was carried out at the SAMU in the city of Londrina-PR, where the service currently has five basic support units, two advanced support units, a rapid intervention vehicle and two centralized transports for transporting patients with less severity.

The study population was selected according to an intentional sample, composed of SAMU nursing professionals. The service has 22 nurses and 39 nursing technicians; however, the number of interviews was lower than the total number of professionals, as the sample was conditioned by the saturation method of the information obtained, i.e., through verification of repeated information, where no new relevant data was found during the interviews, without changing the understanding of the proposed objective for this study[7]. Nurses and nursing technicians who have been working for more than a year on the front lines of patients with COVID-19 in pre-hospital care were included. Professionals on health/maternity leave and who did not belong to the fixed staff of professionals were excluded.

Data were collected between 02/01/2021 to 05/31/2021, by the main researcher, from interviews conducted through a semi-structured script with six questions, namely: 1) Do you feel safe in the service pre-hospital treatment of a patient who has a suspected or confirmed diagnosis of COVID-19?; 2) Have you ever treated any patient suspected of the disease? If so, how did you feel and how did you proceed?; 3) How did you perceive yourself in relation to the protection of your family?; 4) How did you feel about caring for a patient with a severe clinical picture of COVID-19?; 5) Did you feel prepared or were you prepared to meet all the demands of the pandemic?; 6) What have you learned during the pandemic and what is your main experience related to pre-hospital care in the face of the disease?

The interviews were face-to-face and individual, recorded using a cell phone device, in physical spaces (nurses' room and storeroom) at the decentralized base of SAMU in Londrina and lasted an average of 10 to 15 minutes. These records were transcribed in full for textual analysis, in order to guarantee information completeness and reliability. Respondents were identified with the letter "N" for nurses and "NT" for nursing technicians, followed by a sequential logarithm numbering for the two categories and in ascending order (N1-N2/NT1-NT2).

Data were analyzed using Bardin's method, which is configured as a set of speech analysis methods, which makes use of systematic and objective procedures for speeches. It is a methodological instrument that can be applied in diverse studies and that allow the inference of different knowledge related to[8]. Content analysis was performed based on inference and comparison with other studies and authors, based on the scientific literature.

The organization of the analysis of the results obtained was carried out from data saturation and consisted of three steps. In the first, there was an exhaustive reading of the material collected in the interviews. Subsequently, in step two, material exploration was carried out and to support text analysis, identifying the most relevant themes of speeches and carrying out the elaboration of categories, using the *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ) software[9]. Finally, in the last speech, the treatment of results, discussion, inference and interpretation of speeches took place[11].

IRAMUTEQ (used in speech 2 of the study) is a program focused on qualitative research, open access with Python language, which aims to help analyze discourses and describe different processes and statistical analysis of the text corpus with the elaboration of figures that represent the most uttered words by the study participants[10].

The research was approved by the Research Ethics Committee of the *Universidade Estadual de Londrina*, under CAAE 40423620.0.0000.5231 as well as by the SAMU board, since they are institutions that have different internal procedures, and for that it was necessary to send the project to the education agency of the Municipality of Londrina-PR, responsible for teaching and research. The study followed ethical principles in accordance with Resolution 466/2012 of the Brazilian National Health Council. All participants were informed about the content and purpose of the research and signed the Informed Consent Form (ICF).

RESULTS

Eight nurses and 12 nursing technicians participated in the study, of which 13 were female and seven were male, aged between 29 and 50 years. Regarding length of service, all had more than three years of experience in pre-hospital care, in which a large part also worked or worked in in-hospital care. All with effective ties to SAMU and with a workload of 30 hours per week.
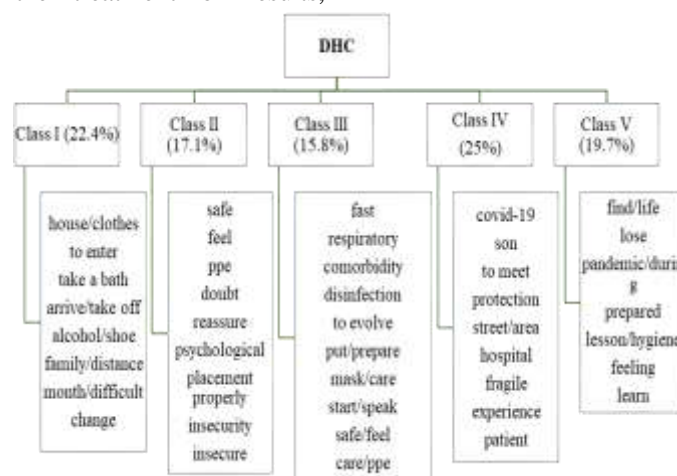

Figure 1. Dendrogram of textual corpus and classes referring to nursing professionals' speeches (Londrina, Brazil, 2023).

The interviews went through a decoding process to identify the subjects considered most relevant

during participants' speeches through the use of IRAMUTEQ. Next, speech analysis of nursing technicians and nurses, generated by the software, presented by the dendrogram through using the Descending Hierarchical Classification (DHC).

Among the results, classes 1 and 4 can be highlighted, as they showed the main perceptions throughout the work at PHC during the pandemic, such as concern about not transmitting the disease to their family members, future expectations regarding care and concern about the use of PPE when caring for patients with COVID-19. In classes 5 and 2, it was identified that doubts and the fear of losing close people due to the virus were also listed in speeches. It should be noted that the distancing from the entities was also considered a difficult period to be faced by professionals, in addition to affecting them psychologically. Through this analysis of participants' speech, four main categories emerged for further discussion, shown in the figure below:
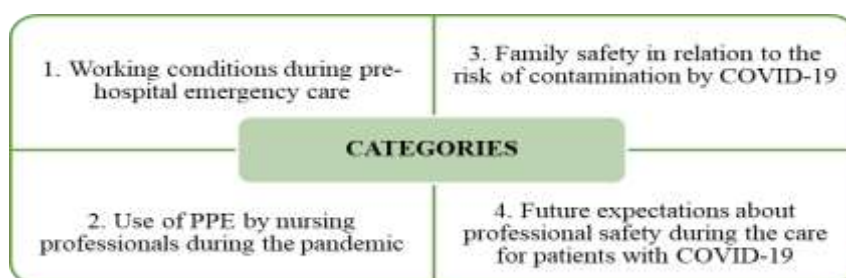

Figure 2. Categories of perceptions of nurses and nursing technicians regarding safety in the care for patients suspected and diagnosed with COVID-19 (Londrina, Brazil, 2023)

1. Working conditions during pre-hospital emergency care

During data collection, it was possible to identify the pre-hospital care flow to patients with suspected or confirmed diagnosis of COVID-19. Care also begins with SAMU regulation, in which medical regulation technicians (MRT) pass on information about the main signs and symptoms of patients as well as whether the disease is suspected or confirmed.

From this, the team equips itself with the appropriate PPE for the service, making it safer and professionals aware that they must apply the care. It was also verified how the process of disinfection of materials and ambulance is carried out and occurrence management from the activation until the moment professionals arrive at the place of care:

Here at work, we have the appropriate vestments, we have the place where the ambulance's donning and safety are disinfected for each suspected or confirmed patient. When patients have the most serious clinical condition, medical support is called in to support us **(NT8)**.

After the service, we return to the base and the ambulance disinfection process begins, where this material is placed for cleaning and disinfection, so care in handling the removal of this material is also important both when you release the patients and when you remove the PPE and materials from the ambulance, not to keep in contact, I think this is the main thing **(NT17)**.

In the service, we are already donned to assist patients, but in some cases, it is not informed, we go back to the base and we are dressed to perform the care **(NT18)**.

On the other hand, it was observed that there are still difficulties for this type of service, usually due to lack or error of information passed on to the team, as can be seen in the following speeches:

When we are told that the patient is a suspect, yes, I feel safe. We dress up, but there are many cases in which the family member does not say everything, I don't know why, if it's fear of not going, I don't know the reason, then you get there and after you're inside, the family member says that he had a fever or even that a swab was collected, with that you get scared" **(N1)**.

When we are notified in advance that we are going to see someone suspected and confirmed with COVID-19, I feel safe, yes, we catch many suspected cases that we will only find out about at the time **(NT14)**.

2. Use of PPE by nursing professionals during the pandemic

From the perceptions regarding proper clothing,

concerns emerged by workers, fear and insecurity:

> We provide safe care, we do our best, but we are not afraid **(NT10)**.

> I don't feel safe, because there's always that opinion if we're really putting on the PPE properly, and there's always that doubt if it's really effective or not **(NT9)**.

> I feel a little insecure about exposure to the virus and contamination, because even though we are dressed up, the ambulance is a small place, we have more contact with patients, you are closer to patients, you touch them more, it is a very small space **(N2)**.

> At first it was very complicated, everyone thought it was going to get it, they didn't know how it was going to manifest itself, even more so for not having any medication, not having anything to effectively prevent it **(N3)**.

As for the informative support of norms and correct donning use and the way in which they were approached and prepared to meet this type of demand, the need arose to search for information regarding the correct care for these patients:

> Over time and days, we improve some things, basic training was given. As time goes by, we adjust things, which we see need to be improved **(NT9)**.

> I think we adapted, because in the beginning everything was very new **(NT16)**.

> The training was day to day, every time something new arrived, the nurses passed it on to us or we sought our own knowledge on the internet. It was the everyday **(N13)**.

Finally, they highlighted their perceptions regarding the quality of care that remained the same, regardless of the type of demand:

> I think the treatment is the same, what differs is whether you need to enter with O2, with a high-flow mask or something more invasive **(NT17)**.

> The feeling is the same, the only thing is the fear of acquiring the virus, fear of something happening during the journey, because everything is risky **(N4)**.

> I got used to it and finally, I started to treat patients with a little more proximity, to examine, to be together, in cases of breathing difficulty, to help hold the oxygen mask and to feel calmer to assist that patient **(N5)**.

3. Family safety in relation to the risk of contamination by COVID-19

Participants highlighted the need for changes in family routine due to the pandemic, as shown below:

> The routine has changed a little, I try to take off my clothes before entering the house, at the door of the house I take off my overalls, I come with clothes underneath, I take off my shoes and I take them to the service area and I have no contact physical with my family before showering **(N5).**

> I didn't visit my family for 8 months, when I went, I didn't hug anyone, I didn't touch anyone, I wore a mask, I only managed to be fine with my family when I took the test here at the service and the result was negative **(N6)**.

4. Future expectations about professional safety during the care for patients with COVID-19

Of future expectations, the vast majority report the importance of using PPE and that routine use, especially masks, should become a more common reality, even after the pandemic:

> My expectation is the way you dress up, sometimes you don't go out dressed up! I think the mask will perhaps be something that we should always use, not just in a pandemic, the simple mask I mean, not the N95 (N1).

> But in a pandemic, you start to think differently again, to don more, regardless of whether it's COVID or not. You start to get used to it and I think the pandemic has pushed us to protect ourselves more (N5).

> We must intensify care more; the mask has become a second skin for me. I think that health personnel will worry about PPE for the rest of their lives (NT19).

DISCUSSION

Studying perceptions is essential for understanding everyday situations and subjectivities of each individual. Therefore, understanding the impacts of the pandemic on PHC through professionals' perception it is essential to identify weaknesses and needs in SAMU care safety and thus create feasible strategies aimed at improving the quality of care[11].

Unlike the hospital context, SAMU requires a different look, as the team needs to be aware of all the scenarios involved and the difficulties that may interfere with care, such as communities that are difficult to access for handling stretchers, boards and other equipment that require different strategies.

Furthermore, the PHC team does not have sinks or devices for continuous hand washing, nor a specific service location for cleaning materials and ambulances[12].

From this perspective, the care to be performed in cases of patients with COVID-19 is also differentiated, since the team may not have complete and definitive control in more complex environments, which makes them professional members of the occupational risk group for the new coronavirus. Therefore, it is necessary to reinforce the use of all PPE recommended by the Ministry of Health. Although it is often difficult to use all the equipment correctly, given the ambulance's restricted physical space compared to hospitals and the physical effort that some occurrences demand from professionals, thus increasing their risk of contamination[5].

The impacts on the organization of work, on the new care flow, especially due to the lack of transfer or error of information in suspected and/or confirmed cases of COVID-19, directly interfere with the correct use of the necessary PPE, before leaving for care in respiratory cases. Also noteworthy is the time spent to properly clean and disinfect each ambulance, after transferring patients to the destination units, which can increase the response to the calls required from the service and be an aggravating factor in time-dependent occurrences[5].

According to studies carried out[5] in the pandemic period, the changes brought about by the pandemic potentiated some challenges already faced by SAMU, such as the weakness in the work process in relation to patient and worker safety, since the risk of contamination by SARs-CoV2 is increased by PHC's uncertainties associated with the continuous need for reinforced donning. It was also highlighted that the increase in occurrences of COVID-19 had a direct impact on the response time of the care for other clinical health problems, as care for patients suspected or confirmed with COVID-19 requires a longer time due to the need for care before, during and after each occurrence[5].

Related research has shown that health teams have been facing since the beginning of the pandemic a set of factors that contribute to occupational stress in work activities, including politics, culture and infrastructure of health services. These factors increase the level of concern regarding the mental health of workers and end up influencing their experiences and reactions to combat the pandemic[12-13].

It is worth mentioning that, due to the disease's complexity, health services had difficulties in adapting to the new reality, a factor evidenced in the presentation of participants' speeches. The vast majority learned over time and the experiences they had about the correct way to protect themselves and even to know how the virus is transmitted. The strategies adopted by research professionals were challenging, since, as the literature points out, studies are constantly changing and there is still much to know and add. Therefore, it is essential that standards and guidelines are made available daily to professionals who work on the front line, in order to promote professionals' and patients' safety and well-being[14].

The literature also adds the need for a learning culture, in which professionals must identify areas that need to be improved. Allied to this, there must be appreciation on the part of superiors with regard to the provision of essential resources for assistance, since such a scenario requires different requirements. Likewise, for this to become a reality, it is essential that managers also identify factors that may compromise health care as well as the understanding, guidance and constant supervision of technical standards and emotional issues, which directly affect professional performance and quality of care[13].

The nursing team in general is the most exposed to stressors, both psychologically and in physical and social environments and, consequently, are increased because they are professionals who work on the front line against COVID-19. Among the most significant factors, we can mention those related to the exhaustive workload, inadequate places to rest as well as work under pressure to perform numerous tasks in a short period, without due appreciation[14].

In addition, the psychological factors that are allied to the process of death and dying of patients are also highlighted, since most professionals were not adequately prepared to deal with the disease's uncertainties and outcomes[15]. The results of this study demonstrated that, during the coping with the pandemic, the concern for families on by professionals who work on the front line was a relevant factor of emotional instability, such as the development of anxiety, stress and fear of contaminating their loved ones, associated with the

feeling of uncertainty in the face of distancing from family members and social life[16].

Family separation can intensify the feelings already experienced by professionals; therefore, it becomes necessary to support families with clear and objective information, in order to reduce the fear of contamination and offer support to the possible emotional imbalance generated[17]. The literature points to the need for psychological support beyond the workplace, also directed to individuals and organizational characteristics of each person involved, because according to this research, several participants reported emotional exhaustion over time[14].

Another risk factor that corroborates psychological distress is the environmental risks that SAMU employees are exposed to on a daily basis, such as horns, ambulance sirens, the flow of cars, communication with the radio operator and lighting, in addition to being charged for a shorter response time[18].

For Marleau-Ponty, health care should be seen beyond the biologist, reductionist and curative vision, but rather as a biopsychosocial perspective, guided by the interdisciplinarity of knowledge and lived experiences so that each person's existential realities are taken into account in order to enhance the quality of life of people in different contexts and characteristics[11].

Although there is a charge and responsibility for a qualified service and in a shorter time on the part of SAMU interventionist teams, it is reiterated that the first speech of any service is the safety of the professionals involved which, in this context, is about the correct use of PPE and the adoption of disinfection measures for ambulances. These factors influenced the response time for attending occurrences, since studies carried out in the pre-pandemic period emphasized that the ideal response time for SAMU assistance should be less than 10 minutes[19-20].

Although there is a robustness of published studies, it is necessary that the attention to the theme be continuous, because despite the current pandemic control and the vast collection of related scientific materials, there are still cases of the disease, and the risk of contamination of professionals is still constant; therefore, it is essential that professionals' biosafety is not relaxed[19].

In this regard, one should consider the development of continuing education programs in institutions related to professional biosafety and activities that boost quality of care and reduce risk, burnout and professional stress. Most professionals in the study listed their future expectations regarding the pandemic with regard to the need to reinforce care for the safety of care at PHC[18].

FINAL CONSIDERATIONS

The study allowed for reflections based on nursing professionals' perceptions on safety at PHC since the beginning of the pandemic, which can contribute to raising the standard of care for this professional category and help in elaborating measures that advance quality of care. It was mainly evident the concern of professionals to have technical-scientific training to work throughout the pandemic period and the need for continuous reassessment of the pre-hospital work process for developing mechanisms that restructure care practices, working conditions and stress factors that affect workers' health.

In addition to this, based on speech analysis, from the dendrogram generated by IRAMUTEQ, it was verified a greater frequency in the text corpus of emotions and feelings that reverberated in quality of care. The study had as a limitation the fact that the interviews were carried out in only one period of the pandemic, with no monitoring of nursing professionals' continuous follow-up.

PERCEPÇÃO DO PROFISSIONAL DE ENFERMAGEM DO SAMU SOBRE SEGURANÇA NO ATENDIMENTO AO PACIENTE COM COVID-19

RESUMO

Objetivo: apreender a percepção dos profissionais da equipe de enfermagem atuantes no serviço de atendimento móvel de urgência sobre a segurança no atendimento aos pacientes suspeitos ou confirmados para COVID-19. **Método**: pesquisa descritiva de abordagem qualitativa realizada com enfermeiros e técnicos de enfermagem do Serviço de Atendimento Móvel de Urgência de um município no norte do Paraná. A coleta de dados deu-se por meio de entrevistas áudio-gravadas realizadas entre fevereiro e maio de 2021. Após transcrição na íntegra, o material foi submetido à análise de conteúdo pelo *Software Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires.* **Resultados:** emergiram quatro categorias

principais sobre a percepção dos profissionais em relação à segurança nos atendimentos: condições de trabalho, segurança da família, cuidados na paramentação e expectativas futuras. **Considerações finai**s: o estudo permitiu refletir sobre as principais percepções dos profissionais de saúde no período da pandemia como, por exemplo, maior preocupação com a segurança durante os atendimentos, resultando em mudanças no fluxo de atendimento pré-hospitalar e na implementação de novas condutas e ações voltadas para a segurança da equipe de enfermagem.

Palavras-chave: Equipe de enfermagem. Pandemias. Saúde do Trabalhador. Emergências.

PERCEPCIÓN DEL PROFESIONAL DE ENFERMERÍA DE SAMU SOBRE LA SEGURIDAD EN LA ATENCIÓN AL PACIENTE CON COVID-19

RESUMEN

Objetivo: comprender la percepción de los profesionales del equipo de enfermería que trabajan en el servicio de atención móvil de urgencia sobre la seguridad en la atención a los pacientes sospechosos o confirmados para COVID-19. **Método:** investigación descriptiva de abordaje cualitativo realizada con enfermeros y técnicos de enfermería del Servicio de Atención Móvil de Urgencia (SAMU) de un municipio en el norte de Paraná-Brasil. La recolección de datos fue hecha por medio de entrevistas audiograbadas realizadas entre febrero y mayo de 2021. Después de la transcripción completa, el material fue sometido al análisis de contenido por el *Software Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*. **Resultados:** surgieron cuatro categorías principales sobre la percepción de los profesionales con relación a la seguridad en las atenciones: condiciones de trabajo, seguridad de la familia, cuidados en la paramentación y expectativas futuras. **Consideraciones finales:** el estudio permitió reflexionar sobre las principales percepciones de los profesionales de salud en el período de la pandemia como, por ejemplo, mayor preocupación con la seguridad durante las atenciones, resultando en cambios en el flujo de atención prehospitalaria y en la implementación de nuevas conductas y acciones dirigidas para la seguridad del equipo de enfermería.

Palabras clave: Equipo de enfermería. Pandemias. Salud del Trabajador. Emergencias.

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