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Knowledge of health professionals about personal protective equipment in the context of the pandemic

Conocimiento de los profesionales de la salud sobre equipos de protección personal en el contexto de la pandemia

Conhecimento de profissionais da saúde sobre os equipamentos de proteção individuais no contexto da pandemia

ABSTRACT

Objective: to know the profile of health professionals in a hospital in the state of Rio de Janeiro and analyze knowledge about adherence to the use of PPE. **Method:** Qualitative, descriptive and exploratory research. For data collection, semi-structured interviews were used, and for the organization and analysis of the material, Bardin's content analysis. The study participants were health professionals from a hospital in the metropolitan region of Rio de Janeiro / Brazil. The research was approved by the Research Ethics Committee. **Results:** Two categories emerged: the use of PPE as the main protection against contamination in Covid-19, and changes in the routine of the care practice at work and facing the pandemic. **Conclusions:** In this study, it was found that the health professionals interviewed know the importance of using PPE, but also highlight that they were strongly impacted by the care demands of the pandemic.

DESCRIPTORS: Coronavirus Infections; Pandemics; Occupational Health.

RESUMEN

Objetivo: conocer el perfil de los profesionales de la salud en un hospital del estado de Río de Janeiro y analizar los conocimientos sobre adherencia en el uso de EPP. **Método:** Investigación cualitativa, descriptiva y exploratoria. Para la recolección de datos se utilizó una entrevista semiestructurada, y para la organización y análisis del material, el análisis de contenido de Bardin. Los participantes del estudio eran profesionales de la salud de un hospital de la región metropolitana de Río de Janeiro / Brasil. La investigación fue aprobada por el Comité de Ética en Investigación. **Resultados:** Surgieron dos categorías: el uso de EPP como principal protección contra la contaminación en Covid-19 y, cambios en la rutina de la práctica asistencial en el trabajo y frente a la pandemia. **Conclusiones:** En este estudio se encontró que los profesionales de la salud entrevistados conocen la importancia del uso de EPP, pero también destacan que fueron fuertemente impactados por las demandas de atención de la pandemia.

DESCRIPTORES: Infecciones por Coronavirus; Pandemias; Salud Laboral.

RESUMO

Objetivo: conhecer o perfil de profissionais da saúde em um hospital no estado do Rio de Janeiro e analisar os conhecimentos sobre adesão no uso do equipamento de proteção individual. **Método:** Pesquisa qualitativa, descritiva e exploratória. Para coleta de dados utilizou-se entrevista semi-estruturada, e para organização e análise do material, análise de conteúdo de Bardin. Os participantes do estudo foram profissionais de saúde de um hospital na região metropolitana do Rio de Janeiro/Brasil. A pesquisa foi aprovada pelo Comitê de Ética em Pesquisa. **Resultados:** Emergiram duas categorias: A utilização do equipamento de proteção individual como a principal proteção de contaminação do Covid-19 e, as mudanças na rotina da prática assistencial do trabalho e o enfrentamento da pandemia. **Conclusões:** Verificou-se, neste estudo, que os profissionais de saúde entrevistados conhecem a importância sobre o uso do equipamento de proteção individual, mas também destacam que foram fortemente impactados com as demandas assistenciais da pandemia.

DESCRIPTORIOS: Infecções por Coronavírus; Pandemias; Saúde do Trabalhador.

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INTRODUCTION

The fight of health professionals in the fight against the new coronavirus has been recurrent since its discovery. The warning made by the World Health Organization (WHO) about the discovery of a new coronavirus with pandemic potential originating from China in the city of Wuhan, in January 2020, was declared an international Public Health emergency. Most patients with the disease evolve well and many are asymptomatic. However, one in six people develops severely, with respiratory distress caused by acute respiratory syndrome, requiring hospital treatment.^{1,2}

The main transmission routes are respiratory, through the inhalation of droplets and aerosols eliminated through coughing or sneezing, as well as through the aerosolization of bodily substances during procedures that manage the airways, such as intubation, extubation, aspiration, cardiopulmonary resuscitation, non-invasive ventilation and bronchoscopy.³

In Brazil, the measure adopted, in addition to hygiene and precaution, was social isolation to prevent the rapid spread of the virus, as well as the quarantine of patients with the disease confirmed and the presence of signs and symptoms. Meanwhile, health professionals face many difficulties in dealing with the pandemic, such as the lack of personal protective equipment (PPE), or inadequate or insufficient equipment, in addition to the lack of beds, medicines and mechanical ventilators.

In view of this, one sees health professionals, especially nurses, sick or deceased as a result of COVID-19.⁴

In this scenario, hospital units become an unhealthy place for health professionals since they have a high possibility of contamination by infectious diseases and involve several procedures related to the work routine that generate occupational risks for workers.

It is noteworthy that occupational accidents, due to exposure to biological materials in hospitals, have always been a concern of professionals exposed to risk factors due to direct or indirect contact with blood and other bodily fluids.⁵

From this perspective, occupational accidents with health professionals in hospital units have a great impact and although the risk of transmission of infectious diseases as a result of accidents with biological material is proven, the precise number of infections that result from these events is still unknown, due to scarcity of systematic surveillance data and underreporting.^{5,6}

Among health professionals, the nursing team stands out for being in greater numbers within a hospital unit and for dealing directly with patients' health problems, exposing themselves to physical, chemical, biological and ergonomic risks. In addition, the risks of their occupation can be aggravated when they present themselves in emergency situations, since there is the contribution of various factors such as fatigue, stress, work overload, double working hours and the need for faster resolution of the problem.

Given the above, the study seeks to promote a discussion about the respon-

sibility and awareness of health institutions and professionals about the use of PPE, requiring the approach of legal aspects and regulations already legislated and in force in Brazil. In order to achieve results that can answer the problem, the objective that guides the discussion of this study is to know the profile of health professionals in a hospital in the state of Rio de Janeiro and analyze knowledge about adherence to the use of PPE.

METHOD

This is a qualitative, descriptive and exploratory study, developed in a hospital in the metropolitan region of the state of Rio de Janeiro, covering health professionals.

Qualitative analysis is an intense activity that requires creativity, conceptual sensitivity and hard work. The purpose of data analysis is to organize, provide structure and extract meaning from the research information, in addition to offering a better understanding of the cultural values and representations of a given group on specific themes, through working with a universe of beliefs, motives, meanings, values and attitudes, corresponding to a deeper space in the relations of processes and phenomena, which cannot be reduced to the operationalization of variables.⁷ At this time, the analysis will be carried out in the context of the Covid-19 pandemic, giving the exploratory character of the research.

The period for data collection took place between January and April

2021. The study sample consisted of 27 health professionals. As inclusion criteria, professionals were selected who agreed to participate in the study by completing the Informed Consent Form (FICF) and who were available at the time of the interview. Professionals who were not on duty at the time of the research or unavailable due to leave, pregnancy, health reasons and others were excluded. For data collection, an interview was conducted using a semi-structured instrument, developed by the authors, focusing on aspects related to work, knowledge and adherence to the use of personal protective equipment and exposure risks. After collecting the information, the interviews were transcribed and followed by thematic content analysis, 8 with a thorough reading of the empirical material, seeking the main ideas, the exploration of the content, constituting the thematic categories of the fragments of the statements; later, there was a confrontation of the categories that emerged analyzed and supported in the references.

The confidentiality of the identification of respondents was preserved. After being invited and knowing about the study, the participants voluntarily agreed to participate in the research. As inclusion criteria, professionals should be in active exercise of their function and agree to participate in the study by signing the Informed Consent Form.

The research was approved by the UNIAN Research Ethics Committee of São Paulo – CEP/ UNIAN, under CAAE No. 35663920.7.0000.5493, in compliance with Resolution 466/2012 on research involving human beings and complied with Resolution 510/2016 of the National Health Council which determines specific ethical guidelines for the human and social sciences.

RESULTS

The Hospital, the study setting, was

inaugurated in 2016. It started its activities with 46 beds, 23 beds for adult medical/surgical clinics, 13 beds for pediatric medical/surgical clinics and 10 beds for pediatric intensive care units. In 2018, it applied its capacity with the addition of 8 surgical beds and 3 semi-intensive beds.

Within the universe of professionals working in this institution, 27 health professionals agreed to participate in the research. There was a predominance of females (25/93%).

Within the universe of professionals working in this institution, 27 health professionals agreed to participate in the research. There was a predominance of females (25/93%). Regarding the age group of respondents, 14 (52%) were between 40 and 49 years old, 8 participants (30%) were between 30 and 39 years old, 3 (11%) between 50 and 53 years old, one with 25 years and one with 26 years.

Of the participants, 6/22% reported being single, 17/63% married and 4/15% divorced. Education and professional training varied between techni-

cal education in nursing (20/74%) and higher education with nurses and physiotherapists (7/26%). When describing the time since graduation, about 17 professionals said they had between 10 and 19 years of graduation, six said they had between 20 and 25 years of graduation, and four said they had less than 8 years in the profession.

Another variable questioned in the study was the number of employment contracts that professionals have. 26% of the participants described having only one bond, 63% have two bonds, 7% have three and one participant reports having more than three bonds.

After analyzing the testimonies of the participants, two categories emerged: the use of PPE as the main protection against contamination of Covid-19, and changes in the routine of care practice at work and coping with the pandemic.

Category 1: The use of PPE as the main protection from Covid-19 contamination: personal and family safety

The majority, corresponding to 71% of the participants, reported that the purpose of the PPE is for professional safety against the risks of disease contamination. Among the speeches of the participants, the following expressions stand out.

"The PPE is to prevent accidents within the hospital environment, so we are protected from any disease." (E16)

"It's to protect us, protect us from the situation we're putting ourselves at risk, and protect us from the things [pathogens] we're dealing with on a daily basis." (E27)

In addition to the concern with the risks to which they may be exposed on a daily basis, professionals also highlight the importance of using protective equipment in a concern for their families. The fear of being contaminated by a disease and taking this risk to their

loved ones in the home environment. The following fragment of testimony portrays this concern.

“I think it's important to use PPE, because it's for disease prevention. It protects our lives and protects us from transmitting something to our family members, father, mother and other people, got it? Sometimes I can take something home without knowing it. So I think it's very important.” (E15)

There was also a reference about associating the use of PPE as protection for patients who are cared for in the hospital. Professionals highlight the need for equipment so that patients are not exposed to the risks of cross contamination.

“We currently protect ourselves more, right? And the PPE is also to protect the patient himself. Because if we don't take care of ourselves, we can contaminate other people. It's not right to know who has a covid and who doesn't, so many times if we don't protect ourselves, we end up contaminating a patient who was hospitalized for another reason.” (E6)

Os participantes citaram ainda quais os EPIs utilizam na assistência, e entre os principais destacados observou-se:

“Temos que usar tanto em caso suspeito quanto positivo, porque se ele é suspeito eu me preparo como se ele fosse um paciente positivo, não existe diferença. Então todos os EPIs são disponibilizados. O gorro, a máscara N95, o avental impermeável, e a máscara que em alguns lugares usam e outros não que é a de gotícula por cima da N95 que não é uma regra geral, mas em alguns lugares ainda fazem dessa forma.” (E22)

Category 2: Changes in the routine of care practice at work and coping with the pandemic

Participants also pointed out the main changes that took place in the institution and that, in their perception, contributed to an improvement in professional practice in patient care. Among the different conceptions, respondents converged on doubled patient care (30%), greater attention to practical activities (44%), studies on specific knowledge (7%) and training about the disease (7%).

“I saw changes that contributed to patient care. Attention with caution and the use of PPE, which have become more frequent. You have to use every moment and that's good for us and for the patient too.” (E3)

“Having a more clinical look at the patient, right? Attentive to assess changes in his health status, and this influenced our search for more knowledge also in knowing how to assess. There are patients who are more difficult to ventilate, so there was a need to search for ventilation, more knowledge to meet the needs of these patients.” (E5)

“In this very beginning of the pandemic in our nursing issues, we got a little lost and asked ourselves: How are we going to deal with this? How are we going to treat the patient? I thought we didn't have the right knowledge at the beginning, after we started to understand what the disease itself was. Then it got easier, but the bad thing is that we also lost a little fear of diseases, and that's bad because we relax our attention.” (E1)

In a less incident expression, one participant highlights that the pandemic did not change its care practice.

“In my care, it didn't change, because the care I was already doing, I do now. As I always come from private hospitals, there is a very strict protocol, which was followed even before the pandemic. It just kept changing, adapting to the new conditions, but it always had a protocol, always had this more rigorous, complex, all-right service. So, the contribution of the pandemic to my work, I didn't see it. The demand for work has increased a lot, but the care I had, I continue, I just get more tired.” (E11)

DISCUSSION

The participation of women in health activities was observed in other investigations that dealt with the profile of Brazilian nursing. Feminization is a strong feature of the sector, as the majority of the health workforce is female.^{9,10}

Scholars¹⁰ point out that the routine of health professionals is exhausting and often marked by work overload, lack of professional appreciation, direct contact with the suffering of others, low pay, double employment bonds, precarious relationships in employment contracts and high responsibility. The search for greater salary valuation of health professionals reflects the reality of the need to maintain the double employment relationship. Reality also found with study participants.

Also considering the analysis of the first category, it is possible to see that health professionals are workers exposed to various risks: contamination by COVID-19, various illnesses due to exposure to other types of diseases, as well as the effect of stress caused by all this context of pressure and working conditions in the limit between the reasonable and the absurd.¹¹

In the analysis of the interviewees' testimonies, the perception about the purpose of using PPE was highlighted mainly in reference to personal protec-

tion as a health professional.

The deponents participating in the study are included in direct patient care. And among the care they have in their work routine, they are experiencing changes due to the pandemic context. In this sense, as it is a respiratory pathogen, its main form of transmission occurs through direct or indirect contact with infected people. Therefore, containment measures must be implemented before the patient arrives in the hospital environment, who must receive assistance from a team trained to adopt the screening procedures.¹²

Among ANVISA's recommendations, there is the implementation of screening procedures to detect patients with suspected infection by the new coronavirus (SARS-CoV-2) even before the patient's registration. Health services must implement non-punitive policies to allow health professionals who present symptoms of respiratory infection to be removed from work.¹³

These recommendations are essential to contain the spread of the virus in the hospital environment, requiring new adaptations so that patients are detected in advance to avoid contact with other patients and professionals. In addition, it appears that it is essential to distribute Personal Protective Equipment for everyone who is exposed to the virus.¹²

The role of PPE in protecting the health of workers in the current pandemic is unique. In the case of the risk of biological contamination, they act as barriers that can prevent infection.¹² Even though professionals recognize the importance and purpose of using PPE. Researches point out possible contributions from failures in the placement and removal of equipment. The time, defined as 4 to 6 days in which asymptomatic carriers can transmit the virus, can influence and bring risks of contamination.¹⁴

However, attributing the worker's contamination to errors he supposedly made in the use of PPE is expected in contexts where the attribution of blame to the victim prevails. Participants

should be encouraged to be aware of the new work situations they need to face when implementing their service response to the pandemic.¹⁵

When asked which PPE's should be used in the care of suspected patients or patients with a confirmed diagnosis of COVID-19, all participants pointed out the need for protective equipment, however only four participants cited the use of the standard recommended by the Anvisa Technical Note.

Some professionals highlighted that at the beginning of the pandemic, the concern about being something new caused concern, but also the search for studies to better understand the disease and the management of care.

Goggles are not always described in the professionals' speech, with the mask being the element mentioned by all respondents. Anvisa's technical note establishes that the health service must ensure that internal policies and good practices minimize exposure to respiratory pathogens, including SARS-CoV-2. Measures must be implemented prior to the patient's arrival at the health service, upon arrival, screening, waiting for care and throughout the assistance provided.¹²

Among the recommendations for measures to be implemented to prevent and control the spread of SARS-CoV-2 in health services by health professionals are: hand hygiene with water and liquid soap or 70% alcohol preparation; wearing goggles or face shield; surgical mask; apron; procedure gloves and cap (for procedures that generate aerosols). The note also clarifies that healthcare professionals must use N95, FFP2 or equivalent masks when performing aerosol-generating procedures such as intubation or tracheal aspiration, invasive and non-invasive mechanical ventilation, cardiopulmonary resuscitation, manual ventilation before intubation, nasotracheal sample collections.¹³

When analyzing category 2, most health professionals highlighted changes that impacted the daily work routine. The insertion of care practices that became more frequent and with that there was a need to learn and develop new skills that professionals were not used to. Such changes require an adaptation and the search for training on the handling of new practices.

In this sense, institutions need to think of new strategies for professional training. Adopting active methods as learning tools in courses in the health area help participants to be proactive, mainly because they are involved in complex activities that require decision-making and evaluation of results.¹⁶

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One participant highlights that the pandemic did not change her care practice. The practices and care she exercised before the pandemic remain as in the current context. Although the participant does not recognize changes in the routine contribution, she highlights an important factor that can impact the risk of exposure.

CONCLUSION

The context of the pandemic we are experiencing has highlighted the category of health professionals as a structuring piece in the care of society. In this sense, understanding and meeting the needs to which these professionals are exposed is essential for the category's

safe work activity and for quality and effective care to the population.

It was found that the health professionals interviewed know the importance of using PPE, but they also highlight that they were strongly impacted by the care demands of the pandemic. Faced with this reality, they can be affected by exposure and contami-

nation caused by COVID-19. Although this is not a reality presented in the study, several health services (public and private) were unable to provide adequate protection, through PPE in sufficient quantity and quality, as well as by training health professionals for new situations arising from the contamination of the virus. ■

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