Knowledge and use of personal protective equipment by nursing professionals during the Covid-19 pandemic

Conhecimento e uso de equipamentos de proteção individual por profissionais de enfermagem durante pandemia da COVID-19

Conocimiento y uso de equipo de protección individual por profesionales de enfermería durante la Pandemia de COVID-19

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ABSTRACT

Objective: To explore the knowledge and use of personal protective equipment by nursing professionals of Primary Health Care during the Covid-19 pandemic. **Method:** This is an exploratory study of a non-probabilistic sample developed in Basic Health Units in the city of Picos, Piauí, Brazil. Data were collected between June and August 2020, by phone call, following a semi-structured script, with responses recording and transcription. For material analysis, the software IRaMuTeQ was used for statistical textual analyses: Descending Hierarchical Classification, similarity analysis, and word cloud. **Results:** From the corpus of 6,873 words and 832 lexical units, three categories were created: (1) motivations and barriers for use (20.9%); (2) handling of personal protective equipment (classes 5 and 4) with 25% and 21.6%, respectively, and (3) measures to protect users and health professionals (classes 3 and 5) with 17.6% and 14.9%. **Conclusion:** The nursing professionals interviewed demonstrated that they did not have sufficient knowledge for the proper use of the equipment, which could compromise their integrity and that of the patient as a subject who receives unsafe care.

DESCRIPTORS

Personal Protective Equipment; Hazardous Substances; SARS-CoV-2; Nursing, Team; Occupational Exposure.

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INTRODUCTION

The identification of a new type of severe acute respiratory syndrome, SARS-COV-2, responsible for causing the Covid-19 disease, and the international crisis resulting from its spread, led the World Health Organization (WHO) to characterize it as a pandemic and a challenge for the entire global health system[1].

In most countries, a discussion has started about how to effectively protect health professionals, especially the nursing staff, who work on the frontlines in the fight against the pandemic. At the same time, the supply of protective equipment in the necessary quantities, as well as the training of professionals for its proper use and the reorganization of care flows[2-3] became mandatory.

According to the International Council of Nurses (ICN), after many nurses being infected with the new coronavirus, the pandemic runs with a deficit of up to six million nurses and, along with exhaustion and the exodus of experienced nurses, puts the nursing workforce under intolerable strain.

Brazil accounts for one third of the total number of nursing professionals who died of Covid-19 worldwide. With the start of vaccination, until the first week of May 2021, the Federal Nursing Council (*Cofen*) registered a significant drop in the number of deaths[4-5].

It is in this context that the barriers that are part of the reality of health institutions stand out, such as the lack of personal protective equipment (PPE) and supplies, as well as the lack of training for the correct use of PPE in health care. The exposure of professionals to biological risks may be fatal, either due to the lack of equipment or knowledge based on scientific evidence[6-7]. Thus, even among those who recognize standard preventive measures, it appears that only part of them adopts such measures insufficiently, or does not adopt them[8-9].

The sudden onset of a health status never experienced contributed to a knowledge gap due to the scarcity of studies, especially in Brazil, regarding the practice of health professionals on the knowledge and use of PPE. Considering the scenario described, this study aimed to investigate the knowledge and use of PPE by nursing professionals working in Primary Care, on the frontline in the fight against Covid-19 pandemic.

METHOD

DESIGN OF STUDY

This is an exploratory study with a qualitative approach.

POPULATION

Thirty-three nurses and 36 nursing technicians from the Family Health Strategy teams and vaccine rooms participated, totaling 69 nursing professionals as the study population. With regard to the Primary Health Units (*UBS*) of operation, the research was carried out in 36 primary health units, with 25 being located in urban areas while 11 belong to rural areas.

LOCAL

It was developed in an inland municipality of Piauí, Northeast Region, Brazil.

SAMPLE SELECTION AND DEFINITION CRITERIA

The sample was of the non-probabilistic type and the inclusion criteria were: working as a nursing professional during the Covid-19 pandemic, having a registration in the National Register of Health Facilities (*CNES*), or working in the vaccination room, in direct contact with the users of the service. Those who were on leave because they were part of the risk group or who were on vacation or work leave were excluded. Those who could not be contacted after three attempts by the researchers were also excluded. Finally, 69 professionals participated in the study, 33 nurses and 36 nursing technicians.

DATA COLLECTION

Professionals were invited to participate through a phone call or a texting application to schedule the interview. Data collection took place between June and August 2020, through telephone interview, using an instrument with closed and open questions, prepared by the researchers based on the literature[10-11]. A pilot test was carried out with a team consisting of 1 nurse and 2 nursing technicians from a *UBS* to check its applicability; however, the unit used for the test was not part of the study sample.

The semi-structured interview script, an integral part of the elaborated instrument, had four questions about the use of PPE: (1) What are the personal factors that motivate and discourage you to wear them? (2) How do you remove PPE when you go to the bathroom, have a snack, or drink water, for example? (3) How do you reuse your PPE? and (4) What measures were taken in your institution to ensure professionals' safety?

The instrument also allowed us to characterize the sample in terms of sociodemographic profile (sex, age, and profession), the PPE available in the institution during the Covid-19 pandemic, and the frequency with which they are used; if there was any training on its use and, if so, how it was carried out; whether the health service makes sure that professionals are making proper use of PPE before treating a suspected or confirmed case of Covid-19, and if the Health Unit has any standard operational protocol for professionals on the correct use of PPE.

The interviews lasted an average of 20 minutes. To designate the nurses, the letter E was used, and for the nursing technicians, the letter T, followed by the Arabic number corresponding to the order in which the interview was conducted.

The 32-item Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist was used to help researchers report important aspects of the study, such as method, context, results, analyzes and interpretations, which provides for the recording of audio and transcription as a way to more accurately reflect the participants' opinions[12].

DATA ANALYSIS AND TREATMENT

For data analysis and treatment, some steps were followed, namely: (1) data transcription, organization, and preparation; (2) content transcript reading and rereading; (3) data categorization; (4) data interpretation, and (5) conclusions drawing.

The software IRaMuTeQ (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*) was used for textual analysis and suggestion of relevant categories and themes[13–14]. The classic textual statistical analyses were performed: Descending Hierarchical Classification (DHC), similarity analysis (SA), and word cloud.

The lexical analysis allowed the use of descriptive statistics, overcoming the traditional separation of quantitative and qualitative approaches. IRaMuTeQ uses the chi-square test (χ^2) to determine the strength of the association between the words[15–16]. In the discussion, the data were compared to the current scientific literature on the subject.

ETHICAL ASPECTS

The study was developed in accordance with Resolution No. 466/2012 of the National Health Council, being approved by the Research Ethics Committee of the Universidade Federal do Piauí with opinion No. 4.104.447, in 2020. All participants received instructions on the research and the Free Informed Consent Form (FICF) was sent by email. Participants demonstrated their consent by sending the signed FICF to the researchers, after which a new telephone contact was made for data collection.

RESULTS

Among the 69 research participants, 65 (94.2%) were female. The predominant age group was up to 39 years (37; 53.6%), with a mean age of 39.3 ± 8.3 years, with a minimum of 22 years and a maximum of 58 years. It was observed that 36 (52.17%) were nursing technicians and 33 (47.83%) were nurses, with 60 (87%) working in the Family Health Strategy and 11 (15.9%) in the Vaccination Room. As for the location of the *USB* where they worked, 53 (76.8%) were located in the urban area, 18 (26.1%) were in the rural area. It was found that two (2.9%) were considered in both zones.

In classical lexical statistics and basic lexicography, statistical analysis of the corpus was performed, with the effective quantity of active and supplementary forms and a list of hapax (Figure 1). Sixty-nine texts were analyzed, with a total of 6,873 words and 832 lexical units, with 365 words appearing only once in the entire corpus. The average number of words per text was 99.61.

SUMMARY

Number of texts: 69
Number of Occurrences: 6.873
Number of forms: 832
Number of hapax: 365 (5.31% of occurrences – 43.87% of forms)
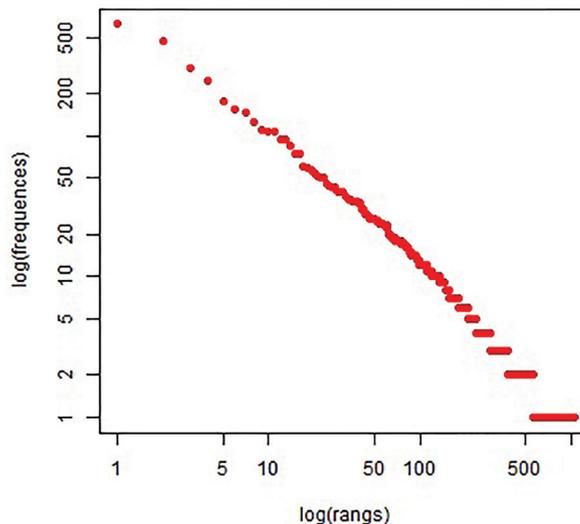Average occurrence per text: 99.61.

Figure 1 – Presentation of the results of the textual statistical analysis by IRaMuTeQ. Picos, PI, Brazil, 2020. (n = 69).

A total of 204 elementary context units (ECU) were obtained. Following dimensioning, the classes presented in the DHC dendrogram were defined and named according to their specific content. The corpus was divided into five classes, formed by the set of words with a statistically significant association, with each set representing a subject (Figure 2).

The construction of classes using the Reinert method (DHC) resulted in data that were categorized into three themes: 1) motivations and barriers for the use of PPE (class (1), (2) handling of PPE – general care (classes 5 and 4) and (3) measures for the protection of users and health professionals (classes 3 and 2). It is important to emphasize that the significance of the words is according to the p value that each one presents; in this regard, when the p value of a word is <0.05, the significance within the class is higher.

As for the motivations and barriers for the use of PPE (class 1), there was a mixture of feelings motivating the professionals, with emphasis on the words family, hurt, and protection, which represent the key posts of this theme, since that the p value of these words is <0.05 and this makes them significant (Figure 2). The term "demotivate" appears at the very bottom, with a p value closer to 0.05 and therefore it is considered not as significant when it comes to the use of PPE, with many declaring that there is no factor discouraging the use and others mentioning discomfort or insufficient equipment.

According to one of the professionals: *What motivates me is my protection, the protection of my family members and of the patient I care for. The only thing that discourages me is the insufficient amount of equipment we are given and, sometimes, their very low quality* (E05).

Personal motivating factors exert a great influence for safe nursing care, as barriers go beyond the insufficiency and low quality of equipment and involve the inconvenience and discomfort experienced throughout the work shift, as shown in the statements of the two interviewees below:

What motivates me is individual and collective protection (...) Although being difficult to keep all the PPE, it hurts, it's hot, it's

CLASS 1 Motivations and barriers for using IEP 20.9%	p-value
Motivate	<0,0001
Family	<0,0001
To chew	<0,0001
Protection	<0,0001
General	<0,0001
Washing	0.00067
To disturb	0.00067
Contaminated	0.00067
Warm	0.00067
Taste	0.00067
Community	0.00067
Purchase	0.00067
Very	0.00077
Protect	0.00089
Single	0.00096
IEP	0.00195
Contaminate	0.00442
Own	0.00495
Illness	0.00495
Demotivate	0.00495
Time	0.00707
Familiar	0.00707
Health	0.00846
Why	0.01590

CLASS 5 General care in handling IEP 25%	p-value
Bathroom	<0,0001
To	<0,0001
Elastic	<0,0001
Drink	<0,0001
Retreat	<0,0001
Snack	<0,0001
Shot	<0,0001
Water	<0,0001
To eat	<0,0001
Put on	0.00031
Glove	0.00050
Catch	0.00050
Mask	0.00080
Reuse	0.00200
Touch	0.00243
Dust	0.00243
Pull	0.00243
To depend	0.00243
Sun	0.00365
Match	0.00385
To take	0.00385
Not	0.00390
To leave	0.00468
When	0.00751
Sauce	0.01611
Contamination	0.01611
Only	0.01866

CLASS 4 General care in handling IEP 21.6%	p-value
Alcohol	<0,0001
Step	<0,0001
To wash	<0,0001
Glasses	<0,0001
Later	<0,0001
Visor	<0,0001
Protective Goggles	<0,0001
To sense	0.00017
Discourage	0.00036
Save	0.00069
Face Shield	0.00070
Soap	0.00091
Cleaning	0.00226
Cloak	0.00350
Water	0.00619
Heat	0.00621
N95	0.01519
Paper	0.01933
Hat	0.01933
Disposable	0.01933
Protection	0.01960
To discard	0.02446
Disinfection	0.03394
Everything	0.04499

CLASS 3 Measures to protect users and health professionals 1.6%	p-value
To enter	<0,0001
Scheduling	<0,0001
User	<0,0001
Also	<0,0001
Post	0,00010
Urgency	0,00015
Social	0,00015
Free	0,00018
Service	0,00025
Inside	0,00026
Guide	0,00026
Query	0,00221
Be	0,00310
Patient	0,00707
Suspect	0,01119
Input	0,01153
Area	0,02396
Marking	0,02396
Floor	0,02396
Release	0,02396
Wait	0,02396
Contact	0,02396
Vaccine	0,02396
UBS	0,02396
Oriented	0,02396
Routine	0,02396
To arrive	0,03306

CLASS 2 Measures to protect users and health professionals 14.9%	p-value
Living room	<0,0001
Distancing	<0,0001
Symptomatic	<0,0001
Chair	<0,0001
Unit	<0,0001
Respiratory	<0,0001
Available	<0,0001
Subway	<0,0001
To maintain	<0,0001
Patient	<0,0001
Syndrome	0.00027
Service	0.00035
Mandatory	0.00060
Availability	0.00060
Distance	0.00389
Flu	0.00389
Gel	0.00392
Protocol	0.01083
Isolation	0.01083
To search for	0.01083
Flowchart	0.01083
Break apart	0.01083
Sanitize	0.01083
Specific	0.01083
Control	0.01083
Institution	0.01227
Hand	0.01351

Figure 2 – Dendrogram for Descending Hierarchical Classification with lexical content and p-value. Picos, PI, Brazil, 2020. (n = 69).

bothering, but when the nose is hurting, the ear is being pressed, we remember these other reasons and there is none to discourage us (E17)

Things that discourage would really be the difficulty, because you're thirsty, you're hungry, there's discomfort because it hurts your face, hurts your ear, hurts your nose (E19)

Classes 2 and 3 cover the new measures adopted at the institution to help fight the coronavirus, with emphasis on the words schedule, enter, and room, whose values are statistically significant, p < 0.05 (Figure 2). They suggest a sequence of measures aimed at organizing the flow of care, avoiding crowding and providing greater protection for users and professionals, as shown below, in a nurse's speech:

Some elective care is not being done, such as childcare, Hiperdia, consultations for health promotion were reduced to avoid crowding. We are not doing group educational activities and we have reserved a specific room in the Unit for respiratory symptoms (E05)

Almost everything has changed. We didn't have that critical care, we didn't wear a cap, it was rare for us to wear a mask, gown… goggles, no way (T31)

After the pandemic, we have been using all [PPE] very strictly (T42)

The role of nurses is highlighted as members of the health team committed to the search for improvements for their institution and a link to the training of the Primary Unit team:

The nurse is always looking for, informing, bringing everything to the team, she works very well in this part (T42)

[I guide] the distribution of PPE according to the activity that I will perform at the Health Unit, most of the time I will not need to use them all, it is important to say to avoid waste and lack of PPE, and I provide instructions to team (E30)

Regarding the new routine of intensive use of PPE, the changes can be harmful to nursing workers' health. They have reported greater fear of contamination and long periods without drinking water to avoid doffing:

I don't go to the bathroom, I don't have a snack at the health center. As the work schedule is of one shift, I really deprive myself so I don't have to take [PPE] off, as there is a risk of contamination (E17)

Regarding PPE reuse practices, many technicians reported having received instructions from the nurse. Furthermore, at the time of the interview, some professionals expressed dissatisfaction with the professional devaluation given the high risk of contamination during the Covid-19 pandemic, which is a demotivating factor for the use of PPE:

We often go to work and I come back scared, crying, afraid of having contracted the virus and bringing it home (…) we work in a very risky area, we are on the frontline. You can't stop going to work, then [I would like] to be more recognized, regarding financial recognition (T02)

We are being greatly professionally undervalued, because many professionals even buy PPE, I believe that the municipality has resources, it is not reasonable to have to buy a N95 [mask] or a box of gloves, that discourages me a lot (T03)

Classes 4 and 5, which deal with general care in handling PPE, represented by the highlighted words: alcohol, step and

bathroom (all with p-value <0.0001), allow us to understand how professionals have dealt with daily donning and doffing, and how to sanitize reusable PPE:

The order of removal is to remove the gloves, if they are on, the face shield and, finally, the gown and mask (E44)

I take off the mask through the straps, then I leave the PPE I'm wearing on the chair and when I come back, I put it on again. The face shield, I wash with liquid soap, and the N95 mask I wash with soap and water, I leave it soaking in a separate bucket and then I rinse, put to dry, always in the sun. That's the N95, because it can be used for up to 30 days, at most, after that I throw it away (T02)

I put the N95 mask on A4 sheet of paper, there's a technique that the nurse taught us to roll it up and store it, to avoid humidity. The others are discarded (T20)

I protect the N95 mask, I wear one underneath, one over it. I wash the face shield every day with detergent (T48)

According to the DHC, the similarity analysis reveals the central elements identified in the selected articles. In the analysis, one can identify the structure, the central nucleus, and the peripheral system, as a semantic range of the most frequent words: PPE, Mask, Alcohol, Water, and Patient (Figure 3).

PPE formed the core of the SA. Surrounding the nucleus, peripheral branches such as "use" and "discard" refer to the importance of using the protocols published by the Ministry of Health (MS) for the management of PPE, as well as of the adoption of hygiene measures, essential to

prevent contamination and virus transmission. There was a link between PPE and Patient, with words such as "isolation" and "distance" and the need to establish measures to avoid crowding, such as scheduling appointments and implementing a care flowchart.

From the nucleus, the word "alcohol" appears and its uses are marked by the words that surround it. From it comes the word "water" and its connection with "soap", highlighting the importance of these items for hygiene. On the right side of the central nucleus, there was a strong connection with the word "mask", with emphasis on N95, which, according to the research participants, was one of the most used PPE for self-protection.

By the word cloud method, the term "PPE" was more frequent in the corpus (107 times), followed by the words "mask" (86 times), "alcohol" (73 times), "use" (70 times), "patient" (57 times), "water" (56 times), "N95" (45 times) and "protection" (41 times). It can be seen in Figure 4 that the words are randomly positioned in such a way that the most frequent ones appear larger than the others, thus demonstrating their prominence in the research analysis corpus. It can be seen that the word cloud corroborates the results explained by the similarity analysis.

Therefore, we can see the representation of the pandemic on measures to contain the disease, in which the use of PPE was the main organizing axis. To a lesser extent, there are other axes that refer to the importance of handling and properly cleaning this equipment, according to the MS standards and the Contingency Plans.
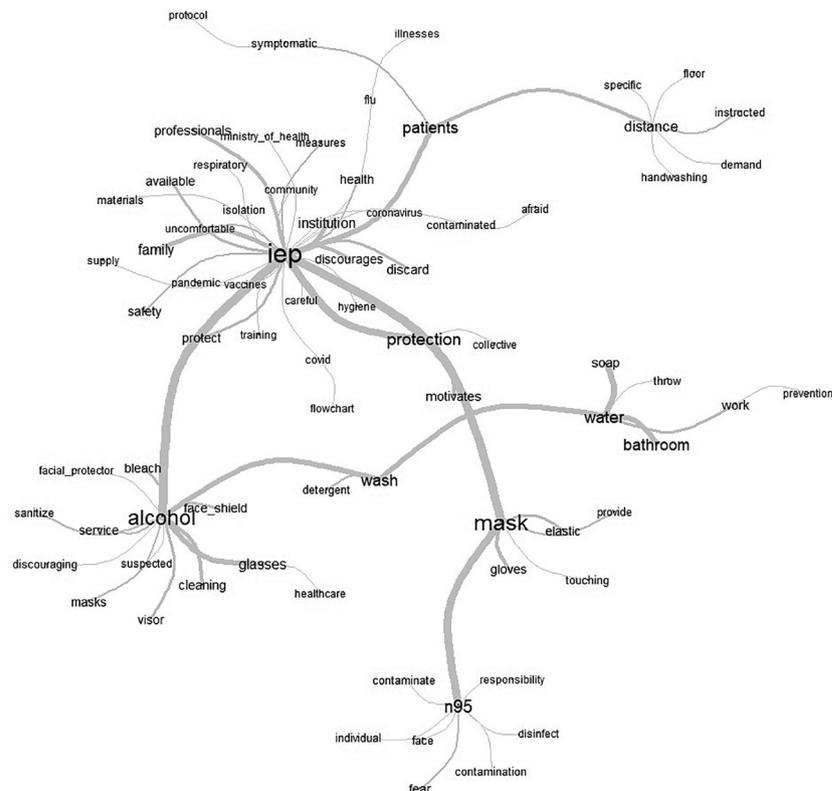

Figure 3 – Similarity analysis stipulating PPE, mask, alcohol, water, and patient as central words. Picos, PI, Brazil, 2020. (n = 69).
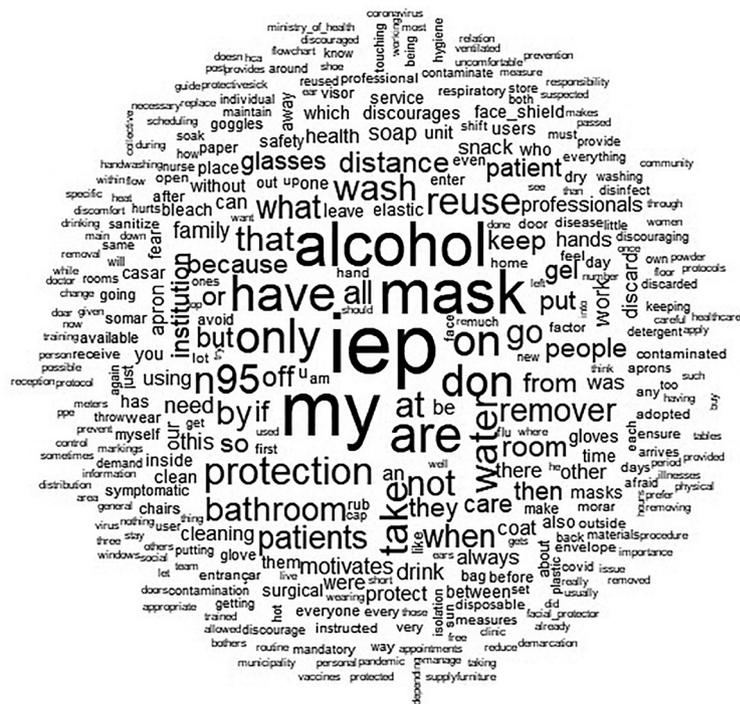
Figure 4 – Word cloud. Picos, PI, Brazil, 2020.

DISCUSSION

This research provides relevant information about what nursing professionals are experiencing in the health context imposed by Covid-19, including the knowledge and use of PPE and how this can affect the nursing care practice provided during the pandemic by health professionals at Primary Care.

The PPE is any device or product for individual use, used by the worker and intended to protect against threatening risks to safety and health at work. For assistance to suspected or confirmed patients of Covid-19, the following PPE is recommended: surgical mask, particulate respirator-N95/pff2 or equivalent, gloves, goggles, or face shield, gown or apron and cap, depending on of the procedure[11].

Regarding the use of the N95 mask, many reported not using it, as the last one had been received two months before. The Brazilian Health Regulatory Agency recommends that, if the mask is intact, clean and dry, it can be reused for up to 15 days[11].

Contamination risk is the main problem affecting professionals involved in the care of patients with Covid-19. The correct use of PPE can reduce this risk by covering some parts of the body[17-18]. During their clinical practice, the nursing professional is exposed to a very high risk for being the one who spends the most time caring for the patient.

The interviews provided alarming data regarding the knowledge and use of PPE, mentioning the reuse of the N95 mask after washing and applying 70% alcohol, which compromises its effectiveness and increases the risk of contamination by aerosols.

Washing and steam sterilization of N95 masks have been shown to degrade them, but reprocessing methods such as microwave-generated steam, wet or dry heat, germicidal ultraviolet irradiation, and hydrogen peroxide may be viable alternatives given the scarcity of this PPE[19]. In the researched scenario, professionals did not use the N95 mask because they had received the last unit two months before.

The lack of PPE and its inappropriate use refer to the high demand for these products, which was predictable, both nationally and internationally, and has been mentioned in some studies[20-22]. Inadequacy or failures of preventive measures against the virus and the scarcity of PPE are associated with the appearance of the infection[23].

The professionals' knowledge was not sufficient to ensure the correct use of PPE and, consequently, safe care for patients and professionals, considering the order of doffing was not correctly mentioned by the interviewees, in which the removal shall start with the gloves, followed by the apron or gown, cap, goggles/face shield, surgical mask and, finally, the N95 mask[24].

Moreover, there was no formal training of all professionals working to fight the pandemic. On the contrary, specific meetings were held to instruct nurses and for them to transmit knowledge to other team members, a process in which communication failures can occur, interfering with understanding and adherence to the proper PPE use.

The situation of lack of material necessary for individual protection increases the risk of contamination by health professionals and aggravates the chronic public health problems present in the Brazilian health system even before the pandemic outbreak, and it is imperative that professionals are trained and the supplies provided.

However, even the full sufficiency of PPE within health services alone does not ensure safe and excellent care, as it is related to professional training and exhaustive working hours. It is known that the environmental and

organizational conditions of work affect health professionals' labor capacity[25].

Environmental working conditions were significantly changed as a result of the pandemic, in which the nursing team's labor capacity is reduced as exhaustion grows. In view of the structural changes aimed at meeting the demand of patients in critical condition, the role assumed by nurses stands out, being critical in decision-making, human resource management, and the functioning of structures[26].

Therefore, it is extremely important that public health authorities invest and efficiently and effectively encourage the training of nursing professionals, minimizing the possibility of contamination and adding quality to the care provided. Despite the offer of several free online courses aimed at training those involved in the management of Covid-19, there is a clear need for incisive educational measures. Only after being equipped with the necessary scientific knowledge will they be able to practice nursing with all its excellence in art and science, as it is, and change the lives of those who are cared for by them.

As limitations and implications for future research, it is suggested that similar investigations are also directed to professionals at the secondary and tertiary levels of health care, allowing to know and identify knowledge gaps interfering in care safety. As a limitation of this study, the unicentric scenario is pointed out in terms of geographic location and type of institution addressed, so that the inclusion of other environments may modify the outcomes found.

CONCLUSION

Data revealed that nursing professionals working in Primary Care in the city of Picos, PI, during the Covid-19 pandemic, have insufficient and inadequate knowledge to promote the correct use of PPE, which can compromise their physical integrity and put the patient who receives unsafe care at risk. The main errors mentioned by professionals refer to the sequence of donning and doffing, PPE expiration time, inadequate reuse of disposable materials and materials used for disinfection.

In the past, there was also a shortage of human resources for training on knowledge and proper use, as well as a previously existing shortage of material resources, which worsened during the pandemic period. Nevertheless, the need to prepare professionals is emphasized, so that they have prior contact with the PPE, to ensure correct and conscientious use, aiming at safety of all who make up this scenario.

The replication of this study, encompassing other primary-level Health Units and even highly complex services, can contribute to elucidate the problem in services of different structural and geographic compositions, expanding and improving the scientific framework, as well as serving as a foundation for strategy development during a public health crisis such as the Covid-19 pandemic.

RESUMO

Objetivo: Explorar o conhecimento e o uso de equipamentos de proteção individual por profissionais de enfermagem da Atenção Básica durante pandemia da Covid-19. **Método:** Estudo exploratório de amostra não probabilística desenvolvido em Unidades Básicas de Saúde do município de Picos, Piauí, Brasil. Os dados foram coletados entre junho e agosto de 2020, por ligação telefônica, seguindo roteiro semiestruturado, com gravação e transcrição das respostas. Para análise do material, utilizou-se o *software* IRaMuTeQ para as análises textuais estatísticas: Classificação Hierárquica Descendente, análise de similitude e nuvem de palavras. **Resultados:** Do *corpus* de 6.873 palavras e 832 unidades lexicais foram constituídas três categorias: (1) motivações e barreiras para o uso (20,9%); (2) manipulação dos equipamentos de proteção individual (classes 5 e 4) com 25% e 21,6%, respectivamente, e (3) medidas para proteção de usuários e profissionais de saúde (classes 3 e 5) com 17,6% e 14,9%. **Conclusão:** Os profissionais de enfermagem entrevistados demonstraram não possuir conhecimento suficiente para o uso adequado dos equipamentos, o que pode comprometer sua integridade e a do paciente como sujeito que recebe o cuidado não seguro.

DESCRITORES

Equipamento de Proteção Individual; Substâncias Perigosas; SARS-CoV-2; Equipe de Enfermagem; Exposição Ocupacional.

RESUMEN

Objetivo: Explotar el conocimiento y el uso de equipos de protección individual por profesionales de enfermería de la Atención Básica durante la pandemia de Covid-19. **Método:** Estudio exploratorio de muestreo no probabilístico desarrollado en Unidades Básicas de Salud del municipio de Picos, Piauí, Brasil. Los datos fueron recolectados entre junio y agosto de 2020, por llamadas telefónicas, siguió texto semiestructurado, con grabación y transcripción de las respuestas. Para el análisis del material, se utilizó el *software* IRaMuTeQ para los análisis textuales estadísticos: Clasificación Descendente Jerárquica, análisis de similitud y nube de palabras. **Resultados:** Del *corpus* de 6.873 palabras y 832 unidades lexicales fueron constituidas tres clases: (1) motivaciones y barreras para el uso (20,9%); (2) manipulación de los equipos de protección individual (clases 5 y 4) con 25% y 21,6%, respectivamente, y (3) medidas para protección de usuarios y profesionales de salud (clases 3 y 5) con 17,6% y 14,9%. **Conclusión:** Los profesionales de enfermería entrevistados demostraron no poseer conocimiento suficiente para el uso adecuado de los equipos, lo que puede comprometer su integridad y la del paciente como sujeto que recibe el cuidado no seguro.

DESCRIPTORES

Equipo de Protección Personal; Sustancias Peligrosas; SARS-CoV-2; Grupo de Enfermería; Exposición Profesional.

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