

PERSONAL PROTECTIVE EQUIPMENT USED BY NURSING PROFESSIONALS IN MATERIALS AND STERILIZATION CENTERS

*Equipamentos de proteção individual utilizados por
profissionais de enfermagem em centros de material e esterilização*

*Equipos de protección individual utilizados por profesionales
de enfermería en centros de material y esterilización*

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ABSTRACT: Objective: To verify the use of personal protective equipment (PPE) by Nursing professionals in Central Sterile Supply Department (CSSD). **Method:** Quantitative study conducted with 50 professionals in two hospitals of João Pessoa, Paraíba, with the application of a semi-structured questionnaire. This study was approved by the Research Ethics Committee, CAEE number 47355315.3.0000.5183. **Results:** Among the participants, 96% are female, 36% have technical nursing courses, and 58% report having more than 10 years of experience. As to the use of PPE, 74% use it frequently, 40% consider it to have low quality, 50% think it is unnecessary, and 68% do not adjust to the activities. Seventy-four percent of the professionals were exposed to occupational risk. The training reached 66% of the interviewees, and 98% recognized its importance. **Conclusion:** The results indicate that professionals do not use PPE regularly, and are therefore exposed to risk. It is important to emphasize the need to provide continuous education in order to increase the awareness regarding care.

Keywords: Personal protective equipment. Occupational risks. Health education.

RESUMO: Objetivo: Verificar o uso de equipamento de proteção individual (EPI) por profissionais de Enfermagem em Centros de Material e Esterilização (CME). **Método:** Estudo quantitativo, realizado com 50 profissionais em dois hospitais de João Pessoa, Paraíba, por meio da aplicação de um questionário semiestruturado. Este trabalho foi aprovado pelo Comitê de Ética e Pesquisa (CEP), sob CAEE número 47355315.3.0000.5183. **Resultados:** Constatou-se que, entre os participantes, 96% são do sexo feminino, 36% têm técnico de Enfermagem e 58% contam mais de 10 anos de experiência. Quanto ao uso de EPI, 74% os utilizam frequentemente, 40% consideram ter pouca qualidade, 50% acham desnecessário e 68% não se adaptam às atividades. Estiveram expostos a risco ocupacional 74% dos profissionais. Participaram de treinamento sobre o tema 66% dos entrevistados e 98% reconheceram a importância da capacitação. **Conclusão:** Resultados apontam que os profissionais não usam regularmente os EPI, expondo-se aos riscos. Ressalta-se a necessidade de realização de uma educação permanente a fim de sensibilizá-los quanto aos cuidados.

Palavras-chave: Equipamento de proteção individual. Riscos ocupacionais. Educação em saúde.

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RESUMEN: **Objetivo:** Verificar el uso de equipo de protección individual (EPI) por profesionales de Enfermería en Centros de Material y Esterilización (CME). **Método:** Estudio cuantitativo, realizado con 50 profesionales en dos hospitales de João Pessoa, Paraíba, por medio de la aplicación de un cuestionario semi-estructurado. Este trabajo fue aprobado por el Comité de Ética e Investigación (CEP), bajo CAEE número 47355315.3.0000.5183. **Resultados:** Se constató que, entre los participantes, el 96% es del sexo femenino, un 36% tiene técnico de Enfermería y un 58% cuenta más de 10 años de experiencia. Cuanto al uso de EPI, el 74% los utiliza frecuentemente, un 40% considera tener poca calidad, un 50% lo cree innecesario y un 68% no se adapta a las actividades. Estuvieron expuestos a riesgo ocupacional el 74% de los profesionales. Participaron de capacitación sobre el tema el 66% de los entrevistados y el 98% reconoció la importancia de la capacitación. **Conclusión:** Resultados apuntan que los profesionales no usan regularmente los EPI, exponiéndose a los riesgos. Se destaca la necesidad de realización de una educación permanente a fin de sensibilizarlos cuanto a los cuidados.

Palabras clave: Equipo de protección personal. Riesgo laborales. Educación en salud.

INTRODUCTION

The historical assumptions come to the conclusion that the starting point of occupational accidents is the person's need to fight for his or her survival. In Nursing, predisposing factors for these situations include the insufficient number of workers, work overload, long working hours, continuous care in night shifts, physical and emotional exhaustion, and deficient technical training¹. In this sense, in order to provide qualified care to the human being, the Nursing professionals are exposed to a series of risks – physical, chemical, ergonomic, psychosocial, biological risks, among others – which may cause accidents during the shift, besides occupational diseases^{2,3}. The occupational exposure to biological material presents higher risks due to the possibility of transmitting pathogens, such as the viruses of hepatitis B (HBV), hepatitis C, and acquired immunodeficiency (HIV), resulting from percutaneous lesions and/or contact with contaminated blood, mucosa or non-intact skin³⁻⁵.

In this context, Resolution 15, from Anvisa's Collegiate Board, defines the Central Sterile Supply Department (CSSD) "as a set of elements addressed to the reception, purge, preparation, sterilization, storage and distribution of the material to consumer units in health institutions"⁶. Therefore, the activities in these environments involve several types of risks, especially biological risks, considering that workers are directly exposed to organic secretion by handling

contaminated items. This is a warning for the constant adoption of biosafety measures.

Among the standard precautions, the personal protective equipment (PPE) is used to prevent work accidents, and its use is necessary in places characterized as being dangerous or unhealthy, besides those that require hygiene and safety for elaboration. The resistance of the Nursing professionals to use this equipment and its incorrect use are the main barriers for the prevention of risk of exposure to biological materials⁷.

The low adherence to the use of PPE and its incorrect management result from factors such as discomfort, annoyance, lack of care, forgetfulness, lack of habit, inadequate equipment, insufficient quantity, disbelief regarding its protection, work overload, and physical tiredness. These conditions become worse due to the precarious infrastructure of health institutions, and other aspects related to the organization of work itself, such as the lack of update and the non-existing permanent education in material centers⁸. The adherence to the use of PPE is closely related to the perception of professionals about the risks to which they are exposed and the susceptibility to them. Because of the described context, the question is: are nursing professionals using PPE in CSSDs?

OBJECTIVE

This study aimed at verifying the use of PPE by Nursing professionals in the CSSD.

METHOD

This is an exploratory study, with a quantitative approach, conducted in the CSSD of two public hospitals, located in João Pessoa, Paraíba, from January to March 2016. The two sectors have similar physical characteristics and activities; however, they are different because one of them is Federal, and the other one is from the State instance.

The research universe is constituted of nursing professionals – nurses, nursing assistants, and technicians – in the CSSD of the aforementioned hospitals, dimensioned as 100%, accounting for 50 interviewees: 30 from University Hospital Lauro Wanderley (HULW), and 20 from Hospital da Polícia Militar General Edson Ramalho (HPMGER).

Data collection used the following inclusion criteria: Nursing professionals who were working at the time the questionnaire was applied and who agreed to participate in the study. Professionals who were not working or were on leave for some reason, during the study period, were excluded from the procedure.

Participants received an informed consent form, and a copy was delivered to each collaborator, with an explanation about the objectives of the analysis. The ethical precepts that guide research involving human beings were followed, according to Resolution n. 466/2012, CAAE number 47355315.3.0000.5183.

After the professional's acceptance, a semi-structured questionnaire including multiple-choice questions was applied. Some of them allowed the selection of more than one option. In the first part, the instrument contained data regarding the characteristics of the professionals, such as gender, schooling, time of work in the institution, time of work exclusively in the CSSD, existence of another work connection. The second part approached data like the use of PPE and its frequency, types of most used PPE, knowledge about the number and quality of equipment available in the sector. It also asked about reasons that can lead professionals to be exposed to occupational risks, types of occupational risks, tendency to the occurrence of work accidents, and training about accident prevention, besides the importance of continuous training.

The findings were organized and presented in tables, transcribed based on the collected data. Processing was made with Windows Excel, using simple statistics, and presented

in absolute and percentage numbers. Therefore, the researchers could understand the findings better.

RESULTS

The study identified 48 (96%) female interviewees, and 2 (4%) male interviewees, and observed that 13 (26%) are nurses, 18 (36%) are nursing technicians, and 19 (38%) are nursing assistants.

According to the time of work in the institutions, 16 (32%) have been working from 1 to 5 years; 5 (10%) from 6 to 10 years, and 29 (58%) for more than 10 years. As for the time of work in the CSSD specifically, 17 (34%) have been working from 1 to 5 years; 7 (14%) from 6 to 10 years; and 26 (52%) for more than 10 years. Among the interviewees, 32 (64%) reported having only one job.

Regarding the frequency of use of PPE, 37 (74%) mentioned they use it every time they perform their activities; 11 (22%) mentioned using it sometimes; and 2 (4%) did not answer this question. About the most used PPE, the most prevalent ones were gloves, for 48 participants (96%), and masks, for 42 (84%), whereas scrubs were little mentioned by the interviewees: 15 people (30%) (Table 1).

According to the opinion about the available PPE, 20 (40%) participants consider its quality as low; 13 (26%) think it is insufficient; 11 (22%) think it is sufficient; and 6 (12%) consider it to have good quality.

The data also indicated that 34 (68%) professionals believe that the available PPE is not adequate for the procedures carried out in the CSSD. Thirty-one (62%) interviewees reported

Table 1. Personal Protective Equipment used by nursing professionals in Central Sterile Supply Departments in two public hospitals. João Pessoa, Paraíba. Brazil, 2016.

Personal Protective Equipment	N	%
Gloves	48	96
Mask	42	84
Goggles	35	70
Coat	25	50
Cap	35	70
Scrubs	15	30
Closed shoes	38	76

n: number of professionals interviewed.

the exposure to occupational risks resulting from inadequate PPE, and 4 (8%) mentioned it was caused by the lack of knowledge of the professional (Table 2).

About the experience regarding some type of exposure to occupational risks in the CSSD, 37 (74%) interviewees claimed to be at risk, whereas 13 (26%) did not answer.

It was shown that 38 (76%) professionals were not involved in any work accident, whereas 12 (24%) said the opposite, reporting their involvement in some sort of accident. Regarding the tendency to types of accidents to which they consider to be exposed, 29 (58%) pointed out accidents with sharp-edged materials; 10 (20%) mentioned burns; 4 (8%) reported chemical solutions; and 7 (14%) did not answer.

It was also observed that 33 (66%) claimed to have attended trainings for the prevention of accidents; 12 (24%) informed they did not participate in any; and 5 (10%) did not answer this question. Concerning the need for trainings about the prevention of occupational accidents, 49 (98%) considered the permanent training to be very important in order to clarify the adequate use of PPE.

DISCUSSION

The study indicated the prevalence of the female gender among the interviewees, and a similar observation was made with 37 Nursing professionals working in two reference hospitals – one public and one private hospital, both located in the city of Caruaru, in Pernambuco. Besides, this prevalence is a characteristic of this profession^{9,10}.

According to the time of work in the institutions, the study showed professionals who have been working in the hospital environment for a long period, as well as

Table 2. Motivation for the exposure of nursing professionals to occupational risks in the Central Sterile Supply Department. João Pessoa, Paraíba. Brazil, 2016.

Causes of Exposure	%
Inadequate PPE	62
Considering its use unnecessary	50
Lack of training	46
Lack of PPE	32
Professional's negligence	28
Unawareness about its use	8

PPE: Personal Protective Equipment.

in the CSSD. So, the dimension of knowledge acquired, along the years, on technical experience in the field is a positive aspect, ensuring the effective service provided by the nursing team. The symmetry in this study corroborates a study conducted in a hospital in Goiás, in which 28 (10.4%) interviewees indicated the importance of specific knowledge, and the experience of the professional to obtain satisfactory and efficient results in the work activities¹¹.

It is a known fact that the use of PPE such as cap, goggles, mask, thick rubber gloves, impermeable coat, and closed shoes is important to reduce the risks to which workers are exposed, such as contamination by blood or other body secretions, or percutaneous accidents, which often affect Nursing workers, as well as those working in the CSSD^{8,9,12}. However, it is sad to know that some professionals do not use it frequently, and are therefore exposed to occupational risks.

In a hospital in the Center-West region, researchers revealed that self-confidence leads professionals to neglect the use of PPE, reinforced by the experience that its use interferes in the professional's skills, making it more difficult to conduct the procedure. Therefore, the professional chooses not to wear it, underestimating its protective role⁸. This result is similar to that observed in the assessed CSSDs, in which 14 professionals recognized being negligent about the non-use of PPE.

This makes us think about the indifference toward bio-safety measures, which are simple, however, protective concepts that eliminate or minimize the existing risks. The objective is to protect the health of men, women, and animals, and the preservation of the environment¹³. Therefore, it is essential to use PPE, which should be provided for free, according to the Regulation of the Ministry of Work (NR), to ensure the safety of those exposed to risks of perforation or cuts, and thereby preventing occupational accidents or occupational diseases⁴.

The result of a study conducted in a hospital in Londrina, Paraná, stands out. It observed that workers used the PPE because of the rules required by the institutions in which they work. Therefore, it is possible to assume that, if they could choose, these professionals would not wear the PPE. Still, the same workers (100%) do not have the power to choose the type / model of PPE that is well adjusted to their activities, since the PPE to be used in the places where they work is already

established¹⁴. Therefore, such a discovery is similar to the data in this study, in which more than half of the interviewees mentioned the existence of inadequate PPE for the procedures. This fact brings out the risk situation to which professionals might be exposed, because once the equipment is not adequate for the activities, it possibly will not provide the required safety.

Therefore, the material resources should provide the worker with safety during the activities, considering the aspects of sufficient quality and quantity. This is a way, not to disqualify the work carried out, so that other professionals may be harmed by some occupational risk⁵. The occupational exposure to accidents among health professionals is frequent due to the exaggerated number of manipulations, representing damage to the health of workers, and the institutions¹⁵. So, the causes of work accidents indicated similarities to the reality found in another study about the same subject, conducted in two hospitals in the Northeast, in which 83.3% of the accidents occurred due to sharp-edged materials, and 57.1% were caused by burns in autoclave⁹.

Concerning trainings, and considering that most professionals claimed to have been trained on the prevention of accidents, the idea that this is one of the most used strategies to face the challenges of health services becomes stronger. Permanent education has been used as a way to develop competences and skills among the workers. Considering the comprehension and importance of the CSSD in the hospital context, the need for continuous educational practices for those working in this field becomes clearer¹⁴.

Differently from this study, an analysis carried out with 38 Nursing professionals from 6 cities in the State of Ceará, aiming at showing the need for training, revealed significant problems regarding update and courses. These situations are easily reversible with the proper training¹⁶. The availability of access to information for professionals, regarding themes about the work process, allows the necessary technical evolution in health services, so that these professionals may perform their role in a competent and efficient manner, free of risks.

Still in that context, this need for training, qualification, and update of professionals working in the CSSD may lead to qualified work, as long as the aspects of

professional practice are investigated and show the identified problems, which are often connected to the “habits” of the routine. This situation is related to the time of work in the sector with professionals who have been working for over 10 years, as have more than half of the interviewees.

A study conducted in three public hospitals in Rio de Janeiro, about the importance of the worker’s participation in continuous education programs, showed that, because of the peculiarities in the activities carried out in the CSSD, it is difficult to maintain a stable group in synchronization with the service. So, it is necessary to change or prevent this situation by carrying out continuous training and improvement programs¹⁷. The result, in this case, is different from this study, since most professionals working in the CSSD of both hospitals have been working in the field for a long time, which demonstrates a permanent group in this service.

CONCLUSION

This study identified the professional profile in the CSSD sector of the analyzed hospitals. The female gender was prevalent, the Nursing technician was the most frequent category, and most interviewees had more than 10 years of experience and only one job.

It was proven that most professionals frequently use the PPE, especially gloves; however, they consider the materials to have low quality and, sometimes, not adequate to the activities carried out in the sector.

The study also showed that many professionals have been exposed to some type of occupational risk, and recognized that they do not always use the equipment properly, since they consider it to be unnecessary or for mere personal negligence.

There are some courses in the field; however, they acknowledge the need for permanent education about the subject during the work shift as a way to acquire knowledge.

In the face of exposure, the results point to the need for continuous and permanent education as a strategy of preventive measures, in order to sensitize the professionals as to the required care, and the importance of using PPE in order to prevent accidents in the CSSD.

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