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ORIGINAL ARTICLE

NURSING AND HYGIENIZATION IN THE MANAGEMENT OF SOLID HEALTH WASTE
ENFERMAGEM E HIGIENIZAÇÃO NO GERENCIAMENTO DOS RESÍDUOS SÓLIDOS DE SAÚDE
ENFERMERÍA E HIGIENIZACIÓN EN LA GESTIÓN DE RESIDUOS SÓLIDOS SANITARIOS

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RESUMO

Objetivo*:** analisar o conhecimento dos profissionais da equipe de Enfermagem e de higienização sobre o manejo dos resíduos sólidos dos serviços de saúde. ***Método*:** trata-se de um estudo quantitativo, descritivo, exploratório. Utilizaram-se para a coleta de dados dois questionários, um para a equipe de Enfermagem com 53 integrantes e outro para a equipe de limpeza com 21 integrantes, abordando questões pertinentes a cada categoria profissional. Calcularam-se as frequências relativas e absolutas das respostas para fins de mensuração e comparação. ***Resultados*:** observou-se, um nível de acertos alto de ambos os grupos entrevistados, que pode estar associado ao fato de a instituição manter, no seu Plano de Gerenciamento de Resíduos de Saúde, um programa de educação continuada, independentemente do tipo de vínculo empregatício dos trabalhadores. ***Conclusão: conclui-se que o conhecimento dos profissionais envolvidos sobre a prática correta do gerenciamento de resíduos de saúde demonstrou-se satisfatório e aqui destacam-se os profissionais de limpeza, por vezes, negligenciados. Pontua-se que não se pode negar o impacto desse trabalho conjunto nos custos da instituição, na saúde dos trabalhadores e na preservação do meio ambiente.

***Descritores*:** Resíduos de Serviços de Saúde; Educação Continuada em Enfermagem; Gerenciamento de Resíduos; Controle de Infecção; Saúde do Trabalhador; Riscos Ocupacionais.

ABSTRACT

***Objective*:** to analyze the knowledge of the Nursing and Cleaning team professionals on the management of solid waste from health services. ***Method*:** It is a quantitative, descriptive, exploratory study. Two questionnaires were used for data collection, one for the 53-member nursing team and the other for the 21-member cleaning team, addressing issues relevant to each professional category. The relative and absolute frequencies of the answers were calculated for measurement and comparison purposes. ***Results*:** It was observed a high level of success of both groups interviewed, which may be associated to the fact that the institution maintains, in its Health Waste Management Plan, a program of continuous education, regardless of the type of

employment relationship of the workers. ***Conclusion***: The conclusion is that the knowledge of the professionals involved about the correct practice of health waste management has proved to be satisfactory and here cleaning professionals are sometimes neglected. It is pointed out that one cannot deny the impact of this joint work on the institution's costs, on the workers' health and on the environment's preservation.

Descriptors: Medical Waste; Education, Nursing, Continuing; Waste Management; Infection Control; Occupational Health; Occupational Risks.

RESUMEN

Objetivo: analizar el conocimiento de los profesionales del equipo de Enfermería e higienización sobre el manejo de residuos sólidos de los servicios de salud. ***Método:*** se trata de un estudio cuantitativo, descriptivo, exploratorio. Para la recolección de datos se utilizaron dos cuestionarios, uno para el equipo de Enfermería con 53 integrantes y otro para el equipo de limpieza con 21 integrantes, abordando temas relevantes para cada categoría profesional. Se calcularon las frecuencias relativas y absolutas de las respuestas con fines de medición y comparación. ***Resultados:*** hubo un alto nivel de aciertos de ambos grupos entrevistados, lo que puede estar asociado a que la institución mantiene, en su Plan de Manejo de Residuos Sanitarios, un programa de educación continua, independientemente del tipo de relación laboral de los trabajadores. ***Conclusión:*** se concluye que el conocimiento de los profesionales involucrados sobre la correcta práctica de la gestión de residuos sanitarios resultó ser satisfactorio y aquí destacan los profesionales de la limpieza, en ocasiones desatendidos. Se señala que no se puede negar el impacto de este trabajo conjunto sobre los costos de la institución, la salud de los trabajadores y la preservación del medio ambiente.

Descriptores: Residuos Sanitarios; Educación Continua en Enfermería; Administración de Residuos; Control de Infecciones; Salud Laboral; Riesgos Laborales.

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INTRODUCTION

The generation of waste by the various activities of society, especially in large urban centers, is a major challenge to be faced worldwide. The inadequate disposal of waste causes environmental damage that can endanger and compromise the natural resources and quality of life of current and future generations.[1]

This scenario also includes Health Services Waste (HSW), those produced by activities related to human or animal health care. Most of the HSW are considered similar to those generated in homes (recyclable or not), however, some waste may present pathogenic, toxic or radioactive characteristics. It is explained that its components need differentiated processes in their management, requiring, in some cases, prior treatment for their final disposal.[2-3]

Some specific risks of health institutions are related to the cleaning, packaging and reuse of contaminated medical equipment, as well as the disposal of puncture wounds in inappropriate places, since they are potential transmitters of diseases to health professionals, to workers who collect waste and are responsible for cleaning, transportation and also to the population that has access to dumps and landfills.[4]

According to ANVISA resolutions, all stages of health waste management are standardized: segregation; conditioning; identification; internal transportation; temporary storage; external storage; internal collection; external transportation; destination and final disposal. These stages must be registered in detail in the Health Service Waste Management Plan (HSWMP), which is elaborated in all the institutions that generate residues observing the RDC nº 222/2018 from ANVISA and the Resolution nº 358/2005 from the National Council of Environment (CONAMA).[5]

The HSWMP regulates the actions of the professionals, besides being a tool to reduce generation, make segregation and recycling more effective, impacting the cost with treatment and minimizing the environmental and health risks of the professionals involved in the process. It is established, by RDC ANVISA nº 222/18, that the institutions that generate HSW need to maintain a program of continuous education, regardless of the employment relationship of the workers. It is detailed that this program guides, raises awareness, motivates and instructs all professionals involved in relation to the risks and correct procedures of the management.[5]

Proper segregation and safe waste disposal of health care waste is believed to be a collective responsibility. Periodic and orientation-based training programs should be offered to all professionals involved and, in addition, quality assessment for waste management should be routinely carried out at the institutions.[6]

It is revealed, according to the survey conducted by Abrelpe Company, in the year 2017, which analyzed the Panorama of Solid Residues in Brazil, that 27.5% of Brazilian cities have disposed of

their solid health residues without performing the previous treatment established by legislation. In the Southeast region, 40.5% of the waste generated by health establishments without prior treatment in landfills, septic ditches or dumps are destined, which contradicts the rules in force in the country and which entails direct risks to workers, public health and the environment.[7]

In view of the impact on the environment, on the health of professionals and on the management of health services, caused by the incorrect management of residues at the source where they originate, the interest in evaluating the performance of the Nursing team together with the cleaning team of a health unit in the management of solid residues has arisen.

OBJECTIVE

To analyze the knowledge of the Nursing and Cleaning team professionals on the management of solid waste from health services.

METHOD

It is a quantitative, descriptive, exploratory study, whose data collection instrument were two questionnaires with closed questions: one for the Nursing team with 53 professionals and another for the cleaning team with 21 professionals. Each questionnaire was divided into two parts: the first composed of socio-demographic data and the second containing twelve questions about the functions of each professional category in the management of solid health care waste.

The study was carried out in a large hospital, with 618 active beds, 60 clinics and service to the military and their dependents. The questionnaire was directed to the Nursing and Cleaning team of the Medical Clinic of sectors 8A, 9A, 9B, 10A and 10B. The aim of the survey is to expand the existing discussions on the topic, helping in the decision making of health strategies.

The project was submitted, in accordance with Resolution No. 196/96 of the National Health Council / National Commission on Ethics in Research, to the Ethics Committee of the Hospital and the Ethics Committee of UNIRIO, approving it with the CAAE protocol number 3,706,660. The questionnaire was applied during two months after the approval in the ethics committee.

RESULTS

Knowledge of nursing professionals

Sociodemographic data						
Age	18 - 23 years	24- 29 years	30 - 35 years	36 - 41 years	More than 42 years	Total
	1	24	20	6	2	53
Education	Highschool	Technical	Complete Higher	Incomplete	Postgraduate	Total

			Education	Higher Education		
	23	6	9	11	4	53
Years of	0 - 5 years	6 - 10 years	11– 15 years	16 -21 years	22-27 years	Total
work	24	17	8	2	2	53

Figure 1. Sociodemographic data of nursing professionals. Rio de Janeiro (RJ), Brazil, 2020.

It is inferred that these data, besides portraying the profile of Nursing in a health institution, also reflect the position performed by these professionals within a military institution, since professionals younger than the predominant age groups have not yet specialized and professionals with more age are usually allocated to functions that are not of direct assistance to the patient.

Segregation of solid health waste

It is shown that, of the 12 questions applied in the questionnaire, 11 were of the multiple-choice type, with only one correct alternative, and only one corresponded to the true-false type (Figure 2). In general, the participants' answers showed uniformity among the interviewed professionals, revealing that there were not many doubts among the options, resulting in a high number of hits (Table 1) and, among the questions presented, three, 11 and 12 were the ones that most divided opinions, however, with little variation in the number of hits of the others.

Correct alternatives
Question 1 - How are the waste disposed in the sectors classified?
C) Group A - infective; Group B - chemical; Group C- radioactive; Group D common and Group E- perforating.
Question 2 - Mark the alternative that contains examples of residues from group A - infective:
A) Blood gauze with closed urine collector system.
Question 3 - Mark the alternative that contains examples of residue from group D - common:
D) Diaper and paper towel.
Question 4 - Mark the alternative that contains examples of waste from group E - perforating:
B) Scalpel and needle blade.
Question 5 - Mark the alternative that contains examples of residues from group d - common/recyclable:
D) Medical-hospital article wrapping and dry paper.
Question 6 - Whose is the responsibility for the correct segregation of residues?
C) All professionals who generate waste.
Question 7 - What are the main risks associated to the incorrect disposal of residues generated in

the health service?

D) Biological, physical, chemical, ergonomic and accident risks.

Question 8 - When to use the white bag?

A) Empty transfusion bags or with residual post-transfusion volume.

Question 9 - What is the segregation at origin?

D) Operation that must be done at the generation point itself and according to the physical, chemical, biological and radiological characteristics of the residue, physical state (solid and liquid) and chemical form.

Question 10 - What is the importance of the waste management program in the institution?

A) Minimize the risks to the environment.

B) Contribute financially to the institution.

C) Keep the sector in order and collaborate with the cleaning service.

D) All previous alternatives.

Question 11 - What is the identification symbol of infecting substances??

D) 

12 - Fill in T - true or F - false:

A) (V) The perforating box must be packed secondarily in a milky white bag and must be closed when 2/3 of its contents are filled.

B) (F) Disposable needles must be disconnected from the syringes when they are discarded in order to reduce the volume of waste in the puncture box.

C) (F) In case of laboratory waste samples containing blood or body fluids, they must be discarded in blue bag and do not need treatment before final disposal.

D) (F) Containers for packaging waste within the patient's room may be used until the total volume of capacity is reached.

Figure 2. Correct alternatives of the nursing professionals questionnaire. Rio de Janeiro (RJ), Brazil.

It is observed, considering the absolute and relative frequencies (Table 1), in which the difference interval of correct answers can be verified by means of the raw value and percentage, that among the multiple choice questions applied in the study, the absolute frequency of hits varies between 37 (69.8%) and 53 (100%) and the relative frequency of errors varies between 0.0% and 32%. Question two on infective residues obtained the highest number of hits, to which all participants answered correctly, and question 11 on the symbol referring to the infective substance generated the highest number of errors.

It is added that the true-false type issue had fewer errors overall (31), possibly because it required all four statements to be classified correctly to get the right sequence.

Table 1. Analysis by aspects addressed in the questionnaire of nursing professionals. Rio de Janeiro (BR), Brazil, 2020.

Themes of the questions	Absolute frequency of hits	Relative frequency of hits (%)	Relative frequency of errors (%)
1 – Waste classification	47	88.7	11.3
2 – Infectious waste	53	100.0	0.0
3 – Common waste	37	69.8	30.2
4 – Perforating waste	40	75.5	24.5
5 – Recyclable waste	38	71.7	28.3
6 – Waste Segregation	41	77.4	22.6
7 – Main risks	52	98.1	1.9
8 – White bags	39	73.6	26.4
9 – Segregation at source	43	81.1	18.9
10 – Importance of management	38	71.7	28.3
11 – Symbol of infective residue	37	69.8	30.2
12 – True or false	31	58.9	41.1
Mean	**39**	**79.8**	**20.2**

It is observed, analyzing the answers by sector (Figure 3), that despite a high number of hits in all the questions, some sectors stand out more than others, because the professionals of 10A and 10B, for example, had a higher average of hits, even considering the different number of participants, while the professionals of 9A obtained the lowest average of hits.

Sector	**8A**	**9A**	**9B**	**10A**	**10B**
Participants	**10**	**13**	**10**	**9**	**11**
Question 1	8	12	9	9	9
Question 2	10	13	10	9	11
Question 3	9	8	8	7	6
Question 4	10	13	10	9	11
Question 5	5	10	7	7	10
Question 6	8	10	6	7	10
Question 7	9	13	10	9	11

Question 8	7	7	8	8	9
Question 9	7	10	8	9	9
Question 10	8	8	8	7	7
Question 11	7	8	6	7	9
Question 12	5	7	7	5	9
Mean	7.9 / 10	10 / 13	8.3 / 10	7.8 / 9	9.3 / 11
%	**79%**	**77%**	**83%**	**87%**	**85%**

Figure 3: Number of hits of the questionnaire of nursing professionals by sectors. Rio de Janeiro (RJ), Brazil. 2020.

Knowledge of cleaning professionals

Sociodemographic data							
Age	24-29 years	30-35 years	36-41 years	42-47 years	48-53 years	+ 54 years	Total
	3	2	4	6	2	4	21
Education	Incomplete elementar school	Complete elementar school	Incomplete highschool	Complete highschool	Technical	Complete Higher education	Total
	1	2	5	13	0	0	21
Anos de	0-5 years	6-10 years	11-15 years	16-21 years	22-27 years	+ 27 years	Total
profissão	7	7	2	2	1	1	20

Figure 4: Sociodemographic data of cleaning professionals. Rio de Janeiro (RJ), Brazil, 2020.

It is noted that there is a similarity in the professional experience of the participants in the research of the two groups, since it is observed that the largest concentration of professionals has up to ten years of experience.

Segregation of solid health waste

It is noted that of the 13 questions applied in the questionnaire, nine were of the multiple choice type, with only one correct alternative, and four corresponded to the true-false type (Figure 5). The cleaning professionals also demonstrated uniformity in the answers, obtaining a high number of hits (Table 2) and, among the questions presented, two and six were the ones that most divided opinions, leading many professionals to error.

Correct Alternatives
1. The practical 100 is a very efficient hospital disinfectant for use in:
C) Surfaces
2. The correct technique of cleaning the patient's room begins:

B) The cleanest area

3. The red bucket of the cleaning cart should always be with:

B) Water

4. The box of perforating material must be closed:

C) It is not assigned the hygienization

5. The white bag should be used in garbage disposal garbage cans:

B) Biological/infectant

6. Always remove the garbage bag from the trash can:

C) Top end (part of the top opening of the bag)

7. What is the main protection equipment for the hygienist:

A) Cap b) Closed shoe c) Gloves d) All answers

8. The greatest risk of contamination for the Cleaning professional has been:

A) Fluids (blood, urine, feces or vomit) from patients on room surfaces

B) Perforating materials (needles, scalpel, scissors, among others) in inappropriate place

C) Lack of identification in beds of multi-resistant patients (transmissible diseases)

D) All answers

9. Food waste must be discarded:

C) In containers intended for food disposal

10. The perforating box must be secondarily packed in a milky white bag and must be closed when 2/3 of its contents are filled.

A) True

11. Waste garbage cans inside the patient's room can be used until the total volume of capacity is reached, as long as they are in a white bag for common, non-infectious waste.

B) False

12. Green gloves should only be worn on dirty surfaces.

A) True

13. Terminal cleaning must be performed every day.

B) False

Figure 5: Correct alternatives from the cleaning professional's questionnaire. Rio de Janeiro (RJ), Brazil, 2020.

It is noticeable, analyzing the questions together with the cleaning professionals, in question two, despite the correct realization of the cleaning technique, that it was not known by the professionals that it was a systematization developed to avoid the contamination of clean areas

with the dirt of the dirtiest areas; already the high number of errors of question six is related to the incorrect interpretation of it or even to the way it was developed (Figure 5).

Table 2. Analysis by aspects addressed in the questionnaire of cleaning professionals. Rio de Janeiro (RJ), Brazil, 2020.

Themes of the questions	Absolute frequency of hits	Relative frequency of hits (%)	Relative frequency of errors (%)
1 - Hospital Disinfectant	21	100	0
2 - Cleaning technique	11	52	48
3 - Cleaning material	21	100	0
4 - Perforating waste box	14	67	33
5 – White bag	16	76	24
6 - Protection measure	10	48	54
7 - Protective equipment	21	100	0
8 - Risk of contamination	21	100	0
9 - Food waste	18	85	15
10 - Perforating waste box	17	81	19
11 - Container capacity	20	95	5
12 - Equipment for dirty surfaces	17	81	19
13 - Terminal cleaning	12	57	43

In general, the questions applied in the study resulted in absolute frequencies of hits ranging from ten (48%) to 21 (100%). The relative frequencies of errors vary between 0% and 54%. Many questions were answered correctly by all participants, who addressed the cleaning materials and protective equipment (Table 2).

The relative frequencies of hits for cleaning professionals were higher than for Nursing professionals, this data shows that the level of education and age of professionals do not influence their ability to develop a safe and effective work.

DISCUSSION

Nursing professionals are believed to be key players in the process of health care waste management, especially in the segregation stage, as they are the main agents producing health care waste. The professional knowledge about the subject is influenced by wrong practices related to the management of the main residues that surround the clinical performance, as well as certain

socioeconomic variables, making the Nursing professionals, here in prominence those of technical level, vulnerable to the wrong management practice and consequent generation of more costs in the treatment of these residues, occupational accidents and environment degradation.[8]

It is shown by the data regarding the age of the Nursing professionals interviewed in this survey that more than 80% (45/53) of them are up to 35 years old, that is, a more active age group, suggesting that they have recently finished their education in the health area or have a reasonable amount of time, however, enough to obtain experience in the profession, which can be verified further on in item 3, "Professional experience", where more than 80% of the professionals have up to ten years of Nursing profession (41/53).

Some authors have argued that this age group is the ideal one to develop the work of Nursing, because the professionals already have a level of experience and, at the same time, have not lost the motivation caused by the physical wear that appears with the passing of the years, besides considering that the knowledge of the academic formation is still latent. In a study conducted with nurses, nursing technicians and assistants enrolled in COFEN in 2013, the demographic profile of the professionals was outlined, showing the rejuvenation of Nursing, with ¼ of professionals aged up to 35 years and 61.7%, up to 40 years. It should be noted that another important factor in this study is that professionals up to 25 years old, at the beginning of their professional life, are newly graduated and aim to increase their value in the labor market, being more engaged in carrying out tasks.[9]

The study also addressed the length of experience of nursing professionals registered with COFEN, noting that the vast majority have zero to ten years of experience. Some authors correlated the longer time of service with the convenience and the lack of interest in keeping up to date because they already have mastery of day-to-day routines. In these years of profession, it is possible to develop the techniques and critical reasoning to perform the activities inherent to the Nursing professional with competence and greater safety, while the professionals with less time of experience seek to qualify for the services, specializing through a post-graduate (nurses) or a postgraduate (for technicians).[9]

It is revealed, in relation to the schooling data, as to the profile of the Nursing professionals raised in this study, that at least 40% (20/53) of them have taken or are taking undergraduate courses and four graduate courses, which corroborate what was mentioned above.

The results obtained in the questionnaire are based, in an exemplary way, on the socioeconomic data collected (age, education and professional experience), which showed a high number of hits, with the highest relative frequency of errors of 32%.

It turns out that question 12 on perforating objects was precisely the one that generated this percentage of errors and is perhaps the most important due to the fact that most accidents in health professionals are percutaneous injuries, the majority involving needles.

It was demonstrated, in question five, that it approaches the common/recyclable residues, also, little knowledge of the professionals about this class of residues, which points to the need to make these professionals aware of the importance of the segregation of the recyclable residues generated in the institution. It is warned that the dispensation of these residues in containers of infecting substance/or other generates more cost in the treatment process and nothing contributes to the preservation of the environment.

It relates directly to the problem of health services waste, directly to the risks of transmission of infectious diseases and work accidents, but also to the preservation of the environment and management of resources of the institution.[4] The result is a large volume of waste, in addition to contributing to the degradation of the environment, at high costs for the institution, and its correct management contributes to the reduction of these costs in treatment and disposal.[10]

Another issue was related that obtained a lower frequency of hits to the symbol of infecting substance, which, although it seems less important, reflects the lack of attention of some professionals. The use of symbols and colors is carried out precisely to promote greater distinction between the containers and waste generated, facilitating their segregation, and memorizing these symbols is part of the construction of knowledge about waste management.

In general, the answers of the participants in the questionnaire as a whole showed uniformity among the professionals interviewed, revealing that there were not many doubts among the options, resulting in a high number of hits.

By analyzing the data by sector, it is observed that some sectors have obtained a greater frequency of hits than others or have greater knowledge about certain aspects of management at the expense of others. It is possible to define, through this detailed analysis, which sectors have more difficulties and should be prioritized in the establishment of updated courses in waste management and which are the main points to be addressed in these courses.

In this regard, it is important to maintain, in a health institution, a continuous education service that aims both to supply the deficits arising from the training courses, to help the professionals who seek more knowledge, as well as to carry out recycling of those who have been in the job market for many years.

The Nursing Department represents more than 50% of the workers in a hospital institution and many factors can interfere in the quality of the work, such as strong emotional and physical loads, long working hours, reduced staff, lack of autonomy and motivation, besides the need of constant

updating of the work process. The existence of a stimulating, effective and permanent methodology for the qualification of these professionals is therefore justified.[11]

It is known that Permanent Health Education (PHE) is learning at work, where learning and teaching are incorporated into organizations and work processes. It is a political-pedagogical proposal that favors workers a teaching-learning process within their daily work. This process defends a philosophy of reflection and criticism on the work processes of professionals and has as a principle to have regularity in its application. It is important that they have as objectives the transformation of professional practices and work organization itself, being structured from the problematization of the work process.[12]

Remember that errors should not be considered as results of isolated professional actions, but as failures or not - conformities of technical-organizational systems related to health.

The second part of this research includes the knowledge of cleaning professionals, since they understand the importance of their role in the process of managing health care waste by being the main authors in the stages of conditioning and disposal of waste, complementing the stage of segregation performed by nursing professionals.

The health risks of all who handle it, be they health professionals who generate it, those who dispose of it, internal cleaning and sanitizing workers or external workers from special collection, are presented by the health residues.[13]

It is noticeable that cleaning professionals are very little mentioned in publications on health waste management, having the concern about their health and the impact of their function on costs, environment and quality of care not measured. It is understood that these professionals are exposed to chemical, physical and biological risks, as well as Nursing professionals, and mistaken practices related to waste management, as well as certain socioeconomic variables, influence the knowledge and practice of cleaning professionals on the subject, causing the same problems observed in Nursing practice.

Cleaning professionals must possess uniforms to facilitate worker identification, and the need for the use of PPE and accident prevention practices is not only mandatory, but fundamental in their health and safety because it is through their use that they are protected and the risks of accident and occupational illness become increasingly lower.[13]

It can be seen, directing to this survey, in relation to the age of the cleaning professionals interviewed, a great difference when compared to Nursing professionals. An inversion in the pyramid can best be described to exemplify that most Nursing professionals are in the lower age groups, while most cleaning professionals are in the higher age groups. It can also be observed that

of the 21 cleaning professionals, four are over 54 years old, in contrast to the nursing professionals, none of whom are over that age.

It is shown by the schooling data that, unlike the Nursing professionals, the participants who practice the cleaning profession in the institution did not take technical courses, nor did they attend Higher Education. It is confident that this factor did not influence the results obtained in the questionnaire, since a high number of successes and good quality of service were demonstrated. The schooling data may be related to the lower socioeconomic level, due to the lower salary value, and even to the non requirement of specialization of the profession.

The data from professional experience shows a similarity in the professional experience of the participants of the research of the two groups, because it is observed that the largest concentration of cleaning professionals also has up to ten years of experience. It is believed that, as well as the nursing professionals, this time working in the area makes it possible to develop the techniques and systematization of waste management to perform the activities with criticality and greater security.

It is inferred, when analyzing the results of the questionnaire applied, as mentioned above, that the cleaning professionals also demonstrated a uniformity in the answers and obtained a high number of hits, however, two subjects related to the service developed by these professionals obtained discrepant values of relative frequency of errors, reaching up to 54%, which led to seek the understanding of the professionals about these specific questions.

It is noticeable, discussing the questions together with the cleaning professionals, in question two, about the technique of cleaning environments, that, despite the correct realization of the technique, it was not known by the professionals that it was a systematization developed to avoid the contamination of clean areas with the dirt of the dirtiest areas; already the high number of errors of question six was related to the incorrect interpretation of it or even to the way it was developed, and the terms "base" and "top end" were not correctly associated to the structure of the plastic bag.

In general, it can be seen that the frequency of hits by cleaning professionals was higher than that of nursing professionals, which can be associated with the repetitive practice of the stages of the service, with many questions being answered correctly by all the participants, especially those who approached the cleaning materials used and the protective equipment.

In this context, the importance of continuing education service is reiterated: to train, fill the deficits and update cleaning professionals on a regular basis and whenever necessary, as well as highlighted for Nursing professionals.

Good health waste management depends on a skilled and dedicated team, competent administration, careful planning, sound organization, respect for the underlying legislation, adequate financing and participatory management.[14]

CONCLUSION

It has been demonstrated that the knowledge of the professionals involved about the management of health residues is satisfactory and here the cleaning professionals stand out, sometimes neglected. It is pointed out that one cannot deny the impact of the correct management on the institution's costs, on the workers' health and on the environment preservation.

In general, a high level of knowledge of both groups is observed and this can be associated with the age, professional experience and schooling of the professionals, but also with the fact that the institution maintains, in its HSWMP, a program of continuing education.

The need to seek the participation of all those involved in educational issues and to maintain, in health institutions, a permanent education service, understood as one of the actions that enable professional qualification and the realization of a competent, conscious and responsible practice, is then reinforced.

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