

Course on waste from health services applied to nursing professionals in a hospital

Curso sobre resíduos de serviços de saúde aplicado à profissionais de enfermagem de um hospital

Curso De Residuos De Los Servicios De Salud Aplicado A Profesionales De Enfermería En Un Hospital

RESUMO

Objetivo: Analisar o desenvolvimento de uma proposta inicial de educação continuada inovadora, para as equipes de gerência de um hospital, com base em metodologias ativas de ensino, referentes ao manejo de RSS. **Método:** Estudo observacional, longitudinal com abordagem quantitativa. O estudo ocorreu no período de julho a agosto de 2021 e analisou pessoas por meio de questionários com base na escala likert pré-teste e pós testes com a finalidade de avaliar a conscientização sobre RSS. **Resultados:** O tempo de formação do profissional interfere no grau de conhecimento pessoal sobre RSS, assim como o tempo de atuação no hospital que se mostrou como a variável que mais favorece o nível de conhecimento dos profissionais a respeito do PGRSS. **Conclusão:** A educação continuada é de suma importância no ambiente hospitalar, e percebe-se a motivação e vontade de mudança dos profissionais. Entretanto, novas maneiras de levar o conhecimento aos profissionais devem ser pensadas, levando maior adesão e motivação ao aprendizado e multiplicação do conhecimento.

DESCRIPTORIOS: Educação em enfermagem; Resíduos de Serviços de Saúde; Hospitais; Meio ambiente; Gerenciamento de resíduos.

ABSTRACT

Objective: This activity aimed to analyze how the development of an initial proposal for innovative continuing education took place, for the management teams of a hospital, based on active teaching methodologies related to the management of medical waste. **Method:** Observational, longitudinal study with a quantitative approach. The study took place from July to August 2021 and analyzed people through questionnaires based on the pre-test and post-test Likert scale in order to assess awareness of RSS. **Results:** The professional's training time interferes with the level of personal knowledge about medical waste, as well as the length of experience in the hospital, which proved to be the variable that most favors the professionals' level of knowledge about the waste management. **Conclusion:** Continuing education is of paramount importance in the hospital environment, and the professionals' motivation and willingness to change can be seen. However, new ways to bring knowledge to professionals must always be thought of, leading to greater adherence and motivation to learning and multiplying knowledge.

DESCRIPTORS: Education, Nursing; Medical Waste; Hospitals; Environment; Waste Management.

RESUMEN

Objetivo: Esta actividad estaba dirigida a analizar cómo se llevó a cabo el desarrollo de una propuesta inicial de formación continua innovadora, para los equipos directivos de un hospital, basado en metodologías activas de enseñanza, relacionadas con la gestión de residuos sanitarios. **Método:** Estudio observacional, longitudinal con enfoque cuantitativo. El estudio se llevó a cabo de julio a agosto de 2021 y analizó a las personas a través de cuestionarios basados en la escala de Likert previa y posterior a la prueba para evaluar el conocimiento de RSS. **Resultados:** El tiempo de formación del profesional interfiere con el nivel de conocimiento personal sobre residuos sanitarios, así como el tiempo de experiencia en el hospital, que resultó ser la variable que más favorece el nivel de conocimiento de los profesionales sobre la administración de residuos. **Conclusión:** La formación continua es de suma importancia en el ámbito hospitalario, y se aprecia la motivación y voluntad de cambio de los profesionales. Sin embargo, siempre hay que pensar en nuevas formas de acercar el conocimiento a los profesionales que conduzcan a una mayor adherencia y motivación al aprendizaje y multiplicación de conocimientos.

DESCRIPTORIOS: Educación en Enfermería; Residuos Sanitarios; Hospitales; Ambiente; Administración de residuos.

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INTRODUCTION

Currently, waste from healthcare facilities has been increasingly studied in terms of the risks it can cause to the environment and human health, mainly through long-term exposure. Efforts have been made to better understand this reality. It is known that effluents from health facilities present a potential risk and danger as they contain from endocrine disruptors to medications, in addition to microorganisms that affect human and environmental health.^{1 2}

A good part of the Health Services Residues (RSS - Resíduos de Serviços de Saúde) that reach the environment are of anthropogenic origin, that is, caused or originated by human activity. Action to prevent risks from occurring to both the environment and health has always been adopted, such as the requirement for Health Services Waste Management Plans (PGRSS - Planos de Gerenciamento de Resíduos de Serviços de Saúde) in hospitals and other health units.³ However, there is not always a conscious awareness on the part of health workers regarding the adherence to practices in relation to waste produced from the care provided to patients, that it is necessary to follow rules for the disposal of RSS, even with training on this topic.⁴

Among health professionals, nurses stand out for the Technical Responsibility of the Health Services Waste Management Plan (PGRSS), being responsible for the correct management of waste, in addition to coordinating their

Due to such importance of the present theme for human and environmental health, it is essential that in the training of health professionals this subject is addressed in a broad way, in order to generate knowledge and awareness in each student

nursing team. It is extremely important for nurses to master the PGRSS, so that they can encourage their team to correctly dispose of the RSS, as well as clear up doubts on the subject. Due to such importance of the present theme for human and environmental health, it is essential that in the training of health professionals this subject is addressed in a broad way, in order to generate knowledge and awareness in each student, so that in the future they will be professionals aware of their actions, knowing that their actions can contribute to population health.⁵

With the awareness of nurses, and consequently of the nursing team, it will be possible to obtain many satisfactory results due to the correct disposal of waste, which in addition to the benefit to human and environmental health, also generates savings for health units. According to a survey carried out in a hospital in Rio Grande do Sul, it was found that the incorrect segregation of infectious waste, often mixed with waste from other classes, generated an expense of R\$1,600.00 more when compared to the correct segregation of these wastes.⁶

In this condition of little adherence to the correct forms of disposal, the question arises "What are the main obstacles to the development of an innovative form of continuing education for the nursing team regarding the correct disposal of Solid Health Waste, considering the awareness of those involved?" There are many training proposals, but there are few reflections on their effectiveness and which are the weak points in

continuing education processes that are ineffective in the proposal to optimize the issue of waste disposal in health. In the quest to find ways to approach the issue of continuing education in a differentiated way, allowing different and more effective results to be obtained, active methodologies are discussed, in which the focus of learning becomes the participant in the education activity, requiring their commitment to achieve learning.^{7, 8}

As an aspect of continuing education, active teaching methodologies are known to generate greater interest from those involved in the teaching-learning process, as it requires the need for greater interaction between participants, in the search for possible solutions to the given problem with the intention of promoting learning. This results in a process that tends to fix knowledge better, and as a consequence generates an awareness of what would be more appropriate to do through the application of the knowledge obtained. It is possible to observe the use of active methodologies in nursing graduation in laboratory classes and practical classes in health units, for example in hospitals.⁸

Continuing education is a fundamental and long process, which starts from graduation or technical course, and which must remain continuously in all areas of health, including from large hospitals to basic health units; in order to keep professionals always up-to-date on relevant topics. An example is the issue of RSS, which must be addressed in the continuing education of all health units that generate waste, for all professionals involved, in order to guide them, as well as sensitize them on the subject.⁷ Therefore, the work aims to analyze how the development of an initial proposal of innovative continuing education for the management teams of a hospital took place, based on active teaching methodologies, referring to the management of health service waste (RSS).

It was an observational study; cross-sectional, experience report type, which involved employees of a large hospital, located in Joinville, SC. It is a reference hospital in urgency and emergency, intensive care, neurosurgery, oncology, orthopedics and traumatology, burns and cerebrovascular accident (CVA).

The hospital has about 270 active beds, 14 of which are in the Intensive Care Unit (ICU), 174 inpatient units, 51 in the emergency room and 28 support beds. Per month, an average of 1,200 surgical procedures and 3,500 visits are performed at the oncology outpatient clinic, including chemotherapy, radiotherapy and complementary therapies, generating a considerably high amount of waste.⁹

The purpose of the study was to identify and understand the reasons for resistance to the adoption of adequate measures on RSS management, with prior assessment of issues related to the theme, with the subsequent application of a course on the subject, with the execution of pre-tests and post-tests for further analysis and evaluation of the characteristics most present in the most resistant employees to the adoption of correct management measures of RSS.

The elaboration and structuring of

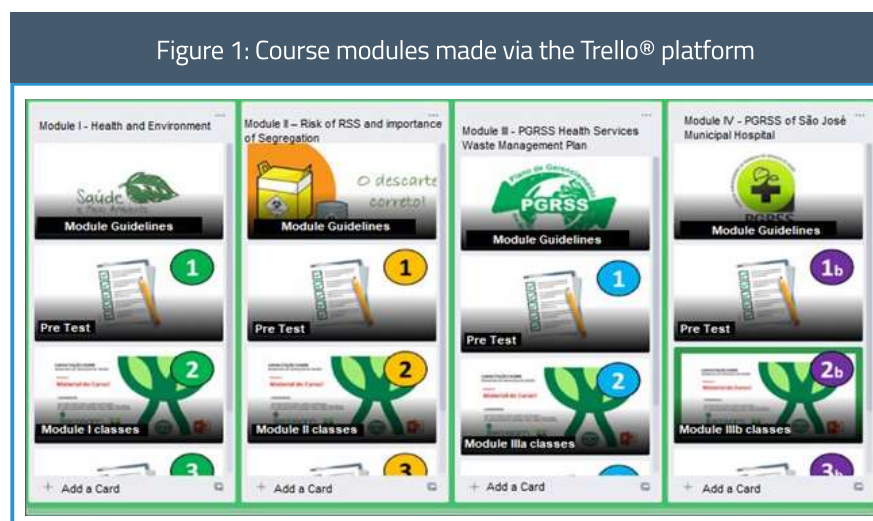
the course was carried out by the professors and academics of the ECOSAM Project, structured as follows: Module I - Health and Environment, Module II - Risk of RSS and importance of Segregation, Module III - Waste Management Plan PGRSS and Module IV - PGRSS of the Hospital where the study was carried out.

The course was developed on the Trello® learning platform (Figure 1); and each module contained the [1] Pre-test (with ICF for research included), [2] the content (in the form of video and narrated slides) and the [3] post-test - similar to the pre-test. Both pre-tests and post-tests were on the Google forms® platform, adopting in its structure opinion questions structured on a Likert scale, composed of 4 questions.

The population corresponded to nurses and hospital managers, in which the inclusion criteria were all professionals duly regulated to perform their activities, with at least one month of activity in the hospital, active in activities involved with various hospital waste. As an exclusion criterion, all professionals on vacation, leave or medical certificate.

The predictive factors for resistance to the adoption of RSS management were then evaluated, such as [1] age of the employee, [2] working time in the

Figure 1: Course modules made via the Trello® platform



Source: the authors, 2021

METHOD

institution, [3] working time in the professional category currently exercised, [4] training time. These characteristics were chosen after a consensus among the researchers and a literature review on the topic.

Data collection took place online, after agreement to the TCLE. Participants who did not agree with the TCLE took the course, but did not have their data computed. Each participant should obtain a score of at least 70% to obtain certification. Despite the questionnaires being made available on Google Forms®, the face-to-face tutoring of the researchers was carried out in the hospital's teaching department room to guide the course participants. The period was from July to August 2021. The research was approved by the Univille Research Ethics Committee, under CAAE 40941320.7.0000.5366.

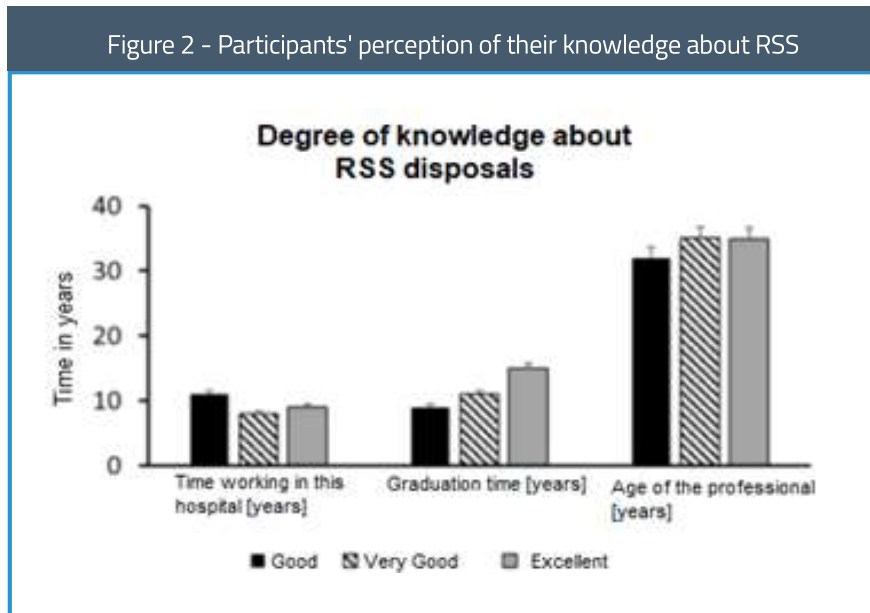
RESULTS AND DISCUSSION

A total of 23 employees of the Hospital initially participated in the activity, being 11 nurses, 1 nursing technician and 11 professionals from other categories, including pharmacists, physiotherapists, biomedical and sanitary engineers. Of the nurses present, all had at least one lato sensu specialization, which included hospital management, intensive care and health auditing.

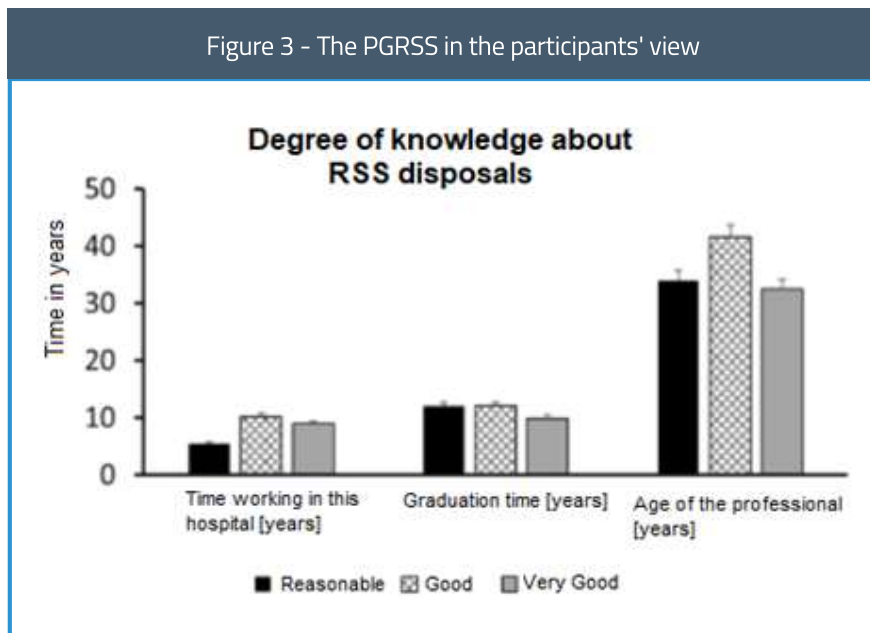
The average age of the participants in general was 35 years and the majority (over 50%) had worked at the hospital between 5 and 10 years. The vast majority had graduated more than 10 years after graduation.

Analysis of the participants' profile and influence on their answers: degree of knowledge about RSS

With the analysis of the data obtained from the pre-tests and post-tests, it is observed that both the time of work in the hospital and the age of the professional do not interfere in the degree of personal knowledge about RSS. However, the training time does, because the lon-



Source: Survey database, 2021



Source: Survey database, 2021

ger the training period, the more specialization courses are carried out and, consequently, more knowledge about the RSS is acquired (figure 2). Therefore, it is clear that there is a need for health institutions to encourage their professionals to take specialization courses¹⁰, because at the same time it will improve

the issue of the correct disposal of waste in your institution and consequently will help to reduce expenses.¹¹

However, regarding knowledge about the PGRSS (figure 3), the time of work in the hospital proved to be the variable that most favors the level of knowledge of professionals on the

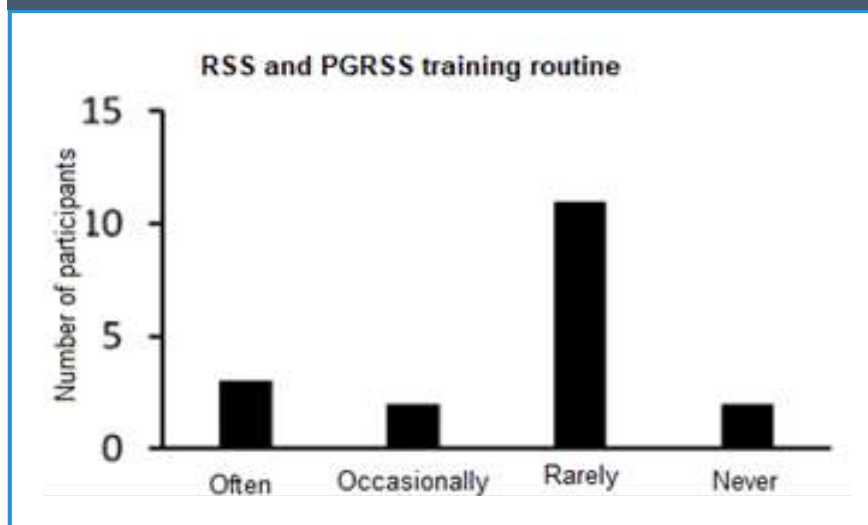
subject, and the time of graduation and the age of the professional were not conclusive. It is noticed that the longer the professional's time in the institution, the greater the chances of him participating in some internal training project regarding the PGRSS, however, it is also perceived the need for training of new professionals soon after hiring, this being a decisive factor for the correct handling of issues assigned to their functions¹², and so that your professional journey at the institution begins with the necessary knowledge about the PGRSS.

When the professionals were asked about the training carried out at the institution where they work regarding RSS and PGRSS (figure 4), most responded that this type of training is rarely available in the hospital. Therefore, there is a need to implement continuing education for professionals on this topic, preferably innovative.¹³

In the quest to understand which professionals are responsible for implementing the PGRSS in the participants' view (figure 5), it was observed that the longer the time of work in the hospital and the older the professional's age, the greater the awareness that the PGRSS is everyone's responsibility, including doctors and nurses. Regarding these data, there is a need to discuss with professionals about the PGRSS and who is responsible for implementing this management plan, with the definition of roles being an important element in the process of education at work.¹⁰

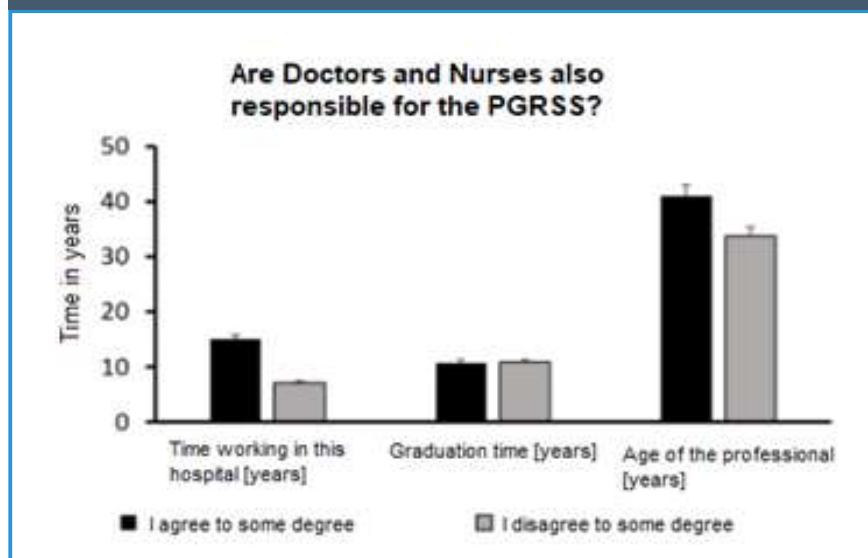
With the analysis of the pre and post tests, it was also observed that the role of sensitizing the participants about the theme was fulfilled, because analyzing Figure 6, it is noted that there was a change in the self-assessment of the participants regarding care for the environment, in the pre-test most responded that their ability to care for the environment was very good or excellent, but after studying the course, in the post-test, there was a change in the answers, and the number of participants who answered "very good" and "excellent" decre-

Figure 4 - Need for training



Source: Survey database, 2021

Figure 5 - Interdisciplinary aspects regarding the PGRSS



Source: Survey database, 2021

ased, and the number of "reasonable" ones increased.

This is in line with a premise brought by Gutierrez¹⁴, which points to the issue of nursing (and other categories as well) need to be more involved with environmental issues, considering this as a fundamental determinant of health. This course awakened this need, but the

continuity of actions is necessary.

All health service units, which generate RSS, are responsible, according to Art. 10 of RDC 222/2018 to: elaboration, implementation, implementation and monitoring of the PGRSS, which aims to avoid public health problems, protect workers and preserve the environment.¹⁵ An adequate PGRSS should

prioritize the reduction, reuse, recycling, treatment and environmentally appropriate final disposal of the RSS.¹⁶

The National Health Surveillance Agency (ANVISA - Agência Nacional de Vigilância Sanitária)³ defines the PGRSS as:

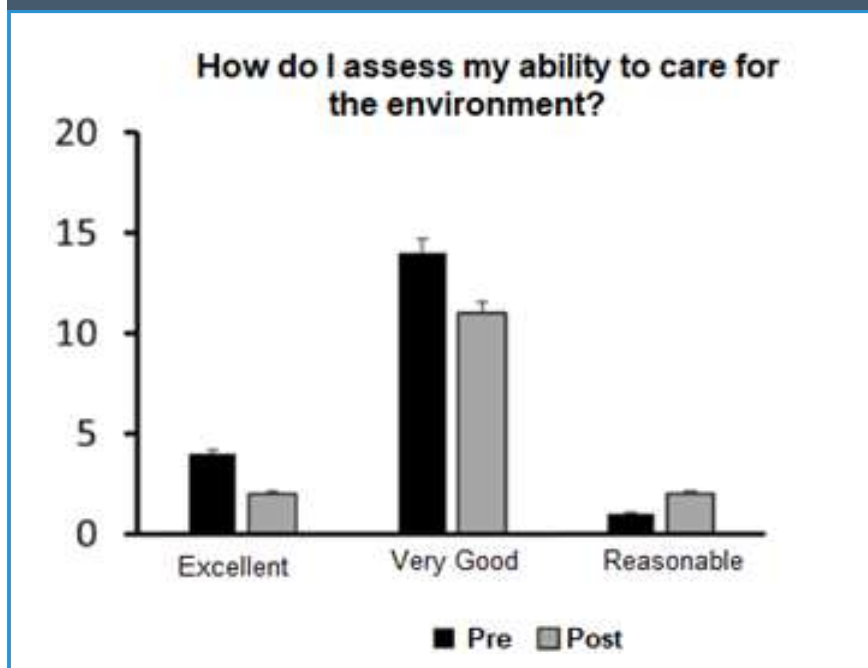
*Document that points out and describes all actions related to the management of waste from health services, observing their characteristics and risks, covering aspects related to generation, identification, segregation, packaging, collection, storage, transport, destination and environmentally appropriate final disposal, as well as actions to protect public health, workers and the environment.*³ (ANVISA, pag 4, 2018).

The great difficulty found in some health units is the lack of information and training of professionals about the existence of the PGRSS as well as its applicability and importance. This lack of knowledge by health professionals results in work accidents, for example, annually 1 million professionals, mainly in nursing, suffer accidents with sharp puncture, considered serious, as it can generate labor causes, in addition to contamination with various infectious diseases, such as Hepatitis B and HIV.¹⁵

Given the seriousness of incorrect disposal of RSS, it is essential that each health service institution train its professionals on the PGRSS, seeking to avoid individual and collective damage.¹⁵

All health professionals have the right to have at their disposal a continuing education program offered by the health unit where they work. In this program, matters related to the PGRSS, the practice of segregation of RSS; symbols, expressions, color standards adopted for RSS management; life cycle of materials; ways to reduce RSS generation and material reuse; responsibilities and tasks.³

Figure 6 - Main post training aspect



Source: Survey database, 2021

Continuing education is a long process that must be started from graduation and must remain in the health units that generate waste, for all professionals involved. It should aim to guide professionals, as well as make them aware of the importance of the topic, and keep them always up to date on the correct disposal of RSS. Considering that all workers in the health area use and dispose of this waste, continuing education should be done for everyone, from nursing technicians, doctors, cleaning staff, including temporary professionals.⁷

CONCLUSION

Given the above, it is observed that the main obstacles to the development of an innovative form of continuing education regarding the correct disposal of RSS is the low frequency in carrying out training for professionals, which is already evident.¹⁰ The frequency of training becomes an essential element for the best profile of professionals in the

institution.

A consequence of the low frequency of approaches on RSS reflects the issue of little knowledge about the PGRSS; a topic that is little known or even unknown by the institution's professionals.

Another obstacle is the lack of training of new professionals hired, who should start their professional journey at the institution with knowledge of the PGRSS and the correct disposal rules from the beginning of their professional journey.

Therefore, this experience, which aimed to show the main obstacles to the development of an innovative form of continuing education for the nursing team regarding the correct disposal of RSS, points out that elements such as a "differentiated education" for those who are newly hired, the dissemination of information for which everyone is responsible and awareness of the issue of health and the environment as everyone's responsibility, denote strategies that overcome such obstacles.

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