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Waste Management: a descriptive-exploratory study in the emergency room of a teaching hospital

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ABSTRACT

Aim: To discover the vision of individuals working in the emergency room of a teaching hospital on the management of hospital waste. **Method:** this is a descriptive-exploratory study, in which a qualitative approach was used. It was conducted with 17 employees and students in the health field, working in an emergency room. Data was collected through semi-structured interviews and non-participant observation, and analyzed based on the framework for content analysis. **Results:** The data showed that the participants are lacking in terms of knowledge on the subject, which is mainly influenced by factors such as a lack of approach on the topic and issues related to the work carried out in emergency rooms. In-service education is seen as a good strategy in the search for an effective commitment to the environmental cause. **Conclusion:** The approach to the topic through training and continuing education are pathways towards the sensitization of workers regarding waste management.

Descriptors: Nursing, Environment, Medical Waste, Hospitals.

INTRODUCTION

The concern regarding the segregation of Health Service Waste (HSW) is relatively new within hospital institutions, and it has only received its due importance over the last decade, with the application of specific laws. The motivation for this concern is justified by the fact that a large amount of waste is generated daily in the health service industry, which may compromise the health of workers, communities and the environment.

In a hospital context in particular, the concern with this waste is further emphasized since there is consumption of a large amount of products for medical and hospital use, plus there is a considerable risk of contamination by pathogens. Thus, some specific laws seek to regulate the entire HSW managing process, by obliging institutions to provide training for healthcare professionals, in addition to the regulatory requirement for the management of waste.

The management of HSW is a set of management procedures, planned and implemented under scientific and technical bases, which aims to minimize the production of waste, as well as providing a safe and efficient disposal method for the waste generated. Thus, it is not only aimed at the protection of workers, but also the preservation of public health, natural resources and the environment. For this, management needs to encompass all stages of the physical resources planning, of the material resources and the training of individuals involved in the handling of the HSW⁽¹⁾.

The HSW management process is divided into internal and external handling to the healthcare facility, and consists of the following steps: segregation, packaging, identification according to the group, internal transportation, temporary storage, internal treatment, external

storage, collection and external transportation and final disposition⁽¹⁾. Each stage includes the observance of specific rules. Normally this management process is the responsibility of services and/or specific commissions in the context of hospital institutions, or linked to the commission of hospital infection control.

The fact that it is a process that requires many adjustments on the part of institutions and employees has generated some difficulties regarding the implementation of the HSW management plans. Furthermore, the debate on issues related to environmental preservation is new to healthcare, making it difficult for practitioners to link their work with environmental protective measures. A current study reveals that a number of issues interfere in the relationship between hospital workers and environmental problems, whether related to the contemporary social context, the conceptions of health and environment, such as the specific labor aspects of the hospital sector and health, which interfere with the performing actions that are responsible for the environment⁽²⁾.

Therefore, the search for broadening the discussion on the subject among hospital workers, aimed at raising awareness on the importance of the development of environmental preservation in the workplace, is essential. A discussion of topics related to the management of HSW is a strategy that can create opportunities for important reflections on the interrelationship between hospital work and environmental preservation.

Therefore, it is essential to know and understand the specifics of the different units that comprise the hospital structure, taking into account that the units have different routines, which may interfere with the behavior of professionals. Thus, although the work process in the health area has similar objects and objectives, some peculiarities offer different connotations

to the labor activity, within the context of health care practice. The context of the debate on the management of HSW in emergency units, for example, can provide important contributions to the debate on the issue in specific scenarios of professional performance.

An emergency unit is permeated with working conditions inherent to the environment and to humans who take care and who are cared for, that live and experience human relations in the care process/assistance in a hospital organizational system⁽³⁾. Several factors contribute to make these places more complex, such as the severity of the cases treated, need for speed in the process of decision-making by the professionals, issues related to overcrowding, lack of beds and professionals, among others. This set of factors, first and foremost, obviously influences the way health care is provided by professionals and also in the way these professionals behave before other issues linked to the process of health care. One aspect that can be highlighted, in this sense, is related to the management of HSW.

In the hope of getting subsidies on this issue, we developed the current study based on the following research question: what is the vision of workers and students working in an emergency room on the management of hospital waste? This study aims to discover the general overview of participants working in the emergency room of a teaching hospital on the management of hospital waste.

METHOD

This is a descriptive-exploratory research, in which a qualitative approach was used. Data collection was performed with 17 participants working in an emergency room of a public hospital the South Region of Brazil. Data was

collected during the months of November and December 2011.

Given the intention of the sample of this qualitative research, this study was composed of participants who experience situations related to the phenomenon under study, and who were capable of representing its importance. Thus, we searched for individuals who, somehow, are involved in waste management.

In this sense, the interviewees were four nurses, three nursing technicians, two nursing students, three doctors, two resident physicians and three cleaning employees. The inclusion criteria were: the individual must be acting as a student (trainee) or been working in the hospital for over a year. On the other hand the exclusion criteria were: to be developing practical classes or training in the sector, working for less than one year on site or be absent from work for health treatment or vacation. As this is a qualitative study, the closure of data collection followed the criterion of data saturation⁽⁴⁾. Data was collected through non-participant observation and semi-structured interviews and we used guiding questions about the investigated subject. The non-participant observation occurred before the interviews, for a period of 20 hours. The observation was performed in different shifts by two previously trained researchers, based on a systematic script for data collection, aimed to understand issues relating to the industry dynamics and behavior of students and workers on the subject investigated.

For the interviews, the subjects were addressed during their work shift and asked about their interest in participating in the study. In the case of an affirmative answer, we would schedule the interview. The interviews had an average duration of 20 minutes and were conducted in a quiet place in the studied working scenario. All interviews were recorded and

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later transcribed verbatim by the researchers themselves. To maintain the anonymity of the participants of the study, we identified them according to the initial letter of the name of the function they performed in the institution, followed by a number corresponding to the order of each interview, namely: RD – Resident Doctor; D - Doctor; N - Nurse, NT - Nursing Technician; NS - Nursing Student and; CS - Cleaning Staff.

Afterwards, The data was analyzed according to the proposed framework for content analysis⁽⁵⁾. The Protocol of the Research Project followed the principles of Resolution No. 196/96 of the National Health Council and was approved by the hospital studied and by the Ethics Committee in Human Research, under No. 0256.0.243.000-11.

RESULTS

The process of results analysis of the study led to some categories which are presented below. These categories were illustrated with statements from the participants and the interpretation of the findings.

Lack of knowledge related to waste management and its implications on the practice

In order to meet the objective of this study, respondents were asked about their perception of the management process of hospital waste. Therefore, when they spoke about the subject, it became clear that the deponents lacked knowledge on the subject, resulting in a limited approach to this process. The connection of waste management to the segregation step was the only one recurrently reported between subjects, which may be evidenced below:

The management is the sorting of waste [...] then one has to know how to manage that trash [...] knowing that there are several types of bags [...] (CS 01).

This part is not our responsibility. We only separate the trash, then whoever does it has a staff that is responsible for this and it is this team that determines where the hospital waste goes. What is done with it, I don't know [...] (NT03).

Furthermore, it was observed, in the search field, that some individuals inserted in the unit apparently did not recognize the different types of waste, segregating it incorrectly. The data collected through observation showed that the recycle bins for common garbage and infectious trash are the most used ones, and often used erroneously. The container for recyclable waste is the least used in the sector.

The statement below by a nursing student illustrates this situation, showing the development of automated actions with respect to the segregation of hospital waste.

[...] We work fast in an emergency, so we end up decorating the garbage spot. Then, memorizing the garbage place is something very automatic: put it here, put it there [...] (NS02).

However, there is the testimony of a professional regarding waste management as something that should be planned and organized, with an adequate flow at all health facilities.

In the hospital environment, I think about the planning and organization of the disposal of this material, both the organic waste and the hospital waste

itself. I think it's something necessary and it should have an adequate flow. [...] All health facilities should have it, so that everyone knows where the trash goes to (E04).

Thus, it is emphasized that health care institutions should further discuss the organization and planning of waste management, not only including those in normative precepts. This process may increase the awareness of workers who are part of the institution, making them conscious of their responsibilities.

Factors that influence the process of segregation of hospital waste

Another issue concerns the factors that may influence the process of segregation of hospital waste. Some respondents blame the flow of academics and new employees for the poor segregation of hospital waste.

The problem is the education of our employees, because when they start working they know nothing of it, and it is also a failure of the institution for not proposing it to them. That's how I see it. And the biggest problem is the number of students moving around here: while we're about seven, eight employees, including nurses and 10 with the doctors, they are about 50 circulating around here per shift. There are several groups and they go see the patients, then throw the gloves in the black trash, blue trash. They don't look where they throw them [...] (N01).

It depends a lot on each one. There are many trainees who receive no expla-

nation, I think. They don't know what to put where. Residents even throw pieces of cloth in the trash; they throw it on the floor. They know nothing; they leave everything to us or they throw it all away in the trash or else they do everything wrong [...] (NT01).

On the other hand, we can also point out that some individuals blame the emergency characteristic and the large flow of procedures performed in the emergency room, as a complicating factor for the correct segregation of waste.

[...] I think that what makes it difficult is the lack of care itself and, sometimes, when he is in a hurry, there's no way. When someone is falling out of bed, they end up putting garbage in the contaminated garbage or else there is a lack of staff, because there is garbage all the time. So it's difficult (NT02).

Another factor that interferes with the process for segregation, which was manifested by the deponents and lavishly displayed during the observation process, is related to the positioning of containers for waste segregation. The statement below illustrates it:

Here, at the hospital, there isn't much garbage. I think the main difficulty I have is to find the little white trash. You go by the beds and you don't find contaminated material. So you have to leave the room to come here to the expurgation area, to bring contaminated gauze. If I have 20 beds to see, the gauze goes into the closest trash can I see. (RD01)

Based on this, we can infer that the process of waste management is complex and involves a number of organizational issues, ranging from the provision of bins to final destination. Thus, workers' awareness regarding environmental issues becomes more important, so that they feel they are co-participants in this process, in order to allow the development of coherent actions in relation to the subject.

Overcoming the lack of knowledge: the importance of in-service education

The data reveals that the participants in the study had a timid approach to the subject, both in the process of professional training, as in the work environment. Thus, respondents believe that certain devices could assist in the management of hospital waste. Among the issues raised were school education and continuing education, as the following statements illustrate:

The school is a key factor in education. It is necessary to make a connection between theory and practice. Perhaps, when we receive the students, we should have a normative for us to follow [...] we should make a brochure to give to students and teach them how it works. And tell them that if they don't follow it, even their training grades could go lower (N01).

[...] I believe that already in pre-school, even in elementary school, junior high, and college it should be an issue of utmost importance to be taught (D01).

In convergence with the topic, when respondents expressed their suggestions on the

subject, they reiterated the importance of the institution in investing in permanent/continuing education on the subject, so that professionals would feel more sensitized to the development of actions for environmental preservation and among them those related to the management of HSW.

I suggest a professional training to identify, to collect all the most commonly used materials in a medical clinic, a surgical clinic and make a list and show the people what the right place to dispose of this material is and how important it is and; who collects this material here at the hospital; if the recyclable waste becomes income to the collectors; [...] I don't know how it is here; [...] if it goes to a company or not. [...] I think professionals and students need training (NS01).

In this case, the bins should be closer, and we asked for more of them, because I had to walk a lot to reach them. And the waste must be treated before going to the sewer. And someone should also come here to give us a lecture, some orientation, because we also forget some things over time. The idea of recycling things; of reviewing things (NT02).

Thus, it is clear that there is, on the part of respondents, the desire to expand discussions on the topic. In this light, reflections on how to organize and develop the actions of in-service education on the subject are needed; pointing out that the learning process requires investment in approaches that go beyond the mere transmission of technical content on the

subject. The environmental issue requires integrative approaches that facilitate awareness of the subjects against the current context of environmental crisis, which, in turn, can be a path to a (re)orientation of values and behaviors, with a view to developing environmentally correct actions.

The perception of environmental responsibility by the health professional

Regarding the perception of their responsibility, the participants confirm that they have a key role as educators, serving as an example for the team and the population about the care of the environment.

[...] Guide family, patients, colleagues to do the same, so that the management of such wastes is not restricted only to invention or only on paper (N04).

I think we have to give the example, because they see us as health agents. As there are people who say, oh, the doctor doesn't get sick, you know. They demand a lot from us. I think we, health people, have to lead by example, educating people to take care of themselves; and the environment and the culture. We need to take care of the future (NT02).

And another thing, who works with healthcare, always ends up being a health promoter somehow. At least it would be interesting to be able to pass this basic knowledge to the staff, to the people with whom we work, to encourage the entire team and everyone you are in contact with; the one that

does the most appropriate procedures, from the waste and environmental point of view. I think this is the idea I have of a healthcare professional [...] I think that it is also the responsibility of healthcare professionals to see how one doesn't affect the other in this interaction (D03).

However, some participants, when thinking about this subject, reported a number of diseases that can be caused by the environment, referring to responsibility issues such as education on environmental care, proper disposal of waste and a concern for the health of the population.

[...] Stay and include it in the culture and teach it to our children because, as we know that there are diseases that are related to the environment, and the contamination of the water, in a little while everything will be contaminated (NT02).

I think everyone has a responsibility. Maybe ours is more directly related, because, depending on some forms of contamination, we can get sick or we can contaminate other patients even more [...] so I think our responsibility is maximized; we can be a vehicle of diseases, and this is not the goal, it is the opposite (D02).

As observed, some respondents still have a thought focused on the paradigm that prioritizes the biomedical, Cartesian model, where the relationship between health and environment results in the incidence and prevalence of various diseases.

DISCUSSION

The testimonies show that HSW management is not seen as a broad process that involves several steps. Accordingly, emphasis is given to the segregation phase, which is usually the one that is mostly linked to the work process of the participants. Thus, the understanding that this process is comprehensive, involving various aspects and having different kinds of impact on the environment, gets impaired.

Given the above, it appears that the fragmented view of the process and lack of knowledge are factors that contribute to the failure of the waste segregation process in that sector. Thus, the proposal of strategies for reflection about the different stages of waste management and its repercussions for the sustainability of the environment and people's health is a prerequisite for the pursuit of greater commitment on the part of students and health workers⁽⁶⁾.

The way to resolve this issue would be the exercise of common sense, combined with education and training of health professionals and the enlightenment of the population. The action in the context of biosafety, gathering resource economy, environmental preservation, ethics and accountability may ensure better life quality in the present and a healthier future for the next generations⁽⁷⁾.

The study, in a general manner, reviewed that workers have demonstrated the perception of a need for caution regarding medical waste, as they reveal they are aware that this type of waste requires special treatment. However, it is clear, in the testimonies, that there is ignorance about the destination of hospital waste, also demonstrating the concern whether routing is the most appropriate. We emphasize that the existence of such doubts can interfere negatively with the attitudes of waste segregation.

With this in mind, by failing to understanding the whole process, in particular the destination of the waste, the participants may not value segregation, understanding that their action would be ineffective, since there would not be a specific target for each type of waste at the end of the process.

This understanding, on the part of the participants, may be related to a vision of inefficiency in the process of segregation of household waste, as pointed out by another study⁽⁸⁾ conducted in the municipality in question, in that there is no selective garbage collection.

Regarding the hospital context, we can highlight the existence of rules and routines concerning the segregation of hospital waste, which can be decisive for the maintenance of a differentiated approach among those surveyed. We emphasize that the institution develops some action in this regard, which became more systematized from the elaboration and implementation of the Plan for Solid Waste Management in 2005⁽²⁾. However, many actions are performed mechanically, perhaps because of poor knowledge about the impact that the waste has on the environment, or characteristics of the labor activity exerted by these workers and students in the hospital context, marked by the standardization and routinization⁽²⁾.

It can be inferred that the development of automated actions with respect to the segregation of hospital waste is due to the fact that health workers have very stressful and repetitive activities. These actions generally occur individually, urging them to behave mechanically, almost automatically, while performing their tasks. Data from the observation process corroborates this finding. It was noticed that workers act with speed and agility, especially because of the peculiarities of the process of health care in

emergency units, resulting in the automation of the disposal of these residues, often segregated erroneously.

In the study, we highlighted the importance of a proper management of HSW in all health facilities. However, what stands out is that the workers and students studied are only concerned with the steps of segregation and disposal at the expense of other phases also necessary for the proper management of waste. Generally, the preparation of professionals to work with the waste from their performances is poor⁽⁶⁾. For professionals to have a better preparation, it is necessary to implement policies of waste management in various health facilities, aiming to promote health and environmental quality.

It is evident that some participants attributed the incorrect segregation of waste to the fact that the researched institution is a teaching hospital, where every day there are many students in the healthcare area, as well as new employees. This fact may be true, as a teaching hospital is characterized for being a center for patient care, whose goal is to take part in training activities and research into the field of education of health professionals. And, since it is a regional emergency unit, the flow of people is considerable.

It is also noteworthy that the process of health care in an emergency unit is marked by dynamism. The numerous emergency situations overlaid by overcrowding and staff shortages, result in a work process that requires agility and speed in decision-making. This is a factor pointed out as of great influence in the process of segregation of waste, mostly by interfering negatively in this process.

It was observed that for the study participants the education acquired during schooling, which is the period when we build a sense of citizenship, is reflected in the workplace, be-

ing perceived as a facilitator of the process of waste management. Currently, in the field of health, the development of lifelong education has been intensified, which promotes and produces meanings, and suggests that the transformation of professional practices is based on critical reflection on the actual practices of professionals. This is done through the realization of a meeting between the world of education and the professional world, in which learning and teaching are incorporated into the daily lives of organizations and work⁽⁹⁾. Thus, health education coupled with environmental education contributes to this process by developing environmentally sustainable behaviors, thus becoming an important tool in order to create opportunities for obtaining knowledge, stimulate reflection and empower individuals and communities ⁽¹⁰⁾.

The expansion of the approach on HSW in the undergraduate courses in the health area is considered an important need. Therefore, one must have information on how to do it, in which case the training space is a path to develop reflection, questioning, critique, articulation, commitment to the construction of subjects provided with ethical postures, solidarity, social consciousness and social commitment, acting responsibly towards the environment⁽⁶⁾.

We may also highlight that education and example are factors of major importance for participants with regard to environmental responsibility. However, for this it is essential that these individuals are aware of the importance of considering environmental aspects as part of health care. Thus, the learning process should be gradual, spanning several steps. Above all, it is necessary that employees and students of the health area know the benefits that their actions of environmental preservation will bring, not only for the environment but also for themselves ⁽²⁾.

Note that the students in the health area understand the impact that their behavior can have on the lives of others. Thus, when they think about their environmental responsibility, they soon relate it to the development of actions to be perceived by others as examples of good behavior⁽¹⁰⁾. However, there are those who still have a thought associated with the biomedical model, for which the relationship between health and the environment results in the incidence and prevalence of various diseases.

Thus, it may be inferred that these subjects are, in a way, distanced from the environmental issues; not establishing a direct relationship between them and their work process and not viewing the environment as a determining and conditioning factor of health. Thus, the challenge of environmental awareness may be therein included as one of the most urgent⁽¹¹⁾. In this sense, reflections that can help to build new meanings to work in health care, which become relevant, with a view to awakening a greater environmental responsibility.

CONCLUSION

With this study, it was possible to identify that the study participants, who act in the emergency room of the researched institution, have a relatively weakened knowledge about the process of the management of waste resulting from the healthcare provided by them, and are unaware of the final destination of the waste generated. It can be inferred that some professionals develop an automated action with respect to the segregation of hospital waste, which leads them to not think about the impact that their actions have on both the environment and on the health of the population.

With respect to factors that influence the process of segregation of hospital waste, the

participants pointed to possible inhibitors of the process; the emergency characteristic of the sector and the large number of procedures performed, as well as the large influx of people, students, residents and new employees. And, as a facilitator, a school aimed at the formation of citizenship and the development of a permanent education in the workplace.

Finally, so that the transformation of professional practices is possible, it is noteworthy that continuing education on the subject is necessary among workers and students in the health area. An extensive discussion process on the topic is a feasible way to raise the awareness of workers, with a view to their effective commitment to the environmental cause.

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