

NURSING AND HEALTH SERVICES WASTE MANAGEMENT: AN INTEGRATIVE REVIEW

ENFERMAGEM E O MANEJO DOS RESÍDUOS DE SERVIÇOS DE SAÚDE: UMA REVISÃO INTEGRATIVA

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ABSTRACT

Objective: to know the contribution of Nursing to environmental sustainability with a focus on waste from health services. **Method:** an integrative literature review study, with its search conducted in the Google Scholar database, covering studies from 2018 to 2021. **Results:** the problems related to lack of knowledge about the waste from health services that exert effects on human and environmental health are evidenced. **Conclusion:** the inadequate management offered by Nursing affects the environment, given that knowledge about management becomes fundamental to reduce the effects on the natural environment.

Keywords: Sustainability; Nursing; Waste from Health Services; Environment.

RESUMO

Objetivo: conhecer a contribuição da enfermagem para a sustentabilidade ambiental com foco nos resíduos de serviços de saúde. **Método:** estudo do tipo revisão integrativa da literatura, com busca na base de dados Google Acadêmico, abrangendo estudos no período entre 2018 a 2021. **Resultados:** evidenciam-se os problemas relacionados à falta do conhecimento acerca dos resíduos de serviços de saúde que acarreta em efeitos sob a saúde humana e ambiental. **Conclusão:** o manejo inadequado ofertado pela enfermagem afeta o meio ambiente, haja vista que o conhecimento acerca do gerenciamento se torna fundamental para a redução dos efeitos no meio natural.

Palavras-chave: Sustentabilidade; Enfermagem; Resíduos de Serviços de Saúde; Meio Ambiente.

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INTRODUCTION

Law No. 8,080/90 establishes that health is a human right and a duty of the State, which must guarantee public policies aimed at reducing risks and harms to health, and the environment is one of the determining and conditioning factors for the disease process⁽¹⁾. Thus, environmental health is the result of the interaction between society and nature, starting from the generation of waste that can directly affect the health-disease process and the quality of life of living beings⁽²⁾.

In Brazil, nearly 79 million tons of Urban Solid Waste (USW) are generated, with part of it consisting of Health Services Waste (HSW) and, when its management is inadequate, it characterizes risks to human and environmental health⁽³⁾. HSW come from the provision of health care, from public or private institutions, households and facilities that handle these types of waste produced during care⁽⁴⁾.

Waste from health services is classified into five groups: group A – infectious; Group B – chemical; Group C – radioactive; Group D – common waste; and Group E – sharps⁽⁵⁾. In addition, they present determining factors for exposure to infectious, chemical and radioactive agents and even sharp objects, which can lead to the transmission of infectious and contagious diseases by viruses and bacteria, such as the Human Immunodeficiency Virus (HIV) and

the Hepatitis B and C viruses, among others⁽⁶⁾. When the waste produced is not managed properly, it can result in adverse effects on the population's health and on the environment, as it leads to the contamination of environmental features such as water, soil and air⁽⁴⁾.

For management to be carried out by the health services, it is necessary to resort to the implementation of public policies that develop actions encouraging education, awareness and social responsibility towards commitment to the environment. Thus, the objective is to minimize the impacts to environmental health caused by incorrect waste disposal⁽⁴⁾. Consequently, it is indispensable to promote health and preserve the environment. Thus, it is up to the managers of the municipal, state and federal spheres to adopt in practice the functioning of the laws and regulations responsible for the natural environment⁽³⁾.

For this purpose, every health institution must have a correct management plan for Health Services Waste (MPHSW), which corresponds to the compatibility of norms related to proper management, from segregation to final disposal⁽⁵⁾. Due to the high danger of some waste, which is not naturally degradable, awareness raising for a sustainable environment must be stimulated, corroborating the legislation with the perspective of reducing the harmful action to

the natural environment related to incorrect waste disposal⁽⁷⁾.

Health institutions promote exposure to risks to human health and, consequently, to the natural environment. Nurses are sensitive to vulnerable needs, playing a fundamental role in sharing their knowledge for the promotion of health, both human and environmental, as there is a commitment to the quality of life of individuals as a whole⁽⁸⁾.

Environmental problems are correlated with the evolution of economic and social development over time, leading to environmental issues that affect health. Thus, for environmental health to be preserved, it is necessary to take actions that reflect positively on the ecosystem, such as policies to protect and promote environmental and human health. However, it is indispensable that there is participation of Nursing in the development of care strategies to educate and raise awareness in the population, so that they maintain sustainable attitudes towards the environment since Nursing is able to influence people through education in health⁽⁹⁾.

Therefore, it is important to emphasize the importance of knowledge related to the proper management of HSW by Nursing professionals, as well as sustainability of the environment. For this, the question raised for the development of this review was as follows: Which are the contributions of Nursing to sustainability regarding HSW?

Therefore, the objective is to know the contribution of Nursing to environmental sustainability with a focus on waste from health services.

METHOD

This is a bibliographic study, of the integrative literature review type, a research method that allows for the systematic synthesis of diverse clinical evidence, in order to incorporate scientific results⁽¹⁰⁾. The data were collected in June 2021 in the Google Scholar database, as the previous search in the Virtual Health Library (*Biblioteca Virtual em Saúde*, BVS) did not include the subexistential number of articles, giving preference to Google Scholar.

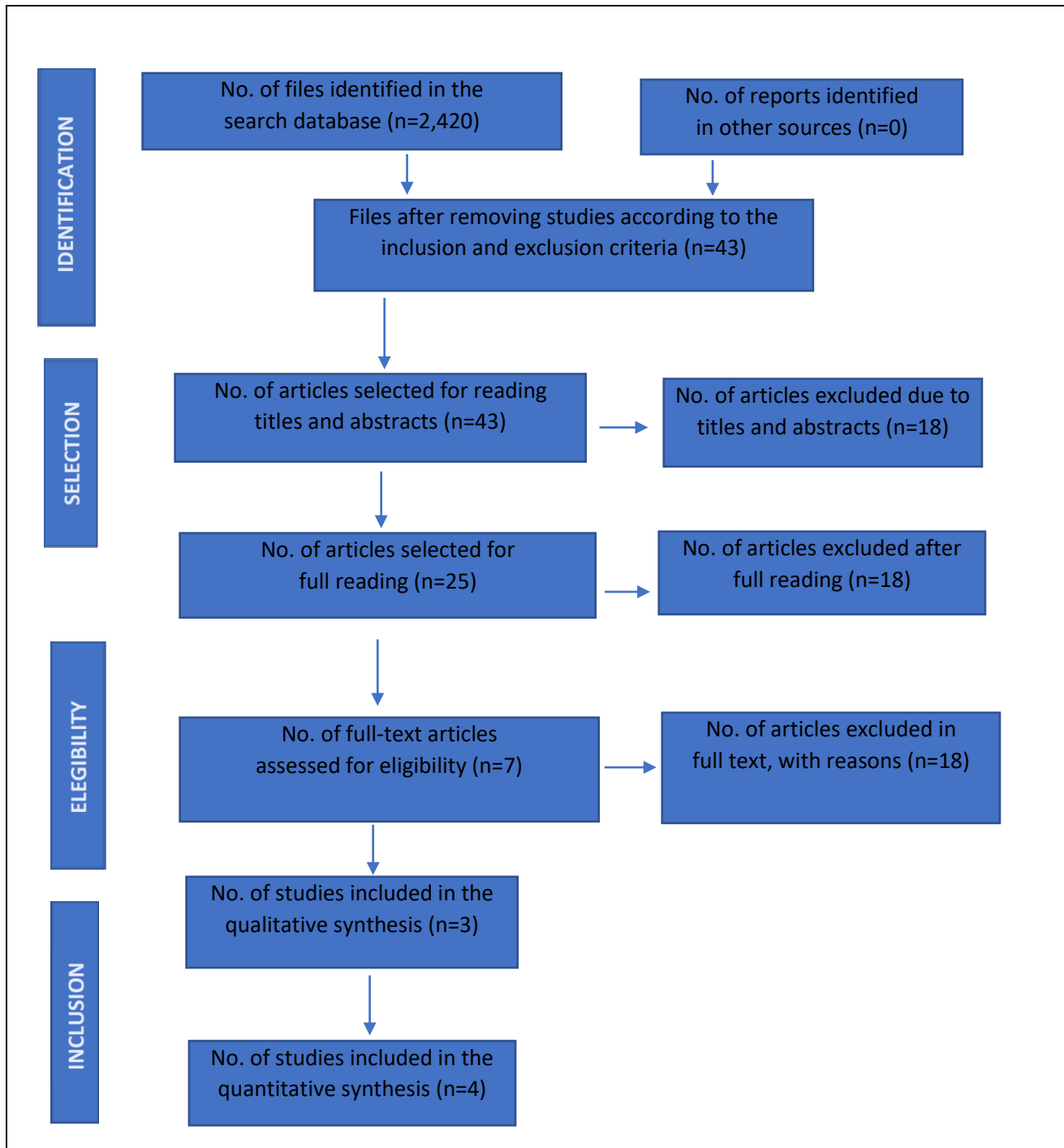
Descriptors such as “Sustainability; Nursing; Waste from Health Services; Environment” were used, totaling 2,420 files. For selection, inclusion criteria were established, namely: full texts, last four years (2018 – 2021), title and abstract. Reviews, theses, dissertations and papers published in events were excluded. After refining the files, 43 articles were selected for reading their titles and abstracts. This resulted in a total of 25 articles for full reading. Of these, 18 were removed after reading their full texts, and seven publications were chosen for the study, as shown in Figure 1 - PRISMA flowchart⁽¹¹⁾.

After analyzing the studies, preparation of the body of the review was

initiated in a synthesized and systematic way, corresponding to the objective proposed by the study. Thus, this discussion is necessary to understand the issues involving Nursing and

the environment, as well as the risks exposed to the compromise of environmental sustainability amid inappropriately disposed health services waste.

Figure 1 - PRISMA Flowchart



Source: Research data, 2021. Based on the PRISMA Recommendation (2015)⁽¹¹⁾

RESULTS

Chart 1 - Results found

| TITLE/JOURNAL/YEAR | AUTHORS | METHODOLOGY | RESULTS |
|---|--|---|---|
| Conhecimento do enfermeiro acerca do gerenciamento dos resíduos de serviços de saúde nas unidades básicas de saúde no interior de Goiás, Brasil. International Journal of Current Research. 2020. | Rodrigues, A. F. S; Meireles, G. O. A. B; Reis, M. A; Matos, M. A; Melo, L. B; Moura, S. G; Santos, N. F. S; Oliveira, E. D. F; Moraes, F. M; Aranha, T. C; Andrade, J. M; Machado, D. T. S. | A descriptive study with a qualitative approach carried out in a municipality from Goiás, 14 nurses who worked at a Basic Health Unit (BHU) were interviewed. | The difficulty of understanding related to knowledge about HSW can be perceived, as well as in classifying it. |
| Ensino sobre gerenciamento de resíduos na graduação em enfermagem: realidade, reflexões e propostas. Revista Eletrônica Acervo Saúde. 2021. | Guimarães, P. S. S; Vilela, R. Q. B; Oliveira, S. M. B; Silva, P. J. T. G; Reis, R. P; Silva, E. S; Lima, A. S; Silva, R. C. | A descriptive and analytical field research study with a qualitative approach, carried out by Nursing students, using the Focus Group (FG) technique. | The students showed knowledge about HSW, as well as the approach to biosafety issues and inadequate disposal, which can result in impacts on human and environmental health. It is evident that there is a gap between theory and practice for proper management. |
| Fatores associados ao manejo adequado de resíduos de serviços de | Oliveira, L. P; Mendonça, I. V. S; | A cross-sectional analytical study, carried out in a | It was observed that the Nursing professionals showed knowledge about |

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| saúde entre profissionais de enfermagem. Rev Baiana Enf. 2018. | Gomes, S. C. S; Caldas A. J. M. | hospital from São Luís, Maranhão. The study population consisted of 461 Nursing professionals. | HSW management since, when handled inappropriately, it brings about social and environmental risks. |
| Gerenciamento de resíduos sólidos de saúde em hospital universitário do Nordeste Brasileiro. Revista Brasileira de Geografia Física. 2019. | Negreiros, R. V; Araújo, F. N. F; Silva, V. F; Souza, P. M. | A quantitative, descriptive and cross-sectional research study carried out in a hospital from Campina Grande, Paraíba. Questionnaires were distributed to 25 Nursing professionals. | The need to adopt the MPHSW for a sustainable environment was identified, so it becomes viable to provide continuing education for a better sustainability condition, as the waste generated presents risks to people and the environment. |
| Gerenciamento de resíduos de serviços de saúde em um hospital no norte do Rio Grande do Sul. Gestão e Desenvolvimento em Revista. 2020. | Salomão, A; Gallon, S; Mores, G. V. | A qualitative and exploratory research study. The study was carried out with 12 professionals linked to HSW management, including nurses. | It is observed that improper disposal of HSW into the environment results in adverse effects on the environment; however, part of the problems found in the MPHSW are correlated with lack of resources. |
| Percepção de enfermeiros sobre gerenciamento de resíduos de serviços de saúde. Brazilian Journal of Health Review. 2020. | Silva, J. T; Jesus, G. A. S; Silva, M. R; Ferreira, S. M. I. L; Silva, G. L; Monteiro, N. M. A. T. | A descriptive and exploratory study with a qualitative approach; an interview was carried out with 11 nurses from 10 BHUs. | There is limited knowledge regarding HSW management and its impacts on the environment. Implementation of the MPHSW for the reduction of risks is noticed, as well as it shows awareness |

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| | | | raising for the practice of the “3Rs” (Reduce, Reuse and Recycle). |
| Resíduos dos serviços de saúde: a responsabilidade ambiental na visão dos profissionais da Atenção Primária. Research, Society and Development. 2021. | Oliveira, L. L.; Souza, P. M.; Clementino, F. S.; Almeida, J. L. S.; Cardoso, L. M. A. | An exploratory, descriptive and cross-sectional research study carried out in 36 Basic Health Units from Campina Grande, Paraíba. 55 health professionals were interviewed, including 24 nurses and 16 Nursing assistants. | It is possible to notice the knowledge about the importance of the relationship between HSW and the environment, as well as proper management that contributes to environmental preservation. |

Source: Research data, 2021.

DISCUSSION

Scarcely discussed knowledge about the concept of HSW in the Nursing field of work is pointed out. It is noticeable that there is a limitation of practical and theoretical knowledge about waste and its management mode. According to the authors⁽¹²⁾, during the training process, the students need to have a broader perspective in relation to the production of HSW, as it is not only limited to hospital areas, but also covers health institutions and the environment as a whole. As a result, education focused on this theme must have a strengthened basis during the academic period, which aims at preservation and at minimizing the risks to environmental health caused by the provision of human care.

In this way, at the same time, it highlights the correct form of waste disposal and packaging.

Lack of knowledge about the correct way to handle waste implies exposure to health risks as a result of the impacts caused to the environment. For this reason, conscious HSW management is fundamental in order to encourage the reduction of infection risks and preservation of the environment⁽¹³⁾. This is where the Management Plan of Health Services Waste (MPHSW) enters into action, which must correspond to a set of procedures for correct waste management, in order to promote the commitment to establish preventive and sustainable ways for the environment, confirming the minimization of impacts to environmental health⁽¹⁴⁾.

Part of the HSW production is a consequence of Nursing actions, as these professionals are the ones who most generate and handle these types of waste during the assistance provided. As soon as management is properly understood, from segregation to final disposal, it is emphasized that the nurses' participation in the elaboration of the MPHSW is essential for the management of waste from a given health facility. Lack of this leads to environmental damage due to indiscriminate disposal into natural resources, as it harms health and environmental preservation. However, some professionals find it difficult to differentiate the types of waste, especially neglecting the segregation stage, one of the most important in proper management⁽¹⁵⁾.

Based on this, the authors⁽¹⁵⁾ address that nurses have the power to manage the health services. In addition to that, the authors attribute limited knowledge regarding adequate management to work overload, lack of discussion in the university and lack of interest on the part of the professionals. However, nearly 54.16% of the nurses interviewed reported that the segregation stage was performed properly, although 29.16% of them stated they did not handle it correctly. In other words, lack of knowledge about how to manage waste efficiently reflects in adverse effects on the environment due to incorrect disposal.

The authors⁽¹³⁾ corroborate this when they state that 60.52% of the professionals are unaware of the final disposal of HSW, and emphasize that 92.84% are aware of the risks inherent to the health of living beings.

Incorrect disposal is sometimes neglected at the generating source, such as the segregation resulting from management failures, as not offering an appropriate container for this destination increases the risk exposure factor to the workers themselves⁽¹⁶⁾. The same occurs as a result of misappropriation and results in exposure to hazardous waste, as it is directed to the environment under a load of negative effects to the natural resources⁽¹⁷⁾.

Another important finding in relation to the interest in complying with the legislation is the proposal of using the 3Rs method, based on waste Reduction, Reuse and Recycling, which is viable during its management for sustainability. Thus, the MPHSW becomes efficient and sustainable with the environment⁽¹⁸⁾.

Disinformation presents itself as a contributing factor to the ineffectiveness of proper management and reinforces the perspective of providing, through permanent education, the provision of qualifications and training for knowledge about correct management, as an alternative to alleviate these effects generated by inadequate final waste disposal to the natural environment and to people⁽¹⁷⁾.

Since management is essential to maintain a sustainable environment, as well as to promote health, quality of life and preservation of the environment, the association between inadequate management and environmental contamination reflects in the spread of infectious and contagious diseases. In other words, when the substances coming from waste without treatment and proper destination may pass through the natural protection barriers, reach and contaminate the water of superficial or underground places, such as groundwater⁽³⁾.

It is noticed that proper management favors the preservation of environmental and human health, as it contributes to sustainability. Thus, it is through education and legislation that seeks to initiate programs to minimize waste and its risks that health professionals become aware⁽³⁾. The authors⁽¹⁹⁾ corroborate this line of thought when they denote that environmental issues must be addressed in health and education institutions in order to reduce the impacts caused by HSW, and that there is a need to recognize social and environmental responsibility.

FINAL CONSIDERATIONS

It is shown that knowledge about the waste from health services needs to be discussed by Nursing, as it presents weaknesses during the training process and in health institutions, which is consistent with

the lack of encouragement to improve practices for good management.

The possible consequences caused to environmental health and to people occur due to inadequate waste packaging, seen in the professionals' contribution during the MPHSW stages inappropriately, in the exposure to risk factors.

The need to improve the Nursing team regarding correct management is thus reinforced, so that they can collaborate in a sustainable way with the environment and health. Therefore, the search for studies that complement this review is encouraged, with the aim of achieving greater depth on the theme for future researchers.

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