

Nurses' role in environmental health surveillance: An integrative literature review

Atuação do enfermeiro na vigilância em saúde ambiental: Uma revisão integrativa de literatura

El papel de las enfermeras en la vigilancia de la salud ambiental: Una revisión integrativa de la literatura

RESUMO

Objetivo: Identificar a atuação do enfermeiro na vigilância em saúde ambiental à luz da literatura. Método: revisão integrativa realizada no mês de dezembro de 2020, nas bases de dados SCIELO, PUBMED e LILACS e na Biblioteca Virtual de Saúde, sendo utilizados os seguintes descritores: saúde ambiental, enfermagem e vigilância, intervalo de vinte anos de 2012 a 2022. Resultado: foram encontrados 362 artigos e 04 selecionados, destes a maioria eram qualitativos. Na avaliação foi realizada leitura completa dos artigos, com intuito de compreender os principais aspectos abordados. Na interpretação dos resultados, seguiu à leitura comparativa entre os artigos, e agrupamento de temas: atuação do enfermeiro na vigilância ambiental e atuação do enfermeiro na atenção básica com foco em vigilância ambiental. Conclusão: Apesar das buscas serem feitas sem recorte temporal e do enfermeiro desde processo de formação trabalhar o binômio saúde e ambiente, o número de artigos publicados com essa temática são poucos, tendo uma necessidade de mais trabalhos.

DESCRIPTORES: Saúde ambiental; Enfermagem; Vigilância.

ABSTRACT

Objective: To identify the role of nurses in environmental health surveillance in the light of the literature. Method: integrative review carried out in December 2020, in the SCIELO, PUBMED and LILACS databases and in the Virtual Health Library, using the following descriptors: environmental health, nursing and surveillance, twenty-year interval from 2012 to 2022. Result: 362 articles were found and 04 selected, most of which were qualitative. In the evaluation, a complete reading of the articles was carried out, in order to understand the main aspects addressed. In interpreting the results, a comparative reading of the articles followed, and the grouping of themes: nurse's role in environmental surveillance and nurse's role in primary care with a focus on environmental surveillance. Conclusion: Although the searches are carried out without a time frame and the nurse since the training process works on the health and environment binomial, the number of articles published with this theme are few, with a need for more work.

DESCRIPTORS: Environmental health; Nursing; Surveillance.

RESUMEN

Objetivo: Identificar el papel del enfermero en la vigilancia de la salud ambiental a la luz de la literatura. Método: revisión integradora realizada en diciembre de 2020, en las bases de datos SCIELO, PUBMED, LILACS y en la Biblioteca Virtual en Salud, utilizando los siguientes descriptores: salud ambiental, enfermería y vigilancia, intervalo de veinte años de 2012 a 2022. Resultado: 362 artículos fueron encontrados y seleccionados 04, la mayoría de los cuales fueron cualitativos. En la evaluación se realizó una lectura completa de los artículos, con el fin de comprender los principales aspectos abordados. En la interpretación de los resultados, siguió una lectura comparativa de los artículos y la agrupación de los temas: papel del enfermero en la vigilancia ambiental y papel del enfermero en la atención primaria con enfoque en la vigilancia ambiental. Conclusión: A pesar de que las búsquedas se realizan sin marco temporal y el enfermero como proceso de formación trabaja sobre el binomio salud y medio ambiente, el número de artículos publicados con esta temática son pocos, con necesidad de más trabajo.

DESCRIPTORES: Salud ambiental; Enfermería; Vigilancia.

RECEBIDO EM: 31/08/2022 APROVADO EM: 01/10/2022

Diego Raí de Azevedo Costa

Nurse. Master's student at the Graduate Program in Nursing at the Federal University of Maranhão.
ORCID:0000-0002-8050-8976

Bruna Caroline SilvaFalcão

Nurse. Master's student at the Graduate Program in Nursing at the Federal University of Maranhão.
ORCID: 0000-0001-5028-1670

Mayane Cristina Pereira Marques

Nurse. Master's student at the Graduate Program in Nursing at the Federal University of Maranhão.
ORCID: 0000-0003-3341-0818

Dorlene Maria Cardoso de Aquino

Nurse. Professor at the Nursing Department at the Federal University of Maranhão. Doctor in Human Pathology - UFBA
ORCID:0000-0002-9604-052X

Lena Maria Barros Fonseca

Nurse. Professor at the Nursing Department at the Federal University of Maranhão. PhD in Biotechnology – UFC
ORCID: 0000-0002.6499-1005

Isaura Letícia Tavares Palmeira Rolim

Nurse. Professor at the Nursing Department at the Federal University of Maranhão. PhD in Biotechnology – UFC
ORCID: 0000-0002.8453-2543

INTRODUCTION

Health and environment or environmental health (the most common term) is the field of public health that gathers knowledge, public policies and interventions (actions) related to the interaction between human health and environmental factors (natural and anthropic) that determine, condition and influence the quality of life.¹

The individual's relationship with environmental factors (chemical, physical and biological factors) influence their health and is related to aspects of social, cultural and economic development. Factors such as location of the home, quality of housing, availability of means of transport interfere with access to environmental goods and amenities (pure air, green areas and clean water) and exposure to environmental risks (floods, landslides and pollution), being unequal between social segments and people.²

Environmental Health Surveillance is a set of actions that provides knowledge and detection of any change in the determining and conditioning factors of the environment that interfere with human health, in order to identify measures for the prevention and control of environmental risk factors related to diseases or other health problems. For its implementation, the National Health Foundation - FUNASA has been articulating with other institutions from the public and private sectors

that make up the Unified Health System - SUS and other members of the environment, sanitation and health, the adoption of integrated actions with the purpose of exercising surveillance of environmental risk factors that may affect the health of the population.³

Environmental health also refers to the theory and practice of valuing, correcting, controlling and avoiding factors in the environment that could harm the health of current and future generations. Due to its continental dimensions and landscape diversity, Brazil is home to a variety of scenarios that affect, to a greater or lesser degree, the existence of environments susceptible to risks, injuries and diseases. The different types of land use, associated with different environmental conditions (climate, relief, vegetation, water availability), are responsible for territorial configurations that directly influence the health of human populations.⁴

Environmental Health Surveillance has as its object the environmental risk factors to the population's health, which means anticipating and predicting the process of illness through inspection, control, monitoring, intervention and communication actions. In this process, it articulates with services and health units of the SUS Health Care Network (RAS-SUS), especially with epidemiological surveillance, health surveillance, worker health surveillance, the network of laboratories and primary care units. It also works in partnership

with state and municipal secretariats for the environment, education, civil defense and sanitation.³

In the current context, it is essential to discuss the issue of environmental health among health professionals, so that there is empowerment and appropriation of knowledge of what the United Nations (UN) 2030 agenda proposes, based on the Sustainable Development Goals (SDGs). The SDGs that contemplate the theme in focus are mainly gathered in the social and environmental dimensions. It is believed that health professionals, having a broader and more contextualized view of health with environmental issues, may have greater power to face challenges related to health care. Among these professionals, the nurse stands out, who is a natural health educator and works with health promotion and disease prevention actions, aiming to minimize damage and health problems.

The quest to understand this theme emerged in the discipline of health surveillance. Bearing in mind that the approach to environmental health begins in the period of academic training, where we are encouraged to understand the health/disease binomial and its determinants and conditions.

Environmental health surveillance plays a fundamental role in public health, through the monitoring and control of diseases and/or risk factors that are related to the environment or its imbalance. Its actions aim to promote and protect health. From

this perspective, the nurse, whose focus is on health promotion, disease prevention and health education, has an undeniable importance as a member of the multiprofessional team.

Due to the scarcity of studies on the subject in question, involving the role of the professional nurse, it is necessary to increase scientific production, in addition to the creation of protocols, documents and the like so that there is visibility and appreciation of this professional in this area, as well as to guide their actions within environmental surveillance. Given the relevance of this study to demonstrate the importance of professional nurses in the area of environmental surveillance, the objective of the study was to analyze the scientific evidence available in the literature on the role of nurses in environmental health surveillance.

METHOD

This is an integrative review, a method that consists of a synthesis of existing knowledge on a given subject, through a careful search in the literature. The steps followed for the development of this review were: 1) problem formulation; 2) literature search; 3) evaluation; 4) data analysis; and 5) presentation. Once the theme was defined, the following question was elaborated to guide the conduction of the study: what is the scientific evidence about the role of the professional nurse in environmental health surveillance? The inclusion criteria established for the selection of publications were: original articles, available in full, in Portuguese, English or Spanish and that answered the research question.

The literature search took place in December 2020, through the Virtual Health Library (VHL), in the databases Latin American and Caribbean Literature in Health Sciences (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE) and Database in Nursing (BDENF), using the descriptors "NURSING (enfermagem)", "environmental health (saúde ambiental)", "surveillance (vigilância)", through the boolean opera-

tor AND. Inclusion criteria were studies published in Portuguese, English and Spanish, in article formats, studies published in the last twenty years from 2012 to 2022 and articles that answered the study question. The exclusion criteria were works that did not present abstracts in full in the databases and library researched, works that did not answer the proposed question or that were not in the presented period of time.

The search resulted in a total of 362 articles. When reading the title and abstract was not enough to verify inclusion in the study, the full reading was performed. Of the articles found, 22 answered the research question and were selected for the study (Chart 1). Of these, articles located in more than one database were excluded, being considered only once, resulting in a sample of 4 articles.

To categorize the results, an instrument was developed for data collection, contemplating the following variables: identification of the researcher, country of origin, institution, year of publication, volume, type of study, descriptors, research design, study objectives, results and conclusions.

RESULTS

When searching for articles in the SCIELO database, a total of 3 articles were found, from which 2 articles were selected.

In the VHL database, 335 articles were found, where only 1 article was selected. In the LILACS database, a total of 21 articles were found, 2 of which were duplicates and 1 was selected. In the PUBMED database, 3 were found, but none were selected as they did not answer the question under study. In the evaluation, a complete reading of each article was carried out, in order to understand the main aspects addressed. In the interpretation of the results, the comparative reading between the articles was followed, checking the similarities and proceeding to the grouping of common themes in axes to be explored:

Based on the interpretation of the findings, the following theme was constructed: The role of nurses in environmental health surveillance.

DISCUSSION

Environmental health surveillance has its competences and attributions linked to the SUS, whose actions to prevent diseases and monitor the determining and conditioning factors of the environment, directly interfere in people's health and quality of life. Thus, the following actions developed within the scope of the SUS stand out: Surveillance Management, which comprises the analysis of the health situation, planning, programming, follow-up/monitoring, evaluation, regulation, mana-

Table 1: Strategy used in the databases, São Luís - MA, 2020

Descriptors	Database	Total articles found	Total selected articles
((saúde ambiental) AND (enfermagem)) AND (vigilância)	SCIELO	3	1
enfermagem AND (saúde ambiental) AND (vigilância)	BVC	335	1
((saúde ambiental) AND (enfermagem)) AND (vigilância)	LILACS	21	2
((saúde ambiental) AND (enfermagem)) AND (vigilância)	PUBMED	3	0

Source: authors, 2020.

gement of service providers; Information, education and communication in Health; Investigation of events of public health interest, including aspects related to vaccines; Control of vectors, reservoirs and hosts.⁸

In this context, the nurse in environmental surveillance can act actively in health promotion and disease prevention, in particular the professional inserted in the Family Health Strategy (FHS), can act recognizing its territory, its risks, environmental factors and developing strategies for the recovery of the environment, minimizing damage to the health of the population. (SILVA et al, 2019).¹⁴

In the aforementioned study, the author emphasizes the health/environment/nurse interface. It emphasizes the superficial view of nurses on the relationship between health and the environment, allowing us to infer that there is a distance from these professionals with a more comprehensive knowledge on the subject. For the authors mentioned by her, there is a simplistic and reductionist approach to environmental health issues in the training of professionals, which shows a weakness of universities in dealing with this issue in a clear and effective way.

In the view of other authors, all nurses and health professionals should seek to overcome the lack of knowledge about human pathogens present in waters that affect human health and carry out actions that allow the control and prevention of health problems.⁹

Nursing takes care of health, and health is linked to sanitary conditions and physical environment, nursing works with the environment that interferes with people's health and quality of life, a healthy environment provides better living conditions for the population. Nursing must be attentive, because it is not necessary to treat only the disease, but to treat the contaminating environment. The conceptual model of surveillance of risk situations is based on the understanding that issues related to the relationship between health and the environment are part of complex systems, requiring interdisciplinary and transdisciplinary approaches and articulations, wat-

Table 2: Articles found according to year, author, title, study type and conclusion, 2020

Year	Author	Title	Type of studies	Conclusion
2014	Artur Dias-Lima	Medical ecology: a holistic view in the context of human illness (Ecologia médica: uma visão holística no contexto das enfermidades humanas)	Descriptive, Exploratory	Health professionals, mainly in Medicine and Nursing, must be prepared for a critical analysis of the challenges presented in this area, so that they can be agents of change and profound transformations in the health process, environment and prevention of human diseases.
2014	Cesar Francisco Silva da Costa; Raul Andrés Mendoza Sassi	Surveillance and monitoring of the waters bordering cities: the nursing professional's view of the local reality (Vigilância e monitoramento das águas que margeiam cidades: olhar do profissional de enfermagem sobre a realidade local)	Tracking study	The hospital information system presents cases of hospitalization for diseases related to such exposure, making monitoring measures necessary for certain diseases in which the nurse professional stands out as an important element and capable of presenting contributions that enable ways of operating this monitoring, producing and distributing health actions.
2011	Gabriela Azevedo de Souza Bruzos, Helayne Mika Kamimura, Suelen Alves Rocha, Thais Amanda Calori Jorgetto, Karina Pavão Patrício	Environment and nursing: their interfaces and insertion in undergraduate education. (Meio ambiente e enfermagem: suas interfaces e inserção no ensino de graduação.)	Qualitative study	It is essential to discuss this environmental issue among health professionals, so that they can take advantage of this knowledge and be able to identify problems related to the environmental issue, proposing resolute and preventive actions, together with the community, seeking to mitigate the environmental risks to which everyone is exposed.
2005	Maristela Santos Nascimento, Maria Ângela Alves do Nascimento	Nurse practice in the Family Health Program: the interface of health surveillance versus programmatic health actions (Prática da enfermeira no Programa de Saúde da Família: a interface da vigilância da saúde versus as ações programáticas em saúde)	Qualitative study	The practice of nurses in the FHS has as a proposal of technological organization health surveillance and health programming. These models seek to incorporate the social determinants of the population's health/disease process in the development of practices for the prevention, promotion and recovery of the health of social groups in the areas assigned to the construction of a new care model.

Source: authors, 2020.

chwords in health promotion.¹⁰

The Code of Ethics for Nursing Professionals is a fundamental principle of the profession, the commitment to health both in promotion, prevention, recovery

and rehabilitation; and the nursing professional must respect life, dignity and human rights, in all its dimensions. Carrying out its activities with competence, for the promotion of human health in its integrity, in

accordance with the principles of ethics and bioethics.

The International Code of Nursing defines that the nurse must be responsible for the preservation of the environment, protecting it against impoverishment, degradation and destruction. Although defined as a legal professional attribution of nurses, many professionals do not give due importance to this action focused on the environment.¹¹

In the study carried out by Bruzos et al. 10 nursing aims to promote, if the environment is not well cared for and preserved, the objective of nursing will not be achieved. This corroborates a study carried out by Camponogara et. al¹¹, where it says that in the nursing orientation, the nurse usually addresses only general aspects, whether the population has access to treated water, sewage, how many rooms the house has and its characteristics, not questioning other environmental problems in the surroundings and the importance of preserving the environment in maintaining health.

To Lima¹² what is currently observed in the health-disease process is the practical separation between the environment and human health, with health professionals and public policies, in general, limited mainly to the treatment and care of the sick, with prevention taking a back seat. Therefore, approaches and attitudes are necessary for health promotion, quality of life and prevention of diseases associated with the environment, by health professionals.

According to Bruzos et al.¹¹ make the population aware of how important it is to preserve the environment and the consequences if it is not properly taken care of and the importance of education ("lectures and education of the population and other professionals in the area"). The nurse is one of those responsible for carrying out health education focused on the primary issues of the individual with his surroundings, family and community, as well as by providing care assistance, in integrating ecological knowledge into their theoretic-

cal/practical activities, that is, taking local attitudes, thinking about the global repercussions.

According to Lima¹² Brazil, even with advances in socioeconomic indicators, is still unequal, a situation that is the result

The individual's relationship with environmental factors (chemical, physical and biological factors) influence their health and is related to aspects of social, cultural and economic development.

of a historically excluding development. To achieve sustainable development and quality of life, improving sanitation and education indicators must be a priority for Brazil, say Carneiro et al.

Nascimento et. al¹³, says that health

surveillance aims to face situations of risk, damage and sequelae to the person, family, community and environment. In PC, these actions are aimed at promotion and prevention, without neglecting rehabilitation. In the study carried out by the aforementioned author, the planning of actions, identification of problems and risk factors in the assigned area, health promotion and education were highlighted as the main nursing actions.

Nurses who work in primary health care are close to the community, which gives them a broad view of the main health problems of the local community, especially problems related to poor sanitation conditions, facilitates it in the process of health education allied to public health policies.⁴

It is important to highlight the role of the family health team for environmental health surveillance, some objectives of the family health team are: to present and discuss the relationship between environmental health and the Family Health strategy to know and recognize risk situations, environmental contamination, basic sanitation; identify intra and intersectoral actors and actions to minimize or even stop locally identified environmental risks.¹⁴

Most promotion and prevention actions are not the exclusive responsibility and competence of the health sector and involve many other sectors of government and society as a whole for their implementation. Family Health represents an exceptional strategy in the identification of situations of environmental risks, for its conception of actions based on the territory, where it is possible to identify risk circumstances that go unnoticed by the majority.³

The nurse, as well as other professionals in primary health care, is crucial to add the understanding of the intimacy of environmental aspects with health in the routine of a population, raising awareness about environmental risks, and understanding them as possible generators of diseases. The nurse, as a professional working in the community and for playing the role of health educator, must disseminate infor-

mation so that the community knows how to recognize environmental and ecological relationships and health problems that are intrinsically linked to environmental issues.¹⁰

CONCLUSION

Nursing is necessary within the EHS in view of its holistic view that also involves the environment, which is one of the four metaparadigms of the profession and has been worked on and explored by various theories for a long time. Like Florence, who developed her environmentalist the-

ory by relating the environment to health conditions.

Throughout the work, it can be seen that graduation already focuses on some of the actions developed by nurses in environmental surveillance such as: education, prevention and health promotion, combating disease vectors, active search, among others. The role of nurses in primary care is highlighted as one of the professionals most involved in this health/disease binomial, since they have a direct role not only with clients, but there is also a clear concern in which families belong.

Even with all the information previous-

sly reported, there was great difficulty in finding documents, articles, protocols and reports of experiences that specifically address nursing care in environmental surveillance. Leaving the functions and attributions of the multiprofessional team very intertwined, because in none of the researched sources, it was possible to find documents that spoke only of the nursing functions in the VGA. Characterizing the need for publications on the subject and elaboration of protocols and manuals by the Ministry of Health, State Department of Health and Municipal Department of Health.

REFERÊNCIAS

- Oliveira, MS., Rohlfs, D.B., Villardi, JWR., Vigilância em saúde ambiental. Rio de Janeiro, EPSJV. 2017.
- Cruz CF, Silva SM, Araújo EF, Peniche PC, Aguiar LT, Faria CDCM. Relação entre fatores ambientais e qualidade de vida em indivíduos com acidente vascular cerebral usuários da atenção primária do Sistema Único de Saúde. *Acta Fisiatr.* 2019;26(2):108-114.
- BRASIL. Conselho Nacional de Saúde. Resolução nº 588. 2018. Disponível em: <http://conselho.saude.gov.br/resolucoes/2018/Reso588.pdf>. Acessado em: 27 de abril de 2021.
- Silva MM, Ceolin T, Mendieta MC, Piriz MA. Ações de saúde ambiental realizadas por enfermeiros da Estratégia Saúde da Família. *Rev. APS.* 2019; jul./set.; 22 (3): 495 - 509
- Bezerra ACV. Vigilância em saúde ambiental no Brasil: heranças e desafios. *Saúde e Sociedade [Internet]* 2017;26:1044-57. Available from: <https://dx.doi.org/10.1590/s0104-12902017170093>
- Whittemore, R. Knaf, K. The integrative review: updated methodology. *Journal of Advanced Nursing, Oxford*, v. 52, n. 5, p. 546-553, Dec. 2005. Disponível em: <http://www.ncbi.nlm.nih.gov/pubmed/1626886> Acesso em 17 de dezembro de 2020.
- Coriolano-Marinus MWDL, Queiroga BAMD, Ruiz-Moreno L, Lima LSD. Comunicação nas práticas em saúde: revisão integrativa da literatura. *Saúde e Sociedade* 2014;23:1356-69.
- Souza MTD, Silva MDD, Carvalho RD. Integrative review: what is it? How to do it?. *Einstein (São Paulo)* 2010;8:102-6.
- Brasil, Ministério da Saúde. Oficina Nacional: Planejamento no Âmbito do SUS 5 de novembro de 2014. Brasília 2014.
- Costa CFS da, Sassi RAM. Vigilância e monitoramento das águas que margeiam cidades: olhar do profissional de enfermagem sobre a realidade local; - doi: 10.4025/cienccuidsaude.v11i3.20258. *CiencCuid Saúde [Internet]*. 27º de março de 2013 [citado 20º de janeiro de 2022];11(3):472-80. Disponível em: <https://periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/20258>
- Bruzos GADS, Kamimura HM, Rocha SA, Jorgetto TAC, Patrício KP. Meio ambiente e enfermagem: suas interfaces e inserção no ensino de graduação. *Saúde e Sociedade* 2011;20:462-9.
- Camponogara, S, Kirchof, ALC, Ramos, FRS. A relação enfermagem e ecologia: abordagens e perspectivas. *Rev. enferm. UERJ*, 398-404. 2006.
- Dias-Lima, A. Ecologia médica: uma visão holística no contexto das enfermidades humanas. *Revista Brasileira de Educação Médica*, 38, 165-172. 2014
- Nascimento, M. S., & Nascimento, M. A. A. D. (2005). Prática da enfermeira no Programa de Saúde da Família: a interface da vigilância da saúde versus as ações programáticas em saúde. *Ciência & Saúde Coletiva*, 10, 333-345.
- Silva MM, Ceolin T, Mendieta MC, Piriz MA. Ações de saúde ambiental realizadas por enfermeiros da Estratégia Saúde da Família. *Rev. APS.* 2019; jul./set.; 22 (3): 495 - 509
- Whitte more R, Knaf K. The integrative review: updated methodology. *Journal of Advanced Nursing.* 2005; 52(5): 546-53. DOI: <https://doi.org/10.1111/j.1365-2648.2005.03621.x>