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LEPROSY: HEALTH EDUCATION WITH CHILDREN AND ADOLESCENTS – SYSTEMATIC REVIEW

*Hanseníase: educação em saúde com crianças e adolescentes – revisão sistemática**Lepra: educación en salud con niños y adolescentes – revisión sistemática***Marta Maria Francisco¹** **Maria Ilk Nunes de Albuquerque²** **Letícia Mayo de Souza Santos³** **Iara Alves Feitoza de Andrade⁴** **Liniker Scolfild Rodrigues da Silva⁵** **William França dos Santos⁶** 

RESUMO

Objetivo: identificar como está sendo trabalhada a educação em saúde sobre hanseníase, com crianças e adolescentes escolares. **Método:** revisão sistemática, realizada de novembro de 2022 a janeiro de 2023, nas principais bases de dados em saúde; utilizando os softwares *Rayyan* para classificação; *Agency for Healthcare Research and Quality* para o nível de evidência; ferramenta *Cochrane RoB* para risco de viés, método *GRADE* para a qualidade da evidência e *Critical Appraisal Skills Programme* para analisar o rigor metodológico das pesquisas, em seguida, as informações foram sintetizadas segundo a técnica de Bardin. **Resultados:** quatro artigos, publicados entre os anos 1991 a 2015, possuindo nível de evidência quatro e categoria A de rigor metodológico. **Conclusão:** intervenções educativas podem proporcionar tanto pontos positivos como negativos, que estão

^{1,2,3,5,6}Universidade Federal de Pernambuco, Recife, Pernambuco, Recife, Brasil.⁴Fundação Hospitalar de Hematologia e Hemoterapia do Amazonas, Manaus, Amazonas, Brasil.**Received:** 2024/10/28. **Accepted:** 2025/04/02**CORRESPONDING AUTHOR:** Marta Maria Francisco**E-mail:** marta_m_francisco@yahoo.com.br**How to cite this article:** Francisco MM, Albuquerque MIN, Santos LMS, Andrade IAF, Silva LSR, Santos WF.

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agregados ao modo como são abordadas, sendo necessária uma abordagem planejada, organizada e adequada para construir o pensamento crítico e reflexivo dos alunos sobre as doenças.

DESCRITORES: Adolescente; Criança; Educação em saúde; Enfermagem; Hanseníase

ABSTRACT

Objective: to identify how health education about leprosy is being worked on with school children and adolescents. **Method:** systematic review, carried out from November 2022 to January 2023, in the main health databases; using the Rayyan software for classification; Agency for Healthcare Research and Quality (AHRQ) for the level of evidence; Cochrane RoB tool for risk of bias, GRADE method for quality of evidence and Critical Appraisal Skills Program (CASP) to analyze the methodological rigor of the research; then, the information was synthesized according to the Bardin technique. **Results:** four articles, published between 1991 and 2015, with level of evidence four and category A of methodological rigor. **Conclusion:** educational interventions can provide both positive and negative points, which are aggregated to the way they are approached, requiring a planned, organized and adequate approach to build students' critical and reflective thinking about diseases.

DESCRIPTORS: Adolescent; Child; Health education; Leprosy; Nursing

RESUMEN

Objetivo: identificar cómo se está realizando la educación en salud sobre la lepra con escolares y adolescentes. **Método:** revisión sistemática, realizada de noviembre de 2022 a enero de 2023, en las principales bases de datos de salud; utilizar el software Rayyan para la clasificación; Agencia para la Investigación y la Calidad de la Atención Médica (AHRQ) por el nivel de evidencia; Herramienta Cochrane RoB para riesgo de sesgo, método GRADE para calidad de evidencia y Critical Appraisal Skills Program (CASP) para analizar el rigor metodológico de la investigación, luego se sintetizó la información según la técnica de Bardin. **Resultados:** cuatro artículos, publicados entre 1991 y 2015, con nivel de evidencia cuatro y categoría A de rigor metodológico. **Conclusión:** las intervenciones educativas pueden aportar puntos tanto positivos como negativos, que se suman a la forma de abordarlas, requiriendo un abordaje planificado, organizado y adecuado para construir el pensamiento crítico y reflexivo de los estudiantes sobre las enfermedades.

DESCRIPTORES: Adolescente; Educación en salud; Enfermería; Lepra; Niño

INTRODUCTION

Leprosy is an infectious and contagious disease caused by *Mycobacterium leprae*, which predominantly affects the skin and peripheral nerves, resulting in neuropathy and associated chronic complications throughout the course of the disease, including deformities and disabilities.¹ Despite being curable, the disease still represents a major global public health problem, with more than 200,000 new cases recorded every year.^{2,3}

Leprosy belongs to the group of neglected diseases, as it is characteristic of low-income populations, in conditions of poverty and in conglomerates. All the diseases in this group are perpetuated by social inequalities, which represent a major obstacle to local, regional and national development.⁴

Public health, in its epidemiological axis, provides the basis for evaluating prophylaxis and diagnostic measures for communicable and non-communicable diseases and allows for the verification of the consistency of causal hypotheses. It also analyzes the distribution of morbidity and mortality in order

to trace the health-disease profile of human communities.⁵ The WHO classifies Brazil as the country with the second highest incidence of leprosy in the world, second only to India.⁶ Brazil has presented various scenarios of diseases and their health problems, as a result of socio-economic and cultural inequalities, as evidenced by epidemiological bulletins, with high rates of chronic degenerative and infectious diseases, as in the case of leprosy.^{6,7}

Health indicators show that, from 2011 to 2020, there was a 30% reduction in the leprosy prevalence coefficient.^{2,7} Between 2011 and 2020, the general detection coefficient showed a downward trend and the curve in children under 15 years of age underwent small variations, maintaining a regular parameter, showing a possible hidden endemic, however the incidence and prevalence of leprosy still show important regional and state variations.⁷ In Brazil, the prevalence of leprosy has shown a downward trend in the last five years. Records show that, from

2011 to 2020, the prevalence coefficients were 17.65% in 2011 and 8.49% in 2020, per 100,000 inhabitants.

As for the overall detection coefficient per 100,000 inhabitants, Brazil had 17.17% in 2011 and 12.23% in 2020, showing high endemicity (10.00% to 19.99% per 100,000 inhabitants).⁸

From 2012 to 2016, Brazil showed high endemicity in children under 15 (4.81% and 3.63% per 100,000 inhabitants), while the Northeast region showed very high endemicity (7.89% and 5.78% per 100,000 inhabitants).

The northeastern region of Brazil is highly endemic, with an average of 31.17% per 100,000 inhabitants, and the state of Pernambuco, in the general population, has 8% of new leprosy cases in Brazil and 12% of cases in children under 15.⁸ In Recife, the distribution of leprosy cases in general detection has been showing decreasing indicators.⁷ According to the Ministry of Health's Epidemiological Bulletin, from 2011 to 2020 the epidemiological indicators per 100,000 inhabitants per year, as well as the percentage of new cases, have been falling.⁷ There was a significant reduction in the number of cases in 2020, due to a possible lack of updated data in the system, or due to the impact of the new Coronavirus pandemic, where patients were afraid to seek health services.⁹

Because it is a neglected disease, which is presented in situations of vulnerability and inequality, relationships are permeated by prejudice, stigma and social exclusion.¹⁰ In order to encourage the prevention of the disease and combat stigma, the Ministry of Health has encouraged the implementation of health education activities, promoting actions against the prejudice caused and formulating strategic points for its prevention, control and monitoring.¹¹

In view of the above, there was a need to carry out a systematic review of the main health databases, with the aim of identifying how health education on leprosy is being carried out with school children and adolescents.

METHOD

This is a systematic review of the literature, based on the protocol proposed by the Joanna Briggs Institute, using the guidelines of the Preferred Reporting Items for Systematic Reviews (PRISMA)³³; six distinct stages were followed to carry out the study: 1) elaboration of the theme and research question; 2) elaboration of eligibility criteria and search for studies in the literature; 3) Categorization of studies and data extraction; 4) Evaluation of selected studies; 5) Analysis and interpretation of results; 6) Description of results and discussion.^{12,13}

To define the guiding question, the PICO13 strategy was used (acronym for P: population/patients; I: intervention; C: comparison/control; O: outcome/outcome): it was constructed as - P: children and adolescents; I: health education in schools; C: how the topic of leprosy is being worked on; O: evaluation of learning, finally the guiding question was established: how is health education on leprosy being worked on with school children and adolescents?

The eligibility criteria included original articles, published in Portuguese, English and Spanish, which answered the research question; there was no time frame for the publications identified. Articles in the form of a thesis, dissertation, book or book chapter, editorial, newspaper article, integrative or systematic literature review, letter to the editor, reflective study, experience report and previous note were excluded.

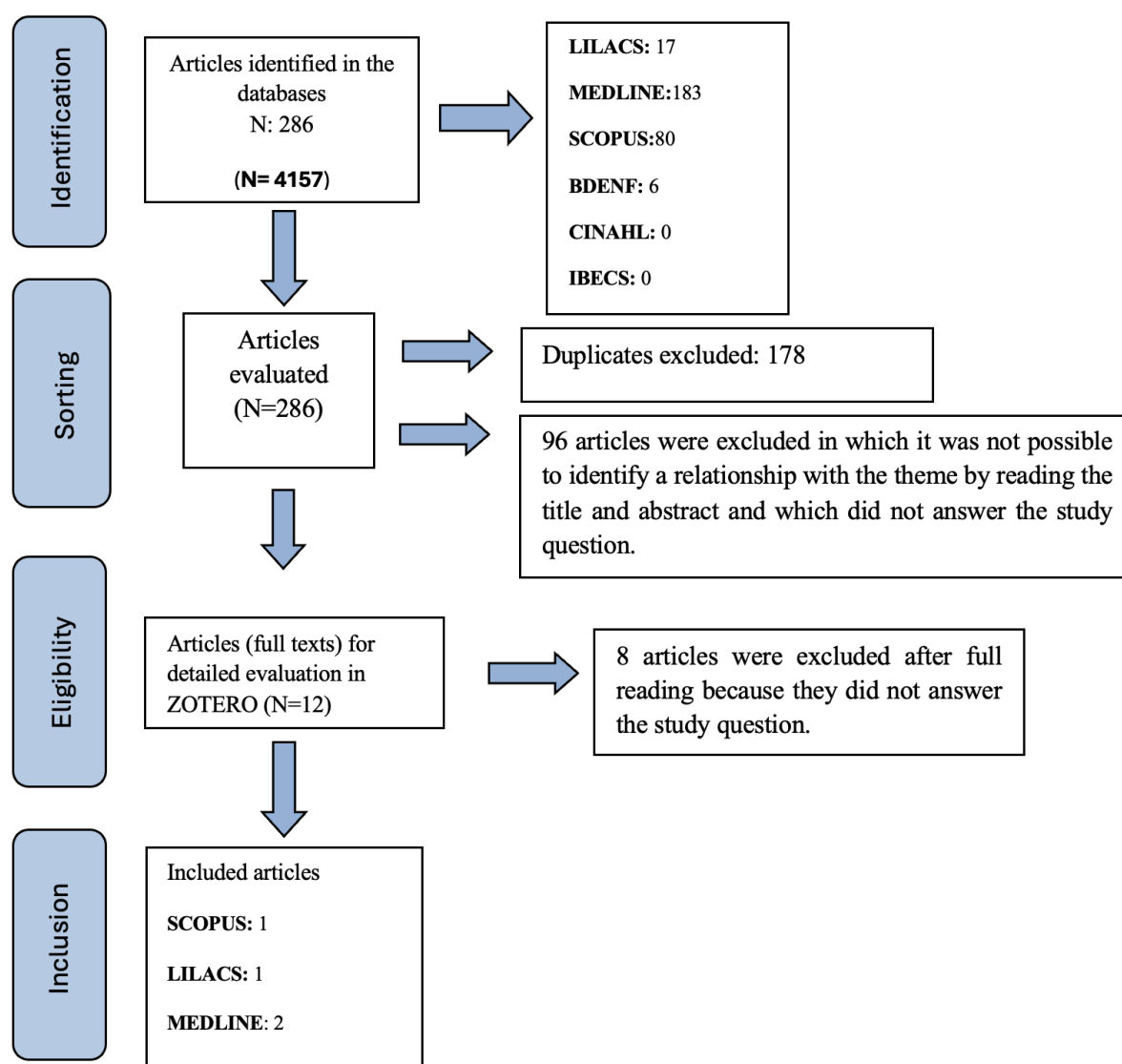
The search was carried out from November 2022 to January 2023 in seven databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American and Caribbean Health Sciences Literature (LILACS), SCOPUS, Web of Science, Cumulative Index to Nursing and Allied Health (CINAHL), Índice Bibliográfico Español en Ciencias de la Salud (IBECS) and Nursing Database (BDENF).

The search in the databases used the controlled terms "Leprosy", "Health Education", "Child", "Adolescent" and their correlates, in Portuguese, English and Spanish, from the Medical Subject Headings (MeSH) and Health Sciences Descriptors (DECS), after which the selected terms were cross-referenced using the Boolean operators "OR" and "AND".

All the studies identified through the search strategy were initially assessed by analyzing the titles, followed by the abstracts; in cases where the titles and abstracts were not comprehensible enough to define the initial selection, the selected articles were read in full.

The search strategy developed allowed 286 articles to be retrieved from the databases, all the titles/abstracts of the references retrieved during the search were read and analyzed individually, 96 references were excluded after reading the title/abstract because they did not meet the proposed criteria; the studies selected for reading the full text were exported to the ZOTERO 6.0 software, then duplicates were excluded (n=178) and after reading, the articles that did not meet the established criteria were also removed.

In the end, 12 articles remained, which were read in full; however, 8 were excluded after full reading, as they did not answer the study question. The final sample of this study consisted of 4 articles.

Figure 1 - Prisma flowchart of the selection process for the studies included in the systematic review, Recife (PE), Brazil, 2024

Source: Research data. 2023.

The selection of studies was carried out autonomously by two researchers and there was no disagreement between them; Rayyan® software was used to classify and consult the titles and abstracts of the articles by peers, with the aim of verifying the inclusion and exclusion criteria¹⁵. The analysis was based on a thorough reading of the selected articles, giving preference to qualitative analysis based on thematic analysis.

As for the level of evidence according to the methodological approach of the Agency for Healthcare Research and Quality (AHRQ): Level I - Systematic review, meta-analysis or clinical guidelines from systematic reviews of randomized

controlled clinical trials; Level II - Well-controlled randomized clinical trial; Level III - Well-designed clinical trials without randomization; Level IV - Well-designed cohort and case-control study; Level V - Systematic review of descriptive and qualitative studies; Level VI - Descriptive or qualitative study; and Level VI - Opinion of authorities and/or expert committee opinion.¹⁷

As for assessing the quality of the evidence, the GRADE method was used.¹⁸ This is divided into four levels: the high level defines that there is strong confidence that the true effect is close to that estimated, the moderate level defines moderate

confidence, the low level has limited confidence in the study and the very low level estimates that the effects are very limited.

To assess the risk of bias, the Cochrane Risk of Bias Table¹⁹ was used, which assesses the risk of bias by summarizing the results of the study. It is divided into seven domains (1: Random sequence generation; 2: Allocation concealment; 3: Blinding of participants and professionals; 4: Blinding of outcome assessors; 5: Incomplete outcomes; 6: Selective outcome reporting; and 7: Other sources of bias), which assess various types of bias that may be present in randomized clinical trials.^{20,21}

To ensure the methodological rigor of the studies, an instrument adapted from the Critical Appraisal Skills Program (CASP)³⁴ was used to analyze the publications found. This instrument classifies studies as having good methodological quality and reduced bias (category A - 6 to 10 points), and satisfactory methodological quality (category B - at least 5 points).

After these phases, the relevant information was gathered, analyzed and organized by theme, using the Bardin technique,

in which two categories were extracted: "Positive effects of health education" and "Negative effects of health education". The results are presented in tabular form and discussed in the light of the literature for better clarification and inferences, complying with the principles of scientific dissemination and the methodological criteria.

The protocol of this review is registered in the Open Science Framework (OSF), under DOI: 10.17605/OSF.IO/H7FZS

RESULTS

The final sample consisted of 04 articles: 01 from SCOPUS; 01 from LILACS; 02 from MEDLINE; published between 1991 and 2015. In Table 1, the selected studies are shown with author, year of publication, country, objective, methodological design, level of evidence and summary of results and sample characteristics; in terms of level of evidence, all the articles were classified as level IV.¹⁶

Chart 1 - Selected studies on Health Education on Leprosy for children and adolescents. Recife, PE, Brazil. 2023.

Positive (+) or negative (-) effect	Article, Year and Country	Objective	Methodological design and Level/ Quality of Evidence	Summary of results	Sample Characteristics
+	Pinheiro MGC., et al, 2015; Brazil	To assess schoolchildren's knowledge of leprosy and implement health education actions on this subject.	Qualitative / IV - High	It was shown that health education activities aimed at schoolchildren, with an emphasis on leprosy, are of fundamental importance, as they denote the appropriation of knowledge related to the disease.	N = 190 Age group 16-23 years Structured questionnaire; Parnamirim-RN; 2011.
+	Norman G et. al., 2004; India	To detect cases of leprosy in schoolchildren.	Qualitative / IV - High	The health education carried out proved to be effective, as it emphasized educating students about leprosy, its early signs and symptoms and training them to identify suspected cases, especially in hyperendemic areas.	N = 26 schools Population: high school students Projects of the Schieffelin Leprosy Research and Training Center; Karigiri, Vellore; 2004.

Positive (+) or negative (-) effect	Article, Year and Country	Objective	Methodological design and Level/ Quality of Evidence	Summary of results	Sample Characteristics
-	Jacob MS., et al, 1994; India	To check whether health information can be passed on by schoolchildren to their families.	Qualitative / IV - High	In evaluating the answers to the post-test questionnaire, the children in groups A and B (those educated about leprosy) showed a significant improvement in knowledge in 2 and 3 of the 5 areas tested, respectively. In group B, knowledge advanced in all but one area. On the other hand, the control group of children (C) showed a significant improvement in only 2 areas and no tendency for improvement in other areas.	N = 118 Population: Child students at a private secondary school in Bangalore, Karnataka; 1990.
-	Kumar RP., et al, 1991; India	To check whether health information would be spontaneously transferred from schoolchildren to their families.	Quantitative / IV - High	In analyzing the results of the pre-test questionnaire, no significant differences were found in the level of knowledge or attitude towards leprosy between the groups of children or their families. In the evaluation of the answers to the post-test questionnaire, the children in the leprosy education group showed an improvement in knowledge in five of the six areas tested.	N = 41 Population: Primary school children in a rural community in the North Arcot district of Tamil Nadu; 1984.

Source: Research data, 2023

Two articles, characterized as “negative effects of health education”, relate to the educational sessions and, although they provided a significant improvement in the knowledge of the study population in the areas tested, the main results highlighted leprosy as the most feared disease, as well as reinforcing prejudiced attitudes on the part of the children and their families, who reported being unwilling to employ people successfully treated for leprosy or even invite them to eat in their homes.

The authors justify the negative results as a consequence of holding only one health education session, considering that

leprosy is a stigmatized disease and involves many taboos, which reinforces the importance of ongoing health education.

Two articles, classified in the “positive effects of health education” category, demonstrate the efficiency of educational interventions as a means of transmitting and building knowledge about leprosy, promoting students’ autonomy on the subject and training them to identify suspected cases by inspecting the skin.

In addition, the information disseminated through audiovisual media is easily grasped by the school audience, which favors memorization.

DISCUSSION

Leprosy represents a public health problem due to its power to cause physical, social and economic disability.²¹ In light of the new epidemiological data, the new WHO Global Strategy for Leprosy 2021-2030 has already been established, which aims to interrupt the transmission of the disease and reach 120 countries with zero new autochthonous cases by 2030.²²

The interventions used for health education on leprosy at school age presented in the articles in this systematic review were: talks, pamphlets, illustrative posters, serial albums, educational sessions using audiovisual media and photographs. The educational interventions were carried out after a pre-test and evaluated with a post-test. Thus, there are various educational tools that can be used to explain certain health issues, making it easier for the recipients to understand, making the subject more attractive and lighter, as well as enabling the actions to be carried out individually and collectively.

The policy on permanent education in health, published by the Ministry of Health in 2009, considers that Permanent Education is the pedagogical concept, in the health sector, for making organic relationships between teaching and actions and services; and between teaching and health care, being expanded, in the Brazilian Health Reform, to the relationships between training and sector management, institutional development and social control in health.²³

Health education is a field of knowledge and practice in the area of health care that seeks to promote health and prevent disease at the various levels of complexity of the health-disease process.²⁴

Active health education methodologies are positive for promoting the empowerment of schoolchildren on the subject, as they facilitate the role of students in spreading knowledge about leprosy, transforming them from passive to active recipients, facilitating the dissemination of knowledge in the places where they are inserted, such as the school, the family and the community.²⁵

Involving teachers, parents and the school community in the early detection process helps to create a collective awareness²⁶ of the fact that leprosy is a curable disease and the earlier it is diagnosed, the better the health conditions of the person treated, reducing the problem of stigma and prejudice about the disease¹¹, which would be reflected in the community, facilitating the rehabilitation process of individuals already affected by the disease, as well as prevention, diagnosis and early treatment.^{27,28} As well as being protagonists, schoolchildren could be able to recognize the signs and symptoms of leprosy,

which will help the population to seek out services for testing, diagnosis and subsequent treatment.

In view of the positive effects attributed to educational actions with schoolchildren, the importance of intervention with this public can be seen, since, in addition to showing potential, its effects are easily achieved.²⁹ From this perspective, health education actions have the backing of the Health at School Program (PSE), which works with health promotion, prevention and care actions for the comprehensive training of students, tackling the vulnerabilities that compromise the development of children, adolescents and young people. The school is characterized as a privileged institutional space that allows education and health to come together.³⁰

This also favours a dynamic in the transmission of information and knowledge, especially when talking about leprosy through positive feedback, forming active receptors who will subsequently form other active receptors and so on, putting into practice the decentralization of health actions and knowledge, allowing the population to develop self-care and even being encouraged to form their own materials and methods in the transmission of their knowledge, in favour of the control and eradication of leprosy.³¹

CONCLUSION

From the analysis of the selected studies, it is possible to highlight that educational interventions can provide both positive and negative points, which are linked to the way they are approached with schoolchildren; health education, with a planned, organized and appropriate approach, can build students' critical and reflective thinking about diseases, prevention, diagnosis and treatment, and be able to make schoolchildren identify signs and symptoms of leprosy, promote self-care and become active communicators in health, transmitting their knowledge to other people they live with.

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