

# Leprosy educational practices with adolescents: an integrative literature review

*Práticas educativas sobre hanseníase com adolescentes: revisão integrativa da literatura*

*Prácticas educativas sobre la enfermedad de Hansen (Lepra) con adolescentes: revisión integrativa de la literatura*

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## ABSTRACT

**Objectives:** to identify scientific evidence in the literature regarding educational actions on leprosy developed with adolescents. **Method:** an integrative review of the literature, with the following research question: what are the leprosy educational practices currently being developed with adolescents? The search was performed in the following databases: MEDLINE, Scopus, LILACS, CINAHL, *BVS Hanseníase* and other sources, using "adolescent"; "leprosy"; "health education"; "public health", and "public health practice" as keywords. **Results:** the sample was comprised of nine studies. Leprosy educational practices with adolescents verifiably promote change in knowledge when they are based on constructivist methodologies. The nurse is recognized as a professional with potential for developing these educational practices. **Final considerations:** actions for leprosy education with adolescents do lead to changes in knowledge, but new research is needed to evaluate their effectiveness in further improving this knowledge as well as changing behaviors and practices.

**Descriptors:** Adolescent; Leprosy; Health Education; Public Health; Public Health Practice.

## RESUMO

**Objetivo:** identificar as evidências científicas da literatura a respeito das práticas educativas sobre hanseníase desenvolvidas com adolescentes. **Método:** trata-se de uma revisão integrativa da literatura, com o seguinte questionamento: quais práticas educativas sobre hanseníase estão sendo desenvolvidas com adolescentes? A busca foi realizada nas bases de dados Medline, Scopus, Lilacs, CINAHL, Hanseníase e em outras fontes por meio dos descritores: adolescente; hanseníase; educação em saúde; saúde pública; e prática de saúde pública. **Resultados:** nove estudos compuseram a amostra. Verificou-se que as práticas educativas sobre hanseníase com adolescentes promovem mudança de conhecimento quando se baseiam na metodologia construtivista e que o enfermeiro é reconhecido como profissional com potencial para o seu desenvolvimento. **Considerações finais:** as práticas educativas sobre hanseníase com adolescentes resultam em mudanças no conhecimento, porém são necessárias novas pesquisas que avaliem a sua efetividade na melhora do conhecimento e nas mudanças de atitude e de práticas.

**Descritores:** Adolescente; Hanseníase; Educação em Saúde; Saúde Pública; Prática de Saúde Pública.

## RESUMEN

**Objetivo:** Identificar las evidencias científicas de la literatura con relación a las prácticas educativas sobre la enfermedad de Hansen desarrolladas con adolescentes. **Método:** Se trata de una revisión integrativa de la literatura, con el cuestionamiento a continuación: ¿cuáles prácticas educativas sobre la enfermedad de Hansen están siendo desarrolladas con adolescentes? La búsqueda fue realizada en las bases de datos Medline, Scopus, Lilacs, CINAHL, Enfermedad de Hansen y en otras fuentes por medio de los descriptores: adolescente; enfermedad de Hansen; educación en salud; salud pública; y práctica de salud pública. **Resultados:** Nueve estudios compusieron la muestra. Se certificó que las prácticas educativas sobre enfermedad de Hansen con adolescentes promueven el cambio de conocimiento cuando se basan en la metodología constructivista y que el enfermero es reconocido como profesional con potencial para su desarrollo. **Consideraciones finales:** Las prácticas educativas sobre la enfermedad de Hansen con adolescentes resultan en cambios en el conocimiento, sin embargo, son necesarias nuevas investigaciones que evalúen su efectividad en la mejora del conocimiento y en los cambios de actitud y de prácticas.

**Descriptores:** Adolescente; Enfermedad de Hansen; Educación en Salud; Salud Pública; Práctica de Salud Pública.

## INTRODUCTION

Leprosy is a chronic, slowly developing infecto-contagious disease. Its etiological agent is *Mycobacterium leprae* (*M. Leprae*). The pathology affects skin and peripheral nerves, possibly causing deformities and physical disabilities<sup>(1)</sup>.

The World Health Organization (WHO) reported 210,758 new worldwide cases of leprosy in 2015. Brazil is the second most affected country, with 12.5% of all cases, following India, with 60.4% of all occurrences. It is worth noting that, despite an yearly decrease in occurrences, the country has not yet attained disease elimination. This characterizes a serious public health problem<sup>(2)</sup>.

According to the Brazilian Ministry of Health (MS), 28,761 new cases of leprosy were recorded in 2015 in the country; among these, 2113 affected children under fifteen years of age, indicating that active sources of Hansen's bacillus still remain, as well as pointing out how difficult it is to eliminate the disease through early detection and timely treatment<sup>(3-4)</sup>.

Considered an adult disease due to its long incubation period, the incidence in adolescents reflects the disease's high morbidity and endemic magnitude. It is observed that in endemic areas adolescents are more likely to become ill, due to early exposure to the bacillus, especially when a family member has already been affected<sup>(5)</sup>.

Leprosy is one of the oldest diseases in the world, and carries stigmas and prejudices due to deformities and physical disabilities, especially among adolescents, who are experiencing a transitional period between childhood and adulthood, with the associated physical, cognitive, social and emotional transformations. Conflicts and psychosocial crises can occur due to changes in the body image and the self-esteem of individuals, compromising the construction of their identity. These situations may influence the adolescent's social interaction and schooling process, causing low academic performance and even dropping out<sup>(6-7)</sup>.

Therefore, in order to answer to the disease, health surveillance – accompanied by adequate health practices ensuring not only detection and treatment, but also health education – is crucial. Health education goes beyond promoting the acquisition of information, providing the improvement of behaviors and values. This takes place in a participatory, creative and interactive way, with the purpose of emancipating individuals, providing them with autonomy over the course of their health. It is considered one of the health actions able to reduce the burden of leprosy over the adolescent public, by encouraging spontaneous demands of patients and contact with the health services once suspicion of the disease emerges. It also acts on the elimination of false concepts attributed to the disease, and serves to provide information on its signs and symptoms and on the importance of timely treatment<sup>(1)</sup>.

In this sense, according to Alves<sup>(8)</sup>, health education serves not only to provide new information, but also to metamorphose knowledge that already exists. Based on this assumption, its aim is to promote self-care not through impositions by a health professional endowed with technical-scientific knowledge, but rather by developing a new understanding of the health-disease situation.

However, effective health education for adolescents requires a multifaceted approach. Studies describe educational practices

with adolescents involving workshops with educational games, which take into account the peculiar characteristics of this age group and make it possible to obtain knowledge in a relaxed way, enabling the communication and expression of ideas, promoting discussion and reflection among participants and strengthening the teaching and learning process<sup>(9-10)</sup>.

Considering the above, this integrative review on leprosy educational practices directed toward adolescents attempts to analyze the relevant research on this theme, possibly contributing to the construction of knowledge about health and to the provision of subsidies for the improvement of leprosy-control practices<sup>(11)</sup>.

## OBJECTIVE

To identify scientific evidence in the literature on leprosy educational practices being developed with adolescents.

## METHOD

An integrative literature review – including theoretical and empirical literature, as well as other types of studies with different methodological approaches – organized systematically, allowing for a deeper knowledge about the research topic in question. This method allows the analysis of relevant research, i.e., studies supporting decision-making and the improvement of practices, identifying the knowledge produced on a given subject and research gaps that need to be filled by new studies<sup>(11)</sup>.

For this type of study to be properly developed, certain methodological standards have to be followed, in a rigorous and transparent way, so that the reader is able to easily identify the characteristics of the studies included in the review. This review was carried out in six stages: establishment of the research question, sampling (i.e., search in the literature), categorization of studies, evaluation of included studies, interpretation or integration of results, and presentation of the review (synthesis of the knowledge in the analyzed articles)<sup>(11)</sup>.

This study was based on the following research question: what are the leprosy educational practices currently being developed with adolescents? The search was carried out in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Scopus, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Latin American and Caribbean Literature in Health Sciences (LILACS) and *BVS Hanseníase*. To allow for greater data capture, other sources were also included.

Inclusion criteria for selection and survey of articles were the following: qualitative, quantitative or quali-quantitative articles written in English, Spanish or Portuguese, published in periodicals and properly indexed, regardless of the year of publication. The search employed descriptors from the international vocabulary used in the healthcare field – the Medical Subject Heading (MeSH), created by the United States National Library of Medicine for describing the literature indexed in MEDLINE. Descriptors were combined using Boolean operators.

Employed descriptors were: adolescent; leprosy; health education; public health, and public health practice (see Fig. 1 for Spanish and Portuguese descriptors). Articles that failed to answer the research question, duplicates and articles not available

in full were excluded. Duplicate articles were counted from the database with the largest number of references<sup>(12)</sup>.

Search and selection of the articles included in the review was independently carried out by two reviewers. Disagreements between these reviewers were resolved by a third one. Primary selection of articles was done by reading titles and abstracts, followed by full reading, in order to verify adequacy to the inclusion and exclusion criteria.

For data categorization, the following information was extracted: authorship, year of publication, language, academic background of the authors, place of study, population, study's objectives, studied educational practice, methods, results, recommendations and conclusions. The selected articles were classified according to their level of evidence, based on the model by Melnyk & Fineout-Overholt<sup>(13)</sup>.

We employed a modified version of the Critical Appraisal Skills Programme (CASP), as proposed by a Brazilian study<sup>(14-15)</sup>, for the evaluation of included studies' quality. The CASP classifies articles into two categories: A – 6 to 10 points (good methodological quality and reduced bias); and B – minimum of 5 points (satisfactory methodological quality, but increased risk of bias). Because there were few articles in the initial sample, we decided to include them regardless of their CASP score.

During the interpretation of the results a critical analysis of the included studies was performed, with their discussion, identification of research gaps and proposal of recommendations and suggestions for future research on the subject<sup>(11)</sup>. In

view of the intersection of the scientific evidence associated with each educational practice, this evidence was grouped according to thematic categories.

For the analysis, subsequent synthesis and presentation of the articles, a synoptic chart was produced. The synthesis of knowledge was performed descriptively.

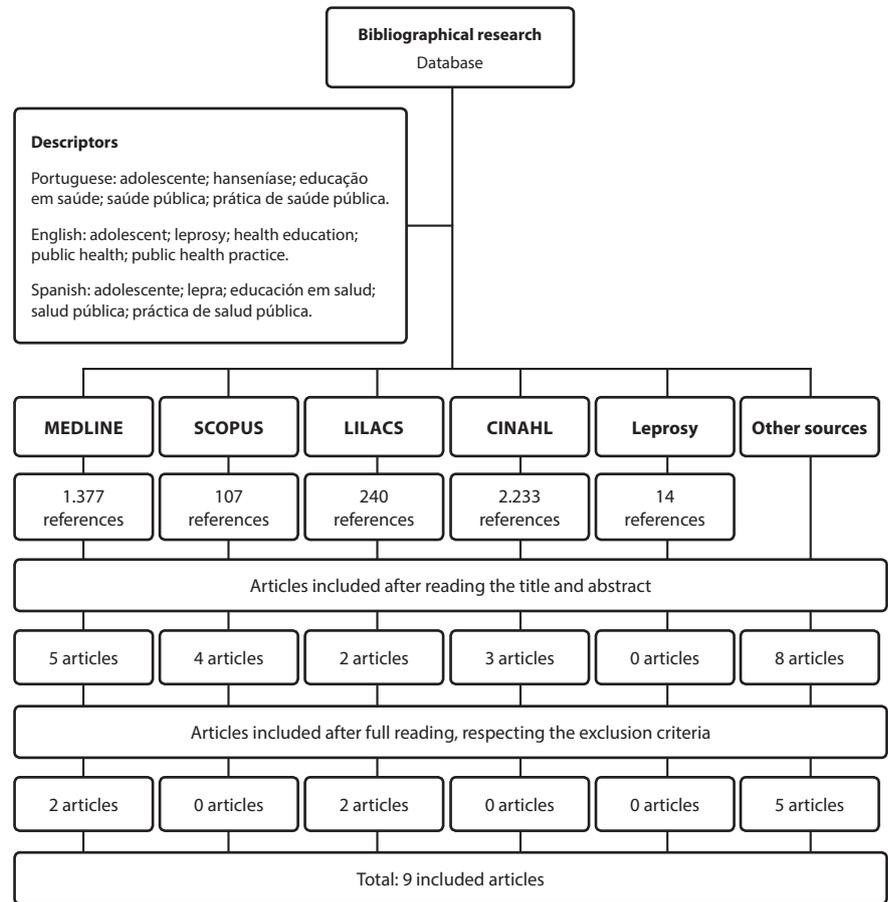


Figure 1 – Flowchart of the research based on Henriques, Rocha and Reinaldo<sup>(12)</sup>, 2017

Chart 1 – Description of studies included in the integrative review, 2017

| Authors (year)                            | Educational practice studied | Level of evidence | Results  | Recommendations and conclusions  |
|---|------------------------------|-------------------|--|--|
| Kumar et al. (1991) <sup>(16)</sup>       | Educational session          | II                | In the evaluation of responses to the post-test questionnaire, the adolescents in the intervention group showed improved knowledge in five of the six tested areas, with a statistically significant difference in two areas (cause and symptoms).   | The leprosy theme is considered a cultural taboo and a stigma. For better knowledge acquisition and information transfer, continuous health education is required.   |
| Jacob et al. (1994) <sup>(17)</sup>       | Educational session          | III               | Compared to controls, children in the intervention groups showed significant improvement in, but no change in attitude.  | The level of knowledge of adolescents and relatives about leprosy can be improved through health education. Further studies are needed to evaluate the types of educational activities that lead to changes in attitude. |
| Cabello and Moraes (2009) <sup>(18)</sup> | Comic book                   | VI                | The intervention stirred up the children, awakening their uneasiness in regard to leprosy and contributing to the assimilation of concepts contained in the comic book. This took place in a favorable environment, and the comic book was a simple, playful and fun way of approaching the theme and generating knowledge about it. | The intervention can be applied in school classrooms, allowing greater assimilation and construction of knowledge.   |

To be continued

Chart 1 (concluded)

| Authors (year)                                  | Educational practice studied  | Level of evidence | Results  | Recommendations and conclusions  |
|---|---|-------------------|--|--|
| Cabello et al. (2010) <sup>(19)</sup>           | Comic book  | VI                | The comic book can be used as an educational material on leprosy, reducing myths and stigma. Its playful character stands out as a guiding idea in the construction of new knowledge.  | Hopefully this research is able to stimulate future studies in this field. There are few researches on this subject, so for this type of material to be widely used in the future, more studies have to apply it and its effectiveness has to be further evaluated.                                    |
| Coriolano-Marinus et al. (2012) <sup>(20)</sup> | Workshops with simulated situations, newspaper production, comics and primer  | VI                | All adolescents satisfactorily addressed knowledge about leprosy, demonstrating an active role in its production. In their answers to the questionnaire, adolescents showed that their knowledge regarding the disease was coherent. They also demonstrated the relevance of health education developed in a playful way.  | Health professionals, especially nurses, should stimulate and encourage health education on leprosy, with the school as the main space for health research.  |
| Pinheiro et al. (2014) <sup>(21)</sup>          | Conversational lecture  | VI                | After the intervention, there was a significant change in the adolescents' learning process regarding leprosy. All the participants came to know the disease and a considerable percentage was able to identify elements related to its epidemiological chain, such as etiologic agent, form of transmission, symptomatology and the type of health service to be sought in case of suspicion. | Health education results in increased number of individuals with information on leprosy. This type of work leads nursing professionals to reflect about their practice in this area.   |
| Pinheiro et al. (2015) <sup>(22)</sup>          | Conversational lecture  | VI                | Clearly, health education activities emphasizing leprosy directed at schoolchildren are of fundamental importance, leading to clarity regarding the disease.   | Empowerment in respect to leprosy may contribute to the dissemination of knowledge on the disease, since students may feel encouraged to disclose information to others, such as family members. It also contributes to disease prevention and the reorientation of attitudes towards stigma and cure. |
| Pinheiro et al. (2015) <sup>(23)</sup>          | Conversational lecture with the support of informational announcement posters | VI                | The intervention improved knowledge on the transmitting agent, symptomatology, cure and the health service that should be sought in case of suspicion.   | Health education actions help participants in the appropriation of knowledge on the fundamental characteristics of leprosy. The importance of the nurse's role in promoting health inside the school environment is highlighted.   |
| Monteiro et al. (2015) <sup>(24)</sup>          | Flipchart   | VI                | There was an improvement in individuals' knowledge on the general principles of leprosy, such as etiology, transmission, signs, symptoms and search for treatment.   | It is the responsibility of the nursing professional to stimulate individual care and to encourage educational practices, especially among children under 15 years of age.   |

## RESULTS

The research sample is represented in Figure 1 by means of a flowchart, elucidating the steps of article selection from each database. The employed search strategy resulted in the capture of 3971 articles, among which nine composed the sample, since they met the inclusion and exclusion criteria.

Most publications (33.3%) date back to 2015, and the country with the highest production is Brazil (77.7%). Most articles (33.3%) were exploratory-descriptive, used a quantitative approach, and were also present in other data sources (55.5%).

Selected articles were produced by professionals from several areas, such as psychology, biological sciences and social sciences, while the field of nursing stood out with the largest number of professionals publishing articles on the subject (55.5%).

Chart 1 presents information on the articles included in this study, containing authorship, year of publication, educational practice investigated, level of evidence, results, and recommendations and conclusions.

After critical reading to evaluate the quality of included studies, the majority (55.5%) were classified as having good methodological quality and reduced bias. Regarding the level of evidence,

77.7% had level VI (evidence derived from a single descriptive or qualitative study).

## DISCUSSION

After successive readings of the selected studies, and prior to the cross-sectioning of the scientific evidence, the evidence was grouped, which allowed us to come up with two thematic approaches: leprosy educational practices and nurses' role in leprosy educational practices.

### Leprosy educational practices

Educational practices are part of the activities of the Family Health teams. Through a constructivist praxis, they seek to develop participants' reflection on their social environment and their living and health conditions, sharing knowledge that results from their experiences, thus improving collective processes to plan and effect change<sup>(25)</sup>.

Leprosy educational practices have the purpose of empowering individuals in relation to the process of health and disease, as well as in relation to preventive and therapeutic measures,

promoting well-being and improving quality of life<sup>(26)</sup>. When it comes to the adolescent public, this practice aims to equip people with knowledge conducive of correct decisions in the control of leprosy. The lack of information about the general aspects of the disease is considered an obstacle to its elimination<sup>(18,27)</sup>. The WHO states that this practice indeed enables participants to acquire knowledge about the general aspects of leprosy, and also to collaborate in the detection of new cases and timely treatment, as well as help with awareness by deconstructing false concepts, stigmas and prejudices associated with the disease<sup>(28)</sup>.

Regarding adolescents' knowledge about leprosy, the analyzed studies indicate that most adolescents have already heard about the disease in a superficial way, especially those who live in hyperendemic areas. However, when evaluated, they generally demonstrate a lack of knowledge on it<sup>(20-21,23-24)</sup>. Lack of knowledge generates an atmosphere of fear and stigma, creating prejudice against those affected by the illness<sup>(19)</sup>.

According to Luckesi and Steps<sup>(29)</sup>, knowledge is the effort to understand what is hidden, and only after this investigative effort can otherwise hidden content be considered known. As such, to acquire knowledge, it is not enough to just retain information: one needs to use that information to attain new perspectives and practices. This reiterates the importance of intensifying educational activities among the adolescent public, in an attempt to disseminate information about leprosy. It is worth emphasizing that in order for it to generate knowledge as defined above, health education must be applied in a continuous manner, requiring professionals to provide permanent assistance.

The following topics were addressed in educational practices described by the included studies: history of leprosy; concept of disease; etiological agent; signs and symptoms; diagnosis; form of transmission; possible complications; prevention; treatment; cure; and which health service to look for in case of suspicion<sup>(16-19,21,23-24)</sup>. In addition, some researchers analyzed the demystification of disease, stigma and prejudice<sup>(18-19,22)</sup>.

In carrying out educational practices with adolescents, there must be a preoccupation with choosing the appropriate method according to the researcher's conceptions of knowledge and education, as well as the individuals who will be part of the pedagogical intervention<sup>(25)</sup>. Forms of teaching that are typical of schools, such as textbooks, usually provide passive knowledge, which can compromise the critical acumen of the adolescent, causing disinterest in the subject. On the other hand, adolescents stimulated through playful, constructivist teaching will feel interested and use their curiosity to actively gain new knowledge<sup>(19)</sup>. However, only three of the reviewed studies explored ludic methods for teaching about leprosy<sup>(18-20)</sup>.

Sharing the same line of thought, Coscrato, Pina and Mello<sup>(9)</sup> agree that educational activities using ludic methods provide materials for effective learning, so that the acquired knowledge can be translated to daily life.

The use of paradidactic materials – such as games, videos, short stories, comic books, newspapers, primers and flipcharts – has been shown to have an important role in adolescent health education, since it favors exploration and construction of creativity and intelligence, along with emotional expression<sup>(18,20,24)</sup>.

The pedagogical strategies adopted in the selected studies were: educational session, comic book presentation, workshops

with simulated situations, newspaper production, conversational lectures, and flipchart presentation. All strategies reached the proposed goals, culminating in better verbalization of knowledge about leprosy by adolescents, with the reduction of myths and stigmas<sup>(16-18,20-24)</sup> – reiterating that educational games are an effective and satisfactory way of fulfilling the demands of health education.

Other studies<sup>(30-31)</sup> with adolescents, although dealing with different themes – such as a study describing a workshop on contraceptive methods and a study on the application of an educational game about the prevention of sexually transmitted diseases (STDs – also observed similar benefits. Ludic methods create a space of dialogue, giving participants the opportunity to express their opinions and thoughts, with debate and reflection, as well as enabling them to obtain and exchange knowledge, according to the concrete needs arising from their reality.

Two studies<sup>(16-17)</sup> included in this analysis carried out educational interventions focused on determining whether information on leprosy would be transferred from adolescents to their families, and whether this information would influence their attitudes. These studies revealed that educational activities were good solutions for expanding adolescents' knowledge on the disease, but were unable to confirm behavioral changes among the participants after the activity took place. Therefore, a change in knowledge, by itself, does not ensure a change of attitude. This situation reinforces the need for a more in-depth and continuous leprosy educational approach by health educators.

All the educational practices included in this integrative literature review were carried out in a school environment. Although the school is the most favorable environment to reach the adolescent public – providing basic cultural formation and socialization, and promoting the propagation of habits and assertive attitudes in relation to the health-disease process – these practices can be developed in a wide range of spaces, provided they are well executed.

In addition, such actions can be planned and performed by various professionals, such as psychologists, physicians, social workers, dentists, biologists and others. However, in the included studies nursing is seen as the most appropriate profession for the execution of leprosy educational practices with adolescents<sup>(20-21,23)</sup>.

### Nurses' role in leprosy educational practices

Educational practices involve all health actions, and Law No. 7.498 from June 25, 1986, which regulates the professional practice of nursing, states that educational practice is an activity intrinsic to the professional nurse, aiming at improving the health of the individual, family and general population. In this sense, nursing professionals should employ educational actions as an instrument, both individually and collectively<sup>(22,32-33)</sup>.

The nurse plays a significant role in developing educational health actions. In one of the studies carried out with students from a public school in Parnamirim (RN), Brazil, the authors observed that, while adolescents initially had considerable knowledge deficits on the disease, after an educational intervention, involving a conversational lecture by nurses, there was a significant improvement in this respect<sup>(21)</sup>. The same took place in other

interventions developed by nurses, which were also verified to have contributed to the construction of knowledge about the disease<sup>(20,23)</sup>.

It is worth noting that, in order to develop such interventions, nursing professionals must be apt in their execution<sup>(22)</sup>. In their academic formation, an approach contemplating all the needs of the individual and aiming at integral healthcare is necessary. Thus, nursing academic training should enable new professionals to perform clinical care and health promotion, as well as provide other knowledge, such as notions of pedagogy, psychology, anthropology and sociology<sup>(34)</sup>.

According to Guimarães<sup>(35)</sup>, there are five characteristics that are fundamental to the formation of the nurse-educator. The first characteristic to be developed is the recognition of the sensibility of others; the second is that the educator should be able to face ethical dilemmas; the third is the ability to reconstruct knowledge; the fourth concerns the interaction with the various technological resources available; and the last is the ability to dream: the educators' belief in what they do, realizing their impact on the lives of others and the world. In addition, in order to develop health education with the adolescent public, the nurse-educator must have specific pedagogical skills.

The nurse-educator must be able to choose an appropriate method for the proposed educational activity, according to the characteristics of the individuals that will take part in the intervention<sup>(25)</sup>. One can employ various strategies, such as games, conversational lectures, workshops, production of newspapers, comics and primers. However, even with adequate human and material resources, ensuring the effectiveness of this educational action depends on the creativity and communicative ability of each professional<sup>(18,20,22-24)</sup>.

In this sense, Oliveira and Gonçalves<sup>(33)</sup> assert that in the educational process nurses need to be able to identify the different levels in which their actions are inserted, somewhat disassociating themselves from strictly clinical health care and becoming educators through the reciprocal action exerted by people's reflections, understanding that the nurse is not the proprietor of knowledge, but a cooperating agent and participant in a collective process of transformation.

The nurse is characterized as the main facilitator of these educational actions, since nurses are historically responsible for the production of integral health care and for acting as educators in the process of health promotion. The professional nurse has the responsibility to plan, execute and evaluate the educational action so that it becomes an effective way to change the health views and practices of individuals and the community<sup>(10,36)</sup>.

Therefore, it is important for the nurse to be able to develop activities that allow the construction of knowledge directed not only toward adolescents, but also people affected by leprosy, as well as their families, institutions and community groups<sup>(22)</sup>.

It should also be noted that, in the field of health education, nurses should have the goal of helping the user to understand and face up to determinants of health<sup>(36)</sup>. According to Mariano and collaborators<sup>(10)</sup>, dealing with both health and education (by developing practices and technologies directed to the promotion

of health) is an incumbency of nurses. Education leads the individual to health awareness and critical attitude, and in this way, change can be realized.

A research with adolescents in the third year of high school at a public school in Recife, Brazil, showed that knowledge about leprosy can be built in a positive way by taking into consideration the students' current level of knowledge, living conditions and culture. All the students were able to express in their answers to the questionnaires coherent reflections regarding the disease, as well as the relevance of an active, mobilizing health education<sup>(20)</sup>.

### Limitations of this study

It is important to emphasize that the conclusions presented by this study cannot be generalized, since the majority of the articles included in this integrative review of the literature concerned investigations at the VI level of evidence. Evidence at this level is considered less robust, lacking research strategies able to provide a synthesis of the best scientific evidence available, i.e., systematic reviews or randomized clinical trials. However, the VI level of evidence can be considered appropriate for the subject matter of the included studies.

### Contributions to the field of nursing

The results presented here contribute to greater knowledge on the topic and provide information for decision making regarding leprosy health education with adolescents, furthering the discussion about appropriate pedagogical strategies for the elaboration and application of these interventions in the community, and also for improving the professional practices of nurses. This study emphasizes the role of nurses in the development of this type of health action, paramount in the control and elimination of leprosy, and also identifies the need for further studies to determine interventions that are effective in improving leprosy knowledge, behavior and practices.

### FINAL CONSIDERATIONS

Leprosy educational practices with adolescents result in changes of knowledge regarding the general aspects of the disease, and provide emancipation of individuals in respect to their health and disease process. In addition, the nurse practitioner has the opportunity to develop educational actions. It is crucial for these professionals to advance a clear and effective communication, in order to assess the learning process of students in different moments and contexts.

It should be emphasized that there are few publications related to the subject with more robust levels of evidence and reduced bias, especially concerning the effectiveness of educational activities in terms of behavioral changes.

We hope that the knowledge acquired through this study can collaborate in the elaboration and execution of educational activities on leprosy, especially by nurses, who play a fundamental role in this type of health action.

## REFERENCES

1. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Departamento de Vigilância das Doenças Transmissíveis. Diretrizes para vigilância, atenção e eliminação da hanseníase como problema de saúde pública: manual técnico-operacional [Internet]. Brasília, DF; 2016 [cited 2017 Jan 10]. Available from: [http://portal.saude.pe.gov.br/sites/portal.saude.pe.gov.br/files/diretrizes\\_para\\_eliminacao\\_hanseniasse\\_-\\_manual\\_-\\_3fev16\\_isbn\\_nucom\\_final\\_2.pdf](http://portal.saude.pe.gov.br/sites/portal.saude.pe.gov.br/files/diretrizes_para_eliminacao_hanseniasse_-_manual_-_3fev16_isbn_nucom_final_2.pdf)
2. World Health Organization-WHO. Global leprosy update, 2015: time for action accountability and inclusion. *Wkly Epidemiol Rec* [Internet]. 2016 [cited 2017 Jan 10];91(35):405-20. Available from: <http://apps.who.int/iris/bitstream/10665/249601/1/WER9135.pdf?ua=1.pdf>
3. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Indicadores epidemiológicos e operacionais de hanseníase Brasil 2001-2015. Sistema de Informação de Agravos de Notificação [Internet]. Sala de Apoio à Gestão Estratégica. Brasília, (DF); 2016 [cited 2017 Mar 15]. Available from: <http://sage.saude.gov.br/>
4. Marinho FD, Nardi SMT, Coutinho GC, Sime MM. Hanseníase em menores de 15 anos: uma revisão bibliográfica. *Refacs* [Internet]. 2013 [cited 2017 Jan 10];3(2):95-105. Available from: <http://seer.uftm.edu.br/revistaelectronica/index.php/refacs/article/view/1087/953>
5. Romero-Montoya IM, Beltrán-Alzate JC, Ortiz-Marín DC, Diaz-Diaz A, Cardona-Castro N. Leprosy in Colombian children and adolescents. *Pediatr Infect Dis J*. 2014;33(3):321-2. doi: 10.1097/INF.0000000000000057
6. Ponte KMA, Ximenes Neto FRG. Hanseníase: a realidade do ser adolescente. *Rev Bras Enferm* [Internet]. 2005 [cited 2017 Jan 5];58(3):296-301. Available from: <http://www.scielo.br/pdf/reben/v58n3/a08v58n3.pdf>
7. Freitas BHBM, Cortela DCB, Ferreira SMB. Trend of leprosy in individuals under the age of 15 in Mato Grosso (MTI), 2001-2013. *Rev Saúde Pública* [Internet]. 2017 [cited 2017 Jan 2];51:28. Available from: <http://www.scielo.br/pdf/rsp/v51/0034-8910-rsp-S1518-87872017051006884.pdf>
8. Alves VSA. Um modelo de educação em saúde para o Programa Saúde da Família: pela integralidade da atenção e reorientação do modelo assistencial. *Interface Comun Saúde Educ* [Internet]. 2005 [cited 2017 Jan 2];9(16):39-52. Available from: <http://www.scielo.br/pdf/icse/v9n16/v9n16a04.pdf>
9. Coscrato G, Pina JC, Mello DF. Use of recreational activities in health education: integrative review of literature. *Acta Paul Enferm* [Internet]. 2010 [cited 2017 Jan 10];23(2):257-63. Available from: [http://www.scielo.br/pdf/ape/v23n2/en\\_17.pdf](http://www.scielo.br/pdf/ape/v23n2/en_17.pdf)
10. Mariano MR, Pinheiro AKB, Aquino OS, Ximenes LB, Pagliuca LMF. Jogo educativo na promoção da saúde de adolescentes: revisão integrativa. *Rev Eletr Enferm* [Internet]. 2013 [cited 2017 Jan 20];15(1):265-73. Available from: <https://revistas.ufg.br/fen/article/view/17814/15546>
11. Mendes KDS, Silveira RCCP, Galvão CM. Revisão integrativa: método para a incorporação de evidências na saúde e na enfermagem. *Texto Contexto Enferm* [Internet]. 2008 [cited 2017 Jan 10];17(4):758-64. Available from: <http://www.scielo.br/pdf/tce/v17n4/18.pdf>
12. Henriques BD, Rocha RL, Reinaldo AMS. Use of crack and other drugs among children and adolescents and its impact on the family environment: an integrative literature review. *Texto Contexto Enferm* [Internet]. 2016 [cited 2017 Jan 20];25(3):e1100015. Available from: <http://www.scielo.br/pdf/tce/v25n3/0104-0707-tce-25-03-1100015.pdf>
13. Melnyk BM, Fineout-Overholt E. Making the case for evidence-based practice. In: Melnyk BM, Fineout-Overholt E, editors. *Evidence-based practice in nursing and health care: a guide to best practice*. Philadelphia: Lippincott Williams and Wilkins; 2005. p. 3-24.
14. CASP: Critical Appraisal Skills Programme [Internet]. Oxford, UK: CASP UK; 2016 [cited 2016 Jan 10]. Available from: <http://www.casp-uk.net/>
15. Toledo MM, Takahashi RF, De-La-Torre-Ugarte-Guanilo MC. Elementos de vulnerabilidade individual de adolescentes ao HIV/AIDS. *Rev Bras Enferm* [Internet]. 2011 [cited 2017 Jan 10];64(2):370-5. Available from: <http://www.scielo.br/pdf/reben/v64n2/a24v64n2.pdf>
16. Kumar RP, Keystone JS, Christian M, Jesudasan K. Transmission of health information on leprosy from children to their families: another approach to health education. *Lepr Rev*. 1991;62(1):58-64.
17. Jacob MS, Amar D, Christopher A, Keystone JS. Transmission of health information on leprosy from children to their families in an urban centre. *Lepr Rev*. 1994;65(3):272-8.
18. Cabello KSA, Moraes MO. Como uma cartilha para falar em hanseníase transformou-se em história em quadrinhos. *Rev Ciênc Ideias* [Internet]. 2009 [cited 2017 Jan 20];1(1):87-92. Available from: <http://revistascientificas.ifrj.edu.br:8080/revista/index.php/reci/article/view/51>
19. Cabello KSA, De La Rocque L, Sousa ICF. Uma história em quadrinhos para o ensino e divulgação da hanseníase. *Rev Ciênc Ideias* [Internet]. 2010 [cited 2017 Jan 20];9(1):225-41. Available from: <https://www.arca.fiocruz.br/handle/icict/8943>
20. Coriolano-Marinus MWL, Pacheco HF, Lima FT, Vasconcelos EMR, Alencar EN. Saúde do escolar: uma abordagem educativa sobre hanseníase. *Saúde Transform Soc* [Internet]. 2012 [cited 2017 Jan 20];3(1):72-8. Available from: <http://pepsic.bvsalud.org/pdf/sts/v3n1/v3n1a12.pdf>
21. Pinheiro MGC, Silva SYB, França ALM, Monteiro BR, Simpson CA. Leprosy: an educational approach with high school. *Rev Pesqui: Cuid Fundam* [Internet]. 2014 [cited 2017 Jan 20];6(2):776-84. Available from: [http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/3096/pdf\\_1282](http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/3096/pdf_1282)

22. Pinheiro MGC, Silva SYB, Moura IBL, Silva FS, Isoldi DMR, Simpson CA. Contribution of educational actions for knowledge of high school students of about leprosy. *Rev Enferm UFPE* [Internet]. 2015 [cited 2017 Jan 20];9(11):9804-10. Available from: [http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/6686/pdf\\_8858](http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/6686/pdf_8858)
23. Pinheiro MGC, Medeiros IBG, Monteiro AI, Simpson CA. The nurse and the theme of leprosy in the school context: case studies. *Rev Pesqui: Cuid Fundam* [Internet]. 2015 [cited 2017 Jan 20];7(3):2774-80. Available from: [http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/3856/pdf\\_1621](http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/3856/pdf_1621)
24. Monteiro BR, Pinheiro MGC, Isoldi DMR, Cabral AMF, Simpson CA, Mendes FRP. Leprosy: focusing on health education for projoem. *Rev Pesqui: Cuid Fundam* [Internet]. 2015 [cited 2017 Jan 20];7(suppl.):49-55. Available from: <http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/5881/pdf>
25. Grazzinelli MF, Souza V, Fonseca RMGS, Fernandes MM, Carneiro, ACLL, Godinho LK. Educational group practices in primary care: interaction between professionals, users and knowledge. *Rev Esc Enferm USP* [Internet]. 2015 [cited 2017 Jan 25];49(2):282-91. Available from: <http://www.scielo.br/pdf/reeusp/v49n2/0080-6234-reeusp-49-02-0284.pdf>
26. Carvalho LKCAA, Souza IBJ, Silva AAG, Pereira ISA, Silva RCC, Tapety FI. Epidemiological profile of leprosy in municipality of Sao Luis – MA from 2006 to 2010. *Rev Pesqui: Cuid Fundam* [Internet]. 2013 [cited 2017 Jan 25];5(6):306-14. Available from: [http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/3490/pdf\\_1179](http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/3490/pdf_1179)
27. Pedrosa JIS. Promoção da saúde e educação em saúde. In: Castro A, Malo M, editors. *SUS: ressignificando a promoção da saúde*. São Paulo: Hucitec; 2006.
28. Organização Mundial da Saúde. *Estratégia global aprimorada para redução adicional da carga da hanseníase (2011-2015): diretrizes operacionais (atualizadas)*. Brasília, DF: Organização Pan-Americana da Saúde; 2010. 70 p.
29. Luckesi CC, Passos ES. *Introdução à filosofia: aprendendo a pensar*. São Paulo: Cortez; 1996.
30. Barbosa SM, Dias FLA, Pinheiro AKB, Pinheiro PNC, Vieira NFC. Jogo educativo como estratégia de educação em saúde para adolescentes na prevenção às DST/AIDS. *Rev Eletr Enferm* [Internet]. 2010 [cited 2017 Jan 26];12(2):337-41. Available from: <https://revistas.ufg.br/fen/article/view/6710/6951>
31. Carneiro RF, Silva NC, Alvez TA, Albuquerque DO, Brito DC, Oliveira LL. Educação sexual na adolescência: uma abordagem no contexto escolar. *Sanare (Sobral)* [Internet]. 2015 [cited 2017 Jan 26];14(1):104-8. Available from: <https://sanare.emnuvens.com.br/sanare/article/view/617/334>
32. Presidência da Republica (BR) Lei nº 7.498, de 25 de junho de 1986. Dispõe sobre a regulamentação do exercício da Enfermagem e dá outras providências. *Diário Oficial da União* [Internet]. 1986 Jun 26 [cited 2017 Jan 27];1:9273. Available from: [http://www.cofen.gov.br/lei-n-749886-de-25-de-junho-de-1986\\_4161.html](http://www.cofen.gov.br/lei-n-749886-de-25-de-junho-de-1986_4161.html)
33. Oliveira HM, Gonçalves MJF. Educação em saúde: uma experiência transformadora. *Rev Bras Enferm* [Internet]. 2004 [cited 2017 Jan 27];57(6):761-3. Available from: <http://www.scielo.br/pdf/reben/v57n6/a28.pdf>
34. Silva KL, Sena RR. Integralidade do cuidado na saúde: indicações a partir da formação do enfermeiro. *Rev Esc Enferm USP* [Internet]. 2008 [cited 2017 Jan 27];42(1):48-56. Available from: <http://www.scielo.br/pdf/reeusp/v42n1/07.pdf>
35. Guimaraes GL. O perfil do enfermeiro-educador para o ensino de graduação. *Esc Anna Nery*[Internet]. 2005 [cited 2017 Jan 28];9(2):255-60. Available from: [http://revistaenfermagem.eean.edu.br/detalhe\\_artigo.asp?id=961](http://revistaenfermagem.eean.edu.br/detalhe_artigo.asp?id=961)
36. Nascimento GRC, Barreto AJR, Brandão GCG, Tavares CM. Ações do enfermeiro no controle da hanseníase. *Rev Eletr Enferm* [Internet]. 2011 [cited 2017 Feb 2];13(4):743-50. Available from: <http://www.revenf.bvs.br/pdf/ree/v13n4/20.pdf>