

Teaching of leprosy: current challenges*

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DOI: <http://dx.doi.org/10.1590/abd1806-4841.20142444>

Abstract: In the context of declining leprosy endemicity worldwide, keeping the interest in knowledge and expertise in leprosy alive has been a matter of concern. Approaching the problem only in primary care, without the proper integration with other levels of care in the health system fails to account for the complexity of the disease. Training professionals to work at different levels of health care is a current challenge. The objective of this review was to look for experiences related to the teaching of leprosy both in undergraduate courses in the field of health sciences and in training programs for professionals who work in patient care. We highlight the role of the dermatologist in the management of control programs, diagnosis and treatment of the disease, as well as in the continuous education of other health professionals.

Keywords: Education, medical; In-service training; Leprosy; Teaching

INTRODUCTION

Leprosy teaching has been the subject of recent discussion, given the decline of prevalence rates in several countries.^{1,2,3} Also in Brazil, a gradual reduction in detection rates of new cases can be observed.⁴ Nevertheless, the diagnosis of new cases continues and is expected to remain over the next few years or even decades.⁵ The impact of operational factors, the regional differences in endemicity, and even the very meaning of detection coefficient versus actual incidence of leprosy are questions that remain open.⁶ Despite all the gain achieved with multidrugtherapy implementation, like leprosy control programs decentralization and the consequent development of expertise, late diagnosis remains a reality experienced in the practice, whether in primary health care or in referral centers. A great challenge faced by educators and managers is to keep health professionals interested in the topic of leprosy from their training in undergraduate courses till their care practice.

The dermatologist's participation in leprosy control, either as public policy advisor, or as the direct responsible for the treatment of patients or for the education of health professionals, has always been significant, though variable over the history of the Brazilian Society of Dermatology (BSD).⁷ The national campaign against leprosy, promoted by the BSD in 2012, reflects concern with this problem and commitment to it in present days.⁸

The objective of this review is to discuss and reflect on experiences and strategies for leprosy teaching, as well as on possible approaches in face of the new scenarios of the disease.

METHODS

Literature review was conducted with articles published in the last 10 years and obtained through searches in the Medline database. The following keywords were used: medical education and leprosy,

Received on 14.01.2013.

Approved by the Advisory Board and accepted for publication on 02.05.2013.

* Study conducted at the Medical School of the Federal University of Minas Gerais (UFMG) - Belo Horizonte (MG), Brazil.

Financial Support: None.

Conflicts of Interest: None

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learning and leprosy, and teaching leprosy. In the Scielo database, the following keywords were used: *hanseníase e ensino*, *hanseníase e treinamento*. In addition, the websites of the Brazilian Ministry of Health, the World Health Organization, and of Brazilian public medical schools were searched. On the latter, the curriculum of the undergraduate courses were examined in order to find references to the teaching of leprosy during undergraduate education. Some references cited in the papers obtained were also consulted. Due to the lack of papers published on the topic, editorials, letters to the editor, reviews, and both qualitative and quantitative methodology were included.

THE INTERFACE OF LEPROSY CONTEXT AND TEACHING

According to the World Health Organization (WHO), leprosy is one of the neglected diseases of greatest interest in the Brazilian scenario. It composes, currently, the action priorities of the "Neglected Diseases Programme" of the Brazilian Ministry of Health (BMH), together with schistosomiasis, dengue, Chagas' disease, leishmaniasis, lymphatic filariasis, onchocerciasis, soil-transmitted helminth infections, trachoma and rabies.⁹

Leprosy is included among the infectious diseases of mandatory notification due to its incidence/prevalence, chronicity, social and economic relevance, morbidity (related to disabilities and deformities), and also because it is a transmissible disease amenable to treatment and control. Due to the inexistence of a specific vaccine, its prevention depends on timely effectiveness of diagnostic actions and treatment.¹⁰ It affects mainly individuals of productive age, causing high economic costs, both direct (related to treatment and rehabilitation) and indirect (related to the loss of potential years of life, apart from the social stigma still associated with the disease).¹⁰

Although curable, the disease remains an important public health problem in developing countries. 219,075 new cases of the disease were diagnosed worldwide in 2011, according to the WHO in a report from 105 countries that notified the disease. Brazil contributed with 16% of these cases and holds more than 90% of cases of the Americas.⁴ According to the BMH, 34,894 new cases were detected in Brazil in 2010 (18.2/100,000), 2,461 (7.1%) cases in patients under 15 years of age. Prevalence rate was 1.56/10,000 inhabitants and cure rate in the cohort was 82.3%, a parameter classified as regular. The distribution of leprosy in the different regions of the country is heterogeneous. There are very high parameters of endemicity in the North and Central West regions, and in some capitals of the Northeast region. Conversely, several states, metropolitan regions and cities in the South and

Southeast of Brazil show low prevalence rates and reduction in annual new case detection.¹¹ The heterogeneous spatial distribution of cases implies the need for adopting policies appropriate to the various realities of the country. Leprosy knowledge has to be considered in this context by current and future health professionals.

Moreover, there is the fact that even today, the stigma remains one of the main problems related to leprosy. Since ancient times, those who contracted the disease aroused feelings of disapproval, social rejection and discrimination.^{12,13}

Therefore, both the process of being infected by leprosy and its social consequences may have a major impact on the quality of life of patients and their families, especially with regard to economic and social aspects.¹⁴ Despite numerous educational campaigns broadcasted in the media by the BMH, misconceptions and popular beliefs about its cause, transmission, symptoms, treatment and cure still remain.

A study conducted in Sao Paulo state with students in their last year of elementary school in two public and in one private school, showed only partial knowledge of the disease and revealed the existence of prejudice.¹⁵ Another study, conducted in a public school in Recife (a metropolis of northeast Brazil) with last year students of high school, in year 2010, showed a lack of information about the disease, which suggests the need for more educational activities aimed at this audience.¹⁶

Knowledge assessments of students and their teachers, as well as of people in the community are also been held in other endemic countries as a way of optimizing strategies for the education in health, aiming even at improving early detection.^{17,18,19} Informational and educational activities result in increased knowledge, behavior change and stigma reduction.²⁰

Studies were also carried out to assess knowledge and attitudes of undergraduate students in the field of health regarding leprosy. In India, Rajkumar et al evaluated nursing students trained in general hospitals and specialized hospitals in the treatment of leprosy. The authors found greater knowledge and more favorable attitudes towards leprosy patients in students from specialized hospitals.²¹ In another study accomplished in India with students in the last year of medicine schools and internships in medicine, the authors found that, in spite of having a good knowledge about the treatment and showing willingness to work with leprosy, students had erroneous information about the main symptoms of the disease, its transmission and the stigma.²²

A qualitative study conducted with 51 students of the last year of physiotherapy in a public universi-

ty in Brazil identified ignorance and/or incomplete or inadequate concepts related to leprosy. The authors discuss the implications of inadequate training during undergraduate education in relation to the integrality of care recommended by the Brazilian Unified Health System (UHS).²³ Another assessment accomplished previously to the theoretical approach to leprosy and conducted with 27 occupational therapy students from a public university in the state of São Paulo showed low level of knowledge of the students on the subject. Nevertheless, an assessment conducted two months after the intervention, using flip chart method and with active participation of the students, revealed improved performance on tests. 84% of the students reported having sought further information on leprosy after the intervention.²⁴

An evaluation of the curricular content of universities, and technical schools of nursing and paramedical was conducted in Uganda, a country with low endemicity and heterogeneous distribution of leprosy cases. The authors discuss the difficulties in providing proper training, despite the fact that this content is formally included in the curriculum. They stress the importance of trainings during the undergraduate period and of continuing education for the implementation of the leprosy control program in primary health care.²⁵

In Brazil, Opromolla, in 1988, wrote about leprosy teaching in Brazilian universities, and emphasizes the need for newly graduated physicians to know the major endemic diseases in the country, among them leprosy.²⁶ This author stated that, despite the magnitude of the endemic at that time, and although there was room for study in various disciplines of medical school (given the complexity of its manifestations), leprosy was an object of study only in the disciplines of dermatology.

New studies on teaching of leprosy in undergraduate medical schools in Brazil were not found. The internet search of curriculum and discipline menus (short content) of federal medical schools (where available) show that leprosy is still little addressed in undergraduate courses in medicine, and seems to be restricted to the disciplines of dermatology and infectology. Moreover, it is necessary to be alert to changes in the medical curricula and the transition from the Flexnerian model to activities in various practice scenarios, with problematization methodologies based on prevalent nosology.²⁷ Although advisable, the new strategy could eliminate the teaching of leprosy in undergraduate medical courses in areas of very low prevalence of the disease.

Feesntra (2003) pointed out that the teaching of leprosy should be included in all curricula of undergraduate courses in the health area including medi-

cine. Moreover, the training of all categories involved in leprosy control should be mandatory.²⁰

EDUCATION FOR LEPROSY CONTROL AT PRIMARY HEALTH CARE LEVEL

In the '90s of the last century, the WHO proposed the goal of eliminating leprosy as a public health problem by the year 2000. Several authorities warned about the misconception of that proposal, a position also supported by Brazilian researchers who were representatives of the BSD at that time.^{28,29,30} The target of eliminating leprosy was not achieved at global level. It was then postponed and finally abandoned, being replaced by another target, namely the consolidation of control measures such as early diagnosis and timely treatment of cases.³¹

The implementation of the UHS in Brazil and its main guidelines, especially universalization of access to health and prioritization of primary health care, enabled the decentralization of care for people affected by leprosy. The municipality's commitment to integrality of health care were regulated and expanded, and leprosy approach was defined as a strategic area with the publication of the Operational Norm of Health Care (NOAS/SUS 01/2001)³² and, the Pact for Health (MS, Portaria 399, 2006)³³ and the National Policy for Primary Care (MS, Portaria 648, 2006).³⁴ In order to make this a reality, there was a great investment in training of health care staff. They were trained to perform early diagnosis, treatment and contacts evaluation. Several Brazilian states developed training projects for health care staffs.^{35,36} However, there has been little publication on the evaluation of trainings for health care professionals involved in the network, according to the literature.

Doctors, nurses and mid-level professionals in two districts in Mali were evaluated by Faye et al on the impact on their ability to diagnose new cases of leprosy, after one day of training in prevalent dermatoses, including leprosy.³⁷ From a total of 495 participants, 389 were assessed immediately after training. There was an increase in diagnostic suspicion, indication of sensory impairment evaluation and appropriate referral. However, no difference was found among those who were tested latter, between 12 and 18 months after the training. Professional category did not interfere with the results.

A study conducted by Moreno et al in the Northeast Brazil (State of Rio Grande do Norte) with trained doctors and nurses showed positive evaluation of these professionals regarding their ability to make diagnosis suspicion, the performance of colleagues in disease control, and the training methodology.³⁵ However, respondents suggested increasing the training workload and the involvement of physicians

in the diagnosis process. In this study, they evaluated a 16-hour training in clinical leprosy diagnosis. Despite positive evaluation of the training by its participants, the expectation of receiving further trainings and increasing their knowledge about leprosy after this short training course can be considered as a sign that there is a lack of content on leprosy in the curriculum of these professionals.

In the state of Rio de Janeiro, the family health staff received an eight-hour training in this topic. The assessment performed a few months later showed increased capability in diagnostic suspicion among the community health workers, and an increased number of professionals working in leprosy control.³⁶

In Sao Paulo, Brazilian state where different rates of case detection and prevalence of leprosy were detected, it was found that, in relation to assistance, almost half of the professionals working in the area are concentrated in referral centers. The most experienced professionals with greater length of service are also found there. This study worked with a sampling of municipalities with different epidemiological situations and evaluated the various complexity levels of health care. No significant changes in the dynamics of reorganization of services were found after the publication of the State resolution that regulates the assistance to leprosy patients in 2001. There was a lack of human resources, failures in teamwork and the inexistence of a training plan designed to prepare new professionals, although many experienced professionals were about to retire. The authors call attention to the fact that the integration of services with undergraduate courses in nursing, medicine and physical therapy is not firmly established.³⁸

A qualitative study conducted in a highly endemic area of Minas Gerais State assessed the technological organization of the work process in leprosy by evaluating the work of physicians, managers, nurses and community health workers. The authors noted that staff turnover affects service organization. They concluded that the practices of professionals involved in the family health program in the region are still based on the clinical model. Physicians merely diagnose and prescribe; community workers develop several counseling activities for patients; and nurses work broadly in the organization of service and care to patients.³⁹

Decentralization of care was crucial for the increase in detection of cases, implementation of large-scale multidrugtherapy with consequent reduction of treatment time and disease prevalence.^{39,40} Conversely, the reduction of cases of leprosy in several regions may result in difficulty to keep the interest of professionals in a problem not so frequent. Considering the complexity of leprosy manifestations

and complications, and the possibility that primary healthcare professional may treat less than one case per year, loss of interest and expertise in this issue is a true risk. That could result in late diagnosis, increased hidden prevalence and treatment troubles.

CURRENT AND FUTURE PERSPECTIVES FOR THE TEACHING OF LEPROSY

Given what was reported in this paper, a problem that seems quite present is how to maintain the knowledge, the skills and the interest needed to deal with leprosy in the context of declining endemicity. The number of cases seen by the primary healthcare professional will be low and occurrence tends to become increasingly sporadic. How to ensure early diagnosis without installed disabilities? The complexity of Brazilian prevalent nosology is a challenge. Health professionals have to share their attention among chronic degenerative diseases (such as hypertension, cancer, diabetes), and tuberculosis, dengue, malaria (in some regions), AIDS, leprosy, among others.⁴¹

In Brazil, there is evidence that the implementation of primary health care played an important role in the initial increase in leprosy detection rates and in the subsequent declining trend.⁴⁰ The strategy of maintaining and reinforcing the role of primary healthcare in the leprosy control program is absolutely necessary, due to the concentration of cases in regions where many people live in small and medium-sized towns, and in rural areas. However, Feenstra (2003) argues that, in areas of low disease prevalence, the primary healthcare professional should limit himself to raising the suspicion of leprosy and referring patients to intermediate-level specialized centers, where the diagnosis would be made and treatment would be initiated, to be continued in the patient's place of origin. In order to be accepted by the community and the patients, leprosy control should be done in primary care, which is accessible and available to all the population. Specialized personnel should be available at intermediate and central health service levels, in order to plan, evaluate, train, technically supervise, receive referrals, make a counter-referrals, and research.²⁰

Among the challenges that the teaching of leprosy might currently face, we highlight: 1. The definition of what and how much to teach about leprosy in undergraduate courses in the field of health, and how to do it; 2. The same type of definition for specialization courses, especially in dermatology, infectology, and family and community health, aiming at generating resources for working in management, or at primary or secondary health care level; 3. Permanent education of primary healthcare professionals; 4. How to motivate and train professionals to work in specialized

reference centers whose goal would be the resolution of complex cases and the permanent training and education of professionals from other levels of care.

Keeping the discussion on leprosy alive (either in the community or in academic circles) is essential so that the disease will not be forgotten. Many successful experiences have been described and they must all be considered in the context of the various courses in the field of health, in permanent education for professionals and in health education for the community.

Academic leagues of dermatology are being created in many universities due to the growing interest of medical students in specialization in dermatology. Souza (2003) reports experience of over 10 years with medical academic leagues in a public university in Brazil. Students were inserted in primary and secondary care, focusing the approach of leprosy.⁴² This strategy allows for the insertion of topics related to the disease, and the integration with the patient and his social environment. Interactions with the community led the students to work with several techniques for the education in health, such as discussion groups and dramatization.

The experiences collected from the use of wall journals in universities can be transported to the current reality of virtual learning.⁴³ Some universities already provide photographic material and texts (some interactive, some not) on their websites, which are available to students and to the external community. This could be used for the teaching of leprosy, both in undergraduate and continuous education.^{44,45} Telemedicine or telehealth is a reality in several parts of the world.⁴⁶ Many distance e-learning modalities are already reality in Brazil.^{47,48,49} The possibility of visualizing lesions places dermatology in a strong position to use this technology, both in permanent and

undergraduate education. The approach to chronic diseases such as leprosy and their reactions, among other dermatoses, can be successfully done through the interaction between primary healthcare professionals and specialists.⁴⁶ Several authors consider the participation of dermatologists in dermatology and leprosy trainings for basic healthcare professionals and in the integration of health-services at different levels to be essential.^{37,50}

In order for all these working fronts on the issue of leprosy education to be covered, the joint work among the public power (through its bodies, especially the Ministry of Health, and the State and Municipal Health Secretariats), human resource training institutions in the field of health, and the society has to be maintained and expanded. The BSD, as a scientific society that trains great part of the specialists in dermatology, must ensure excellence in the teaching of leprosy through its accredited services. In order for that to happen, it is crucial to maintain and create referral centers for leprosy, linked to training services for dermatologists, and with multidisciplinary teams that provide not only the training of the specialist, but are open to the participation of students and professionals from health areas. Moreover, these services should be compulsorily inserted in the Unified Health System in order to ensure adequate flow and performance to the region covered. In addition, they should function as an efficient referral and counter-referral service that is capable of not only meeting the patient's demand but also of providing permanent education to primary health care professionals. The inclusion of leprosy among the neglected diseases has offered the possibility of resources for research in the area, which may be a stimulus for the maintenance of professionals in reference centers, as long as care, teaching and research can be articulated. □

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How to cite this article: Alves CRP, Ribeiro MMF, Melo EM, Araújo MG. Teaching leprosy: current challenges. *An Bras Dermatol*. 2014;89(3):454-9.