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Health education, screening, and prevention of tuberculosis in institutionalized homeless population

EXPERIENCE REPORT

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Educação em saúde, rastreamento e prevenção da tuberculose em população em situação de rua institucionalizada

ABSTRACT

Introduction: The homeless population has a lifestyle marked by situations of social exclusion, unemployment, and abandonment by the health system. Consequently, these vulnerabilities, mainly related to health, make this population very susceptible to diseases, such as tuberculosis, which is an important health problem for this population. **Objective:** To carry out health promotion and tuberculosis screening actions in an institutionalized population. **Experience Report:** An extension project was developed for the institutionalized homeless population. Each action started with a discussion between academics and users of the institution on the main aspects of tuberculosis. Subsequently, sputum tests were offered. These actions were performed in two days, with the addition of a ludic dynamic about the disease, in the form of bingo. The actions provided a significant interaction of this population, which was perceptible through the questions and answers made on the topic of tuberculosis. In addition, the dynamics enabled a notorious adherence to the tests, with a contingent of 35 participants, of which 19 were symptomatic, howe-

ver, all had negative results. **Final Considerations:** The teaching-service-community triad is essential for health promotion actions to be carried out effectively and inclusively for vulnerable populations. The proposed actions proved to be important for raising the awareness of the target audience, as well as enabling a notable advance in the academic context of the students who were involved, and providing an effective participation of the local health team.

Keywords: Tuberculosis; Vulnerable Populations; Health promotion.

RESUMO

Introdução: A população em situação de rua apresenta um estilo de vida marcado por situações de exclusão social, desemprego e de desamparo pelo sistema de saúde. Consequentemente, essas vulnerabilidades, principalmente relacionadas à saúde, tornam essa população bastante suscetível a doenças, como a tuberculose, a qual configura-se como um importante problema de saúde nesse público.

Objetivo: Realizar ações de promoção à saúde e rastreamento para tuberculose em uma população institucionalizada. **Relato de Experiência:** Foi elaborado um projeto de extensão para população em situação de rua institucionalizada. Cada ação iniciou com uma discussão entre os acadêmicos e os usuários da instituição sobre os principais aspectos da tuberculose. Posteriormente, foram ofertados exames de escarro. Essas ações foram realizadas em dois dias, com a adição de uma dinâmica lúdica, sobre a doença, em forma de bingo. As ações propiciaram uma significativa interação dessa população, o que foi perceptível por

meio das perguntas e respostas realizadas sobre a temática da tuberculose. Ademais, as dinâmicas viabilizaram notória adesão aos exames, tendo um contingente de 35 participantes, os quais 19 encontravam-se sintomáticos, porém todos tiveram resultados negativos. **Considerações Finais:** A tríade ensino-serviço-comunidade é essencial para que ações de promoção à saúde sejam realizadas de forma efetiva e inclusiva para as populações vulneráveis. As ações propostas demonstraram-se importantes para a conscientização do público-alvo, assim como viabilizaram um notório avanço no contexto acadêmico dos alunos envolvidos, e propiciaram uma participação efetiva da equipe de saúde local.

Palavras-chave: Tuberculose; Populações Vulneráveis; Promoção da Saúde.

INTRODUCTION

The Institutional Reception Units offer comprehensive care that guarantees conditions for their stay, interaction, and a reference address, with the aim of welcoming people living on the streets or migrating and/or from areas of geological risk. In this context, they are part of the Special Social Protection of High Complexity of the Unified Social Assistance System (SUAS). From this perspective, the institutional reception units in the city of Belo Horizonte are divided into modalities such as *Casas de Passagem*; Institutional Care for Families; Institutional Care for Adults; Care Units for Adolescents Living on the Streets, and Post-Discharge Units¹.

Thus, the Institutional Reception service has the duty to guarantee privacy, respect for customs, traditions, the diversity of life cycles, family arrangements, race/ethnicity, religion, gender, and sexual orientation. Long-stay homes have the main goal of reestablishing family ties, developing new skills for users, inserting them into participation and access to other public policies (health, education and leisure)².

In turn, the halfway houses differ from the others, as they are characterized by providing emergency and immediate care, solving specific demands that are taken to these places in a personalized way. With this, it is extremely important that there is a collaboration between the different types of services so that the homeless population (PSR) has their rights guaranteed in an effective and human way².

According to data from the Belo Horizonte City Hall (PBH), currently, in the city, there are 18 institutional reception services involving shelters, halfway houses, youth republics and post-hospital discharge units. In these places, homeless people are received, including children, adolescents, adults, elderly and migrants, in addition to specific centers for the reception of families³. The capital of Minas Gerais has currently approximately 5,344 homeless people, of which more than 50% came from country cities of Minas Gerais, other states and countries as well. The majority is composed of males, with 84% of prevalence and average age of 42.5 years, while women represent 16% and have an average of 38.9 years⁴.

A survey carried out in 2022 reveals that nowadays, in Belo Horizonte, there are about 5,344 people living on

the streets, of which 62% have already gone through shelters or hostels linked to public policies. In addition, 29.8% of them carry out their personal hygiene at *Centro Pop* and 24.2% at hostels and shelters. Another fact evidenced by the census was the predominance of males in institutions such as Pop Centers and Reference Centers Specialized in Social Assistance⁴.

The life story of the homeless is marked by loss of bonds, ruptures, unemployment, social exclusion and involvement, as a producer or target, in violent and criminal acts⁵. Based on these facts, the National Policy for Social Inclusion of the PSR was created,⁶ in 2009, which adopted intersectoral actions for reintegration into family and community networks, also increased access to constitutional rights of citizenship. Although, there are places in Brazil, such as Rio de Janeiro, where public authorities have addressed this issue from the perspective of “urban cleaning” and the “revitalization” of public spaces. As a result, there is a contradiction between ensuring the accessibility of the homeless and the exclusion of this group⁷.

Additionally, there is a negative sociocultural view of the HP, reflecting on the relationship between it and health professionals, causing non-compliance with the principle of integrality of the Unified Health System (SUS) and the National Humanization Policy (PNH), which affects the health of this population⁸. Therefore, given the particularities of life imposed on the streets, revealing the consequences of social exclusion, people who experience the street situation become more vulnerable to various comorbidities, such as tuberculosis (TB), in which the risk of contracting the disease is 56x higher than in the general population^{9,10}.

TB is caused by *Mycobacterium tuberculosis*, which most often affects the lungs. It can be transmitted when sick people expel the bacillus into the air through coughing, talking, or sneezing¹⁰. It is a transmissible disease, considered neglected due to its high prevalence in developing countries, and is associated with a high proportion of morbidity and mortality in Brazil¹¹.

When approaching the Brazilian TB treatment scheme, it should be noted that it is standardized, with a duration of six months, made available free of charge by the SUS. However, socioeconomic factors of the affected public and the quality of health services are also identified as barriers to successful TB treatment¹². Abandonment treatment is considered one of the main limitations for combating and curing TB, as, in addition to increasing treatment costs, mortality rates and recurrences of diseases, they also act in the selection of resistant bacilli¹³.

According to the 2023 Tuberculosis Epidemiological Bulletin, from 2021 onwards, there was an increase in the TB mortality rate in Brazil, where had been decreasing for two decades, with 5,072 deaths recorded. When compared to 2019, there was a 10.7% growth in the mortality rate and 11.9% in the total number of deaths from tuberculosis. Regarding populations in vulnerable situations and at greater risk of becoming ill from TB, there are the HP, the population deprived of liberty (PDL), health professionals, immigrants and indigenous people. Data from the Ministry of Health inform that the PSR is second only to the population deprived of liberty in an absolute number of cases. About the outcome, it is the vulnerable population with the highest rate of treatment abandonment.

A reduction in the percentage of cures for TB in the homeless population was identified when compared between 2019 and 2021, concomitant with an increase in the number of deaths¹⁴.

In view of the health indicators from TB to PSR, it is extremely important that actions to protect and promote health are performed, individually and collectively. Projects in this axis are capable of facilitating early diagnoses, preventing injuries, supporting rehabilitation processes, and promoting the maintenance of health in this population¹⁵. Among the main diseases that benefit from primary health care actions is the monitoring of TB, including the possibility of an early diagnosis and permanence of effective treatment¹⁶.

In view of the context presented, this project aimed to carry out health education actions on tuberculosis and offer tests to identify possible cases in an Institutional Reception Unit located in Belo Horizonte/MG.

EXPERIENCE REPORT

With the aim of expanding the use of actions and better transmitting essential information about TB, the academics selected several studies on alternative educational methods and the disease. Bearing in mind that recreational activities allow the application of knowledge to reality and favor a more dynamic approach, they are efficient in health education¹⁷ and, therefore, were used by academics during extension actions.

In view of the relevance of the theme for populations in situations of social vulnerability, the academics chose people who live on the streets as their target

audience. In this perspective, after extensive deliberation, an Institutional Reception Unit located in the central region of Belo Horizonte, Minas Gerais, was selected as the field for interventions proposed by the extension. A problem observed due to the target audience chosen by the group was the difficulty in passing on the necessary knowledge so that the participants could be active agents in the promotion, prevention and treatment of TB. This is because many of them did not have the opportunity to complete their education, therefore, could have difficulties in understanding complex reasoning.

Thus, Reuven Feuerstein's mediated learning logic was chosen as the basis for the dynamics, as it uses a method, which guides the learner in the construction of knowledge, encouraging and guiding learning based on the stimulation of the student/participant's interest. Feuerstein's education process is based on four main parameters — intentionality, reciprocity, meaning and transcendence — which were applied by academics during actions¹⁸ and will be better discussed later.

For the mediation of knowledge, the mediator, in this case, the academics, stimulated and directed the curiosity and thinking of the learners, maintaining an active and constant involvement, enabling a better understanding of the content, as well as its meaning.¹⁸ The meaning concerns the given concept to what is being taught in order to value the information within the learner's reality¹⁸. This first principle of Feuerstein is essential for the construction of knowledge and was one of the main targets of the dynamics used since it is imperative that the individual understands how the

taught content is relevant and necessary in their daily lives so that they want to involve and can be an active agent in their health education.

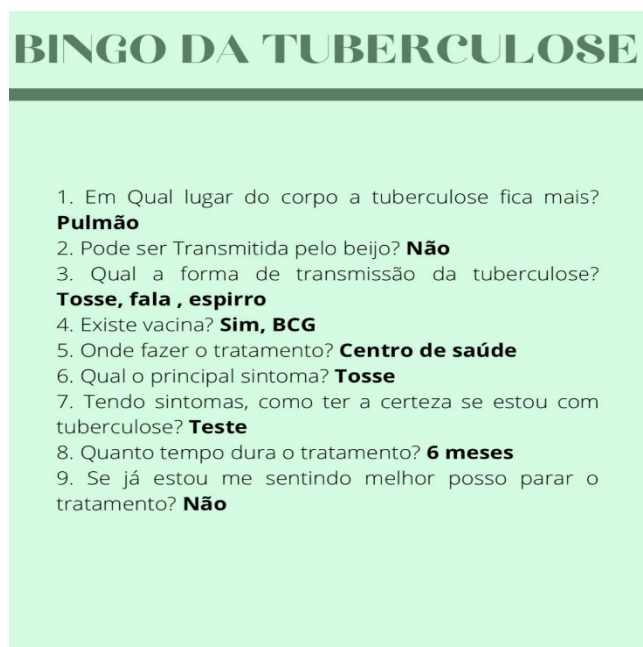
The intervention in this way took place over two days (11/01/22 and 11/03/22) at the selected Institutional Reception Unit, located in the central region of Belo Horizonte, Minas Gerais. There were 35 participants in total, 20 on the first day and 15 on the second, and 10 of these participants attended the two days where the actions were carried out. All of them were male due to the rules of the institution itself. On these two occasions,¹⁹ individuals had a cough as the main symptom, regardless of the elapsed time since the beginning of the condition⁵.

On the first day, the action began with a discussion between the academics and 20 residents of the institution on the main aspects involving TB, such as case definition, forms of transmission, signs and symptoms, diagnosis, treatment and prevention. Images were taken about the subject addressed, such as figures of lungs affected by the disease and hemoptysis. During the action, many questions were asked by the participants, which demonstrated to the academics that they were interested in the subject and that it was a relevant theme, directly inserted in their social context.

On the second day, a playful dynamic was organized in the form of bingo with cards containing words related to TB, which were given to each of the 15 people present. These words were right and wrong answers to the questions and statements that were made by the academics and each participant could mark the answer they thought was true.

It is worth pointing out that, as the objective of the actions was to teach about TB and clarify any doubts of the participants in a relaxed and engaging way, the questions and statements selected for both activities dealt with transmission, etiology, prophylaxis, signs and disease symptoms (Figure 1). Thus, following the principle of intentionality, which consists of guidance, provided by the mediator during the discussion so that attention is focused on the desired stimulus, the academics acted in the dynamics in order to direct learning¹⁸. This was done not only by asking pertinent questions but also by validating or correcting participants' responses.

FIGURE 1: QUESTIONS USED IN BINGO



SOURCE: AUTHORS' COLLECTION (2022)

Reciprocity was used as a way of validating the work since this principle is characterized by the student's response to the dynamics. Reciprocity concerns acceptance and understanding, it is an indication that the participant is being receptive¹⁸. This was applied through the active participation of the target population mediated by academics, who, at all times, asked guiding questions to guide the discussion and verify the level of understanding of the participants, either in the conversation circle or in bingo. In this way, all the necessary knowledge was transmitted to provide participants with a general understanding of the disease, the importance of its prevention and adherence to treatment.

Bingo winners were those who marked all the correct answers, in the same way as a traditional bingo, and academics gave each of the four winners a bottle of water and a chocolate as a gift. It is also important to clarify that the choice of the bottle of water as a gift was based on the understanding that it is a basic need item for the participants, who are homeless and often share personal objects - favoring the transmission of various infections - or even do not have access to them.

The cards used in bingo are shown in Figure 2.

FIGURE 2: CORRECT AND INCORRECT TUBERCULOSIS BINGO CARDS

Cartelas Corretas



Cartela errada 1



SOURCE: AUTHORS' COLLECTION (2022)

The principle of meaning, in which the importance of the activity is discussed with the mediator¹⁸, was applied again at the end of the discussion in each activity through the reiteration, by the academics, the importance of the participants performing the test, completing the treatment correctly and in opportune time. The negative impacts of TB on personal and community life, also the responsibility of each person in preventing the disease were also recalled.

Once the dynamics proposed for each day were finished, the academics explained how the sputum test for TB detection worked and offered the test to all those present who complained of cough, regardless of the time, or who expressed interest in performing it.

Regarding testing, the rapid molecular TB test (TRM-TB), smear microscopy, and sputum culture are widely used to diagnose TB in the clinic. The benefits of molecular diagnosis are speed, specificity and high sensitivity¹⁹. Thus, the method chosen by the academics during the action for people who had never used TB drugs was the TRM-TB, due to its practicality and effectiveness. People who reported having already been treated or abandoned treatment for TB were also offered bacilloscopy and sputum culture.

The form “Registration of Individuals – APS”²⁰ used by Community Health Agents was completed, and the form “Request for TRM-TB, culture, identification of mycobacteria and sensitivity test”²¹, with the data of the participants so that the samples were sent to the reference Health Center of the institutional reception unit for the exams to be carried out. Such recording instruments are standardized by the Municipal Health Department of Belo Horizonte. In addition, the “Respiratory Symptoms Book”²² was also completed. Each academic was responsible for collecting data from a person and filling out the form before sending the participant for testing. The data filled in the form were: name, age, case of previous TB, daily use of medications and comorbidities.

As soon as this step was completed, the individual was sent to perform the collection, where one was

instructed about the process and received the sputum container. To ensure a good sputum collection, a pharmacist helped the participants with the correct procedure, then they were directed to an open place to collect the sample.

After collecting the sputum pots, all of them were duly identified and stored in a thermal container and sent for analysis at the Health Center, following the flow recommended by the Municipal Health Department of Belo Horizonte. All tests were negative for TB. The steps were recorded in Figure 3 below.

At last, when explaining how the same TB prevention actions are similar to the prevention of other diseases transmitted by droplets and aerosols, such as COVID-19, the principle of transcendentality was applied, which concerns a generalization of the content¹⁸, in a way that it can be used in other situations. It is concluded, therefore, that the interaction proved to be effective since most of the target audience understood the importance of prevention and performed the sputum test.

FIGURE 3: DYNAMICS, SCREENING AND BOX WITH THE SPUTUM TEST



SOURCE: AUTHORS' COLLECTION (2022)

THEORETICAL REFLECTIONS:

On the first day, the tests were performed after a conversation between academics and shelter visitors, which addressed the most relevant information related to TB, pointing out the veracity of the questions raised by them. The use of impactful images on the mechanisms and complications of the disease helped PSR's interest in action. It was observed that this previous discussion was an influential factor for adherence to the examination. There was also an active interaction among the participants, who clarified their doubts and shared reports of their own experiences, or those they knew about TB. In this way, as in other studies, methodologies involving group discussions provide a careful and interactive space, which enables the de-

velopment of positive strategies for health promotion, through the exchange of knowledge and information²³.

On the second day, a fun activity was held in the form of bingo with the locals, and a large number of participants were present at the action on the previous day. This activity had a positive result, since the participants answered 100% of the questions proposed in the bingo, demonstrating that there was consolidation and assimilation of the content previously taught by the academics. In addition, it was an important moment for clarifying any doubts and curiosities about tuberculosis, since the game becomes an ideal learning tool, which stimulates the learner¹⁷.

Adherence to performing the sputum test was around 70% of those present, which demonstrated to the academics that the health promotion action was effective and presented satisfactory results. However, due to the presence of participants who were present on both days of action, but who only took the test on the first day, the results may have been impacted, to a lesser extent, in the relationship between the number of participants and those who were tested. In addition, there were participants who wanted to undergo the test but did not have sputum, making the test unfeasible. At the time of performing the test, there was initial resistance from some participants regarding the need to collect sputum outside the closed environment. Although, after explaining the requirement of this protocol, for biosafety reasons, and aiming at non-transmission of the disease, the request was accepted without further impediments. It was observed that such guidelines are important not only to improve the quality of the sample but also to lead to a positive in-

teraction between the professional and the user. In addition, guidelines and didactic explanations on the performance of the test may be related to optimizing the time between the test and the diagnosis, reducing the chances of spreading the disease²⁴.

After analyzing the results described and the experience of the participating academic students, it was possible to state that, despite the negative result of 100% of the sputum tests performed, the health promotion actions proposed by the project were highly effective in terms of transmission and absorption of crucial information about TB, its prevention, an important result considering the high prevalence of TB cases and the vulnerability of HP. Respecting the autonomy and desire of the participants was essential for carrying out the tests, which leads us to harm reduction based on the ethics of care²⁵.

It is important to incorporate the different areas of health and intensified care during the care process for individuals living on the streets since the involvement of TB in this vulnerable group is related to a series of factors that also involve the conditions of housing and the limited access of this population to health systems. Thus, the main concern of the authors was to provide the availability of resources related to primary care specifically for this group, which experiences impediments in access to health.

Health education can contribute to building the subject's autonomy, recognizing him or her as a rightful person and protagonist in the health promotion process, in addition to being an important work tool in the context of high vulnerability, such as experien-

ced by the HP²⁶. In the National Survey on PSR, it was found that 18% of this population experienced substantial barriers to accessing health services and that the context of the street seems to be both the cause and the consequence of health problems, which can aggravate pre-existing health situations. -existing²⁷.

As for the project's contributions, the actions provided academics with the opportunity to develop a connection with individuals who live in a reality marginalized by society, which added in a unique way to the humanized and professional training of students, in addition to contributing to the promotion of health in this group. Beyond, it enabled students to identify the importance of an intervention focused on the needs and realities of society. At the same time, there was a contribution to the health service in the city of Belo Horizonte, based on the registration of all those tested at the health center closest to the institution where they were located. Finally, the project described in this article contributes to the community by disseminating knowledge, promoting health, prophylactic resources and greater control of highly transmissible pathologies in the municipality.

Academics emphasize the importance of extensionist practices aimed at populations in vulnerable situations, who often find it difficult to access basic care, either due to lack of knowledge or discrimination by professionals and society²⁸. Such activities aim to contribute to public health and to reduce the incidence of diseases with the potential for mortality and long-term treatment, that is difficult to adhere to, such as TB.

CONCLUSION

This extension project directs health professionals towards a playful, clear, interactive alternative for presenting and applying knowledge about tuberculosis to a previously lay community, which contributes to the prophylaxis of the disease by addressing the form of transmission, the symptoms and the treatment.

Concomitantly, the project in question provides a better performance of the principle of integrality and humanization (which should be foreseen in the SUS), through the practice of a welcoming look towards the homeless population, which enables the reduction of the vulnerability about this group of people who is exposed.

At last, the present work was essential in terms of the academic history of the students involved, through the introduction of new experiences to the curriculum and the practical application of the acquired knowledge.

It is concluded that the teaching-service-community triad is essential for health promotion and disease prevention actions to be carried out effectively and inclusively for the homeless population.

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