Cogitare Enfermagem

ORIGINAL ARTICLE

EDUCATIONAL PODCAST ON LEPROSY AS A LEARNING RESOURCE*

HIGHLIGHTS

1. The educational podcast increased knowledge about leprosy.
2. The podcast in education combats prejudices by demystifying leprosy.
3. The podcast facilitates access to information about leprosy.

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ABSTRACT

Objective: Evaluate the effect of a *podcast* as an educational action on Youth and Adult Education (EJA) students in learning about leprosy. **Method:** Prospective, quasi-experimental study. An educational action was carried out with an educational podcast about leprosy in public schools in Recife, Pernambuco, 2024. The sample consisted of 211 students and the selection was non-probabilistic by convenience. The collection took place through a questionnaire involving content about leprosy, and McNemar was used to assess the significance of the changes. **Results:** After the intervention, there was an increase in the number of students with adequate knowledge, with the proportion of changes from errors in the pre-test to correct answers in the post-test being greater ($p < 0.05$) than the proportion of changes from correct answers in the pre-test to errors in the post-test for the questions. **Conclusion**: Using tools like podcasts in health education enables access and dissemination of information, promoting knowledge and changes in individual and collective health behavior.

KEYWORDS: Leprosy; Webcast; Education; Public Health; Health Education.

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INTRODUCTION

Health education is a set of developed actions aimed at building knowledge and promoting changes that can improve the quality of life of individuals and/or the community. It consists of a tool for dynamic and interactive exchanges between scientific knowledge and the population, leading to positive results[1].

Various factors hinder and/or delay the diagnosis and treatment of leprosy, such as stigma and difficulty in accessing correct and adapted information for understanding, which leads to a delay in seeking health care that can result in severe complications of the disease, including causing physical disabilities, economically affecting not only the individual/family but also the health system. Thus, health education can be used as a tool to prevent these consequences[2-4].

In this view, health education goes beyond the walls of service units, as it involves the construction of knowledge, which can be developed in various places such as businesses, neighborhood associations, workplaces, and schools. The school has been established as the ideal place for carrying out health education actions, considering its fundamental role in forming human beings[1].

Health education actions must be designed or adapted to ensure accessibility and enable the modification of health behaviors. Health education guides and grounds health knowledge. With this, the possibility of knowledge can neutralize the marginalization, social burden, and exclusion felt by those affected by stigmatized diseases such as leprosy[5-6].

The professionals involved in health education actions must plan strategies for greater student involvement and participation. It is of fundamental importance to consider the needs and characteristics of the target audience so that they are encouraged to participate in the educational process and to define the appropriate resources to be used[7].

Among the technological resources available for educational purposes are videos, booklets, flyers, software, games, audio, and podcasts. The podcast consists of a media resource for transmitting information through a personalized radio program, which can be recorded in various audio formats and stored on a computer, available on the internet or on stream platforms. It can make use of speech, music, or both[8]. This technology has the advantages of being low-cost in its production and editing, easy to disseminate, and highly accessible, without requiring a complex input of technological resources[8-9].

Exploring educational technologies, such as podcasts, in health-related educational processes has been showing its undeniable benefits. There is a growing number of scientific works involving the construction of these technologies in themes related to health promotion, and the effectiveness of these should also be explored in various environments with diverse audiences for the production of excellence[2]. From this perspective, the present study aimed to evaluate the effect of a podcast as an educational action on students of Youth and Adult Education (EJA) in learning about leprosy.

METHOD

Study design

A prospective, quasi-experimental study was developed according to the Transparent Reporting of Evaluations with Non-randomized Designs (TREND) statement, which complements the Consolidated Standards of Reporting Trials (CONSORT) statement. In this study model, all participants are exposed to the intervention, with no independent control group, evaluating and comparing the knowledge before and after the intervention to analyze its impact[10-12].

Study location

The research was conducted in public elementary and high schools in the city of Recife, PE, Brazil, located in Health Districts (DS) IV and V.

The choice of such districts was made because they are hyperendemic health districts for leprosy in Recife. Together, these districts serve 29 neighborhoods and 538,944 inhabitants.

Population

The study population was comprised of students from the Youth and Adult Education Program (EJA). EJA is a teaching modality created in 1996 by the federal government, which covers all basic education implemented throughout Brazil. The program was developed to focus on young people, adults, and the elderly who could not attend basic education at the appropriate time and recommended age. It is divided into two modalities: EJA Elementary Education, for young people aged 15 who have not completed 1st to 9th grade, and EJA High School, for people over 18 who have not started or completed high school[13].

In this context, this population was chosen due to the need for educational actions with this target audience, considering that, although they are part of the Health in School Program, no health education actions focused on the theme of leprosy are observed.

Selection criteria

The study included students aged 18 or older who were regularly enrolled in schools and present on the day of the intervention. According to the teachers' reports, those who had hearing problems that prevented them from participating in the research and those who had some cognitive deficit that compromised participation were not included.

Sample definition

The minimum sample size (n = 193) was defined using the formula for McNemar's test[14-15] and infinite populations. The proportion of failure-success (p_{01} = 0.50), the proportion of success-failure (p_{10} = 0.30), the significance level equal to 0.05 (α = 0.05; z_{α} = 1.96), test power equal to 0.80 (β = 0.20; z_{β} = 0.84) and estimated sample loss of 20% were considered. The choices of the values of p_{01} and p_{10} were based on a percentage of at least 50% of failure-success changes and at most 60% of that value for success-failure changes.

The sample selection was non-probabilistic for convenience and included two schools, one from each health district linked to the institution that was drawn. The first school had 322 enrolled students, and all the students present were invited. However, due to the high dropout rate, participation was obtained from 138 students. The second school had 153 enrolled students, where the same procedure was carried out, resulting in the participation of 73 students.

Study variables

Sociodemographic variables were described, and knowledge was assessed on specific aspects related to leprosy, including transmissibility, diagnosis, treatment, cure, and citizens' rights to treatment.

Instrument used in data collection

Sociodemographic information and knowledge about leprosy were collected for the pre and post-test. A questionnaire consisting of seven sociodemographic questions and 20 specific questions related to leprosy was used, addressing transmissibility, diagnosis, treatment, cure, and citizens' rights to treatment, developed based on a literature review and Manuals from the Ministry of Health: a practical guide on leprosy and guidelines for surveillance, care, and elimination of leprosy as a public health problem[16-17].

After the critical analysis of the questionnaire, it was submitted for content validation by judges[18]. 22 judges[19] who are experts in the subject(s) of leprosy and/or health education and/or educational technology participated in the questionnaire validation process. The Content Validity Index values[19] for content validation were considered values greater than or equal to 0.80 in most of the evaluated items, and the items that did not reach the value were reformulated until the value for validation.

Data collection

Data collection took place in the selected schools. The process occurred in the classroom during the evening shift, where all information and steps were presented to the participants collectively. Then, the lead researcher trained and supervised each team member, consisting of 11 undergraduate nursing students.

Initially, the students were invited, and the research objectives were clarified. Their participation was voluntary, and data collection only started after the signing of the Informed Consent Form (ICF), which was prepared in language accessible to the students, as all participants belong to the EJA high school.

The pre-test was applied in the format of an individual interview, where each question was read and waited for the participants to respond individually, moving to the next question only when everyone had already answered. The educational Podcast **(A Mancha)[20]** was presented between the pre and post-tests. For leprosy, using Bluetooth speakers allows everyone to hear the audio clearly. The podcast, lasting 12 minutes, addresses issues related to leprosy, such as signs and symptoms, treatment, care, and prevention. It also addresses treatment as the user's legal right and the importance of community radio, nursing, and the community health agent.

After listening to the podcast, the post-test was applied following the same method as the pre-test. The collection respected the time made available by the teacher, and the entire process took place in the classroom with an average duration of 60 minutes. During the intervention, it was highlighted that the goal was not to assign grades or evaluate right or wrong answers but to obtain information about their knowledge of the disease.

Throughout the process, the researchers did not explain or clarify leprosy; however, all questions were clarified at the end of the research, after the post-test was returned.

Treatment and Data Analysis

The data obtained was entered into a Google Drive form and exported to IBM SPSS Statistics—18 for analysis. The questionnaires were numerically identified, making it possible to compare each participant's pre-test response with the post-test.

The McNemar test was used to analyze changes in proportions between the number of correct and incorrect answers in each question before and after the Podcast applications in proportions[16-17].

The hypotheses tested are Ho: The proportion of changes from errors in the pre-test to correct answers in the post-test does not differ from the proportion of changes from correct answers in the pre-test to errors in the post-test; and Ha: The proportion of changes from errors in the pre-test to correct answers in the post-test is greater than the proportion of changes from correct answers in the pre-test to errors in the post-test. The significance level used in the analyses was equal to 0.05 (α = 5%).

Ethical Aspects

The research project was approved by the Ethics and Research Committee (CEP) of the Health Sciences Center of the Federal University of Pernambuco, under opinion No. 2,885,556. Data collection began after project approval.

RESULTS

Table 1 presents the results related to the sociodemographic profile of the EJA students participating in the study.

Table 1 - Sociodemographic profile of EJA students participating in the study (n = 211). Recife, PE, Brazil, 2024

Variables	n	%
Age range (years)		
18 to 24	128	60,7
25 to 34	28	13,3
35 to 44	33	15,6
45 to 54	13	6,2
55 to 65	9	4,3
Sex		
Female	107	50,7
Male	101	47,9
Did not inform	3	1,4
Color or race		
Black or brown	149	70,6
White	48	22,7
Others	14	6,6
Monthly household income (minimum wage)		
No income	11	5,2
<1	17	8,1
1 to 2	71	33,6
3 to 5	13	6,2
> 6	5	2,4
Did not inform	94	44,5
Education		
Incomplete fundamental	23	10,9
Complete elementary or incomplete high school	174	82,5
Did not inform	14	6,6
Union condition		
Single	146	69,2
Married	51	24,2
Divorced	6	2,8
Widower	3	1,4
Did not inform	5	2,4
Employment relationship		
No	116	55,0
Formal	44	20,9
Informal	47	22,3
Did not inform	4	1,90
Has children		
No	110	52,1
Yes	98	46,4
Did not inform	3	1,4

Source: The authors (2024).

Regarding the participants' experiences related to the theme of leprosy, (171) 81% had already received some information about the disease. Of these, the most frequent sources were the media (television, internet, flyers, newspaper), (58) (27.5%); health units, (38) (18.0%); followed by work, (36) (17.1%); acquaintances and/or family members, (35) (16.6%); schools and books, (24) (11.4%); and the Bible, (21) (9.9%). Regarding the experience of having an acquaintance and/or family member with the disease (165) (78.2%), they stated that they do not know anyone who has or has had leprosy.

The results presented in Table 2, obtained with the application of the McNemar test for each of the questions, show that the proportion of changes from errors in the pre-test to correct answers in the post-test was greater than the proportion of changes from correct answers in the pre-test to errors in the post-test, for all questions except 5, 6, 9, and 10.

In this way, the proportion of participants who started answering most questions correctly after the educational intervention was greater than the proportion of participants who changed their answers from correct to incorrect in the post-test.

Table 2: Proportions of EJA students with errors in the pre-test and correct answers in the post-test, and correct answers in the pre-test and errors in the post-test, respectively, by question. Recife, PE, Brazil, 2024 (n = 211)

Question	P01† (%)	P10‡ (%)	p
04	0,40	0,14	<0,001
05	0,07	0,12	0,127
06	0,28	0,19	0,073
07	0,32	0,14	<0,001
08	0,30	0,09	<0,001
09	0,07	0,05	0,387
10	0,06	0,04	0,404
11	0,36	0,05	<0,001
12	0,50	0,06	<0,001
13	0,31	0,04	<0,001
14	0,54	0,06	<0,001
15	0,26	0,09	<0,001
16	0,36	0,09	<0,001
17	0,34	0,14	<0,001
18	0,22	0,13	0,038
19	0,38	0,08	<0,001

†: P01: proportion of participants who got it wrong in the pre-test and got it right in the post-test.

‡: P10: proportion of participants who got it right in the pre-test and got it wrong in the post-test.

Source: The authors (2024).

DISCUSSION

The socioeconomic profile of students attending EJA is that of young workers with low family incomes, often being the breadwinners for those they live with, as shown in Ferreira's study[21], where the predominant reason for dropping out of school was the need to work. The study above shows a student profile similar to this one, where the prevalent age range is 18-25 years, single, with one child, workers, and a family income of one to two minimum wages.

The results show that the theme of leprosy is disseminated in the media, since (171) 81% of the participants had already heard about the theme. The places where they heard about the disease most frequently mentioned were in the media, with television standing out, and in health units. In this perspective, mass media such as television, the internet, social networks, radio, and newspapers are important tools for disseminating health information, with podcasts being a type of media that can be easily spread through these communication channels.

Since education is communication, effective communication between educator and learner is necessary for teaching-learning since both parties involved are fundamental. Therefore, the media are important tools to be used in educational processes, always taking into account the sociocultural characteristics of the learner, so that the content can be adapted to the reality experienced and, in this way, achieve an effective educational process[1].

In this sense, considering the low cost of production and editing, the ease of dissemination and access, and the range of themes and approaches that can be made through podcasts, they stand out as a facilitating instrument for knowledge construction and can be used by health professionals[22].

It was observed that (42) 19.9% of those who had already heard about the disease reported having received this information from a family member and/or acquaintance. This shows that when people acquire health knowledge, they become multipliers in their environment, and therefore, investment in health education actions within the community is necessary. Corroborating with this finding, studies on leprosy education actions in the school environment show that students who participated in these actions became multipliers in the environment in which they live[23].

In this context, the school as a training body must include health-related topics in its regularly worked content, a fact reinforced by the creation of the PSE, highlighting the strength of the partnership between schools and basic health units to improve the health situation of communities[1,24]. In this study, it is observed that leprosy is a topic still little addressed in the school environment, as the percentage of students who had already heard about the subject at school and/or in books was (28) 13.3%. Discussions about leprosy can be addressed in the school environment in biology and history classes, using audiovisual resources that can make this discussion more dynamic.

Studies addressing the theme of leprosy in the school environment show the benefits of addressing this theme with students, highlighting the various approaches and age groups to explore the topic. However, they also highlight educational actions that use active methodologies, showing greater involvement and empowerment of the learner by making them the authors of the construction of their knowledge[23,25-26].

The results of this study showed that the participants' knowledge in the pre-test was mostly inadequate or partially adequate. This indicates that although most students had already received some information about leprosy, their knowledge was not sufficient to answer the questions correctly, prompting reflection on the quality and manner in which this health information is being addressed with the population.

To develop a dialogical relationship[5] during the educational process and facilitate and streamline the teaching-learning process, the professional can make use of the available auxiliary resources[27]. In the case of the present study, the use of the podcast as an educational technology proved to be effective in increasing the knowledge of EJA students about leprosy, highlighting the importance of using resources like this when carrying out educational actions. Corroborating with this study, other research also shows the effectiveness of these resources in health education[13,27-28].

When carrying out health education actions, it is of utmost importance to consider social, cultural, and economic issues, considering the intrinsic relationship between them[1]. The podcast presented in this study addressed these issues, highlighting the cure of the disease, the cessation of transmission after the start of treatment, therefore not requiring the patient to interrupt their usual activities or isolate themselves from society; in addition to bringing up issues such as the importance of community radio and the community health agent, and highlighting treatment as a right of every citizen, it is possible to observe an increase in participants' knowledge about these aspects of the theme.

In view of the above, health education is reinforced as a tool for empowering the individual/community, a means by which technical-scientific knowledge is integrated with popular knowledge. When carried out in a horizontal, dialogical manner, considering sociocultural and economic aspects, it can increase the participants' knowledge and positively impact the health situation of a population/community[4-5].

Limitations of this study include non-probabilistic sampling and the absence of blinding (information about the allocation of participants in the Control and Intervention Groups). The information was used only by the professional who conducted the data analysis, as the participants were aware of the intervention. The responsible researcher participated in the entire process, including supervising the application of data collection instruments in the pre- and post-test.

CONCLUSION

This study identified that EJA students' knowledge of leprosy was inadequate despite having already heard about the disease. The positive effect of the podcast as an educational technology became evident, improving the knowledge of EJA students about leprosy and reinforcing the importance of implementing technologies in educational processes.

Health education is an important tool for promoting health, serving as a space that enables integrating technical-scientific and popular knowledge. Educating in health goes beyond the transmission of information, it consists of awakening in the individual/community the empowerment and co-responsibility for the health situation of the community. Therefore, it is of utmost importance to carry out educational actions in health to promote the improvement of the health scenario in its various aspects, such as, for example, in the field of neglected diseases like leprosy.

Addressing the cultural and social aspects of the disease and its biological issues are highlighted so that myths and prejudices can be demystified and the individual's/community's right to health can be reaffirmed.

It is suggested that studies be conducted implementing this technology with other audiences to verify whether it will also prove effective in other populations. This highlights the importance of not only building and validating educational technologies but also developing studies that verify their effect within the community so that other professionals can use them with scientific support.

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