



Validation of a practical guide for healthcare professionals: adherence to tuberculosis treatment

Validação de guia prático para profissionais da saúde: adesão ao tratamento da tuberculose

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ABSTRACT

To validate a practical guide for PHC professionals to guide the approach and contribute to the process of adherence to the treatment of tuberculosis. This was a methodological study, which sought to validate an educational technology by specialists in the subject. An instrument was applied to evaluate the material, which used a Likert scale. For data analysis, the Content Validity Index (CVI) was calculated, whose minimum agreement rate adopted was 0.80. The material was considered validated, with a satisfactory global CVI of 0.86. The study demonstrated that the material has the potential to contribute to the management of patients with tuberculosis since it gathers information from the perspective of people who had the disease and were cured.

Keywords: Cooperation and adherence to treatment. Educational technology. Tuberculosis.

RESUMO

Validar um guia prático para os profissionais da APS que oriente a abordagem e contribua no processo de adesão ao tratamento da tuberculose. Trata-se de um estudo metodológico, que buscou validar uma tecnologia educacional por especialistas na temática. Utilizou-se um instrumento para avaliação do material que contou com uma escala tipo *Likert*. Para análise dos dados, foram calculados os Índices de Validação de Conteúdo (IVC), cuja taxa mínima de concordância adotada foi 0,80. O material foi considerado validado, onde obteve IVC global satisfatório de 0,86. O estudo demonstrou que o material tem potencial para contribuir no manejo de pacientes com tuberculose, uma vez que reúne informações da perspectiva de pessoas que tiveram a doença e alcançaram a cura.

Palavras-chave: Cooperação e adesão ao tratamento. Tecnologia educacional. Tuberculose.



INTRODUCTION

Tuberculosis (TB) is an ancient disease, caused by *Mycobacterium tuberculosis*, considered in several countries, especially in developing countries,¹⁻² as a pathology that is difficult to control, which is one of the reasons for non-adherence to treatment. TB is a comorbidity of a social nature and affects the most vulnerable people with deficient socioeconomic conditions and who live in places with environmental hypoventilation, in addition to people with some type of comorbidity, such as diabetics and people living with the Human Immunodeficiency Virus (HIV), and the indigenous population.²⁻⁴

According to the latest report by the World Health Organization (WHO), released at the end of 2021, there is still concern regarding the incidence of tuberculosis in the Americas, since the number of new cases has gradually increased after a few years of reduction, and Brazil is the main responsible for this.² In this regard, between 2016 and 2019, new cases increased from 34.4 to 37.1 per 100,000 inhabitants, evidencing a leap in the tuberculosis incidence in Brazil.⁵ In addition to such data, the indicator cases closed as abandonment, in 2020, exceeded the value of 5% established by the WHO as a tolerable maximum,⁵ which can also be considered worrying, given the availability of treatment in the public health system.³

As for the treatment, in Brazil, this is standardized and comprises two phases, namely: the intensive phase, which aims to quickly reduce the population of bacilli to reduce transmission; and the maintenance phase, which has the purpose of eliminating latent or persistent bacilli and TB is considered curable when drug therapy is followed correctly until the end.⁶ To achieve a cure and reduce incidence rates, the Ministry of Health also recommends the active search for those considered at fault so that abandonment is avoided, as well as highlighting the importance of Directly Observed Treatment (DOT) as the main strategy to support and monitor the treatment of the person with TB.⁴

Success in the treatment of tuberculosis, however, depends on the patient's adherence, which can be understood as the co-responsibility in the treatment process, both of the service user and the professionals who assist them, with the objective of achieving the cure of the affected person.^{4,7} In this context, adherence to treatment is a subject that has been widely discussed for years and attempts have been made to identify barriers, as well as propose solutions that work as true facilitators of adherence.⁷⁻⁹

Despite the knowledge of some barriers to adherence, such as social vulnerability, TB/HIV co-infection, unstable economic situation, lack of support from family members or professional staff, stigma, and discrimination,⁷ adherence to drug therapy is characterized by a dynamicity that infers the importance to understand, from the perspective of those who

experience the disease and treatment, all the inherent factors, so that the actions that made them adhere can be reproduced with other patients, adapting them to each context.¹⁰

Based on the above, to subsidize the actions of professionals working in Primary Health Care (PHC), it is necessary to use the resources available for this, such as the use of educational material that synthesizes information, as well as presenting relevant points for efficient adherence to TB treatment, which can act as a true facilitator of care, by providing enrichment of knowledge and skills involved in the adherence process.¹¹

Additionally, other techniques have to be created, according to the dynamics of each service and assessing specific barriers in each context, to improve treatment adherence and consequently lead the patient to cure.^{4,12} In this context, there is a need for educational material that provides TB patients with qualified reading about the complete treatment.

Given the need for this type of material, a practical guide is characterized as a tool that has as one of its greatest benefits the compilation of important data for a given practice, serving as a kind of manual, due to its instructive format, but with more detailed information on any topic and that can be easily accessed at any time during the assistance, in addition to bringing as a striking feature the possibility of adaptation to different contexts.¹³

Given the above, considering the need to support the assistance of Primary Care professionals in the process of adherence to antituberculosis treatment, the objective was to validate a practical guide for PHC professionals that guides the approach and contributes to the process of adherence to tuberculosis treatment.

METHODOLOGY

This was a methodological study, in which a systematic approach to existing knowledge was carried out for the elaboration, validation, and evaluation of instruments and strategies of the chosen method.¹⁴

Thus, the study aimed at validating a practical guide to support PHC professionals who treat people with TB was carried out between August 2021 and August 2022, in Natal, state of Rio Grande do Norte, Brazil. The instrument was elaborated with elements related to TB, with items organized clearly and objectively, which included the observations already experienced by health professionals.

Thus, for construction, the following steps were taken: 1 - definition of the theme; 2 - elaboration of the script with topics and content that composed the material; 3 - development of the practical guide; and 4 - validation of the material.

Steps 1 and 2 were performed simultaneously. The theme to be worked on and the theoretical content of the practical guide were extracted from the doctoral thesis entitled

“Process of adherence to tuberculosis treatment in the context of Primary Health Care: Grounded theory”,¹⁰ linked to the Graduate Program in Nursing at the Federal University of Rio Grande do Norte, defended and approved on October 29, 2021. That said, the script was based on the compilation and synthesis of the results obtained from interviews with people who adhered to and completed TB treatment, obtaining a cure. After reading the results, the content was synthesized in a way that was faithful to the original work and at the same time brought practicality in the reading and execution of the final material.

In step 3, the guide was constructed based on some aspects recommended for educational materials, namely: language, layout/design, and content authenticity.¹⁵

Finally, in step 4, the material was validated by a group of professionals considered experts in the topic addressed, which we called judges. The literature does not have a consensus regarding the ideal number of judges for validation, however, studies indicate numbers that vary between 6 and 20 specialists.¹⁶ The sample selection was made in a network or “snowball” and for convenience, this being the latter chosen due to its positive characteristic of choosing the most accessible people.¹⁷ For the selection of judges, some criteria were established, namely: thesis/dissertation/monograph in the area of interest*; participation in research groups/projects in the area of interest*; professional practice in the area of interest*; works published in the area of interest*(* Area of interest: Adherence to TB treatment and Educational Technologies in Health); experience in the construction and validation of educational technologies.¹⁸

The search for the judges was carried out through the Lattes Curriculum on the Lattes Platform and through an active search for Community Health Agents in a Family Health Strategy Unit in a neighborhood in the municipality of Natal, state of Rio Grande do Norte, this approach is justified because these professionals are not in the Lattes Platform and are indispensable in the assistance to the person with TB. For those whose search was carried out in the Lattes Platform, after applying the criteria and selecting potential judges, first contact with the professionals was established via email through an explanatory letter, along with the link to access the Informed Consent,¹¹ inviting them to participate in the study, and upon acceptance, they were asked to indicate other people. Ninety-seven professionals were invited, of which 3 returned the email, 2 were indicated and agreed to participate in the validation, and 6 contacted by active search, which resulted in a total of 11 participating judges.

Given the professionals’ positive response to the invitation, a second email was sent containing the links to the practical guide assessment instrument, which included the link to access the practical guide and a sociodemographic characterization form.¹⁶ The assessment instrument was adapted from another study,¹⁹ and is composed of six thematic axes, which dealt with theoretical content, illustrations, layout/design, motivation, and culture. The items were evaluated by applying a Likert scale, containing four points, ranging from “totally agree” to

“totally disagree”.¹⁴ For the judges selected by active search, an approach similar to the one mentioned above was applied, being performed in a single face-to-face moment.

For data analysis, Microsoft Excel (2019) software was used. The Content Validity Index (CVI) was calculated for each item individually (Item-Level Content Validity Index (I-CVI)) and for the instrument as a whole (overall CVI).^{14,16} For the calculation of the I-CVI, divided the sum of the answers “totally agree” and “agree” by the total number of judges. The calculation of the overall CVI continued, taking the average of all the CVI per item. A minimum acceptable agreement rate of 0.80 was adopted, which is recommended by authors to certify the validity of a material as a whole.^{14,16}

The study was approved by the Research Ethics Committee of the Federal University of Rio Grande do Norte under opinion 3.246.634, of April 5, 2019, and CAAE 08005919.00000.5537.

RESULTS

The practical guide entitled “Practical Guide for Primary Health Care professionals: how to contribute to adherence to tuberculosis treatment?” was initially composed of 32 pages measuring 21x29.7cm, containing cover, back cover, catalog sheet, list of abbreviations, summary, presentation, information on the contributions of PHC professionals in adherence to tuberculosis treatment and references.

The topics covered were further divided into three major items and subitems, namely: (1) How do people feel when they find out they have tuberculosis? (a) Feeling threatened; (2) How do people act and interact during the process of adhering to tuberculosis treatment? (a) Undergoing tuberculosis treatment; (3) What are the results obtained during and after tuberculosis treatment? (a) Achieving the expected improvement, (b) Achieving a cure for tuberculosis and (c) Re-signifying life.

The texts in the material were written using clear and objective language, to bring practicality in reading and adapting to the target audience, namely PHC professionals, so some technical terms were also part of the theoretical content. Concerning the layout/design, we decided to use the online graphic design platform Canva Pro in its version for academic use, as it is a free instrument, with a copyright included, easy to use, and eliminates the need for a design professional. The authenticity of the content was guaranteed using the results of the aforementioned thesis.



Figure 1. Illustrations of the material “Practical Guide for Primary Health Care professionals: how to contribute to adherence to tuberculosis treatment?”. Natal, state of Rio Grande do Norte, Brazil, 2020
Source: Prepared by the authors (2022)

To validate the practical guide for Primary Health Care professionals, 11 judges participated. The majority had a mean age between 46 and 55 years (36.36%). As for the training time (years) of the specialists, most have more than 20 years and the predominant professional category was Community Health Agent (CHA), but among the participating judges, there were also nurses and social workers. In addition, with regard to title, judges with a doctoral degree (27.27%), specialization (36.36%), among other titles, and most have assistance as their current occupation (54.55%), followed by teaching (27.27%). Specialists work professionally in the Northeast (63.64%), Central-West (18.18%), and South (9.09%), and Southeast (9.09%) regions of Brazil (Table 1).

Table 1. Characterization of judges for validation of the practical guide “Practical Guide for Primary Health Care professionals: how to contribute to adherence to tuberculosis treatment?”. Natal, state of Rio Grande do Norte, Brazil, 2022

Sociodemographic Characterization of Judges (n = 11)	n	(%)
Age (years)		
26 - 35	2	18.18
36 - 45	2	18.18
46 - 55	4	36.36
56 - 65	2	18.18
Over 65	1	9.09
Training time (years)		
Less than 5	1	9.09
Between 5 and 10	3	27.27
Between 10 and 20	2	18.18
More than 20	5	45.45
Publication on the topic	5	45.45
Professional categories (example: Nurse, CHA)		
Nurse	4	36.36
Community Health Agent	6	54.55
Social worker	1	9.09
Degree (example: Doctorate, Masters, specialization)		
Doctorate	3	27.27
Specialization	4	36.36
Other	4	36.36
Current occupation		
Teaching	3	27.27
Assistance	6	54.55
None	2	18.18
Region of work		
Central-West	2	18.18
Northeast	7	63.64
Southeast	1	9.09
South	1	9.09

Source: Prepared by the authors (2022)

Twenty-one items were evaluated about the practical guide, which are detailed in Table 2 with their respective CVI values.

Table 2. Judges' agreement regarding the items of the "Practical Guide for Primary Health Care professionals: how to contribute to adherence to tuberculosis treatment?". Natal, state of Rio Grande do Norte, Brazil, 2022

Variables	n	(%)*	I-CVI**
1 CONTENT			
1.1 The content helps in a possible situation of work of PHC professionals	11	100.00	1.00
1.2 Titles and subtitles are coherently divided	10	90.91	0.91
1.3 Featured stretches really deserve to be featured	10	90.91	0.91
1.4 The content meets the needs of the target audience	10	90.91	0.91
1.5 There is logic in the text sequence	11	100.00	1.00
1.6 The content is relevant to be informed to PHC professionals	10	90.91	0.91
1.7 Content is correct from a scientific point of view	10	90.91	0.91
2 LANGUAGE			
2.1 Writing is compatible with the target audience	10	90.91	0.91
2.2 Sentence formation is attractive and not tiring	10	90.91	0.91
2.3 There is clarity and objectivity in the text	9	81.82	0.82
3 ILLUSTRATIONS			
3.1 Illustrations match the content	8	72.73	0.73
3.2 Illustrations are understandable	9	81.82	0.82
3.3 Caption helps the reader to understand the image	11	100.00	1.00
3.4 Number of images is sufficient to cover the content	8	72.73	0.73
4 LAYOUT			
4.1 Font and font size favor the reading	8	72.73	0.73
4.2 Colors used in the text enable reading	8	72.73	0.73
4.3 Arrangement of items on the page is organized	9	81.82	0.82
4.4 Number of pages and size of the material are consistent	9	81.82	0.82
5 MOTIVATION			
5.1 Reader is encouraged to continue reading through the content	10	90.91	0.91
5.2 Practical Guide is enlightening	10	90.91	0.91
6 CULTURE			
6.1 Meets the profiles of PHC professionals who care for people with TB	8	72.73	0.73
OVERALL CVI			0.86

*Percentage of agreement on the item; **Item-Level Content Validity Index.

Source: Prepared by the authors (2022)

Of the proposed items, three had only the options "I agree" and "I totally agree" selected. Nine items had an agreement of 90.91%, in four 81.82% agreed, and five items obtained a percentage of 72.73%. In all, sixteen subtopics were assessed as adequate by the judges. The practical guide, in the validation process, had a satisfactory overall CVI of 0.86, a value above the recommended minimum for certification of educational material.

Considering the axes of the validation instrument, items related to content, language and motivation were agreed upon by most of the participating judges. They agree with the potential of the material to guide and clarify doubts about the subject, through a solid content, with accessible and objective language, providing the reader with confidence in approaching the subject and clarifying their doubts about the management of patients with Tuberculosis (TB).

The five subtopics showing a minimum agreement rate below 0.80 was because of the number of judges who selected the “partially agree” option, that is, 27% of the experts believe that items such as illustrations, number of pages, font, and culture do not fully meet expectations for the material.

DISCUSSION

Validation of the practical guide covered the steps of the initial proposal and necessary adjustments, making the product consistent and thus applicable for professional practice in the care of TB patients, as well as their follow-up during the treatment period.

Considering the magnitude of Tuberculosis (TB), there is a need to seek strategies for patients to adopt their treatment.¹⁵ Further studies addressing adherence and abandonment of treatments have to be carried out, as well as the development of tools and their validation to effectively assist in health services.²⁰

During the coronavirus disease 2019 (COVID-19) pandemic, in Brazil and the world, technology was significantly present in the routine of individuals, both for entertainment and to bring information about different areas, mainly health.²¹ Despite the moment experienced referring to a critical and unwanted situation, this period clearly brought opportunities for improving processes in health.²¹ Now, more than ever, we live in a new era in the health sector, with the incorporation of new virtual technologies,²¹ which aim to help simplify and improve the care and flow of information.¹⁶

In this context, care needs to direct attention to the development of intervention strategies used by health professionals, which minimize the mishaps that the disease in question generates.²² These tools are based on the needs of each patient and their family, embracing the individual in the context in which they are inserted, observing the psycho-socioeconomic factors, and humanizing and making care more effective.²³

In this way, educational technologies aim to facilitate teaching-learning processes, focusing on communication and reception, thus representing a tool for spreading knowledge regarding the disease, its manifestation, and control. Thus, it provides a positive relationship between the professional and the patient, favoring the treatment.²³

On adherence, Temoteo¹⁰ argues that adherence to tuberculosis treatment is a process experienced from before the diagnosis until the end of treatment. Thus, it is necessary to expand the understanding of professionals who assist people with TB regarding the context that involves treatment to put into practice more targeted and effective interventions for this public.¹⁰

This understanding has shown positive results in studies^{1,12,24-25} that demonstrate that the approximation of the professional with the reality of the patient who lives with a chronic disease can

positively interfere with the treatment sequence since they feel more welcomed in the different demands that the disease brings.

As for these aspects, a study carried out in Ukraine¹² presented examples of satisfactory results in health care in Europe, with regard to improved adherence. For example, a social support program whose main benefits are the convenience of patients receiving their medication at home and, therefore, avoiding going to places where the drugs were dispensed, and the support that received from the nurses, who provided information about the disease, treatment, consultations, as well as emotional and often financial support.¹²

Another study¹ also adopted the approach of bringing convenience to the patient, in which researchers compared the traditional DOT and the DOT using a mobile team, which provided the medications at a convenient time and place to the patient, thus evidencing a new strategy, adapted to the reality of the community, reducing the default rate of people undergoing tuberculosis treatment since it takes into account the main barriers to adherence to treatment.¹

The diagnosis of the disease brings with it many doubts and difficulties on the part of those who experience it.²⁶⁻²⁷ Therefore, knowing how this person with TB experiences the disease can be of great value for the professional, thus producing an important framework to build and put into practice strategies centered on the person with tuberculosis, as well as for people who experience the disease together with the person affected.²⁸ In this sense, the practical guide becomes relevant, since it summarizes information from the perspective of people who have had the disease and achieved a cure.

Given this, it is worth highlighting the need for actions dedicated to health education, which are fundamental in the dissemination of information, such as instruments that provide guidance on adherence to tuberculosis treatment.²⁹ Although not having due recognition of its importance, it is still necessary to apply measures that break down the barriers that prevent this therapeutic adherence,³⁰ because matters like this are necessary for awareness, and thus, to achieve a cure.

The practical guide can facilitate adherence to tuberculosis treatment by providing Primary Health Care professionals with information that is easy to access and understand and also with the possibility of adapting it to different treatment contexts. In addition to the technical issues that involve the treatment of tuberculosis, such as measuring weight, quantity of medication dispensed weekly, and sputum tests for diagnosis and control, there are intrinsic and extrinsic issues that involve this process, which need to be understood and, then adjusted.

In view of what was exposed in this study, the person who experiences the disease and treatment of tuberculosis is a valuable source of strategies for adherence to the treatment, which is an important theme to be worked on, mainly, with patients who experience a long period of therapy. In addition, using this information to improve and more assertively conduct care for people with

tuberculosis can be a great differential in behaviors to combat infectious diseases at the level of primary care.

CONCLUSION

The study demonstrated by the validation process that the practical guide is valid as a health education instrument, and can satisfactorily contribute to the management of patients with tuberculosis in Primary Health Care, positively influencing their adherence to the therapy. Its objective format, accessible language, and scientifically based content show the potential of the material to guide such professionals in conducting the process of adherence to tuberculosis treatment.

In this way, the relevance of validating a manual to guide the nursing processes carried out by the team regarding tuberculosis is notorious, for the practice to be grounded, as well as compiling the knowledge for understanding the disease and necessary conducts for its application, thus aligning the work process and providing the patient with the management that best suits their reality and needs.

Regarding the study limitations, the participation of the judges stands out, in which some participants incompletely completed the forms, making it necessary to exclude them from the count. Because it is an innovative material on the theme, with theoretical content based on the experiences of patients who achieved the cure of the disease, it also has as a limiting factor the difficulty in finding studies that demonstrate the effectiveness of the material in the format of a practical guide.

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