



Validation of an educational booklet on psychotropic drugs for family members of people with mental disorders

Validación de una cartilla educativa sobre psicofármacos para familiares de personas con trastornos mentales

Validação de cartilha educativa sobre psicofármacos para familiares de pessoas com transtorno mental

Fernanda Jorge Guimarães¹

Williane Souza da Silva²

Daniela Vieira Silvestre³

Jaqueline Galdino Albuquerque Perrelli⁴

Juliana Lourenço de Araújo Veras⁵

Mariana Boulitreau Siqueira Campos Barros⁶

¹Doutora em Enfermagem, Núcleo de Enfermagem, Centro Acadêmico de Vitória, Universidade Federal de Pernambuco. Rua Alto do Reservatório, S/N, Bela Vista, Vitória de Santo Antão, Pernambuco, Brasil. Email: fernanda.guimaraes@ufpe.br

^{2,3}Acadêmica de Enfermagem, Centro Acadêmico de Vitória, Universidade Federal de Pernambuco, Vitória de Santo Antão, Pernambuco, Brasil.

⁴ Doutora em Neuropsiquiatria e Ciência do Comportamento, Departamento de Enfermagem, Centro de Ciências da Saúde, Universidade Federal de Pernambuco.

⁵ Doutora em Neuropsiquiatria e Ciência do Comportamento, Núcleo de Enfermagem, Centro Acadêmico de Vitória, Universidade Federal de Pernambuco.

⁶ Doutora em Enfermagem, Núcleo de Enfermagem, Centro Acadêmico de Vitória, Universidade Federal de Pernambuco.

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ABSTRACT:

Introduction: Educational technologies could be used to educate family members and individuals with mental disorders about psychotropic drugs, since pharmacological treatment presents several challenges, such as user adherence.

Objective: To validate an educational booklet on psychotropic drugs for family members of individuals with mental disorders.

Methods: This is a methodological study with a quantitative approach, conducted online with mental health specialists and at the Psychosocial Care Center with family members of individuals with mental disorders. The research was developed in three stages: development and validation of the booklet's content; development and evaluation of the booklet; and validation of the booklet. Data were collected through a characterization questionnaire, a Health Educational Content Validation Instrument, a Suitability Assessment of Materials, and an Assistive Technology Assessment Questionnaire, pre- and post-tests. The following criteria were analyzed: objectives, structure/presentation and relevance, language, graphic illustrations, layout, learning stimulation and motivation, cultural appropriateness, effectiveness, and

interactivity. The percentage of agreement was used for data analysis. An 80% agreement level was adopted to consider the criterion evaluated as adequate.

Results: Twenty experts and 20 family members participated. The agreement level for the evaluated items was 80% or higher. The average score for the experts' responses was 34.9. Family members demonstrated greater knowledge in the post-test.

Conclusion: The booklet was considered valid and reliable for informing family members of individuals with mental disorders about psychotropic drugs.

Keywords: Educational technology, validation study, psychotropic drugs, nursing.

RESUMEN:

Introducción: Las tecnologías educativas podrían utilizarse para educar a familiares y personas con trastornos mentales sobre los psicofármacos, ya que el tratamiento farmacológico presenta diversos desafíos, como la adherencia al tratamiento.

Objetivo: Validar un folleto educativo sobre psicofármacos para familiares de personas con trastornos mentales.

Métodos: Se trata de un estudio metodológico con enfoque cuantitativo, realizado en línea con especialistas en salud mental y en el Centro de Atención Psicosocial con familiares de personas con trastornos mentales. La investigación se desarrolló en tres etapas: desarrollo y validación del contenido del folleto; desarrollo y evaluación del folleto; y validación del folleto. Los datos se recopilaban mediante un cuestionario de caracterización, un Instrumento de Validación de Contenido Educativo en Salud, una Evaluación de la Adecuación de los Materiales y un Cuestionario de Evaluación de Tecnologías de Asistencia, además de pruebas previas y posteriores. Se analizaron los siguientes criterios: objetivos, estructura/presentación y relevancia, lenguaje, ilustraciones gráficas, maquetación, estimulación y motivación del aprendizaje, adecuación cultural, eficacia e interactividad. El porcentaje de acuerdo se utilizó para el análisis de datos. Se adoptó un nivel de acuerdo del 80% para considerar el criterio evaluado como adecuado.

Resultados: Participaron veinte expertos y 20 familiares. El nivel de acuerdo en los ítems evaluados fue del 80% o superior. La puntuación media de las respuestas de los expertos fue de 34,9. Los familiares demostraron un mayor conocimiento en la prueba posterior.

Conclusión: El cartilla se consideró válido y fiable para informar a los familiares de personas con trastornos mentales sobre los psicofármacos.

Palabras clave: Tecnología educativa, estudio de validación, psicofármacos, enfermería.

RESUMO:

Introdução: Tecnologias educacionais poderiam ser utilizadas para esclarecer familiares e pessoas com transtorno mental sobre psicofármacos, uma vez que o tratamento farmacológico apresenta vários desafios como a adesão de seus usuários.

Objetivo: Validar cartilha educativa sobre psicofármacos para familiares de pessoas com transtornos mentais.

Métodos: Trata-se de um estudo metodológico, com abordagem quantitativa, realizado *online* com especialistas em saúde mental e no Centro de Atenção Psicossocial com familiares de pessoas com transtorno mental. A pesquisa foi desenvolvida em três etapas: elaboração e validação do conteúdo da cartilha; elaboração e avaliação da cartilha; validação da cartilha. Os dados foram coletados por meio de questionário de caracterização, Instrumento de Validação de Conteúdo Educativo em Saúde, Suitability Assessment of Materials, Questionário de Avaliação de Tecnologia Assistiva, pré e pós teste. Foram analisados os critérios: objetivos, estrutura/apresentação e relevância, linguagem, ilustrações gráficas, layout, estimulação para aprendizagem e motivação, adequação cultural, eficácia e interatividade. Utilizou-se o percentual de concordância para a análise dos dados. Adotou-se o percentual de 80% de concordância, para se considerar o critério avaliado como adequado.

Resultados: Participaram 20 especialistas e 20 familiares. Verificou-se que o percentual de concordância obtido nos itens avaliados foi igual ou superior a 80%. A pontuação média das respostas dos especialistas foi 34,9. Os familiares demonstraram maior conhecimento no pós-teste.

Conclusão: A cartilha foi considerada válida e confiável para informar os familiares de pessoas com transtorno mental sobre psicofármacos.

Palavras-chave: Tecnologia educacional, estudo de validação, psicofármacos, enfermagem.

INTRODUCTION

Medication therapy is important for improving the quality of life of individuals with mental disorders, as it minimizes the acute symptoms of the illness and strengthens family bonds, making individuals more receptive to dialogue and a peaceful routine. However, adherence to this treatment approach still faces challenges such as gaps in information, a lack of qualified listening, and the imposition of medicalization without dialogue with the patient⁽¹⁾.

Other factors that positively or negatively affect medication adherence can also be highlighted, such as trust and social support, a positive attitude toward the illness and treatment, understanding of the beneficial and negative impacts of medication, and financial constraints⁽²⁾.

In addition to these, there is a tendency to discontinue non-pharmacological therapy when signs of improvement appear or when side effects of psychotropic medications occur, leading to withdrawal from support groups and a loss of connection with the providing facility in question, such as the Psychosocial Care Center (CAPS)⁽³⁾.

Furthermore, psychotropic medications should be combined with other non-pharmacological approaches in treatment, such as therapeutic workshops—whether group or individual—always involving the family and community in this process. In this regard, the family plays a fundamental role in the care of these patients, as it is the family that generally administers the medications and provides full-time care for the patient's needs, while also needing to attend to its own interests and needs.

Generally, when a family member becomes ill, there are repercussions for the entire family, which may require a reorganization of roles within the family and lead to emotional overload, as well as physical and psychological problems⁽⁴⁾.

On the other hand, the family can be a great support to the treatment team, as it serves as a mediator between the patient and the healthcare professional.

Family psychoeducation is an evidence-based therapeutic approach that emphasizes the importance of family bonds, providing information about mental illness through a facilitator or healthcare professional; when combined with pharmacological treatment, it promotes adherence to treatment. It is well known that the breakdown of family bonds also stems from the stigma associated with mental illness, in which family members end up distancing themselves, causing patients to feel rejected. Furthermore, prescribers of psychotropic medications highlight the scarcity of easy-to-understand educational materials that can aid in understanding the subject⁽⁵⁾.

In light of the inadequate use of medications for mental health treatment, the Self-Managed Medication Guide (SMG) was developed with the aim of promoting autonomy and ensuring user participation in their treatment. SMG provides information on medications regarding effects, drug interactions, dosages, and contraindications. Additionally, it allows users to share their experiences and questions about medication use⁽⁶⁾.

Adherence to the SMG has not been effectively established, as healthcare professionals fear that users knowing more about medications will result in them discontinuing

treatment. Consequently, medication treatment is rarely discussed by either users or professionals⁽⁶⁾.

To address this issue, educational technologies could be used to educate family members and people with mental disorders about psychotropic medications. Consequently, a search was conducted in the Bireme databases and the CAPES journal portal using the search terms health education, educational technology, medications, and treatment adherence; few studies on the topic were found, highlighting a gap in the existing body of knowledge.

Therefore, upon observing the difficulties faced by family members and caregivers regarding knowledge of medications, dosing schedules, and the importance of drug therapy, as well as the lack of an educational tool for these family members that encourages effective adherence, an interest in developing this study emerged.

This study is relevant because it recognizes the caregiver/family member as someone crucial to the success of drug therapy and who needs guidance and accurate information regarding patient care, which can also contribute to greater patient involvement in their own treatment. Furthermore, the study contributes to expanding the body of knowledge on this topic, given the scarcity of research in this area.

In light of the above, the study aimed to validate an educational booklet on psychotropic medications with family members of people with mental disorders.

METHOD AND MATERIALS

This is a methodological study with a quantitative approach. Methodological studies involve investigations into methods for collecting and organizing data and conducting rigorous research⁽⁷⁾. The study was carried out in three main stages: development and content validation of the booklet; development and evaluation of the booklet; and validation of the booklet.

First phase: elaboration and validation of the contents of the booklet

The first stage involved developing the content for the booklet on psychotropic medications, as well as having this content reviewed by a panel of experts. The content was developed based on a review of the literature on psychotropic medications, as well as on manuals from the World Health Organization and the Ministry of Health. The text was written in simple, clear, and accessible language.

The study population participating in this first stage consisted of mental health specialists, who evaluated the content to be used in the booklet. The experts were selected through the Lattes platform and contacted via email. The inclusion criteria adopted were: having professional training (specialization, master's, or doctoral degree in the field of mental health) and scientific output (works related to the topic presented at conferences, publication of articles on the topic in indexed journals). The exclusion criterion was failure to complete the evaluation.

The sample size was determined based on a psychometric model, which estimates that six experts are needed for content validation⁽⁸⁾. A convenience sampling method was

adopted, as it was understood that this approach allows for the recruitment of experts in the subject area during the exploratory phase of this study.

For data collection, a demographic questionnaire—containing information about the experts—and the Instrument for the Validation of Health Education Content (IVCES) were used. The instrument demonstrates good reliability ($ICC > 0.8$) and has proven to be a reliable and valid tool for evaluating health education content. It consists of 18 items divided into three domains: objectives, structure/presentation, and relevance⁽⁹⁾.

The objectives domain ensures that the educational material to be validated includes content that promotes health and facilitates the work of health professionals in providing health education to patients and their families⁽⁹⁾. In the Structure/Presentation domain, clear and objective language is evaluated, ensuring it meets the needs of the selected target audience⁽⁹⁾.

In terms of relevance, the content of educational technology must be up-to-date and relevant. It is important for the researcher to be immersed in the context of the population and attuned to its needs and specific characteristics, thereby promoting education among the target audience⁽⁹⁾.

This stage of the study was conducted online by sending data collection questionnaires via email to mental health specialists who agreed to participate in the study.

The data analysis process for this stage initially involved entering the data into an Excel spreadsheet, and then the percentage of agreement was calculated for each item of the IVCES instrument. This percentage corresponds to the ratio between the “strongly agree” and “somewhat agree” responses and the total number of responses. A percentage of agreement of 80% or higher was adopted as the criterion for considering an item adequate⁽⁸⁾.

Second phase: elaboration and validation of the booklet

The second stage, referred to as the development and evaluation of the booklet, consisted of three phases: development of the booklet, technical evaluation of the booklet, and semantic evaluation. During this stage, the booklet was developed, guided by the method proposed by Falkembach⁽¹⁰⁾. This method takes into account that, for the development of educational technology, it is necessary to establish and strictly follow stages to ensure the project's smooth progress and problem resolution. The methodology employed must include standardization, modularization, documentation, flexibility, and planning. The work of creating the technology is divided into five phases: analysis and planning, modeling, implementation, evaluation and maintenance, and distribution.

Phase 1: Analysis and planning. In this phase, the material to be developed was conceived. The theme was defined, and similar applications as well as available resources were considered. Furthermore, it was necessary to define the application's objective, the target audience, the format, the environment, and the purpose for which the product was used; and what is expected when using this application.

Phase 2: Modeling. In this phase, the graphic designer developed the user guide. It is produced in three versions: the conceptual model, the navigation model, and the interface model⁽¹⁰⁾.

The conceptual model outlines how the information will be presented to the user; that is, it affects both the content and its availability. This is followed by a diagram containing the application's hyperbase, given that every hypermedia application is synthesized by a hyperbase. The diagram shows how the content will be presented, the media that will be used, and user interaction⁽¹⁰⁾.

In the present study, an educational booklet was developed that will be made available online after its validation.

The navigation model outlines how the user accessed the material created by the researcher. Given this, navigation must be objective and clear, reducing the participant's cognitive load and, consequently, their distraction⁽¹⁰⁾.

The interface design reflects the artistic elements developed to integrate the previous designs. Therefore, it is essential that the design harmonizes with the content, which should be clear, objective, and aesthetically organized⁽¹⁰⁾.

Phase 3: Implementation. In this phase, media were created or reused to compose the booklet. It is essential to respect copyright and review the texts to eliminate any grammatical errors⁽¹⁰⁾.

Phase 4: Evaluation and Maintenance. Evaluation and maintenance involve correcting potential errors, as well as conducting tests to identify flaws⁽¹⁰⁾.

Phase 5: Distribution. This phase involves making the final material available⁽¹⁰⁾. Upon completion of the booklet, it was evaluated by a panel of experts who assessed its appearance.

The booklet was designed by a professional graphic designer based on the content validated in the previous stage of the study. Efforts were made to use images, diagrams, and font sizes that would contribute to a better understanding of the information provided in the booklet.

In the second stage, experts in the technical field related to online educational materials participated. The inclusion criteria were professional training in the development of online educational materials. No exclusion criteria were defined. The search for experts was conducted through the Lattes platform. The experts were contacted by email. As a result, ten experts responded to the survey, constituting the total number of participants in this stage.

In addition to the experts, the second stage included a group composed of members of the target population. The purpose of forming this group was to assess understanding of the content presented in the booklet.

The inclusion criteria for participants from the target population were being over 18 years of age, regularly attending the CAPS, and having a family relationship with or being the legal guardian of the client served at the CAPS. The exclusion criterion was having no formal education or having any difficulty that would prevent them from understanding the information contained in the text and the survey questions. At this stage, the guidelines proposed by the adopted methodological framework were followed, which indicate that the evaluation of the items (in this study, educational material) can be

conducted with small groups of subjects (three or four)⁽⁸⁾. Therefore, eight family members participated, divided into two groups of four family members each.

With regard to data collection from the experts in the second stage, the process began with a search on the Lattes platform to select the experts, who were then contacted via email with an invitation containing information about the study. If they expressed interest in participating in the research, the informed consent form (ICF) was sent to them, along with the data collection instrument. The stage of developing and evaluating the booklet by the panel of experts took place online, with participants contacted via email.

For data collection in the second stage of the study, the Suitability Assessment of Materials (SAM) instrument was used. This instrument consists of six sections presented in the form of a checklist (1. content; 2. language appropriate for the population; 3. graphic illustrations, lists, tables, and charts; 4. layout and typography; 5. stimulation for learning and motivation; 6. cultural appropriateness). Each item on the instrument can be rated as (2) excellent, (0) not suitable, (1) suitable, and (N/A) if the factor cannot be assessed. The SAM was translated and made available in Portuguese⁽¹¹⁾.

Data collection from family members took place in a private setting at the Psychosocial Care Center (CAPS). Family members reviewed the booklet and were asked whether they found the content presented in it to be clear. In addition, they were encouraged to offer suggestions if they deemed it necessary.

The results obtained in this stage were entered into a spreadsheet and analyzed using percentage distribution according to the proportion of “excellent,” “adequate,” and “inadequate” responses, and the percentage of agreement was calculated.

Third phase: Validation of the booklet

During the validation phase of the booklet, its validity and reliability were assessed. Validity refers to the instrument’s ability to measure what it is intended to measure⁽⁸⁾. Content validation indicates whether the instrument contains an appropriate sample of items to measure the specific construct and adequately cover its domain⁽⁷⁾. Furthermore, reliability refers to the instrument’s ability to measure consistently by applying the same methodology under similar conditions⁽¹²⁾.

In the third stage, family members of individuals with mental disorders treated at a Type II Psychosocial Care Center (CAPSII) participated in the study. The inclusion and exclusion criteria were the same as those established in the previous stage for members of the target population. However, the third stage of the study included a larger number of members of the target population for the evaluation of the educational booklet.

The sample size for the family members group consisted of 20 family members, selected by convenience, who attended the CAPS during the data collection period.

In this stage, the Assistive Technology Assessment Questionnaire (QUATA) was used. This instrument evaluates the following attributes: objectives; clarity; relevance; effectiveness; and interactivity. Each attribute requires a score, which must be assigned according to the following criteria: adequate (2), partially adequate (1), and inadequate (0), where it is considered adequate when the technology meets the item’s definition;

partially adequate when it partially meets the definition; and inadequate when it does not meet the item's definition, with space provided for comments⁽¹³⁾.

In addition, the researchers developed pre- and post-tests. Each test consists of ten true or false statements about the content covered in the booklet. The purpose of the tests is to assess family members' knowledge of psychotropic medications before and after the educational booklet is used.

To develop the pre-test and post-test, a question bank was initially created, consisting of 30 true/false statements on topics related to psychotropic drugs, which were covered in the booklet developed for this study. These statements were classified into low, medium, and high levels of complexity, with ten statements in each complexity level. The level of complexity refers to the level of difficulty the question presents to the respondent.

Next, the question bank for the pre-test and post-test was submitted for review by a panel of experts. Three experts participated, evaluating whether the statements were clear, classifying each statement according to its level of complexity, and determining whether the statement was true or false.

Following the review by the panel of experts, a spreadsheet was created with their responses and suggestions, and the process of analyzing their responses began. Regarding the criterion of clarity, nine statements were excluded, as there was no consensus among the experts regarding this criterion.

Next, the remaining statements were classified according to their level of complexity. At this stage, three statements were excluded because the same statement was rated by one expert as low complexity, by another as medium complexity, and by a third as high complexity.

Finally, the suggestions provided by the experts were adopted. The suggestions concerned the replacement of terms and the clarification of terms, and four items were excluded because they were not specific to the target audience for which the item was intended.

Thus, the item bank consisted of 14 items, three of which were of low complexity, six of medium complexity, and five of high complexity. The statements were randomly selected for the pre-test and post-test, with three low-level statements, four medium-level statements, and three high-level statements. Since there were only three low-level statements in the bank, these were included in both the pre-test and post-test. An online random selection service was used to select the statements.

A sociodemographic questionnaire developed by the authors was also used to characterize the participants, including the following information: gender, age, marital status, religion, education level, occupation, degree of kinship with the person with a mental disorder (limited to family members), and monthly household income.

Regarding the family members of individuals with mental disorders, the study was presented to the management of the Psychosocial Care Center (CAPS), as well as to the family members. Family members who agreed to participate signed the Informed Consent Form (ICF) and completed the identification questionnaire and the pre-test. Subsequently, they accessed the booklet via an electronic device (smartphone or

laptop), and immediately afterward answered the post-test and the Assistive Technology Assessment Questionnaire (ATAQ). The entire process of administering the questionnaires to family members was conducted in person.

The data were tabulated in Excel, using the mean, percentage of agreement, and relative frequency as measures. To calculate the percentage of agreement, responses classified as “appropriate” and “partially appropriate” were considered to be in agreement. A criterion of 80% agreement among experts was adopted to classify an item as appropriate.

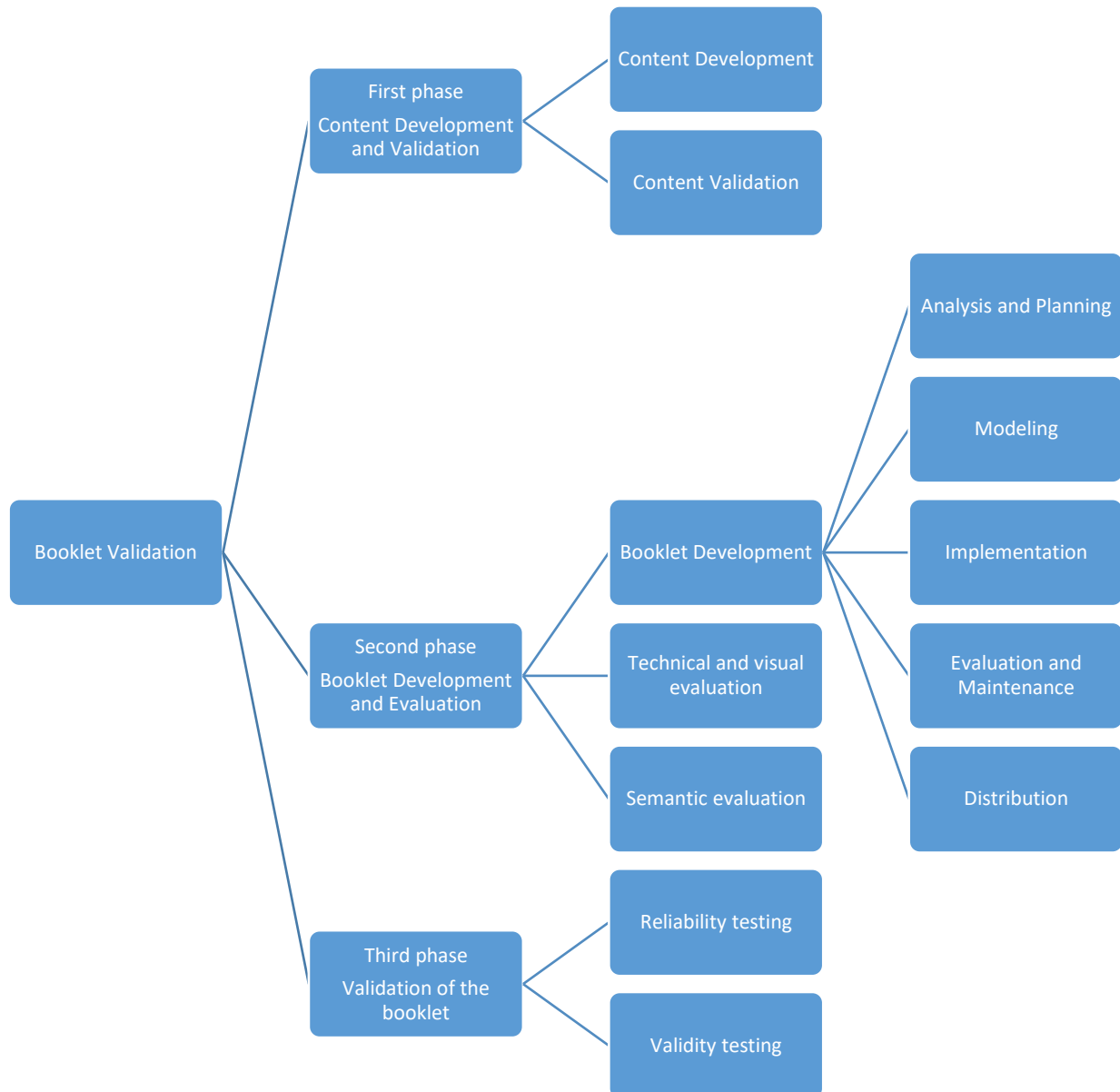
The reliability of the booklet was estimated using McDonald’s omega (ω), calculated from a polychoric correlation matrix, considering the ordinal nature of the items, which were answered on a three-point polytomous scale (0, 1, and 2). The ω was selected because it constitutes a more robust estimate of internal consistency, since it does not assume tau-equivalence among items, allows for distinct factor loadings, and provides a more realistic estimate of the proportion of score variance attributed to the common factor⁽¹⁴⁾. Values of $\omega \geq 0.70$ were considered indicative of adequate internal consistency⁽¹⁵⁾. Cronbach’s alpha was not used due to its theoretical and empirical limitations, particularly in instruments with ordinal items, where the use of Pearson correlations tends to underestimate reliability and produce less accurate estimates⁽¹⁴⁾.

Ethical aspects of the investigation

The study complied with the guidelines set forth in Resolution 466 of 2012, which addresses research involving human subjects. The study was approved by the Research Ethics Committee under CAAE 54537221.3.0000.5208 and opinion number 5.284.889. Anonymity, privacy, confidentiality, and the confidentiality of the information provided were ensured. Participants included in all stages of the study agreed and signed the Informed Consent Form (ICF).

Figure 1 below presents a summary of all stages carried out in the study.

Figura 1: Síntese das etapas da pesquisa.



RESULTS

First phase: Elaboration and validation of the contents of the booklet

Ten experts participated in the first stage of the study, nine of whom were women. Most are nurses with experience working in Psychosocial Care Centers, with an average of six years of experience in the fields of mental health and public health. Regarding the content evaluation, the results are presented in Table 1.

Table 1. Content evaluation by expert judges, first round, Vitória de Santo Antão, PE, Brasil, 2024.

Items	D*	CP§	CT	PC#
Objectives: purposes, goals, or aims				
1. Addresses the proposed topic	1	1	8	90%
2. Is appropriate for the teaching-learning process	0	6	4	100%
3. Clarifies questions about the topic covered	1	2	7	90%
4. Encourages reflection on the topic	1	3	6	90%
STRUCTURE/PRESENTATION: organization, structure, strategy, coherence, and adequacy				
5. Encourages behavioral change	2	6	2	80%
6. Language appropriate for the target audience	2	4	4	90%
7. Language appropriate for the educational material	1	3	6	90%
8. Interactive language, allowing for active engagement in the educational process	2	6	2	100%
9. Accurate information	0	2	8	90%
10. Objective information	1	1	8	100%
11. Informative content	0	5	5	100%
12. Necessary information	0	2	8	100%
13. Logical sequence	0	4	6	100%
14. Current topic	0	1	9	100%
RELEVANCE: Significance, impact, motivation, interest.				
15. Appropriate text size	0	5	5	100%
16. Encourages learning	0	6	4	100%
17. Contributes to knowledge in the field	0	1	9	100%
18. Sparks interest in the topic	0	5	5	100%

Source: data from the investigation, Vitória de Santo Antão, 2024. D*: Disagree (0);

CP§: Partially agree (1); CT¶: Completely agree (2); PC# Percentage of agreement

The agreement rate obtained for the items evaluated was found to be 80% or higher. However, it was noted that in the “objective” and “structure” domains, two experts assigned a score of zero to four items. These evaluations did not prevent the 80% threshold from being met, which is required for the content to be considered adequate.

Second phase: Development and evaluation of the booklet

Ten experts participated in the second phase of the study, with an average age of 35.2 years. Six participants are married and four are single. Five participants identified as Evangelical and five are Catholic. Regarding professional background, four participants hold a degree in design technology, four have specializations in design or health-related technologies and information technology, and two participants hold doctorates in design and education with an emphasis on educational design. Three experts identified as self-employed, two are salaried employees, and five are civil servants.

The average score of the experts' responses was 34.9. The maximum score was 44 and the minimum score was 26. Table 2 below presents the evaluation of the booklet regarding technical aspects.

Table 2. Evaluation of the educational booklet by experts in the technical field, Vitória de Santo Antão, Pernambuco, Brasil, 2024.

Attribute	Items	Optimal (%)	Adequate (%)	Not adequate (%)	Percentage of agreement
Content	(a) The purpose is clear	90	10	0	100
	(b) The content addresses behaviors	40	50	10	90
	(c) The content is focused on the purpose	100	0	0	100
	(d) The content highlights the main points	80	20	0	100
Demand of literacy	(a) Reading level	60	40	0	100
	(b) Uses active voice	50	50	0	100
	(c) Uses vocabulary with common words in the text	90	10	0	100
	(d) Context precedes new information	60	40	0	100
	(e) Learning is facilitated by bullet points	80	20	0	100
Illustrations	(a) The purpose of the illustration in relation to the text is clear	60	30	10	90
	(b) Types of illustrations	60	40	0	100
	(c) The figures/illustrations are relevant	60	40	0	100
	(d) Lists, tables, etc. have explanations*	40	40	0	100
	(e) Illustrations have captions	60	30	10	85,71
Layout and presentation	(a) Layout characteristics	80	20	0	100
	(b) Font size and type	60	40	0	100
	(c) Subheadings are used*	70	20	0	100
Stimulation/ motivation for learning	(a) Uses interaction	40	40	20	80
	(b) The guidelines are specific and provide examples	50	50	0	100
	(c) Motivation and self-efficacy	60	40	0	100
Cultural appropriateness	(a) Is similar to the reader's logic, language, and experience	90	10	0	100
	(b) Cultural imagery and examples	60	40	0	100

Source: data from the investigation. Vitória de Santo Antão, 2024. *Presentation of answer N/A (Not applicable).

As for the semantic analysis conducted with family members of people with mental disorders, all family members found the booklet to be clear and relevant.

Third phase: Validation of the booklet

Twenty family members of people with mental disorders, with an average age of 43, participated in the third phase of the study. Regarding gender, 17 participants were female and three were male. Six participants were single, ten were married, and four were widowed. Four participants had not completed elementary school, one had completed elementary school, two had not completed high school, nine had completed high school, and four had completed higher education. Two have no income. Fifteen family members earn up to two minimum wages; three earn between two and three minimum wages. Six are unemployed; two are self-employed; six are employed under the CLT; two are civil servants; two are homemakers; two are retired. Nine are Catholic, eight are Evangelical, and three do not profess any religion. Regarding the degree of kinship with the person with a mental disorder, it was found that six are children; five are siblings; four are spouses; one family member is the mother; one is a niece; one is an aunt or uncle; one is a cousin; and one is a brother- or sister-in-law.

Socio-demographic variables were examined to better understand the characteristics of family members, as well as to determine whether they have a support network and occupations that could assist in caring for their relative with a mental disorder.

With regard to knowledge about the proper use of psychotropic medications before and after using the educational booklet, the proportion of correct answers between the pre-test and post-test was determined for each of the 10 statements and their respective levels of complexity, as shown in Table 3.

Table 3. Percentage of correct answers on the pre-test and post-test for each of the 10 statements, Vitória de Santo Antão, Pernambuco, Brasil, 2024.

Level of complexity	Afirmatives	% Pre-test accuracy	% Post-test accuracy
Low	1	90	100
	2	100	100
	3	50	40
Midlle	4	85	100
	5	75	100
	6	45	85
	7	100	100
High	8	75	85
	9	85	45
	10	90	90

Source: data from the investigation, Vitória de Santo Antão, 2024.

Table 4 presents the results regarding the assessment of the appropriateness of the educational booklet by family members of people with mental disorders.

Table 4. Assessment of the appropriateness of the educational booklet by family members of people with mental disorders, Vitória de Santo Antão, Pernambuco, Brazil, 2024.

Atributes	Items	Inadequate (%)	Parcially inadequate (%)	Adequate (%)	Percentage of agreement
1 Interactivity	1 The content is tailored to your needs	0	10	90	100
	2 It promotes interaction and engagement in the educational process	0	5	95	100
	3 It allows you to access the topics presented	0	15	85	100
	4 It gives users autonomy in how they use it	5	30	65	95
2 Objectives	5 Encourages learning about the subject matter	0	5	95	100
	6 Encourages learning of new concepts	0	15	85	100
	7 Makes it easy to find information	10	10	80	90
	8 Features an engaging presentation style	0	10	90	100
3 Relevance and efficiency	9 Provides appropriate resources for use	5	30	65	95
	10 Sparks interest in using it	0	15	85	100
	11 Encourages behavioral change	0	15	85	100
	12 Applies the content covered in different contexts	0	15	85	100
4 Clarity	13 Presents information in a simple way	5	25	70	95
	14 Encourages reflection on the content presented	0	5	95	100

Source: data from the investigation. Vitória de Santo Antão, 2024.

The evaluation of the booklet by family members showed high internal consistency, with $\omega = 0.83$, a value higher than the established cutoff point (≥ 0.70). This result indicates adequate consistency among the items used to evaluate the educational technology, showing that family members responded consistently to the different aspects of the

material, such as clarity of information, appropriateness of language, organization of content, thematic relevance, and practical usefulness. The magnitude of the coefficient reinforces that the evaluation instrument demonstrated sufficient internal stability to measure the quality of the booklet, supporting the reliability of the educational technology validation process in the context of its intended target audience.

DISCUSSION

With regard to the development of the content, it was organized from an educational and behavioral perspective, with the aim of contributing to the proper administration of medications by family members of people with mental disorders. The authors state that the educational tool in booklet format serves as a creative, reliable, and useful instrument for health education⁽¹⁶⁾.

The booklet's content was validated by professionals specializing in mental health. The authors emphasize the importance of validating educational technology as a scientifically sound product that has been tested for its effectiveness and suitability for application in different nursing settings. The technology validation process allows for inferences regarding the legitimacy and reliability of the practice that produces quality care, as it is assumed that educational material, when well-produced and validated, can help change the reality of the target individual⁽¹⁶⁾.

Regarding the first stage of the study, the items comprising domain 1, "objectives," presented how the content of the chosen topic is organized, which enriches the teaching-learning process and facilitates the exchange of knowledge, ideas, and experiences regarding a specific topic addressed.

The item "Suitable for the teaching-learning process" received consensus among the experts, highlighting the relevance of the content evaluated.

In domain 2, "Structure/presentation," the item "encourages behavioral change" received the lowest percentage of agreement (80%). Authors highlight that behavioral change occurs through a full understanding of the topic in question⁽⁹⁾. A study on the development and validation of digital educational resources for worker health and safety achieved a 95% agreement rate on the same item and presents educational content that is both interesting and easy to understand⁽¹⁷⁾, which differs from the result presented in this study. Although the presented result meets the adequacy criteria adopted in the study, it is acknowledged that the language used in the evaluated content may hinder the target audience's understanding of the information provided.

The "relevance" domain obtained the highest agreement percentage across all items, indicating that experts deemed the content current and necessary and that it contributes to knowledge in the field. Authors emphasize that the themes and topics covered in educational content should meet the participants' needs, fostering empowerment regarding the subject addressed⁽⁹⁾. Therefore, it is understood that educational tools that use easy-to-understand language and reflect the reader's lived reality, in addition to keeping their attention focused, lead to significant behavioral change⁽¹⁶⁾.

In the results obtained in the second stage of the study, an average score of 34.9 was recorded on the SAM instrument, which classifies the booklet as adequate, given that, for this purpose, the technology must achieve a score of 10 points or higher⁽¹⁸⁾.

Technical experts, during the evaluation of the booklet, recognized it as valid, given that the percentage of agreement ranged from 80% to 100%, with the lowest percentages obtained in the stimulation/motivation of learning domain, in item “a) uses interaction” (80%), followed by the illustrations domain in the item “e) the illustrations have captions” (85.71%), and the content domain in the item “b) the content addresses behaviors” (90%). According to researchers, for it to be valid, the content validation index must be at least 70%⁽¹⁹⁾.

The domains of literacy requirements, layout and presentation, and cultural appropriateness showed a 100% agreement rate. This study reported a higher agreement rate than that observed in another study that used the same instrument to evaluate educational materials for family members of people with venous ulcers, which reported agreement rates ranging from 75% to 100%⁽²⁰⁾.

The item “(d) Lists, tables, etc. have explanations,” under the illustrations attribute, showed 40% of responses as excellent, 40% as adequate, and 0% as inadequate. This item had two “not applicable” responses, which were excluded from the calculation of the agreement percentage, resulting in a total agreement percentage of 100%. A similar result was found in a study on the development, validation, and use of educational materials, in which 90% of experts rated the illustration domain as adequate⁽²¹⁾.

With regard to the family members of people with mental disorders, it was found that the majority are female. In addition, most family members have low incomes and low levels of education, with an average age of 43 years. This reality was observed in a study conducted in southern Brazil in which 63.3% of participants were women, with a mean age of 51.1 years; 38.5% reported having up to 4 years of schooling, and 41.2% reported a per capita income of 0.5 to 1 minimum wage⁽²²⁾.

When analyzing the proportion of correct answers among the statements in the pre-test and post-test, it was found that the majority of statements showed an increase in the proportion of correct answers in the post-test, with the exception of statement 3, which showed a decrease in the post-test, and statements 7 and 10, which showed no differences between the pre-test and post-test. These data are consistent with the results presented in a study validating educational materials, in which there was an increase in the proportion of correct answers on the post-test after using the aforementioned materials⁽²³⁾.

According to the assessment conducted by family members, the workbook was deemed appropriate, given that the agreement rate ranged from 90% to 100% during the evaluation of items in each domain, which is consistent with a study that evaluated printed educational material on the proper storage of medications in the home, which showed a content validity index among users of 0.94 for all evaluated items⁽²¹⁾.

The results presented are also similar to a study that validated a booklet for parents of children with attention-deficit/hyperactivity disorder (ADHD) treated at a Child Psychosocial Care Center (CAPSi), which showed that the booklet was evaluated by the target audience with a content validity index of 0.99⁽²⁴⁾.

Therefore, it is observed that the results obtained in this study corroborate the scientific literature regarding the development and validation of health education materials.

CONCLUSION

The results presented in the study showed that the content of the educational technology is relevant and valid in terms of its objectives, appearance, structure, organization, relevance, and teaching methods. Thus, the content can be made available to family members of people with mental disorders as a source of information about psychotropic medications.

The booklet was evaluated as adequate by technical experts and family members of people with mental disorders, with a percentage of agreement above 80% on all evaluated items. Family members demonstrated greater knowledge in the post-test, which shows that the booklet contributed to this knowledge-building process.

A limitation of the study was that it was conducted with family members of people with mental disorders who were treated at only one Psychosocial Care Center, which may not represent other realities across the country. Another limitation concerns the use of convenience sampling. In addition, a significant portion of the family members of people with mental disorders lack formal education, which made it impossible to administer the educational booklet, and the difficulty in engaging and involving family members in the activities promoted at the CAPS, which hindered contact with family members for study participation.

The results of this study demonstrate that the educational booklet will provide family members with information about the medications used to treat mental disorders, promoting health education and serving as a tool to facilitate communication between healthcare providers and caregivers of individuals with mental disorders, as well as potentially contributing to the development of public policies.

To access the booklet, please request it via email from the corresponding author.

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