



DEVELOPMENT AND VALIDATION OF EDUCATIONAL MATERIALS ON HIV

DESENVOLVIMENTO E VALIDAÇÃO DE MATERIAIS EDUCATIVOS SOBRE HIV

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ABSTRACT: Objective: To develop and validate educational materials on HIV. Method: A methodological study conducted in three stages: 1. Development of materials based on HIV-related protocols; 2. Validation of the materials by experts using the validated instrument, Suitability Assessment of Materials (SAM). Consensus among experts was determined using the Content Validity Index (CVI), which was deemed satisfactory with a score of ≥ 0.80 ; 3. Evaluation by users from a university hospital according to predefined criteria. Results: Three educational materials were developed: "Combined Prevention," "HIV Diagnosis, Transmission, and Prevention," and "Pre-exposure Prophylaxis and Post-exposure Prophylaxis for HIV." Validation by four experts resulted in SAM scores of 70.39%, 66.67%, and 61.90%, respectively. All materials achieved a $CVI \geq 0.90$. In the user evaluation, ten participants considered the materials appropriate according to the established criteria. Conclusion: The three educational materials developed were validated by experts and considered adequate by the target audience.

KEYWORDS: HIV. Health Education. Educational and Informative Materials. Validation Studies as Topic.

RESUMO: Objetivo: desenvolver e validar materiais educativos sobre o HIV. Método: estudo metodológico, realizado em três etapas: 1. Elaboração dos materiais com base em protocolos relacionados ao HIV; 2. Validação dos materiais por especialistas, utilizando o instrumento validado *Suitability Assessment of Materials* (SAM). O consenso entre os especialistas foi determinado pelo Índice de Validade de Conteúdo (IVC), satisfatório quando $\geq 0,80$; 3. Avaliação por usuários de um hospital universitário de acordo com critérios pré-definidos. Resultados: foram desenvolvidos três materiais educativos: "Prevenção Combinada", "Diagnóstico, Transmissão e Prevenção do HIV" e "Profilaxia Pré-Exposição e Profilaxia Pós-Exposição ao HIV". A validação dos materiais por quatro especialistas resultou em pontuações SAM de 70,39%, 66,67% e 61,90%, respectivamente, com $IVC \geq 0,90$ para todos os materiais. Na avaliação pelos usuários, dez participantes, consideraram os materiais adequados conforme os critérios estabelecidos. Conclusão: Os três materiais educativos desenvolvidos foram validados pelos especialistas e considerados adequados pelo público-alvo.

PALAVRAS-CHAVE: Educação em Saúde. Estudo de Validação. HIV. Materiais Educativos e de Divulgação.

INTRODUCTION

The Human Immunodeficiency Virus (HIV) is a retrovirus that suppresses the immune system.¹ In advanced stages, HIV can develop into Acquired Immunodeficiency Syndrome (AIDS), a phase where the immune system is severely compromised, making individuals more susceptible to illnesses and opportunistic infections.² Global statistics indicate that 39.9 million people worldwide were living with HIV in 2023.³ In Brazil, 489,594 cases of HIV infection were reported from 2007 to June 2023. Additionally, 10,994 AIDS-related deaths were recorded in 2022.⁴

Given this scenario, prevention strategies have been discussed and implemented worldwide.⁵ One prominent strategy is the combination prevention framework, which advocates the simultaneous use of diverse prevention approaches (biomedical, behavioral, and structural) applied at multiple levels (individual, relational, community, and societal) to meet the specific needs of different population segments. Consequently, various strategies can be adopted, including Pre-Exposure Prophylaxis (PrEP), Post-Exposure Prophylaxis (PEP), mass testing, condom use, prevention of vertical transmission, among others.⁵⁻⁷

Access to information on HIV prevention, diagnosis, and treatment contributes to self-care, helping to mitigate infection.⁸ Studies show that good levels of knowledge about HIV can positively influence the population's risk perceptions, use of prevention methods, testing, seeking healthcare services, post-diagnosis treatment, and pursuit of support environments.⁹⁻¹⁰ Furthermore, adequate knowledge assists people living with HIV (PLHIV) in self-care and self-management, promoting better health outcomes and reducing stigma through the dissemination of information on prevention and transmission.⁹⁻¹⁰

In this context, Health Education can be employed as a strategy to promote health and prevent diseases by expanding knowledge, developing skills, and fostering positive attitudes within the population.¹¹⁻¹³ Health Education is defined as a set of pedagogical, social, technical, political, and scientific practices aimed at enhancing critical thinking, improving knowledge, reducing misinformation, and strengthening individuals' self-worth.¹²⁻¹³ This continuous and dynamic process involves a partnership between healthcare professionals and patients, empowering them to make behavioral changes that improve health.¹²⁻¹⁴

Various educational strategies can support this service.¹⁵⁻¹⁷ A scoping review conducted by Duarte et al. (2024), which included 17 studies from Brazil, the United States, the United Kingdom, and South Africa, revealed that the primary educational strategy targeting PLHIV was the use of printed educational materials (n=8; 47%). Other identified strategies included games, videos, online educational programs, mobile instant messages, and workshops.¹⁷ The review also highlighted that printed educational materials played a significant role in empowering and fostering the autonomy of PLHIV.¹⁷ Lastly, the authors emphasized that the process of validating printed educational materials with experts and the target population was a key factor contributing to their adequacy, underscoring the importance of this process.¹⁷

Educational materials are perceived as facilitators of the learning experience, acting as mediators in knowledge acquisition.¹⁸ Besides serving as informational tools, they support the development of learning experiences in specific contexts.¹⁸ Producing educational materials on HIV aims to increase public knowledge levels, reduce taboos, minimize the incidence of HIV and sexually transmitted infections through combination prevention, and, in cases of HIV infection, promote autonomy in performing rapid tests and blood examinations.¹⁹⁻²⁰

Despite the widespread practice of producing educational materials, the methodological development process is rarely described. Research emphasizes the need to develop these materials

using robust methodological processes that include evaluation by experts and the target audience.²¹⁻²³ These processes are crucial for ensuring quality and accessible language for users, making information more comprehensible and applicable in practice. In this context, the objective of this study was to develop and validate educational materials on HIV.

METHODOLOGY

STUDY DESIGN AND LOCATION

This is a methodological study focused on the development and validation of educational materials related to HIV, conducted from July to November 2023 in the city of Vitória, Espírito Santo state in Brazil. The study was carried out in three stages: 1. Development of the educational materials; 2. Validation of the educational materials by an expert committee; and 3. Evaluation of the educational materials by the target audience.

STAGE 1 - DEVELOPMENT OF THE EDUCATIONAL MATERIALS

The development of the materials was led by two researchers who selected the content based on observed needs at the Medication Dispensing Unit of a University Hospital. Discussions resulted in the selection of the following topics: combined prevention (Material 1); HIV diagnosis, transmission, and prevention (Material 2); PrEP and PEP (Material 3).

To create the educational materials, clinical protocols and therapeutic guidelines published by Brazil's Ministry of Health were consulted. These materials were chosen for being evidence-based documents that aim to guide best practices in the care of PLHIV. Additionally, the websites of the Brazilian Ministry of Health and UNAIDS were consulted.^{2,6-7, 24-25}

After defining the topics and consulting documents and websites, prototypes of the educational materials were created using the graphic design tool Canva. During this phase, specific guidelines from the "Assessment Instrument for Printed Educational Materials Focusing on Health Literacy for Brazil" (AMEELS-BR) were considered. This instrument is validated and reproducible and consists of 56 criteria organized into six sections that cover content, language, illustrations, layout, typography, presentation, learning stimulation/motivation, and cultural appropriateness, adhering to Health Literacy principles.²⁶

Subsequently, two researchers working in the field of HIV/AIDS reviewed the materials and provided suggestions, which were incorporated, resulting in content modifications. A designer then refined the materials using Adobe Illustrator 2024, preparing them for the next stage.

STAGE 2: VALIDATION OF EDUCATIONAL MATERIALS BY AN EXPERT COMMITTEE

The second stage involved validating the content of the educational materials through a consensus analysis of opinions.

Fifteen experts were invited to form the committee, including 13 specialists in HIV and two in health literacy. The experts were identified through searches in the CNPq Research Groups Directory and evaluations of their Lattes Curriculum. Eligibility to serve as an expert was determined based on an adaptation of the model proposed by Fehring.²⁷ (Chart 1).

Chart 1. Adaptation of Fehring's criteria for expert selection

Fehring Criteria	Adapted Criteria	Score
Master's degree in nursing	Master's degree in health sciences or related fields	3
Master's degree in nursing, with a dissertation in the area of diagnostic interest	Master's degree in the area of interest	1
Published research on diagnostics or relevant content	Published research in the area of HIV	2
Published article on diagnostics in an indexed journal	Published article on HIV in an indexed journal	1
Doctorate in nursing, with a thesis in the area of diagnostic interest	Doctorate in health sciences or related fields	3
Recent clinical practice of at least one year in the addressed topic	Recent clinical practice of at least one year in the addressed topic	2
Relevant clinical training in the diagnostic area of interest	Relevant clinical training in the area of HIV	2
Maximum Score		14

The expert committee was invited to participate in the project via email and received the validation form through Google Forms. Upon accessing the platform, the experts were presented with the Informed Consent Form (ICF), the developed educational materials, and evaluation instructions.

Experts were invited to analyze the three materials based on the criteria established in the Suitability Assessment of Materials (SAM) instrument. This instrument was translated and validated for Brazilian Portuguese and consists of 22 items covering categories such as content, text comprehension, illustration, presentation, motivation, and cultural adaptation. Each item could be rated as follows: 2 points for "excellent," 1 point for "adequate," 0 points for "not adequate," and "N/A" if the factor could not be evaluated. The suitability score was calculated by summing the scores obtained for each item, dividing by the total maximum score, multiplying by 100, and converting to a percentage. The result interpretation is as follows: 0-39% = inadequate material, 40-69% = adequate material, 70-100% = superior material.²¹ Additionally, there was a field in the Google Forms where experts could provide comments or suggestions about the materials.

Consensus among experts was established using the Content Validity Index (CVI).²⁸ The CVI for each item of the instrument (CVI-I) and the overall CVI for each material were calculated based on SAM criteria. The formula used to evaluate each item was:

$$\text{CVI-I} = \text{Number of "excellent" and "adequate" responses} / \text{Total number of responses}$$

Finally, the overall CVI was calculated as the average of the CVI scores obtained for the material using the formula:

$$\text{CVI-global} = \Sigma \text{CVI-I} / \text{Total number of items}$$

Materials were considered validated if they achieved an overall CVI ≥ 0.8 .²⁸ Items with a CVI < 0.8 or considered inadequate by SAM were revised, and the suggestions from experts were analyzed by the research team, resulting in a version prepared for evaluation by the target audience.

STAGE 3: EVALUATION BY THE TARGET AUDIENCE

In this stage, the educational materials were evaluated by the target audience, composed of users from a university hospital in Vitória, Espírito Santo, Brazil. Participants were invited to join the study, with inclusion criteria being over 18 years old and literate. No exclusion criteria were established.

The target audience assessed the materials based on the following criteria: organization, writing style, appearance, clarity, and ease of comprehension. Each criterion could be rated as “Adequate,” “Partially adequate,” or “Not adequate.” Observations and suggestions provided by participants were documented during this phase.

ETHICAL ASPECTS

The study was approved by the Research Ethics Committee (CAAE: 66774723.7.0000.5060 | Approval Number: 6.546.896). All participants were informed about the voluntary nature of their participation and were invited to sign the ICF, following CNS Resolution No. 466/1231.

RESULTS

STAGE 1 - DEVELOPMENT OF EDUCATIONAL MATERIALS

Three prototypes of educational materials were developed: a leaflet on combined prevention, a folder on HIV containing information on diagnosis, transmission, and prevention, and a folder on PrEP and PEP. During development, the main suggestions provided by the two researchers in the prototype review were related to the textual part, inclusion or exclusion of information, order of information, and image modifications. Subsequently, the materials were attached to the form for validation by experts.

STAGE 2: VALIDATION OF EDUCATIONAL MATERIALS BY A COMMITTEE OF EXPERTS

Four experts participated in the validation process of the materials. Their ages ranged from 30 to 59 years, with an average of 45 years. Three experts were female, three had a degree in Pharmacy, and one in Nursing. Two worked in teaching and two in hospital or outpatient settings, all with a doctorate. The average score according to Fehring's criteria was 12 points (minimum: 10; maximum: 14).

In the evaluation of educational materials by the experts, according to the SAM calculation, the combined prevention leaflet was considered superior (70.39%), while the folders on HIV (66.67%) and on PrEP and PEP (61.90%) were adequate, as shown in Table 1.

Table 1. Overall SAM scores according to the experts' evaluation in the different domains of the instrument.

SAM Domains	Score (%)		
	Combined Prevention Leaflet	HIV Folder	PrEP and PEP Folder
1. Content	68,75%	75,00%	71,88%
2. Literacy Requirements	75,00%	60,00%	62,50%
3. Illustrations	79,17%	68,75%	59,38%
4. Layout and Presentation	81,25%	66,67%	45,83%
5. Stimulation/Motivation	54,17%	62,50%	66,67%
6. Cultural Appropriateness	62,50%	68,75%	62,50%
Global Score	70,39%	66,67%	61,90%

SAM = Suitability Assessment of Materials; Global Score = Sum of scores obtained for each item, divided by the total maximum score, multiplied by 100

Regarding the CVI calculation, all materials achieved an overall score of 0.90 or higher, being considered valid. However, some items presented values below 0.80 and were reformulated (Table 2). The experts made 22 suggestions, of which only three were not accepted due to lack of space, repetition of terms, and confusion of meaning. Based on the suggestions, the educational materials were modified.

Table 2. Content validity indices of educational materials assessed by experts according to the SAM criteria.

SAM Items	CVI		
	Combined Prevention Leaflet	HIV Folder	PrEP and PEP Folder
Content			
a) The objective is clear, facilitating the understanding of the material	1,0	1,0	1,0
b) The content addresses information related to behaviors that help prevent HIV	1,0	1,0	1,0
c) The material's proposal is limited to the objectives	1,0	1,0	1,0
d) The content highlights the main points	0,75	1,0	1,0
Literacy Requirements			
a) The reading level is appropriate for the reader's comprehension	1,0	0,75	1,0
b) The conversational style (verbal voice) aids in understanding the text	1,0	1,0	1,0
c) It uses vocabulary with simple words in the text	1,0	1,0	1,0
d) The information is conveyed in a clear context	1,0	1,0	1,0
e) Learning is facilitated through the use of topics	1,0	1,0	1,0
Illustrations			
a) The purpose of the illustration related to the text is clear	1,0	1,0	1,0
b) The illustrations play a key role in helping the reader understand the main points, allowing them to comprehend independently	1,0	0,75	1,0
c) The figures/illustrations are relevant	1,0	1,0	1,0
d) Lists, tables, etc., are explained	N/A	N/A	N/A
e) The illustrations have captions	N/A	0,5	0,5
Layout and Presentation			
a) Layout characteristics	1,0	1,0	0,75
b) Font size and type	1,0	1,0	0,5
c) Subheadings are used	N/A	0,75	0,75
Stimulation / Motivation			
a) It encourages interaction between the reader and the text and/or illustrations, prompting them to solve problems, make choices, and/or demonstrate skills	0,5	0,75	0,75
b) The instructions are specific and provide examples	0,75	1,0	1,0
c) There is motivation and self-efficacy	0,75	0,75	0,75
Cultural Appropriateness			
a) The material is culturally appropriate for the logic, language, and experience of the audience	1,0	1,0	1,0
b) It presents culturally appropriate images and examples	1,0	1,0	1,0
Global CVI	0,93	0,92	0,90

SAM = Suitability Assessment of Materials; CVI = Content Validity Index; N/A = if the factor cannot be evaluated

STAGE 3: TARGET AUDIENCE EVALUATION

Ten people participated in the evaluation of the materials by the target audience, five of whom were female, with an average age of 41 ± 14.6 years. Regarding education, three had completed higher education, three had incomplete elementary education, two had completed high school, and two had incomplete high school. Additionally, three participants were people living with HIV. Overall, all participants considered the materials adequate for all the evaluated criteria. The only exception was the "Writing style" item of the combined prevention leaflet, which was rated as "partially adequate". The other items were rated as "adequate". The participant who attributed the answer as "partially adequate" justified that, although the material was very interesting, they would like more details on the subject. The final version of the materials can be visualized in Figures 1, 2 and 3.

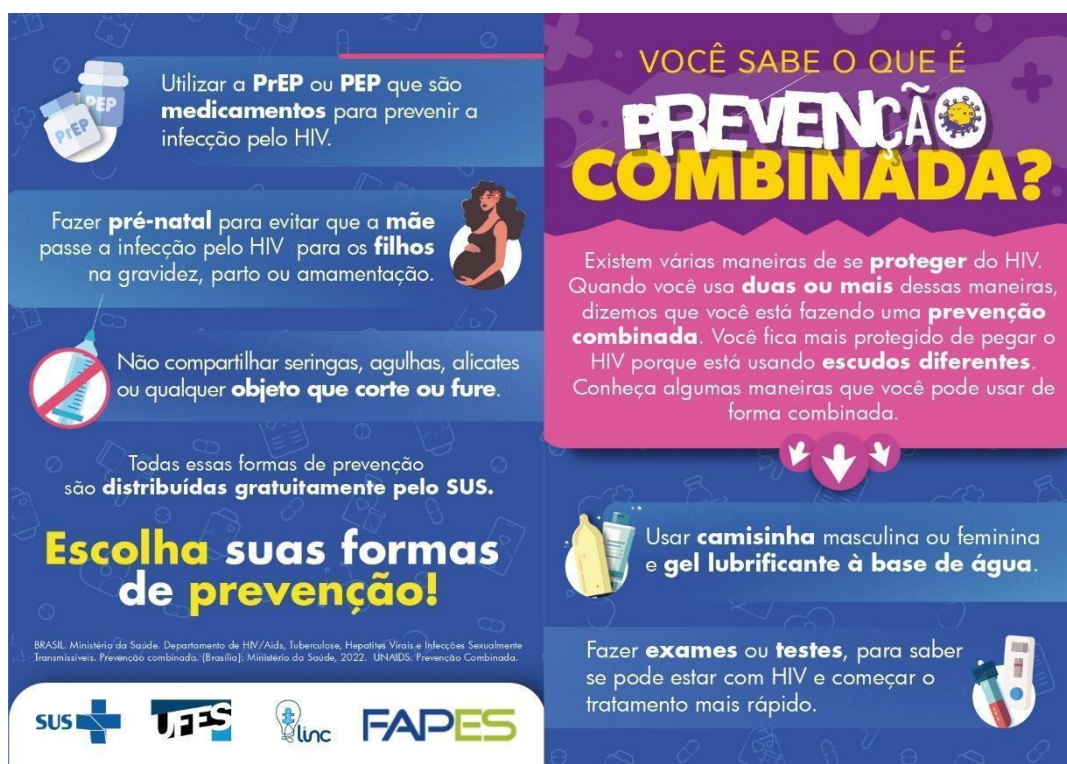


Figure 1. Leaflet about Combined Prevention
Source: The authors.



Figure 2. Folder about HIV

Source: The authors.

Aponte a sua câmera para o QR code abaixo




e descubra os locais de apoio e informações sobre o HIV e outras infecções no Espírito Santo

Se tiver dúvidas ou precisar de ajuda, fale com um profissional de saúde. Cuidar de você é muito importante.

Mantenha-se seguro!

1. ORAS L. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância, Prevenção e Controle das Infecções Sexualmente Transmissíveis, do HIV/AIDS e das Hepatites Virais. Protocolo Clínico e Diretrizes Terapêuticas para Profilaxia Pós-Exposição (PEP) de risco à infecção pelo HIV. Brasília: Ministério da Saúde, 2021.
2. BRASIL. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância, Prevenção e Controle das Infecções Sexualmente Transmissíveis, do HIV/AIDS e das Hepatites Virais. Protocolo Clínico e Diretrizes Terapêuticas para Profilaxia Pré-Exposição (PrEP) de risco à infecção pelo HIV. Brasília: Ministério da Saúde, 2021.






O que é PrEP e PEP?



PrEP | Profilaxia Pré-Exposição

É um medicamento usado **antes** das relações sexuais para evitar que a pessoa se infecte pelo HIV.

Quem pode usar a PrEP?
Qualquer pessoa com risco de se infectar pelo HIV, com idade a partir de 15 anos. A PrEP pode ser usada por pessoas que:

-  Fazem sexo sem camisinha
-  Fazem sexo com pessoas diferentes com frequência
-  São profissionais do sexo e pessoas que usam drogas
-  Já tiveram infecções que são transmitidas pelo sexo
-  Se relacionam com indivíduos que têm HIV

Como a PrEP funciona?

A PrEP contém duas substâncias chamadas **Tenofovir e Emtricitabina**, que irão impedir que o vírus do HIV se espalhe pelo corpo.

Antes de começar a PrEP é importante que você busque um serviço de saúde para que os profissionais de saúde possam te ajudar da melhor forma.

PEP | Profilaxia Pós-Exposição

A PEP é um medicamento usado **depois** de qualquer situação em que exista a exposição ao HIV.

Quem pode usar a PEP?
A PEP é recomendada nas seguintes situações:

-  Sexo sem camisinha ou quando a camisinha estourar
-  Abuso sexual
-  Acidente com objetos que cortem ou furem
-  Contato com líquidos que podem estar contaminados como: sangue, espermatozoides, lubrificação da vagina.

Como a PEP Funciona?

A PEP contém **2 comprimidos**: duas substâncias chamadas **Tenofovir e Lamivudina** em um comprimido e o outro com uma substância chamada **Dolutegravir**. Antes de começar a PEP é importante que você busque um serviço de saúde para que os profissionais de saúde possam te ajudar.

A PEP impede que o vírus do HIV se espalhe pelo corpo e deve ser tomada até 72 horas depois da situação de risco.

Figure 3. Folder about PrEP e PEP

Source: The authors.

DISCUSSION

This study developed and validated three educational materials on HIV, achieving an overall CVI score of 0.90 or higher, attesting to their validity. Additionally, the materials were evaluated by the target audience, who considered them suitable for disseminating information related to HIV. These materials aim to assist healthcare professionals in providing services to the population and promote access to information for the population.¹⁷ The literature shows that general knowledge about HIV is still low^{8, 29-30}, therefore these materials are valuable tools to support healthcare professionals and empower people to make informed decisions about their health.¹⁴ A Brazilian study found a positive association between receiving educational material and a high level of knowledge about HIV/AIDS among men who have sex with men in 12 Brazilian cities, reinforcing the importance of these materials.³⁰

Various methods are used for the development of educational materials, such as literature review, meetings with experts, and focus groups, but there is no defined gold standard.^{18, 22, 31} Regardless of the method adopted, scientific publications highlight that development should consider important characteristics, such as language, objective, coherence, cohesion, organization, appearance, illustrations, readability, and legibility.^{22, 32} The present study was based on clinical protocols and therapeutic guidelines, as well as the guidelines of the AMEELS-BR instrument, which gives greater scientific evidence to the materials. Future studies can use this process as a reference for the development of new educational materials, especially by considering aspects of Health Literacy.

The materials developed in this study were validated by a committee of experts, considering the overall CVI score. This is a common practice in studies on the development of educational materials, used mainly to validate the content.^{19-20, 33} Regarding the selection of experts to compose the committee, previous research highlights the importance of establishing criteria, which were considered in this study through the adaptation of Fehring's criteria.^{27, 33} The use of these criteria is important to ensure the representativeness of the experts in the study regarding the subject in question. However, only four experts responded to the validation questionnaire in this study. The literature indicates that the difficulty in obtaining responses from experts can be a challenge, as answering adequately requires time and concentration, which can lead to delays or dropouts.³⁴ Future studies should consider inviting a larger number of experts to broaden the variety of perspectives and improve response rates.

In addition, the materials were evaluated by the target audience, users of health services. Studies highlight that this process is essential to ensure that the materials meet the real needs of the public.^{12, 20, 23} Incorporating the public's perspective can increase the adherence and effectiveness of educational materials, helping to identify gaps and adjusting the message for greater clarity and understanding.^{12, 18, 20}

The present study presents some limitations that should be considered. The reduced participation of experts may have impacted the scope of the analyses. The absence of health literacy experts may have limited the depth of the analysis. Despite these limitations, this study presents some strengths. A robust methodological process was adopted, which involved the development of materials based on scientific evidence and considering aspects of health literacy, as well as the participation of experts and the target audience. This study has important practical implications, including the provision of validated educational materials that can support healthcare professionals in guiding patients about HIV. These materials offer clear and evidence-based information on modes of transmission, diagnosis, treatment, and combined prevention strategies. They were developed for practical use in various contexts, such as consultations, awareness campaigns, and educational actions in the community, serving as accessible and didactic tools that facilitate the educational process and expand the reach of HIV guidelines. The study also serves as a valuable model for future researchers interested in developing

educational materials. It is expected that these materials will not only be effective in disseminating information, but will also promote actions and interventions for HIV prevention, empowering individuals and positioning them as protagonists in caring for their own health.

CONCLUSION

Three educational materials were developed: a leaflet on combined prevention, a folder on HIV containing information on diagnosis, transmission, and prevention, and a folder on PrEP and PEP. The developed materials were validated by experts, obtaining an overall CVI ≥ 0.90 and were considered adequate according to the SAM criteria. In addition, the target audience evaluation considered the materials adequate. It is expected that these materials will support healthcare professionals in guiding patients and directly assist the population in acquiring more information related to HIV.

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REFERENCES

1. Alzubaidee MJ, Dwarampudi RS, Mathew S, Bichenapally S, Khachatryan V, Muazzam A, et al. A Systematic Review Exploring the Effect of Human Immunodeficiency Virus on Cardiac Diseases. *Cureus*. 2022;14(9):e28960. <https://doi.org/10.7759/cureus.28960>
2. Brasil. Ministério da Saúde. Protocolo Clínico e Diretrizes Terapêuticas para Manejo da Infecção pelo HIV em Adultos. Módulo 1: Tratamento. [Internet]. Brasília: Ministério da Saúde; 2023 [cited 2023 Oct 28]. 102 p. Available from: <https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/svsa/aids/protocolo-clinico-e-diretrizes-terapeuticas-para-manejo-da-infeccao-pelo-hiv-em-adultos-modulo-1-tratamento/view>
3. Joint United Nations Programme on HIV/Aids (UNAIDS). Global HIV & AIDS statistics - Fact sheet [Internet]. 2023 [cited 2024 Jul 23]. Available from: <https://www.unaids.org/en/resources/fact-sheet>
4. Ministério da Saúde. Boletim Epidemiológico - HIV e Aids 2023 [Internet]. Ministério da Saúde; 2023 [cited 2023 Jul 4]. 84 p. Available from: <https://www.gov.br/aids/pt-br/central-de-conteudo/boletins-epidemiologicos/2023/hiv-aids/boletim-epidemiologico-hiv-e-aids-2023.pdf/view>
5. Krishnaratne S, Hensen B, Cordes J, Enstone J, Hargreaves JR. Interventions to strengthen the HIV prevention cascade: a systematic review of reviews. *Lancet HIV*. 2016;3(7):e307-e317. [https://doi.org/10.1016/S2352-3018\(16\)30038-8](https://doi.org/10.1016/S2352-3018(16)30038-8)
6. Ministério da Saúde. Prevenção Combinada [Internet]. [cited 2023 Jul 4]. Available from: <https://www.gov.br/aids/pt-br/assuntos/prevencao-combinada>
7. Brasil. Ministério da Saúde. Protocolo Clínico e Diretrizes Terapêuticas para Profilaxia Pré-Exposição (PrEP) de Risco à Infecção pelo HIV [Internet]. 1 ed. rev. Brasília: Ministério da Saúde; 2022 [cited 2023 Oct 19]. 52 p. Available from: http://bvsmms.saude.gov.br/bvs/publicacoes/protocolo_clinico_profilaxia_prep_1ed.pdf

8. Silva MAS, Lima MCL, Dourado CARO, Andrade MS. Aspectos relacionados ao letramento em saúde, autocuidado e adesão ao tratamento de pessoas vivendo com HIV. *Rev Esc Enferm USP*. 2022;56:e20220120. <https://doi.org/10.1590/1980-220x-reeusp-2022-0120pt>
9. Areri H, Marshall A, Harvey G. Factors influencing self-management of adults living with HIV on antiretroviral therapy in Northwest Ethiopia: a cross-sectional study. *BMC Infect Dis*. 2020;20(879):1-11. <https://doi.org/10.1186/s12879-020-05618-y>
10. Crowley T, Rohwer A. Self-management interventions for adolescents living with HIV: a systematic review. *BMC Infect Dis*. 2021;21(431):1-29. <https://doi.org/10.1186/s12879-021-06072-0>
11. Lima MAC, Cunha GH, Lopes MVO, Fontenele MSM, Siqueira LR, Ramalho AKL. Knowledge, attitude and practice of people with HIV regarding a healthy lifestyle: clinical trial. *Rev Bras Enferm*. 2022;75(5):e20210307. <https://doi.org/10.1590/0034-7167-2021-0307>
12. Hernandez CP, Bueno AGBS, Darsie C, Cardoso V, Krug SBF, Mannes GT, et al. HIV health education practices for vulnerable populations in Brazil: integrative review. *Saúde e Pesqui*. 2024;17(1):e12327. <https://doi.org/10.17765/2176-9206.2024v17n1.e12327>
13. Handebo S, Aduugna A, Nigusie A, Shitu K, Kassie A, Wolde M. Health communication materials use in providing health education among health professionals working at health-care institutions in Gondar City: a cross-sectional study. *Int J Health Promot Educ*. 2022;1-14. <https://doi.org/10.1080/14635240.2022.2154130>
14. Wongtaweepkij K, Corlett S, Krska J, Pongwecharak J, Jarernsiripornkul N. Patients' experiences and perspectives of receiving written medicine information about medicines: A qualitative study. *Patient Prefer Adherence*. 2021;15:569-580. <https://doi.org/10.2147/ppa.s298563>
15. Conner LR, Fernández Y, Junious E, Piper C, Rowan D. Evaluating HIV Educational Materials for Older People. *J Int Assoc Provid AIDS Care*. 2019;18:2325958219849054. <https://doi.org/10.1177/2325958219849054>
16. Maloney KM, Bratcher A, Wilkerson R, Sullivan PS. Electronic and other new media technology interventions for HIV care and prevention: a systematic review. *J Int AIDS Soc*. 2020;23(1):e25439. <https://doi.org/10.1002/jia2.25439>
17. Duarte FHS, Silva SO, Oliveira ES, Silva BVS, Melo EBB, Cabral MAL, et al. Health educational strategies for people living with HIV: scoping review. *Acta Paul Enferm*. 2024;37:eAPE02572. <http://dx.doi.org/10.37689/acta-ape/2024AR0025722>
18. Paiva APRC, Vargas EP. Material Educativo e seu público: um panorama a partir da literatura sobre o tema. *Revista Praxis*. 2017;9(18):90-99. <https://doi.org/10.47385/praxis.v9.n18.769>
19. Cordeiro LI, Lopes TO, Lira LEA, Feitoza SMS, Bessa MEP, Pereira MLD, et al. Validation of educational booklet for HIV/Aids prevention in older adults. *Rev Bras Enferm*. 2017;70(4):808-815. <https://doi.org/10.1590/0034-7167-2017-0145>
20. Jesus GJ, Caliani JS, Oliveira LB, Queiroz AAFLN, Figueiredo RM, Reis RK. Construction and validation of educational material for the health promotion of individuals with HIV. *Rev Lat Am Enfermagem*. 2020;28:e3322. <https://doi.org/10.1590/1518-8345.3748.3322>
21. Sousa CS, Turrini RNT, Poveda VB. Tradução e adaptação do instrumento "suitability assessment of materials" (sam) para o português. *Rev Enferm UFPE on line*. 2015;9(5):7854-7861. <https://doi.org/10.5205/1981-8963-v9i5a10534p7854-7861-2015>
22. Lemos RA, Veríssimo MLÓR. Methodological strategies for the elaboration of educational material: Focus on the promotion of preterm infants' development. *Cien Saude Colet*. 2020;25(2):505-518. <https://doi.org/10.1590/1413-81232020252.04052018>
23. Melo ES, Antonini M, Costa CRB, Pontes PS, Gir E, Reis RK. Validation of an interactive electronic book for cardiovascular risk reduction in people living with HIV. *Rev Lat Am Enfermagem*. 2022;3030:e3512. <https://doi.org/10.1590/1518-8345.5568.3512>
24. UNAIDS Brasil. Prevenção Combinada ao HIV [Internet]. [cited 2023 Oct 28]. Available from: <https://unaids.org.br/prevencao-combinada/>

25. Brasil. Ministério da Saúde. Protocolo Clínico e Diretrizes Terapêuticas para Profilaxia Pós-Exposição de Risco (PEP) à Infecção por HIV, ISTs e Hepatites Virais [Internet]. Brasília: Ministério da Saúde; 2024 [cited 2023 Oct 28]. 81 p. Available from: <https://www.gov.br/aids/pt-br/assuntos/prevencao-combinada/pep-profilaxia-pos-exposicao-ao-hiv/pcdt>
26. Abreu RB, Carioca AAF, Sampaio HAC, Vasconcelos CMCS. Validation of the Instrument for the Evaluation of Printed Educational Materials with focus on Health Literacy for Brazil (AMEELS-BR). *Res Soc Dev*. 2021;10(12):e68101220104. <http://dx.doi.org/10.33448/rsd-v10i12.20104>
27. Fehring RJ. Methods to validate nursing diagnoses. *Heart Lung*. 1987;16(6 Pt 1):625-629.
28. Wynd CA, Schmidt B, Schaefer MA. Two quantitative approaches for estimating content validity. *West J Nurs Res*. 2003;25(5):508-518. <https://doi.org/10.1177/0193945903252998>
29. Elghazaly A, AlSaeed N, Islam S, Alsharif I, Alharbi L, Ashagr T, et al. Assessing the knowledge and attitude towards HIV/AIDS among the general population and health care professionals in MENA region. *PLoS One*. 2023;18(7):e0288838. <https://doi.org/10.1371/journal.pone.0288838>
30. Guimarães MDC, Magno L, Ceccato MDGB, Gomes RRFM, Leal AF, Knauth DR, et al. HIV/AIDS knowledge among MSM in Brazil: a challenge for public policies. *Rev Bras Epidemiol*. 2019;22(Suppl 1):e190005. <https://doi.org/10.1590/1980-549720190005.supl.1>
31. Cruz FOAM, Faria ET, Reis PED. Validation of an educational manual for breast cancer patients undergoing radiotherapy. *Rev Lat Am Enfermagem*. 2020;28:e3384. <https://doi.org/10.1590/1518-8345.3197.3384>
32. Nakamura MY, Almeida K. Development of education material for providing orientation to the elderly who are candidates for hearing-aid use. *Audiol Commun Res*. 2018;23:e1938. <https://doi.org/10.1590/2317-6431-2017-1938>
33. Lima ACS, Cabral BG, Capobianco JD, Soares MH, Pieri FM, Kerbauy G. "Educational Material on HIV": validity of health educational technology for people living with HIV. *Rev Bras Enferm*. 2023;76(3):e20220549. <https://doi.org/10.1590/0034-7167-2022-0549>
34. Galdeano LE, Rossi LA. Validação de conteúdo diagnóstico: critérios para seleção de expertos. *Ciênc Cuid Saúde*. 2006;5(1):60-66. <https://doi.org/10.4025/ciencuidsaude.v5i1.5112>