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RESEARCH

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Media library for nurses on child abuse prevention and management: production, validity and assessment[a]

Midiateca para enfermeiros sobre prevenção e manejo dos maus-tratos infantis: produção, validação e avaliação

Mediateca para enfermeras sobre la prevención y el tratamiento del maltrato infantil: producción, validación y evaluación

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ABSTRACT

Objective: to produce, validate, and assess a media library for nurses on child maltreatment prevention and management in Primary Health Care. **Method:** an applied methodological study, developed from February 2023 to June 2024 in seven stages: literature review; content organization; media library construction; media library validity by experts; adaptation after validity; media library assessment by the target audience; and new adaptation after assessment. Thirty-two individuals participated, 16 experts in validity and 16 participants from the target audience in assessment. The data were analyzed by the Concordance Index and the System Usability Scale. **Results:** the website-format media library is integrated with other media platforms (YouTube® and Spotify®), and obtained a Concordance Index of 0.996 (99.6%) in both validity and assessment. The usability assessed by experts obtained a score of 95.63, and by the target audience, 94.53, obtaining the classification "best imaginable". **Conclusion and implications for practices:** media library was produced, adjusted and validated satisfactorily by experts, in addition to being well assessed by the target audience representatives. The results indicated high agreement among evaluators, demonstrating its high potential as an educational tool. It is available free of charge for the continuing education of nurses in Primary Health Care.

Keywords: Child; Child Abuse; Educational Technology; Nurses; Primary Health Care.

RESUMO

Objetivo: produzir, validar e avaliar uma midiateca para enfermeiros sobre prevenção e manejo dos maus-tratos infantis na Atenção Primária à Saúde. **Método:** estudo metodológico aplicado, desenvolvido de fevereiro de 2023 a junho de 2024 em sete etapas: revisão de literatura; organização do conteúdo; construção da midiateca; validação da midiateca por *experts*; adequação após validação; avaliação da midiateca pelo público-alvo; e nova adequação após avaliação. Participaram 32 indivíduos, sendo 16 *experts* na validação e 16 participantes do público-alvo na avaliação. Os dados foram analisados pelo Índice de Concordância e pela *System Usability Scale*. **Resultados:** a midiateca em formato de *website* está integrada a outras plataformas de mídia (*YouTube*® e *Spotify*®), e obteve Índice de Concordância de 0,996 (99,6%) tanto na validação quanto na avaliação. A usabilidade avaliada pelas *experts* obteve escore de 95,63, e pelo público-alvo, de 94,53, obtendo-se a classificação "melhor imaginável". **Conclusão e implicações para a prática:** a midiateca foi produzida, ajustada e validada satisfatoriamente por especialistas, além de bem avaliada por representantes do público-alvo. Os resultados indicaram alta concordância entre os avaliadores, demonstrando seu elevado potencial como uma ferramenta educacional. Encontra-se disponível em acesso gratuito para a educação permanente de enfermeiros da Atenção Primária à Saúde.

Palavras-chave: Atenção Primária à Saúde; Criança; Enfermeiras e Enfermeiros; Maus-tratos Infantis; Tecnologia Educacional.

RESUMEN

Objetivo: producir, validar y evaluar una mediateca para enfermeras sobre la prevención y el manejo del maltrato infantil en Atención Primaria de Salud. **Método:** estudio metodológico aplicado, desarrollado entre febrero de 2023 y junio de 2024 en siete etapas: revisión bibliográfica; organización del contenido; construcción de la mediateca; validación de la mediateca por expertos; adaptación tras la validación; evaluación de la mediateca por el público objetivo; y nueva adaptación tras la evaluación. Participaron 32 personas: 16 expertos en la validación y 16 participantes del público objetivo en la evaluación. Los datos se analizaron mediante el Índice de Concordancia y la System Usability Scale. **Resultados:** la mediateca en formato web está integrada con otras plataformas (YouTube® y Spotify®) y obtuvo un Índice de Concordancia de 0,996 (99,6%) tanto en la validación como en la evaluación. La usabilidad evaluada por los expertos obtuvo una puntuación de 95,63, y la del público objetivo, de 94,53, obteniendo la clasificación de "mejor imaginable". **Conclusión e implicaciones para la práctica:** la mediateca fue producida, ajustada y validada satisfactoriamente por expertos, además de ser bien valorada por representantes del público objetivo. Los resultados indicaron un alto grado de acuerdo entre los evaluadores, lo que demuestra su gran potencial como herramienta educativa. Está disponible gratuitamente para la formación continua de enfermeras en Atención Primaria de Salud.

Palabras-clave: Atención Primaria de Salud; Enfermeras y Enfermeros; Maltrato a los Niños; Niño; Tecnología Educacional.

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INTRODUCTION

Child maltreatment, also known as child violence, is an act or omission that compromises the well-being, health, development and/or dignity of individuals under the age of 18, resulting in physical, emotional, sexual and/or moral harm to victims in contexts of responsibility, trust or power. Such situations encompass a range of abusive or negligent behaviors, such as physical abuse, emotional or sexual abuse, neglect and exploitation.[1]

Child maltreatment affects around one billion people worldwide, causing a range of emotional, social and economic consequences that last a lifetime. It is estimated that 300 million children between the ages of 2 and 4 suffer physical violence from their caregivers and one in three children is a victim of emotional abuse.[2] These alarming data are in line with the Brazilian overview, which, in 2022, recorded 66,238 cases of violence against children aged 0 to 9 years, according to data from the Notifiable Injuries Information System (In Portuguese, *Sistema de Informação de Agravos de Notificação* - SINAN).[3] This scenario highlights the need for urgent measures that recognize and propose assertive and effective actions to transform this social reality.[4,5]

Although child maltreatment has been a topic of debate over the years, and the prevention and management of these situations have been covered by laws and public policies to protect and guarantee children's rights, such as the Brazilian Child and Adolescent Statute, the current overview of child maltreatment still represents an alarming and challenging reality in public health.[4,5] According to the World Health Organization (WHO), in 2020, 88% of countries had child protection laws, but only 47% actually enforced them.[2]

Given this scenario, good practices should be used to prevent and manage child maltreatment in order to promote child health. In nursing, good practices involve the integration of theories, techniques, processes and activities, considering the best available options for care, always aligned with knowledge, values, contexts, environments, objectives and evidence, both disciplinary and transdisciplinary, aiming at health promotion.[6] Thus, Primary Health Care (PHC) professionals, including nurses, play a crucial role due to their ability to implement good practices with families. Nurses, due to their close ties with the community and the relationship of trust in the PHC context, have the potential to promote health and encourage behavioral changes on such a sensitive topic, through health education with families.[7]

Despite the important role played by nurses in this context, international and national literature indicates that nurses still face significant obstacles in recognizing and managing cases of child maltreatment. These difficulties include a lack of understanding of their professional role, lack of knowledge of the child protection network, lack of specialized training, and feelings of insecurity regarding the effectiveness of the interventions adopted. Thus, professionals feel unprepared to deal with these situations.[8,9]

Given the lack of knowledge and training among nurses on this topic, it is extremely important to provide these professionals with accessible educational opportunities to learn how to detect and care for children who suffer from child maltreatment.[8] In this regard, digital health emerges as a response to the global need to integrate the health field with technological advances, seeking solutions to the various global issues and concerns through the development of technological tools in health, including for educational purposes.[10] Studies show that the use of digital resources such as educational technologies results in significant benefits in students' learning process, significantly improving knowledge, reducing misconceptions, disseminating good practices and facilitating the adoption of new behaviors.[11,12]

In the field of educational technologies, media library emerges as an environment that integrates and organizes different formats of information, bringing together multimedia materials to support teaching and learning processes. The term began to be used to represent a new concept of library, expanding its scope beyond books and incorporating various information media, such as films, videos and music. This evolution reflects the need to adapt to changes in access to knowledge and in the use of communication and information technologies, providing a more interactive and accessible space.[13]

An online media library in website format is therefore capable of offering easy access to knowledge through a vast collection of multimedia, in which audiovisual resources assume an importance comparable to printed materials.[13,14] In particular, a media library on child maltreatment emerges as a useful and dynamic strategy in continuing health education, bringing together good practices in a didactic and illustrative manner through a variety of resources, such as videos, podcasts, mind maps, images, films, digital documents and other relevant content. The use of platforms in desktop and mobile versions can facilitate continuous and updated access to these quality educational materials, regardless of nurses' geographic location. The intention is to equip professionals on the topic and raise awareness about their responsibility in combating child maltreatment and protecting children's rights.

The creation of a media library for nurses represents an innovative strategy to promote continuing education in health, despite being a topic that is still little explored, offering an interactive and dynamic approach to learning. This initiative is aligned with the 2030 Agenda for Sustainable Development guidelines, which emphasizes the need to eradicate all forms of violence against children and encourage technological advancement.[15] By offering flexible access to content through digital devices, media library allows professionals to explore knowledge according to their individual preferences.

Therefore, this research seeks to contribute to the advancement of scientific knowledge and digital health, fully presenting the process of designing, validating and assessing a media library, considering aspects such as content, objective, relevance, appearance, motivation and usability. Thus, it can assist PHC nurses in their work related to child maltreatment, favoring professional training and improving the quality of care offered to children and their families.

Thus, the study aimed to produce, validate and assess a media library for nurses on child maltreatment prevention and management in PHC.

METHOD

This is an applied methodological study, focused on the production, validity and assessment of an educational health technology, specifically a media library in website format, developed in seven stages: literature review; content organization; media library construction; media library validity by experts; adaptation after validity; media library assessment by the target audience; and new adaptation after assessment.[16] It was carried out in a virtual environment from February 2023 to June 2024, with the media library being produced between January and March 2024, and data collection for validity and assessment between April and June 2024.

In the first stage of the study, a narrative literature review was developed between March and April 2023 to compose the media library theoretical content, which aims to promote the training of nurses on child maltreatment prevention and management in PHC. For this stage, this review modality was chosen because it is more flexible, allowing the integration of a wide variety of sources, in addition to scientific articles, with less strict eligibility criteria.

Thus, the media library theoretical basis was constructed with scientific evidence made available directly on the websites of institutional sources such as the WHO, the Brazilian Ministry of Health, the United Nations Children's Fund, and the Brazilian Society of Pediatrics, in addition to epidemiological data from SINAN. Additionally, a bibliographic search, with the same intention, was carried out in the LILACS, PubMed, Web of Science, BDENF, Elsevier's Scopus, CINAHL, and SciELO databases using the terms "child", "child maltreatment", "violence" and "Primary Health Care" in pairs and trios, in addition to the Boolean operator "AND".

To conduct this literature search, the guiding question was formulated: what are the best practices related to child maltreatment prevention and management to be applied by nurses in PHC described in literature? Inclusion criteria for the selection of theoretical materials were studies from the last ten years and in Portuguese, English or Spanish. Exclusion criteria were experience reports, letters, editorials, duplicate productions and productions not related to the scope of the study.

After applying the criteria, 155 studies were selected after reading titles and abstracts. Duplicate articles were subsequently excluded, resulting in 81 previously selected studies. Finally, 28 complete studies were assessed for eligibility, of which eight were selected to compose the media library theoretical content, in addition to the materials from the websites of institutional sources, all included in the "library and links" tab of educational technology.

In the second stage, the contents of the theoretical materials found were divided into five subtopics for the media library: the concept of abuse and its forms; the flow of care for victims and family members of child maltreatment in the unit; good practices for preventing and managing child maltreatment in primary care; ideas for approaching child maltreatment in the unit; and statistical data on this issue. In this stage, the media library structure was defined in website format and, thus, the Wix® Web platform was chosen to store the media library, due to its multifunctionality in incorporating multimedia, and the Videoscribe® software was used to create videos in whiteboard format, with a hand drawing on a whiteboard.

At this stage, the media library logo was designed by a professional and approved by the researchers, the platform layout was implemented and the following tabs were created: "home page", "mind maps", "video library", "podcast", "child maltreatment panel", "films", "library and links", "frequently asked questions", "about us", "contact" and "security and privacy policies".

In the third stage, scripts for video production were developed, aiming to make them attractive, motivating and creative. The short educational videos were produced by the first author of this study and submitted for assessment and approval by the research team. The scenes were created based on trial and error tests, incorporating audio, selecting images, characters and texts in the Videoscribe® software. The podcasts were produced using the telephone recorder and edited on the Spotify for Creators® platform. The posts, mind maps and images were produced on the Canva® graphic design platform, and texts were produced on the Microsoft Word® processor. After rigorous assessments conducted by the researchers, media content was produced and integrated into the platform, ensuring adjustments, refinements and optimization of materials. The platform appearance and organization were meticulously planned to ensure a clear and efficient presentation.

The website was built by the first author under the guidance and supervision of the second, who has extensive experience in developing educational technologies, through weekly monitoring. Moreover, content, navigation and interface were planned to ensure interactivity, autonomy and accessibility, with standard colors selected to establish the visual identity. The pages were built using the Hyper Text Transfer Protocol Secure, a web security protocol.

The fourth stage was aimed at validating the media library by experts, which was carried out using Google Forms®. In the fifth stage, adaptations recommended in the previous stage were implemented, enabling the assessment of the second version of the media library by the target audience. In the sixth stage, media library assessment by the target audience also took place using Google Forms®. After the sixth stage, no adjustments were identified that were necessary for finalizing the media library in the seventh and final stage of the study.

Inclusion criteria for selecting experts were being health professionals with expertise in of child health and/or in the production of digital educational technologies and/or working in continuing education services. Exclusion criterion was being professionals who worked exclusively in administrative activities. To be considered an expert, participants needed to obtain a minimum score of five points in the classification system adapted from Fehring criteria.[17] The scoring criteria included: doctoral degree (4 points); master's degree (3 points); publication in

an indexed journal on the subject (2 points); specialization in the area (2 points); clinical practice of at least five years in the area (2 points); and participation in a scientific event on the subject in the last two years (1 point). The score was verified by consulting the resumes on the *Lattes* Platform on the Brazilian National Council for Scientific and Technological Development (In Portuguese, *Conselho Nacional de Desenvolvimento Científico e Tecnológico* - CNPq) website. For the target audience, the inclusion criterion was to be a PHC nurse, regardless of length of experience. The same exclusion criterion adopted for experts was also applied to this group.

All participants were selected for convenience using a consecutive non-probabilistic method, using the snowball sampling technique.[18] For experts, invitations were initially sent via WhatsApp® to potential participants who were part of researchers' reference network. From the initial five professionals, others were nominated and invited to join the study. As for the target audience, the seed participant was a nurse, intentionally selected because she was a family health specialist and worked in the city where the researchers' university is located. From this professional, other individual were nominated and invited to participate in the study, without the need to work in the same health unit.

The survey's online page included information about the project, the electronic form for data collection, and the Informed Consent Form (ICF), which was available for download, in which participants registered their agreement by checking the box "I declare that I have been informed and agree to participate in the research project described above". To preserve privacy and anonymity, no identifiable contact lists were used. Instead, these people received a message with a brief explanation of the project and the research team, in addition to the link to access the media library and the instrument. The deadline for returning the survey was ten days, with an estimated mean time of 40 minutes to analyze the media library and respond to the form.

Although the literature does not specify the exact number of participants in studies of this nature, a minimum number of nine participants is recommended for experts and target audience.[16] Thus, the sample was composed of 16 experts and 16 individuals from the target audience, considering respondents throughout the period determined by the authors. None of the participants had a work relationship with the researchers, which helped to minimize possible biases in sample composition.

Due to the sample nature, most experts and individuals in the target audience responded promptly to the material, without refusals or delays. It is worth noting that, based on studies that demonstrate that, in online surveys, a significant number of losses can occur due to non-response to the invitation or non-response within the deadline, varying between 15% and 40%,[19,20] a greater number of invitations were sent, 20 to experts an1d 25 to the target audience, culminating in a loss of 13 (28.9%) participants in total.

The study instruments consisted of two parts: the first consisted of closed-ended questions to characterize participants, and the second included questions directed to the purpose of the study, which was to analyze the media library. The variables used to characterize experts included sex, age, area of activity, education, qualifications and length of professional experience, publication of research on the topic, and participation in a scientific event on the topic in the last two years. For the target audience, variables included sex, age, education, qualifications and length of professional experience.

In the validity stage with experts, the Health Education Content Validity Instrument (*Instrumento de Validação de Conteúdo Educativo em Saúde*) was used, consisting of 18 items, divided into three domains: objectives (four); structure/presentation (nine); and relevance (two). The items were assessed using a Likert scale, which assigns scores between 0 and 2, where 0 = disagree, 1 = partially agree and 2 = totally agree.[21] For the target audience, in the assessment stage, another instrument was developed based on a previous study, culminating in five items on content, nine on layout and four on motivation. The items were analyzed according to a Likert scale, which assigns scores between 1 and 4, according to the following assessments: strongly disagree (1 point); slightly disagree (2 points); slightly agree (3 points); and strongly agree (4 points).[22]

After completing the instruments, a quantitative analysis of responses was performed by calculating the Concordance Index (CI). For the experts' instrument, this index was calculated from the sum of responses classified as 1 and 2 (partially agree and totally agree), divided by the total number of responses.21 For the target audience instrument, the CI was obtained by adding responses 3 and 4 (somewhat agree and strongly agree) and then dividing by the total number of responses.[22] Items that achieved a score equal to or greater than 0.70 (70%) were considered valid.[16]

Subsequently, both the experts and target audience assessed usability using the System Usability Scale (SUS). This validated instrument was chosen because it is widely recognized, allowing the analysis of user interaction with the interface and providing a quantitative measure of usability for various products, such as websites, mobile applications and clinical systems. The results provide a score that indicates the usability score, verifying whether the interface meets users' needs and provides satisfaction, facilitating the identification of areas for improvement.[23] The SUS consists of ten statements, each with five response options: strongly disagree (1 point); slightly disagree (2 points); neither agree nor disagree (3 points); slightly agree (4 points); and strongly agree (5 points). Furthermore, at the end of the questionnaire, participants were invited to provide suggestions and comments to improve the media library.

The final SUS score per participant was calculated by individually adding the values assigned to each item on the scale. For odd-numbered questions, one point must be subtracted from the value given by the evaluator, while for even-numbered questions, the subtraction is 5 points. Then, the values obtained are added and multiplied by 2.5 to obtain the usability score, which ranges from 0 to 100 points. The SUS result can indicate different levels of usability: worst imaginable (up to 20.5); poor (from 21 to 38.5); mean (from 39 to 52.5); good (from 53 to 73.5); excellent (from 74 to 85.5); best imaginable (from 86 to

100).[23] The overall SUS mean was obtained by adding the SUS score of each participant and dividing it by the total number of participants in each of the stages.

In addition, the media library was assessed based on usability characteristics, which analyzed the ease of understanding the system (questions 3, 4, 7 and 10), its efficiency (questions 5, 6 and 8), inconsistencies (question 6), ease of memorization (question 2) and user satisfaction (questions 1, 4 and 9). To this end, the values assigned to each item of the characteristics were added, multiplied by 25 and divided by the number of participants.[24] Afterwards, to obtain the overall mean of the characteristic, the score of each item was added and divided by the number of items of the characteristic. Items that did not reach satisfactory levels should be corrected and/or adapted.

This study followed the ethical requirements set forth in Resolution 466/12 of the Brazilian National Health Council, which sets forth the guidelines and standards for scientific research involving human beings, and was approved by the *Universidade Federal Fluminense* Research Ethics Committee, under Opinion 6.425.617 and Certificate of Presentation for Ethical Consideration 74128623.2.0000.5243. In addition, participants were provided with the ICF.

RESULTS

The first three stages of the study culminated in the creation of the "*Prevenção e Manejo dos Maus-tratos Infantis*" media library, which was developed with several tabs and is available in versions for desktop and mobile devices. The media library is integrated with other media platforms, such as YouTube® and Spotify®, allowing independent access to content through it. A striking feature of this media library is the diversity of content presentation formats, which means that the information is presented in different media formats to meet different learning styles, in addition to allowing the inclusion of people with visual and/or hearing impairments. Figure 1, below, shows the menu interface of the media library's home page and the Quick Response Code for access.

Health professionals (experts) were between 26 and 70 years, with a mean of 45.57 years and a standard deviation of 13.43. All were female and had a degree in nursing. Among them, 11 (73.33%) had a doctoral degree and had ≥ 14 years of experience. Concerning the area of activity, two (12.50%) worked in the neonatal area, seven (43.75%) in pediatrics, four (25.00%) in neonatal and pediatrics, and three (18.75%) in continuing education. Table 1 shows the media library validity performed by experts according to CI per item and overall in stage 4.

The mean overall CI of the media library by experts in the first version was 0.996 (99.6%), reflecting a high level of agreement regarding objectives and relevance, both reaching 1.0 (100.0%), and structure/presentation, reaching 0.993 (99.3%). Thus, all items were considered valid and received very positive assessments. After the initial validity of the first version by experts, despite the remarkable results, adjustments were made considering the opportunities for improvement, such as refining the layout and selection of images, reviewing the audios, expanding the content on gender, race and sex issues related to cases of child maltreatment, introducing a frequently asked questions section, and changing the tab titles.

The assessment with the target audience involved participants aged between 25 and 47 years, with a mean age of 33.6 years, with a standard deviation of 5.30. The majority were female (87.50%). As for professional qualifications, only one (6.25%) had only a bachelor's degree, while 11 (68.75%) had a specialization, three (18.75%) had a master's degree, and one (6.25%) had a doctoral degree. The mean length of professional experience was 9.5 years, and in PHC, it was 4.9 years. Table 2 presents the media library assessment by the target audience in stage 6.

The mean overall CI of the media library by the target audience in the second version was also 0.996 (99.6%), which demonstrates a high level of agreement regarding content and layout, both reaching 1 (100%), and regarding relevance, reaching 0.982 (98.2%). Therefore, all items were considered valid and received positive assessments. After validity of the second version by the target audience, no necessary adjustments were identified, indicating a high level of satisfaction and agreement with the media library. Therefore, only a final review was carried out for the media library availability. Table 3 presents the usability results for the first version validated by experts and the second version assessed by the target audience.

The media library validity by the SUS revealed remarkable results both by experts and by the target audience. Experts attributed an overall mean of 95.63, classifying the media library usability as "best imaginable". The lowest score obtained was 80, demonstrating an excellent assessment. Furthermore, 14 of 16 experts (87.5%) gave the media library the maximum rating, with eight of them assigning 100 points. This result is even more

Figure 1. Screenshot of the media library navigation bar and Quick Response Code for access. Rio das Ostras, RJ, Brazil, 2025

Table 1. Validity of experts of the first version regarding objectives, structure/presentation and relevance (n=16). Rio das Ostras, RJ, Brazil, 2025.

Objectives				
Item	Disagree	Partially agree	Totally agree	Item CI*
The media library covers the proposed topic	0	0	16	1 (100.0%)
The media library is suitable for the teaching-learning process	0	0	16	1 (100.0%)
The media library clarifies doubts about the topic addressed	0	0	16	1 (100.0%)
The media library provides reflection on the topic	0	0	16	1 (100.0%)
The media library encourages behavior change	0	0	16	1 (100.0%)
Structure/presentation				
The media library uses language appropriate to the target audience	0	0	16	1 (100.0%)
The media library uses language appropriate to the educational material	0	0	16	1 (100.0%)
The media library uses interactive language, allowing active involvement in the educational process	0	0	16	1 (100.0%)
The media library contains correct information	0	0	16	1 (100.0%)
The media library contains objective information	0	0	16	1 (100.0%)
The media library contains clarifying information	0	0	16	1 (100.0%)
The media library contains necessary information	0	0	16	1 (100.0%)
The media library presents a logical sequence of ideas	1	0	15	0.93 (93.0%)
The media library presents a current topic	0	0	16	1 (100.0%)
The media library presents an appropriate text size	0	0	16	1 (100.0%)
Relevance				
The media library encourages learning	0	0	16	1 (100.0%)
The media library contributes to knowledge in the area	0	0	16	1 (100.0%)
The media library awakens interest in the topic	0	0	16	1 (100.0%)
OVERALL MEAN CI = 0.996 (99.6%)				

Note: CI*- Concordance Index.

significant considering that the majority (68.75%) assessed the media library with a score equal to or higher than 97.5.

The assessment carried out by the target audience resulted in an overall mean of 94.53 in the SUS, also classifying usability as "best imaginable". The lowest score obtained was 85.0, attributed by only one participant, while the others assessed the media library with the best possible rating. These results confirm the excellent media library usability for both experts and the target audience, demonstrating the ease of user interaction with the media library since the first version. Table 4 presents experts' validity and the target audience's assessment regarding usability characteristics.

The results revealed a satisfactory assessment of the "*Prevenção e Manejo dos Maus-tratos Infantis*" media library in relation to its usability. All of the media library's usability characteristics were rated as "best imaginable", which indicates that it is an educational technology that stands out for its easy-to-use system from the first interaction, speed in executing established tasks, low incidence of errors, ease of operation even after prolonged periods of non-use, and a pleasant design.

DISCUSSION

The "*Prevenção e Manejo dos Maus-tratos Infantis*" media library was produced, validated and assessed based on the methodological rigor required for the development of an educational health technology, especially with regard to its content, layout, relevance, motivation and usability, respecting all the stages considered essential and exceeding the minimum number of evaluators for validity and assessment.[16] Digital educational resources, such as media libraries, can be valuable tools in the context of child maltreatment, providing easy and quick access

Table 2. Assessment of the target audience of the second version regarding content, layout and motivation (n=16). Rio das Ostras, RJ, Brazil, 2025.

Item	Strongly disagree	Slightly disagree	Slightly agree	Totally agree	Item CI*
Content					
The language used in the media library is easy to understand	0	0	0	16	1 (100.0%)
The media library facilitates learning about good practices in the management and prevention of child maltreatment	0	0	1	15	1 (100.0%)
The media library invites and/or attracts to changes in the care provided to children in Primary Health Care	0	0	0	16	1 (100.0%)
The media library is attractive	0	0	2	14	1 (100.0%)
The media library encourages and/or instigates changes in behavior in care practice	0	0	0	16	1 (100.0%)
Layout					
The letters in the media library are in an appropriate size	0	0	3	13	1 (100.0%)
The media library is attractive	0	0	2	14	1 (100.0%)
The videos and images in the media library are easy to understand	0	0	0	16	1 (100.0%)
The texts in the media library are easy to understand	0	0	0	16	1 (100.0%)
The media library colors are appropriate	0	0	1	15	1 (100.0%)
The media library presents a logical sequence of ideas	0	0	0	16	1 (100.0%)
The media library presents a current topic	0	0	0	16	1 (100.0%)
The media library seems organized	0	0	1	15	1 (100.0%)
The media library is easy to use	0	0	3	13	1 (100.0%)
Motivation					
The media library encourages learning	0	0	0	16	1 (100.0%)
The media library provides help in a positive way	0	0	0	16	1 (100.0%)
The media library contributes to knowledge in the area	0	0	0	16	1 (100.0%)
The media library awakens interest in the topic	1	0	0	15	0.93 (93.0%)
OVERALL MEAN CI = 0.996 (99.6%)					

Note: CI*- Concordance Index.

to a wide range of relevant content, and need to be rigorously validated and assessed.

The media library is composed of a variety of media content, and the literature indicates that these resources favor greater knowledge acquisition, learning persistence, and improvement of nursing practice. For instance, an Iranian study that assessed the effect of multimedia training on the attitudes and practices of pain management of pediatric nurses found that this type of training was more effective than the lecture method. Furthermore, the research showed that the multimedia training method provides more convenient facilities for students in terms of time, place, and financial issues.[25]

In the Brazilian context, the dissemination of knowledge through online tools, such as websites, has gained prominence.

Table 3. Usability assessment of the first version of the media library by experts (n=16) and of the second version by the target audience (n=16). Rio das Ostras, RJ, Brazil, 2025.

Participants	Q1†	Q2†	Q3†	Q4†	Q5†	Q6†	Q7†	Q8†	Q9†	Q10†	SUS score‡
P1§	3	4	4	4	4	4	4	4	4	4	97.5
P2§	4	4	4	4	4	4	4	4	4	4	100.0
P3§	4	4	4	4	4	4	4	4	4	4	100.0
P4§	4	4	4	4	4	4	4	4	4	4	100.0
P5§	4	4	4	4	4	4	3	1	4	4	90.0
P6§	4	4	4	4	4	4	4	4	4	4	100.0
P7§	3	4	3	3	4	4	3	2	4	4	85.0
P8§	4	4	4	4	4	4	3	4	4	4	97.5
P9§	3	4	4	4	4	4	4	4	4	0	87.5
P10§	4	4	4	4	4	4	4	4	4	4	100.0
P11§	4	4	4	4	4	4	4	4	4	4	100.0
P12§	4	4	4	4	4	4	4	4	4	4	100.0
P13§	4	4	4	4	4	4	4	4	4	3	97.5
P14§	4	3	4	3	4	4	4	4	4	4	95.0
P15§	4	3	4	1	4	4	3	3	4	2	80.0
P16§	4	4	4	4	4	4	4	4	4	4	100.0
Overall mean of SUS – first version - experts (n=16): 95.63											
P17§	4	4	4	4	4	4	4	4	3	4	97.5
P18§	3	4	4	4	4	4	4	1	4	4	90.0
P19§	4	4	4	4	4	4	4	4	4	4	100.0
P20§	2	4	4	2	4	3	4	4	4	4	87.5
P21§	4	4	4	4	4	4	4	4	4	4	100.0
P22§	4	4	4	4	4	4	4	4	4	4	100.0
P23§	4	4	4	4	4	4	3	3	4	4	95.0
P24§	4	3	3	4	4	4	4	4	4	4	95.0
P25§	4	3	4	3	4	3	3	4	4	3	87.5
P26§	4	4	4	4	4	4	4	4	1	4	92.5
P27§	4	4	4	4	4	4	4	3	4	4	97.5
P28§	4	4	4	4	4	4	1	4	4	3	90.0
P29§	4	4	4	4	4	4	4	4	4	4	100.0
P30§	3	2	2	4	3	4	4	4	4	4	85.0
P31§	4	4	4	4	4	4	4	2	4	4	95.0
P32§	4	4	4	4	4	4	4	4	4	4	100.0
Overall mean of SUS – second version - target audience (n=16): 94.53											

Note: *n = number of study participants; †Qn = SUS Question; ‡SUS Score = System Usability Scale score; §Pn = Participant.

Table 4. Assessment of usability characteristics of the first version with experts (n=16) and the second version with the target audience (n=16). Rio das Ostras, RJ, Brazil, 2025.

Usability characteristics	First version		Second version		Meaning
	Mean of items among experts	Overall mean	Mean items across target audience	Overall mean	
Ease of understanding the system	Q3 (98.4) Q4 (92.2) Q7 (93.8) Q10 (89.1)	93.4	Q3 (95.3) Q4 (95.3) Q7 (93.7) Q10 (96.8)	95.2	Easy to use system when used for the first time
System efficiency	Q5 (100.0) Q6 (100.0) Q8 (90.6)	96.9	Q5 (98.4) Q6 (96.8) Q8 (89.0)	94.7	Speed in executing established tasks
Inconsistencies	Q6 (100.0)	100.0	Q6 (96.8)	96.8	Absence of errors
Ease of memorization	Q2 (96.9)	96.9	Q2 (93.7)	93.7	Easy to use system, even after a long period of not using it
User satisfaction	Q1 (95.3) Q4 (92.2) Q9 (100.0)	95.8	Q1 (93.7) Q4 (95.3) Q9 (93.7)	94.2	Pleasant design

Note: *Q = question.

A study conducted in Paraná described the creation of a website on healthcare-associated infections for nursing professionals. Despite the relevance of the topic, this work was limited to the content production and development phases,[26] which differs from the "*Prevenção e Manejo dos Maus-tratos Infantis*" media library. It is worth noting that educational technologies validated by experts and assessed by the target audience guarantee information accuracy and relevance. In addition to this, usability, which includes ease of navigation and accessibility, is essential to ensure that users can fully utilize available resources, minimizing technical barriers.[27]

The website-based media library was validated and assessed satisfactorily, achieving a high CI in both versions, although in three items (logical sequence of ideas, easy to use and arouses interest in the topic) it did not obtain total agreement from participants, demonstrating its relevance and acceptance, and highlighting its potential as an educational tool suited to its purpose. The results reflect an extremely high level of agreement, as recommended in the literature.[22]

Furthermore, the media library usability values assessed by the SUS exceed those found in similar studies, such as one carried out in the United States on the WeCanManage application for cancer patients, which obtained a mean of 81 in the SUS.[28] They also resemble the results of a study in Mexico on an educational website for patients with type 2 diabetes mellitus, which achieved an overall usability mean of 94.76.[29]

In the Brazilian context, the media library usability results are in line with and surpass those of a study that assessed the ROBOVID mobile application usability characteristics using the same scale, obtaining a minimum overall mean of 83.3.[24] The comparison shows that the media library not only meets, but exceeds the usability standards of other educational technologies, reinforcing its effectiveness and acceptance among users, highlighting its excellence in terms of usability.

It is important to highlight that, although the typical mean in the SUS is 68 points, tools that achieve assessments above 80.3 are classified as having a value of A, such as the media library, ranking among the 10% best results obtained with this scale. This type of result means that such tools not only meet, but significantly exceed the usual usability expectations, providing a very satisfactory user experience,[28] as observed in the two versions of the media library. This position not only validates the meticulous work carried out in its production, but also highlights its potential for a positive impact on PHC nurses' continuing education. Furthermore, this high usability index suggests that the tool is intuitive and easy to use, fundamental aspects to ensure its adoption and long-term success. On the other hand, usability below that recommended would represent a significant obstacle to the use of the technology created.[30]

It is crucial to recognize that, in the face of any usability problems encountered in educational technologies, adjustments must be made.[28] In this regard, despite the excellent results obtained in the first version of the media library, specific improvements were implemented to minimize the small problems identified. These continuous adjustments ensure that the tool not only maintains high standards of usability, but also evolves according to users' needs and feedback, promoting an even more efficient and satisfactory experience.

It is known that, in addition to the production and validity of an educational technology in health by experts, it is necessary to carry out an assessment with the target audience. This assessment demonstrates the guarantee that this technology is appropriate and meets the needs of those it is intended for. In addition, it provides opportunities for adjustments before the dissemination and circulation of the educational technology, reducing the likelihood of rejection by the target audience. The present study shares similarities with a previous investigation that developed, validated and assessed an educational website in health about home care for newborns.[31] Although both received positive reviews from experts and the target audience, suggestions were analyzed and incorporated to improve the website and the current media library, with the aim of ensuring a higher quality of the resources offered.

CONCLUSION AND IMPLICATIONS FOR PRACTICE

The "*Prevenção e Manejo dos Maus-tratos Infantis*" media library was produced, adjusted and validated satisfactorily by experts, in addition to being well assessed by representatives of the target audience. The results indicated high agreement among evaluators, demonstrating its high potential as an educational tool.

The media library will be periodically updated, ensuring its continued relevance in tackling child maltreatment. Focused on user preferences, the media library establishes itself as a relevant, inclusive and dynamic digital solution, offering a variety of resources for training professionals, such as videos, podcasts, mind maps, images, films and digital documents, with an emphasis on child maltreatment prevention and management.

In addition to being available free of charge for PHC nurses' continuing education, the "*Prevenção e Manejo dos Maus-tratos Infantis*" media library has been publicized not only in the academic environment, but also through the social networks of the extension project authors linked to the research team and health services where the researchers work, aiming to reach their target audience.

The study has some limitations, such as the difficulty in accessing individuals outside the initial network of contacts, which restricted the diversity and representativeness of participants. Another limitation is the possible response bias, since participants, aware of the purpose of the study, may have assessed the media library usability more favorably than they would have in a more controlled context. Furthermore, the lack of an assessment of the impact of the media library on nurses' knowledge on the topic is also a limitation. These issues indicate opportunities for improvement in future research, including strategies to reach a more representative and diverse sample as well as conducting studies in different contexts of use. Finally, future research could apply pre- and post-tests to analyze the evolution of knowledge before and after the use of the media library, comparing it, when relevant, with other traditional educational strategies.

This study contributes to teaching, research, management and care in the area of nursing. It enriches the training and qualification of nurses for work in PHC, through a versatile and updated educational technology adapted to different learning styles, which enables a more robust preparation for the care of children in the context of abuse. Furthermore, the validated and assessed technology offers accessible and quality educational resources, which can be adopted by leaders and managers in continuing education, aiming to raise awareness and train professionals about the relevance of the topic, as well as the prevention and adequate management of this serious public health problem.

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DATA AVAILABILITY RESEARCH

The contents underlying the research text are included in the article.

CONFLICT OFINTEREST

None.

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