



Construction and validation of a care-educational technology on health and psychosocial demands for middle-aged women

Construção e validação de uma tecnologia cuidadoso-educacional sobre demandas de saúde e psicossociais para mulheres de meia-idade

Construcción y validación de una tecnología cuidado-educativa sobre demandas psicosociales y de salud para mujeres de media edad

ABSTRACT

Objective: To describe the process of building and validating a Care-Educational Technology on health and psychosocial demands for middle-aged women. **Methods:** This is a methodological study carried out in four stages: bibliographic survey, field survey, production of a Care-Educational Technology and content validation of the developed technology. **Results:** The booklet was built in the Canva app and its final version is 35 pages. As for validation, six experts participated. The booklet was validated with a maximum Content Validity Index of 1.0, showing that it is suitable for working with middle-aged women. **Final considerations:** With this research, it was possible to build and validate a booklet, which is configured as a tool that can be used by health professionals and women themselves in their self-care process.

Keywords: Needs and demands of health services; Middle-aged person; Educational technology.

RESUMO

Objetivo: Descrever o processo de construção e validação de uma Tecnologia Cuidado-Educacional sobre demandas de saúde e psicossociais para mulheres de meia-idade. **Métodos:** Trata-se de um estudo metodológico realizado em quatro etapas: levantamento bibliográfico, levantamento de campo, produção de uma Tecnologia Cuidado-Educacional e validação de conteúdo da tecnologia desenvolvida. **Resultados:** A cartilha foi construída no aplicativo Canva e sua versão final constitui 35 páginas. Quanto à validação, participaram seis especialistas. A cartilha foi validada com um Índice de Validade de Conteúdo máximo de 1,0, evidenciando ser adequada para trabalhar com mulheres de meia-idade.

Considerações finais: Com esta pesquisa, foi possível construir e validar uma cartilha, que se configura como uma ferramenta que poderá ser utilizada por profissionais da saúde e pelas próprias mulheres em seu processo de autocuidado.

Descritores: Necessidades e demandas de serviços de saúde; Pessoa de meia-idade; Tecnologia educacional.

RESUMEN

Objetivo: Describir el proceso de construcción y validación de una Tecnología Cuidado-Educativa sobre las demandas de salud y psicosociales de mujeres de mediana edad. **Métodos:** Se trata de un estudio metodológico, realizado en cuatro etapas: levantamiento bibliográfico, levantamiento de campo, producción de una Tecnología Cuidado-Educacional y validación de contenido de la tecnología desarrollada. **Resultados:** El cuadernillo fue creado en la aplicación Canva y su versión final consta de 35 páginas. En cuanto a la validación, participaron seis expertos. El folleto fue validado con un Índice de Validez de Contenido máximo de 1,0, demostrando que es apto para trabajar con mujeres de mediana edad. **Consideraciones finales:** Con esta investigación fue posible construir y validar una cartilla, que es una herramienta que puede ser utilizada por los profesionales de la salud y las propias mujeres en su proceso de autocuidado.

Descriptores: Necesidades y demandas de servicios de salud; Persona de mediana edad; Tecnología educacional.

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INTRODUCTION

Care-Educational Technologies (CETs) represent a possibility to conceive/justify technological products and processes and should be seen as actions integrated with educational processes⁽¹⁾. Care-educational technologies facilitate the process of caring and educating in health, so that they contribute to professionals and the population with the individual and collective improvement of the techniques and knowledge that generate care. In addition, they are considered important tools in improving self-care and capable of intensifying skills that contribute to the exercise of care⁽²⁾.

Care-educational technologies are crucial for the development and construction of the educational process that, combined with care, transforms health promotion and provides critical thinking and knowledge strengthening through educational strategies⁽³⁾. From this perspective, these instruments can be valuable in health education (HE) processes carried out with middle-aged women in Primary Health Care (PHC), given the lack of this public with educational actions that address their health demands.

In this sense, educational materials must be carefully constructed and evaluated before being used by the target population. One of the main stages for the elaboration of an effective educational material is the validation of its content, a process that evaluates its quality and firmness when addressing a certain theme⁽⁴⁾. These products can be used for HE with middle-aged women, a public recognized for having their main health demands made invisible in the health networks.

Middle age is the time when most women experience menopause and the

climacteric period, which is the transition from the reproductive to the non-reproductive phase, in which biological, emotional and endocrine changes occur due to hormonal changes, more specifically due to the gradual decrease in estrogen. The main milestone of the climacteric period corresponds to the absence of menstruation for 12 consecutive months due to the decrease in ovarian hormones⁽⁵⁾. Because of these events, these women lack instruments capable of providing information that contributes to the experience of middle age in the best possible way.

Notably, women with greater access to information about the climacteric and its possible manifestations live this phase better⁽⁶⁾. In this sense, the availability of educational materials and the promotion of spaces for group reflections on the changes experienced is indicated, which contributes to sharing the doubts and anxieties that permeate this moment of complex repercussions in the life cycle.

It should also be noted that the demands of middle-aged women, although generally associated with the climacteric and/or menopause, transcend these periods. Thus, based on the assumption of integrality, it is necessary to consider the social, cultural, gender and psychological aspects as determinants for the quality of life of this period. Thus, such recognition makes it impossible to reduce the demands of middle-aged women to clinical manifestations related to menopause and allows a holistic look considering biological, social and psychological factors⁽⁷⁾.

That said, the development of this study is justified due to the need for CETs capable of assisting in the health promotion process of middle-aged women. In addition, it can contribute to female self-

f-knowledge and the protagonism of this group, with regard to health care itself, recognizing its main demands and transformations in the face of the transition to middle age.

Given the above, the research sought to answer the following question: "Is a booklet produced based on scientific evidence considered by experts a Care-Educational Technology suitable for middle-aged women?" Therefore, the present study aims to describe the process of construction and validation of a CET on health and psychosocial demands for middle-aged women.

METHODS

This is a methodological study of technological development, carried out in four stages, in which the premises of Echer's model of technology construction were considered⁽⁸⁾. For the author, the construction process should follow three stages: bibliographic survey, preparation and validation of the booklet⁽⁸⁾. In this study, four stages were used: a) bibliographic survey; b) field survey; c) production of a CET; and d) content validation of the developed technology. This research is linked to an umbrella project entitled: "Health education as care technology related to the health demands of middle-aged women".

For the first stage of this work, a bibliographic survey was carried out through an integrative literature review based on the following guiding question: "What

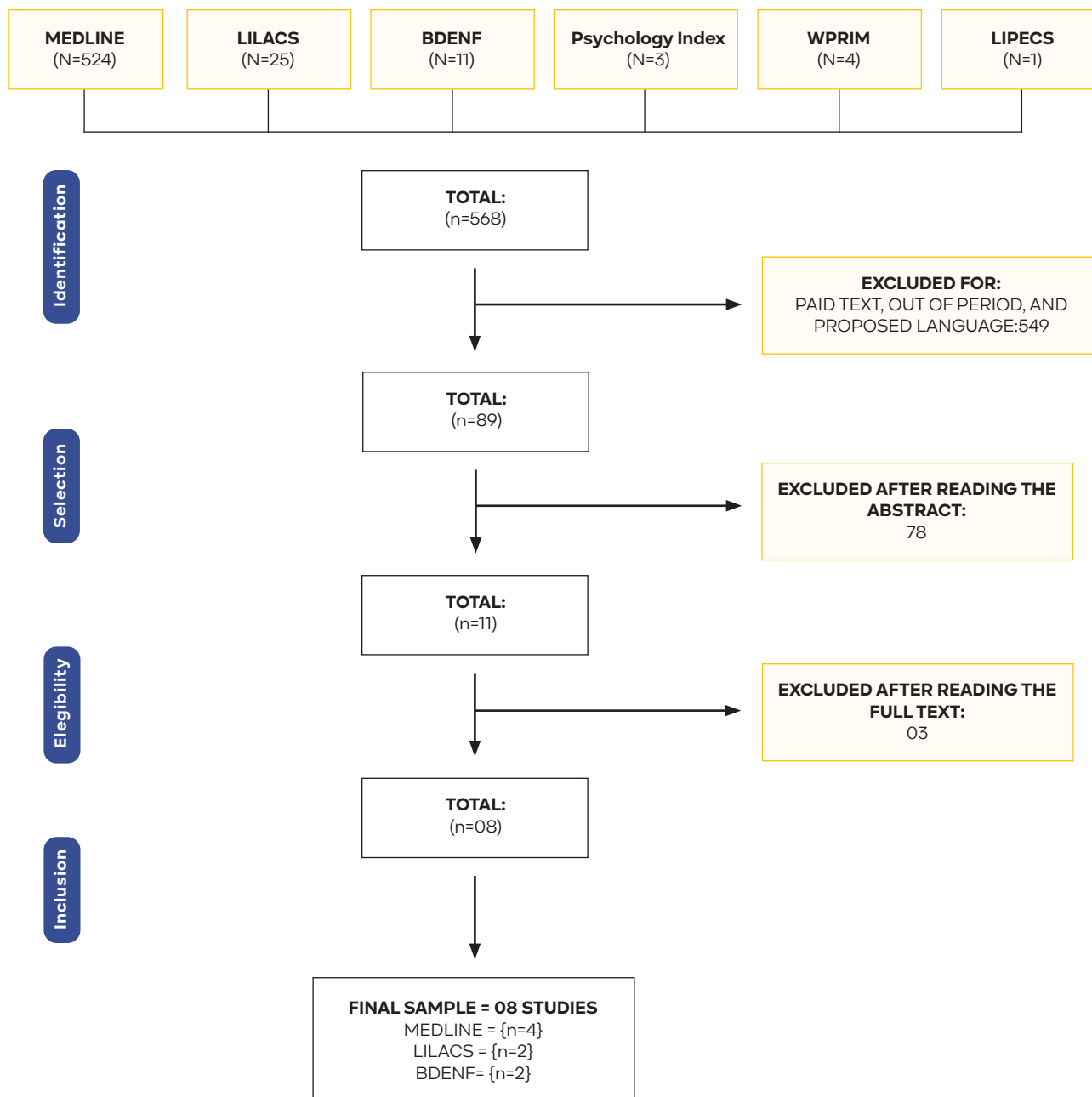
are the main health and psychosocial demands of middle-aged women?" To this end, searches were carried out in the database of the Virtual Health Library (VHL).

The review was carried out in August 2023 and used the following Descriptors in Health Sciences (DeCS): "Educational Technology"; "Middle-Aged Person"; "Women's Health" and "Health Services Needs and Demands", with the help of the boolean operator AND.

The articles selected for reading met the inclusion criteria: texts available in full, free of charge, in Portuguese and English, published between 2017 and 2022, excluding those that did not meet the objective of the research. Manuals and documents from the Ministry of Health were also used to survey the central themes of the proposed CET, such as the National Policy for Integral Attention to Women's Health, primary care notebooks number 15 and 16, among others.

The following associations were applied in the database: Group 1: Educational technology AND Middle-aged Person AND Women's Health; and Group 2: Middle-aged Person AND Women's health AND Health Service Needs and Demands.

The filtering process followed the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) model. Image 1 is a flowchart of article selection.

Figure 1 - Selection flowchart according to PRISMA model (Guanambi, Bahia, Brazil, 2023).

Source: Created by the authors (2023).

After the screening phase by the platform, the titles, abstracts and, later, the full texts were read in order to identify the articles that contemplated the proposed objectives. Thus, a total of eight articles were selected to compose the integrative review.

At the same time, in the second sta-

ge, the data collected in the scientific initiation research: "Health and psychosocial demands of middle-aged women users of Basic Health Units", linked to the umbrella project mentioned above, as well as those of this research were used. Data were collected and analyzed from February to June 2023. This research fits into the qua-

litative approach model, with data collected through semi-structured interviews, analyzed through Content Analysis, by Laurence Bardin⁽⁹⁾, with the support of the Iramuteq software in data processing and analysis. The conduct and presentation of the research followed the criteria defined by the Consolidated Criteria for Reporting Qualitative Research (COREQ).

After the analysis, the data were compared to the findings of the literatu-

re and, from this process the main generating themes for the production of CET emerged. It is noteworthy here that the production of a booklet based on popular knowledge and scientific evidence confer greater reliability and adequacy of the themes raised to the intended audience.

At the end of this process, the generating themes presented in Table 1 were identified.

Table 1 – Main generating themes identified in middle-aged women based on the findings of a research in scientific initiation and literature (Guanambi, Bahia, Brazil, 2023)

Generating Themes Identified in Scientific Initiation	Generating Themes Identified in the Integrative Review
Generating Themes Identified in Scientific Initiation	Hypertension and Diabetes mellitus;
Cumulative burden of women in the domestic environment;	Joint pain (fibromyalgia, arthritis and arthrosis);
Social pressure that culminates in psychological suffering;	Solitude and abandonment of children;
Low self-esteem;	Characteristic manifestations of the climacteric/ menopause, such as reduced libido, vaginal dryness and hot flashes;
Violence against women	Anxiety;
Demands associated with the control and treatment of SAH and DM;	Migraine;
Joint pain;	Joint pain;
Mental suffering (depression, anxiety), among others.	Pain in the spine, among others.

Source: prepared by the authors

In the third stage of this research, an educational booklet/CET was produced. The production of a CET, whether printed or digital, requires the adoption of some methodologies that systematize this process, such as: scientific evidence; definition of the purpose of the technology,

purposes, selection of the audience for which the CET is intended, type of material (booklet, guide, booklet, manual), type of paper, themes, illustrations and language; the planning of actions, elaboration of the CET “pilot” and, also, the importance of the research project to guide what is to

be built.

In view of the above, we sought to meet the criteria set out above and the CET chosen was a booklet, as the use of educational booklets has been shown to be effective in promoting and improving readers' knowledge, attitude and practice(10). The booklet created in PDF format, which can be printed at any time, will be intended for middle-aged women, in order to promote the health of this public. To facilitate the understanding of the information contained by the women, an informal, direct and clear language was used, as well as illustrations to not make the reading tiring and to bring the content closer to the readers.

The booklet, because it is a powerful CET, can be used by health professionals, especially nurses, to mediate teaching-learning processes and assist in HE moments. The use of these tools by professionals in health services benefits the adherence, learning and interest of women in their demands and needs, in addition to representing an efficient subsidy that can be used by this population whenever they have doubts or curiosities regarding their demands.

Thus, the first version of the educational booklet originated, entitled "Health and psychosocial demands of middle-aged women: from women to women". The central themes addressed in the booklet were defined based on the findings of the literature and research results in the aforementioned scientific initiation.

Furthermore, the content of the booklet was based on official publications of the Ministry of Health, as well as on scientific articles selected through an integrative literature review. In addition, the main information and illustrations perti-

nent to the theme were organized in a systematic and sequential manner.

In the construction process, the Canva software was used, a tool chosen because it consists of an online application that, in addition to being fully compatible with the internet browser, is very intuitive and easy to handle, has free access and the possibility of obtaining the paid version, providing access to a greater number of illustrations and elements. Thus, in this research, the paid version of the application was used.

With regard to the fourth and last stage, after the construction of the first version of the booklet, the content was validated by agreement, which was carried out with experts. In order for CETs to achieve the objectives proposed in their construction, they must go through the validation process to measure the reliability of their content and form. CET validation is a fundamental strategy to assess the legitimacy and credibility of the instrument produced before it is disseminated and/or distributed to the target audience(11).

The CET validation process was performed in a virtual environment. In this sense, some instruments of this context were used, namely: e-mail; WhatsApp and Google Forms. This is a study with coverage in the national scenario.

The sample of participants for content validation of the booklet was composed of professionals with competence in the area of women's health. The search for specialists took place through research on the Lattes platform and, later, by non-probabilistic sampling, for convenience, with the application of the snowball technique. After the first indication, the Lattes Curriculum was consulted to verify the suitability of the expert to the selection criteria of

this study.

The experts who participated in the content validation related to the booklet were called experts. For the selection of participants, the expert selection criteria, adapted from Benevides⁽¹²⁾, were used, namely: experience in the development of health promotion activity on the subject of CET, in the last 5 years; being a specialist in the area of the subject of CET; having published works on the subject of CET in the last 5 years and/or on the construction and validation of educational materials; master or PhD, with scientific production in the area of CET or production of CET and being a member of the scientific society in the area of CET. To include the participants in the expert panel, at least two of the criteria presented were considered.

Regarding the sample size, there are divergences in the literature regarding the number of experts required for validation studies. However, according to the recommendations of Polit and Beck (2006)⁽¹³⁾, the number of experts for validation varies between six and ten, as a very high number can hinder consensus, while a very low number can compromise representativeness. For the present study, we chose to follow the recommendations of Polit and Beck^(1,3), such as the participation of at least six and a maximum of ten experts.

Thus, 14 experts were identified and six accepted to participate in the study. The process of attracting these professionals was based on a search in the Lattes Curriculum with the help of the filters made available by the platform. In this space, the "professional performance" filter was selected, followed by the major area (health sciences), area (nursing) and sub-area (women's health nursing).

With the beginning of the construction of the team of experts, via the Lattes platform, an email was sent to those who met the criteria, in which the objective of the research and those responsible for the project were explained, through an invitation letter, sharing the basic information about the objective of the booklet and the importance of the expertise of the guests in the evaluation of the issues contained in the instrument, consequently, in the contribution to the teaching of nursing in women's health.

In the same email, two different Google Forms form links were shared with the experts. The first concerned the Informed Consent Form (ICF), and the second was the booklet and the Health Educational Content Validation Instrument (HECVI), which is a validated and innovative instrument in the validation of educational content, such as videos, games, booklets, among others⁽¹⁴⁾.

At the end of the quantitative evaluation made through HECVI, using the Likert scale, the experts made qualitative considerations about the relevance and suggestions about the content of the booklet, in a space intended for this purpose, in the online form itself.

In the validation stage, the well-known and accessible WhatsApp instant messaging application was also used, through which it was possible to contact some experts to clarify doubts and assist in the validation process.

Once the considerations of the validation phase were gathered by the experts, adjustments were made and some of the suggestions from this process were added and the analysis phase of the answered validation instrument was proceeded.

To analyze the data obtained from the HECVI, the Content Validity Index (CVI) was used – a method that measures the proportion or percentage of experts who are in agreement on certain aspects of the instrument and its items –, which initially allows analyzing each item individually and then the instrument as a whole⁽¹⁵⁾.

The index score was calculated by adding the agreement of the items that were marked by “1” (partially agree) or “2” (strongly agree) by the experts. If any item received a score “0” (disagree), it should be revised or eliminated from the booklet. The CVI was evaluated by domain (objective, structure/presentation and relevance) and general, according to the HECVI. The formula for evaluating each domain and/or its items is as follows:

$$\text{CVI} = \frac{\text{number of responses "1" and "2"}}{\text{Total number of answers}}$$

Regarding the acceptable agreement rate, the authors differ in the recommendations; however, in the case of six or more experts, a rate of not less than 0.78 is recommended⁽¹³⁾. To verify the validity of new instruments, in general, some authors suggest a minimum agreement of 0.80. Thus, for this research, a CVI greater than or equal to 0.80 was acceptable as agreement between the experts.

The umbrella study, to which this research is linked, was submitted to the Research Ethics Committee of the State University of Bahia (Uneb), approved with Opinion number 5,323,173. Thus, in the four methodological stages, ethical aspects were followed in accordance with all the provisions of Resolution 466, of December 12, 2012⁽¹⁶⁾.

RESULTS

The booklet built with evidence from the literature and data from the scientific initiation research, using the paid version of the Canva application, is composed of 35 pages that discuss the main health demands of women in the middle-aged context.

At this stage of the process, the booklet was concerned with addressing all the necessary information completely, but not exhaustively. This aspect is reflected, for example, in the number of pages of the technology, as well as in the choice of colors and illustrations, which were intended to make the booklet inviting, attracting the reader's attention.

Subsequently, the content validation stage of this technology was carried out by experts in the field. At first, eight experts were willing to participate in the validation, but two did not complete all the stages and the final sample consisted of six experts.

The 14 potential experts selected, using the snowball sampling methodology, received an email with all the necessary information, of which only six made up the final study sample.

The six participants are female and nurses. As for the current function, four are professors from state universities in Bahia, one works as an assistant nurse in a maternity hospital and one as a nurse in the Family Health Strategy (FHS). With regard to the degree, three have a PhD in nursing; two have a master's degree in nursing; and one is a specialist in women's health – their training time varies between 12 and 32 years.

For the evaluation of the booklet, the specialists used the Health Educational Content Validation Instrument (HECVI),

which required a grade for each domain evaluated. Regarding "Block 1 – Objectives", which refers to the purposes, goals and points to be achieved with the use of the booklet, the six participants fully agreed (2) that the booklet contemplates the proposed theme; provides reflection on the theme and encourages behavior change. Only one (16.7%) partially agreed (1) about the booklet being adequate to the teaching-learning process and about its ability to answer questions about the topic addressed.

In relation to "Block 2 – Structure and presentation", which refers to the way of presenting the guidelines, which includes the general organization, structure, presentation strategy, coherence and sufficiency, all experts (100%) fully agreed (2) that the technology presents language appropriate to the educational material; that its information is correct, objective, enlightening and necessary; and that the theme is current and the text is of an appropriate size.. Only one of the experts (16.7%) partially agreed (1) that the language is suitable for the target audience; that the language is interactive, allowing active involvement in the educational process and that the booklet follows a logical sequence of ideas.

With regard to "Block 3 – Relevance", which refers to the degree of significance of the educational material presented, all experts (100%) fully agreed on the ability of care-educational technology to stimulate learning; contribute to knowledge and arouse interest in the subject.

In addition to these quantitative aspects evaluated through the HECVI, at the end of the questionnaire, a space was made available for qualitative contributions, with a view to improving the booklet.

After reading and analyzing the suggestions, the accepted modifications were carried out without the need for a second round of evaluation, as the technology reached the expected CVI – above 0.80 – in the first round.

Among the contributions and qualitative comments suggested, the following stand out:

Expert01: "The booklet is wonderful! I would like to congratulate the authors and I would like to request the submission of the version. As a suggestion, I leave the possibility of ordering the themes better. I noticed that you bring some initial pathology, such as Fibromyalgia, and then talk about conditions to live better, decreased burden and self-care, such as stress relief and division of household chores. Then they resume pathologies such as SAH and DM. Maybe raise these pathologies a little and leave for the end the themes more related to the mind and care strategies. A tip is also to bring your relationship with dementias to the subject of depression. The femininity of dementia is not only related to the fact that women live longer than men, but mainly to overload, use of benzodiazepines, antidepressants and commonly appear after depression. In addition, I wish you success in publishing and thank you for the opportunity to collaborate".

The expert's first contribution was not accepted, as the choice to order the themes was based on the purpose of valuing psychosocial complaints, to the detriment of the demands associated with chronic diseases, such as systemic arterial hypertension (SAH) and diabetes mellitus (DM). This decision aims to encourage health professionals, who may use this technology, to value psychological, emotio-

nal and social complaints during the care process for these women.

The judge's second contribution, with regard to dementia and her relationship with the female sex, was accepted and inserted in the topic: "I have to go through a psychologist to vent, to have a moment of my own like that, you know...".

One of the participants also highlighted the scarcity of educational content dedicated to dialoguing about middle-aged women and collaborated with the booklet:

Expert2: "Congratulating the academic and the advisor for the research are extremely relevant studies for women who are between this age group. And with regard to the climacteric, then, there is still a lot of lack on the subject. I suggest a spelling check of the booklet before disclosure. Success".

When considering the comments left by the judges in the space, it can be concluded that the content met expectations and was well received by the evaluators:

Expert03: "Congratulations! A contribution to the promotion of health in the female universe. Also, the commitment to research results through feedback to collaborators".

Expert05: "Congratulations, great content... Some suggestions: In the part of "They are simple and easy to adhere to", I would also add alcoholism. In the item "How do I know if I have diabetes?" It implies that this test is the capillary blood glucose test, which is done in the Health unit in diabetic patients to control blood glucose. Is that it? I would add laboratory tests for glycated hemoglobin and fasting blood glucose levels, which are some laboratory tests for diagnosing diabetes".

As suggested by the participant, in

the topic on DM, alcoholism was added among the habits that should be avoided during the climacteric period, in order to reduce the clinical manifestations that may be present. In addition, it was decided to insert laboratory tests and their functions in the diagnosis of the pathology.

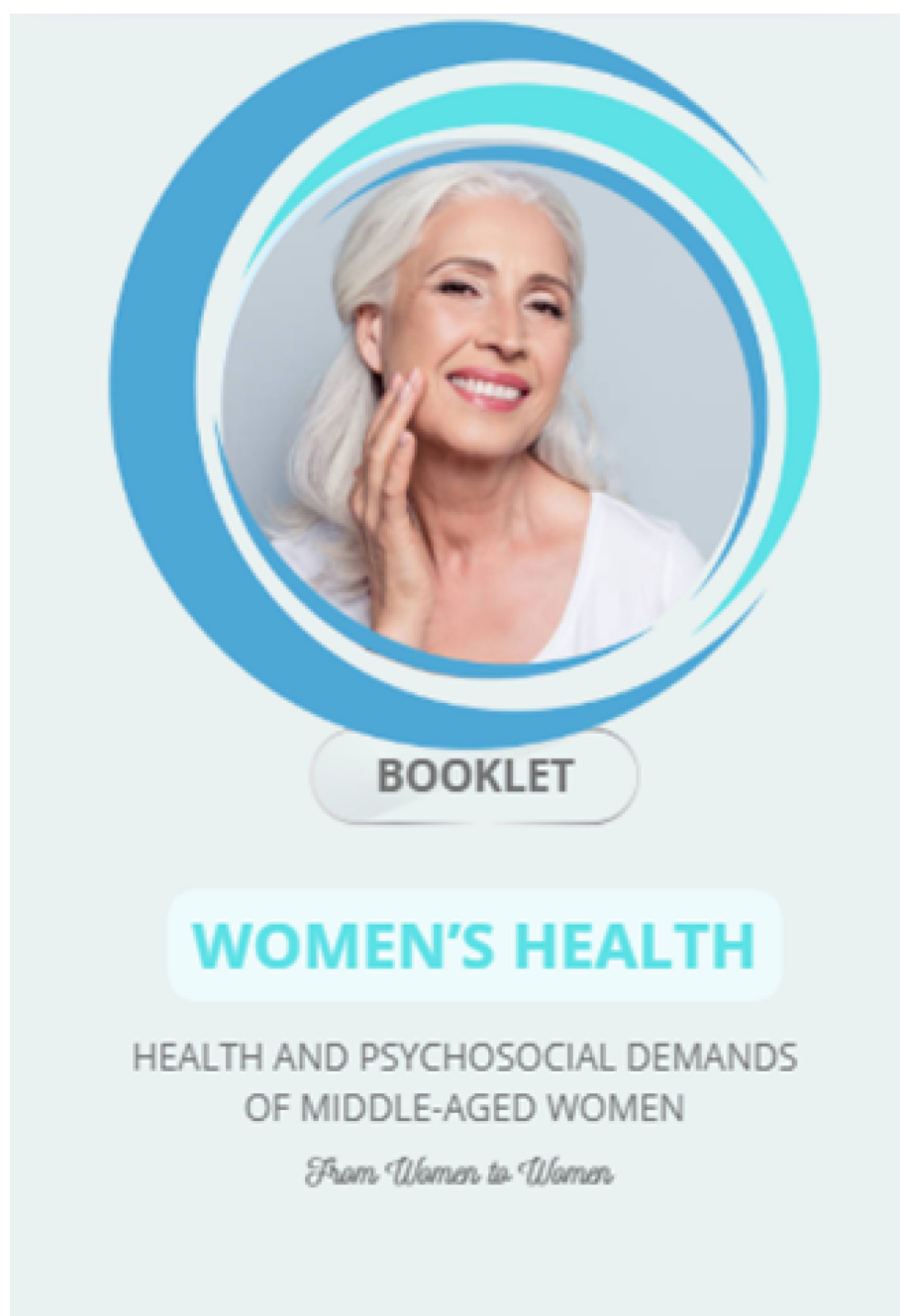
After the content validation process, followed by a review and adjustment of the contributions received, the booklet was submitted to a spelling evaluation/correction with a qualified professional trained in Letters, Portuguese and Spanish. It should also be noted that the qualitative contributions did not have an impact on the elimination of the content of the booklet, so they focused on the structural issues of technology.

The latest version of the booklet was organized into 35 pages, including cover, cover sheet, summary and presentation.

The eight topics listed were: 1. "So I have fibromyalgia, arthritis, those that join them here, it bends everything...". 2. "It's this heat, because menopause affects us a lot, it affects us a lot, a lot, a lot...". 3. "... Horrible, horrible headache. " 4. "I have to go through a psychologist to vent, to have a moment of my own like that, you know...". 5. "...Because the man works outside and he comes home, his work stopped there, the woman didn't, the woman works outside and works at home...". 6. "...I talked to him, do you know what my illness is?, it's you. He talked about why, I talked about why it is, because everything in my health you ate...". 7. "I come here a lot to see if my blood pressure is high...". 8. "It's because I have diabetes, right, then I always pass here...".

Figure 1 represents the cover of the final version.

Figure 2 – Cover of CET: Health and psychosocial demands of middle-aged women: from women to women (Guanambi, BA, Brazil, 2023)

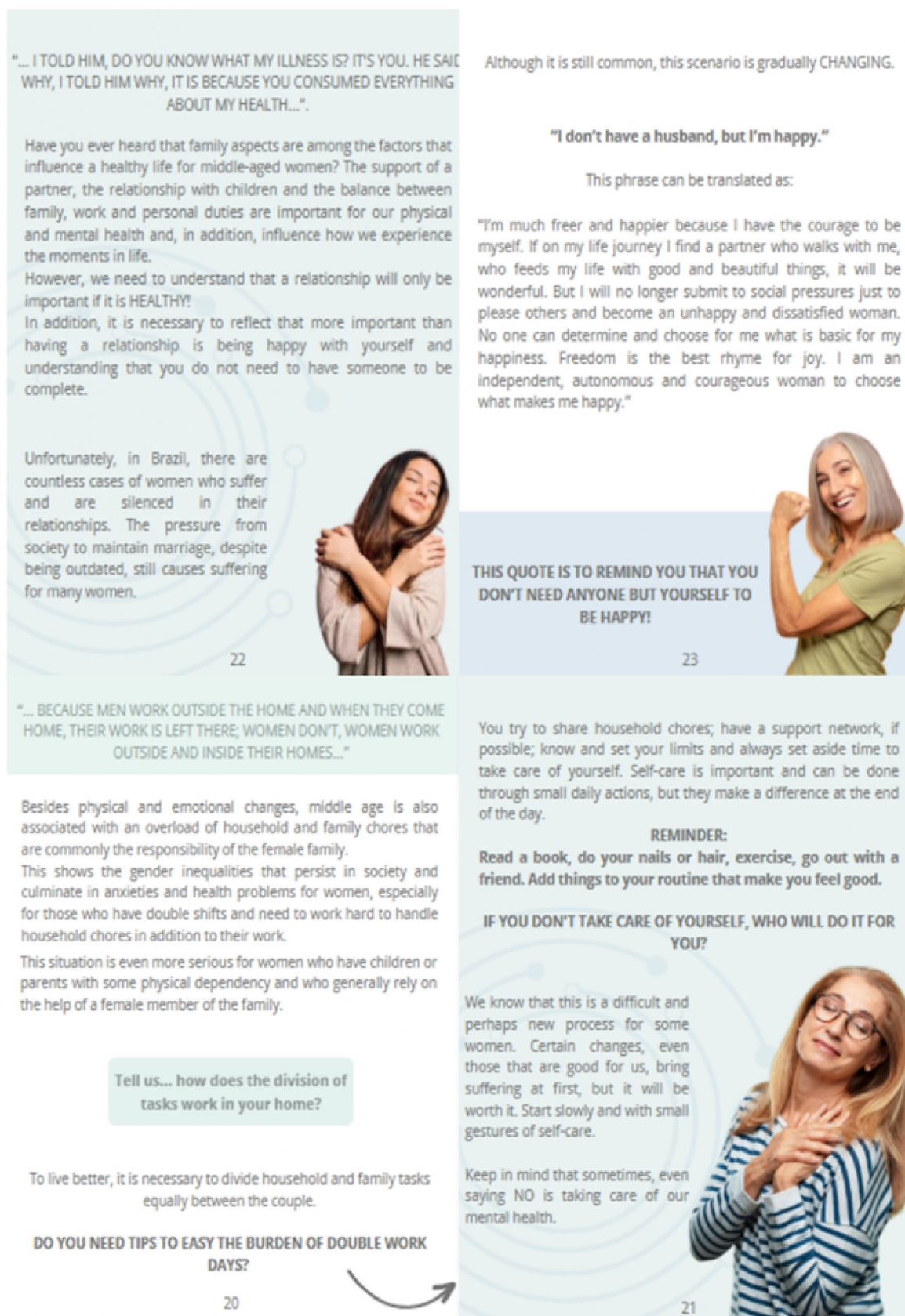


Source: prepared by the authors

After analyzing the filled HECVI, it was found that the CVI of the three blocks was maximum, that is, 1.0. The data obtained from the experts' evaluations were tabulated using Microsoft Excel software, version 2016, and the data treatment was performed using descriptive statistics. In

addition, as none of the items had disagreement (0) between the evaluators, it was not necessary to eliminate and/or review. In the case of the global CVI of CET, the value reached was also 1.0, therefore, as the minimum agreement was reached, the technology was validated by experts.

Figure 3 – Illustrations of the educational booklet “Health and psychosocial demands of middle-aged women: from women to women” (Guanambi, BA, Brazil, 2023)



Source: Created by the authors (2023).

Table 2 – Evaluation of experts regarding objectives, structure/presentation and relevance, according to HECVI (Guanambi, Bahia, Brazil, 2023)

Item	I agree	I partially agree	I totally agree	CVI
Objectives: Purposes, goals, or objectives				
It contemplates the proposed theme	-	-	100%	1
Teaching and learning process	-	16,7%	83,3%	1
Clarifies doubts about the topic addressed	-	16,7%	83,3%	1
Reflect on	-	-	100%	1
Behavior change	-	-	100%	1
Item	I agree	I partially agree	I totally agree	CVI
Structure/presentation: organization, structure, strategy, coherence and sufficiency				
The language is appropriate for the target audience	-	16,7%	83,3%	1
Language appropriate to the educational material	-	-	100%	1
Interactive language, allowing active involvement in the educational process	-	16.7%	83.3%	1
Correct information	-	-	100%	1
Objective information	-	-	100%	1
Clarifying information	-	-	100%	1
Necessary information	-	-	100%	1
Logical sequence of ideas	-	16.7%	83.3%	1
Current theme	-	-	100%	1
Size of text	-	-	100%	1
Item	I agree	I partially agree	I totally agree	CVI
Relevance: significance, impact, motivation and interest				
Stimulates learning	-	-	100%	1
Contributes to knowledge of the area	-	-	100%	1
Awaken interest in the theme	-	-	100%	1

Source: prepared by the authors (2023).

DISCUSSION

The booklet was constructed and validated, by agreement, in its content, considering conceptual and illustrative aspects that allow the knowledge of the main health demands of women in middle age. It should be noted that the literature has established a minimum score of 0.80 ideally suited to validate the specific and general contents of an instrument or prototype, a parameter adopted in this study.

Bedin *et al* (2022)¹⁷ state that the validation of instruments represents a factor of greater reliability in the health area, being applied when an instrument is adequate to achieve the final objective of its construction.

In this way, the general evaluation of agreement of the factors, by the Likert scale, reached a satisfactory index in all questions, with variation between partially agree and totally agree, evidencing the approval of the content by the participants. Thus, the technology in question was validated with a CVI of 1.0; however the evaluators made suggestions for relevant changes to improve the booklet. Other studies that validated printed educational materials also used the CVI to validate the content of the researched material and needed to undergo adjustments until the final validated version was reached, which demonstrates the importance of carrying out this stage for the elaboration of a quality material⁽¹⁸⁾.

This process of reformulating and adjusting the technology is essential to ensure the quality and applicability of the booklet to the target audience. In addition, it makes the technology more complete, of greater scientific rigor and effective during the HE activity for which it is used⁽¹⁸⁾.

It should be noted that in the current

scenario there is a significant shortage of educational materials that are dedicated to discussing and bringing information on topics related to women's health⁽¹⁹⁾, which contributes to the distancing of HE actions in primary health care units and other establishments in this context, reflecting on the quality of life of this population.

In view of this, there is a need to build materials, including CETs, to meet this shortage. The validated booklet can be considered an effective tool in these stages, whose use has the potential to enrich the knowledge construction process, making it simpler and more effective, both for the target audience and for professionals, mainly because it is a reliable and coherent material that guarantees the consolidation of quality guidelines⁽²⁰⁾.

In this sense, the accessibility of the language used in the booklet is an inseparable factor to its adherence by the target audience; however, understanding is not only achieved by the adequacy of the language, but also by the complementation of the illustrations and images existing in the material, factors that associated are responsible for captivating and stimulating the learning of readers⁽²⁰⁾.

CET information elucidates common doubts about middle-aged women, since the text and illustrations confirm the theoretical content and the past guidelines, which facilitates visual communication, brings readers closer and favors the understanding of women with different levels of education⁽²¹⁾.

It is also noteworthy that the chosen experts have experience in the construction of materials and scientific works on themes related to women's health, especially middle-aged women. These characteristics made them even more suitable to

evaluate and contribute to the improvement of this technology; thus, the process of choosing the participants of the validation stage was crucial to assign quality to the CET.

Despite the above, the difficulty of finding potential experts willing and able to collaborate for validation research should be highlighted. The discontinuity of the stages and the delay in answering the e-mail were the biggest obstacles in this study, but to overcome these challenges, the WhatsApp instant messaging application and the Snowball sampling technique were the researchers' biggest allies. Other validation studies also explained such difficulties during the process^(22,23).

FINAL CONSIDERATIONS

With the development of this research, it was possible to build and validate a CET, in the format of an educational booklet, for middle-aged women. This is a tool that can be used by health professionals and by women themselves in the health self-care process.

The validation of the content produced configures greater credibility and safety, premises inherent to the use of these instruments in health and educational environments. The material that goes through the analysis of different professionals accustomed to assistance and teaching, presents greater technical-scientific rigor, given the different perceptions of the evaluating specialists.

As a limitation of this research, it is noteworthy that the educational booklet has not yet been tested with the target audience to assess its effectiveness. Therefore, future studies are recommended to evaluate the effectiveness of this CET. In addition, the difficulty in finding profes-

sionals willing to collaborate in the validation process has become a limitation.

Finally, it is emphasized that this research may contribute to the work of nurses, as a validated educational booklet is capable of assisting health professionals in managing the main health demands of middle-aged women and promoting quality of life for this group. In addition, it has the benefit of enabling an educational material with the potential to promote self-knowledge of the target audience, encouraging the practice of self-care as an instrument to improve living conditions.

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