

# Construction and validation of educational technology for family members of people with venous ulcers

*Construção e validação de tecnologia educacional para familiares de pessoas com úlcera venosa*  
*Elaboración y validación de tecnología educacional para parientes de personas con úlcera venosa*

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## ABSTRACT

**Objective:** To build and validate an educational technology in the form of a booklet, aimed at the family members of people with venous ulcers to assist them in their care. **Methods:** A methodological study, which went through the stages of bibliographic survey and situational diagnosis for the construction of the booklet and validation of content, appearance, and adequacy with judges and the target audience. The Content Validity Index, the Suitability Assessment of Materials, and the Concordance Index were used. **Results:** In the validation with the content and appearance judges, the booklet showed an excellent overall Content Validity Index (tCVI=0.92). The technical judges evaluated the booklet as "superior" (average of 91%). The booklet underwent adjustments, and validation was performed with the target population, reaching an agreement rate higher than 75%. **Conclusion:** The educational booklet developed was validated for content and appearance and considered suitable for use by family members of people with venous ulcers.

**Descriptors:** Varicose Ulcer; Family; Enterostomal Therapy; Nursing; Educational Technology.

## RESUMO

**Objetivo:** Construir e validar uma tecnologia educativa em forma de cartilha, voltada aos familiares de pessoas com úlceras venosas para auxiliá-los no cuidado. **Métodos:** Estudo metodológico, que percorreu etapas de levantamento bibliográfico e diagnóstico situacional para construção da cartilha e validação de conteúdo, aparência e adequação com juizes e público-alvo. Utilizou-se o *Índice de Validade de Conteúdo*, o *Suitability Assessment of Materials* e *Índice de Concordância*. **Resultados:** Na validação com os juizes de conteúdo e aparência, a cartilha apresentou excelente Índice de Validade de Conteúdo total (IVCt=0,92). Os juizes técnicos avaliaram a cartilha classificando-a com grau de recomendação "superior" (média de 91%). A cartilha passou por adequações, e foi realizada validação com a população-alvo, alcançando índice de concordância superior a 75%. **Conclusão:** A cartilha educativa desenvolvida foi validada quanto ao conteúdo e aparência e considerada adequada para ser utilizada pelos familiares de pessoas com úlcera venosa.

**Descritores:** Úlcera Varicosa; Família; Estomaterapia; Enfermagem; Tecnologia Educacional.

## RESUMEN

**Objetivo:** Elaborar y validar tecnología educativa en forma de cartilla, vuelta a parientes de personas con úlceras venosas para auxiliarlos en el cuidado. **Métodos:** Estudio metodológico, que pasó por etapas de levantamiento bibliográfico y diagnóstico situacional para elaboración de la cartilla y validez de contenido, apariencia y adecuación con jueces y público objeto. Utilizado el *Índice de Validez de Contenido*, el *Suitability Assessment of Materials* e *Índice de Concordancia*. **Resultados:** En la validación con jueces de contenido y apariencia, la cartilla presentó excelente Índice de Validez de Contenido total (IVCt=0,92). Los jueces técnicos evaluaron la cartilla clasificándola con grado de recomendación "superior" (mediana de 91%). La cartilla pasó por adecuaciones, y fue realizada validación con la población objeto, alcanzando índice de concordancia superior a 75%. **Conclusión:** La cartilla educativa desarrollada fue validada cuanto al contenido y apariencia y considerada adecuada para ser utilizada por parientes de personas con úlcera venosa.

**Descritores:** Úlcera Varicosa; Familia; Estomaterapia; Enfermería; Tecnología Educacional.

## INTRODUCTION

Venous ulcers (VU), also called leg ulcers, are lesions that affect the lower limbs, usually in the lower third, and are characterized by an area of rupture of the skin layers, as a result of venous hypertension. Considered chronic wounds because of their long duration and relapsing nature, they have slow healing in their great majority, which can take from months to years<sup>(1-2)</sup>. They constitute a public health problem because of their high incidence, prevalence, chronicity, socioeconomic impact and high cost of treatment. About 1% of the Western population will suffer from a VU at some point in their lifetime and approximately 0.1%-0.3% of the population has an active VU. Prevalence increases with age, affecting up to 2% of the population over the age of 80, and is more common in women than men. Between 26% and 69% of those affected have a recurrence rate within 12 months, and this is reported up to 60 months<sup>(1)</sup>.

Due to its chronicity, VUs need frequent dressings, evaluation of lesions, and reevaluation of the instituted therapy. Such care is maintained at home with daily dressing changes, care in the use of elastic compression, following an adequate diet and rest<sup>(3)</sup>. At home, family members play a relevant role, as they are often responsible for the patient's daily activities and potential collaborators for treatment compliance<sup>(4)</sup>. In this context, we emphasize the importance of the integration of the family member/caregiver in the development of the care plan elaborated by the nurse for the person with VU in his/her home environment<sup>(5)</sup>; this helps with care, which often is not performed by the person with VU or is performed inappropriately due to physical or cognitive limitations.

Thus, considering the relevance of family members/caregivers in this care environment and aiming at their empowerment, nurses can use care technologies that aim to enhance existing skills, and/or assist in the acquisition of new attitudes, seeking a transformation. Among these technologies, the Care-Educational Technology (CET) stands out as an important tool to assist nurses in caring for people, enabling the development of new actions that help teach self-care and the development of skills<sup>(6)</sup>.

In this sense, booklets emerge as alternatives that enable an approach to the person with VU and their family members. They allow subsequent access to information given during consultations and serve as a guide in case of doubts, helping in daily decision making. However, for professionals to use this tool effectively, it is necessary that they are developed and validated based on care systematization.

In view of these considerations, the relevance of this study in the construction of an educational technology, scientifically grounded and validated, that may contribute to the learning process of family members of people with VU and be a tool to help in the educational process, is asserted. It may be used by the health team working in the assistance to this specific public, favoring an integral attention that seeks not only to focus on the pathology, but also the comfort and well-being of the people involved, with a possible improvement in their quality of life.

## OBJECTIVE

To build and validate an educational technology in the form of a booklet, aimed at the family members of people with venous ulcers to assist them in their care.

## METHODS

### Ethical aspects

Study approved by the Research Ethics Committee (REC) of the University of Fortaleza (UNIFOR), as established by Resolution No. 466/12.

### Study design, location and time period

Methodological study, which followed the phases: Submission of the project to the research ethics committee; Bibliographic survey by means of integrative literature review; Situational diagnosis; Preparation of the first version of the booklet; Validation of content and appearance, adequacy with judges and with the target audience, adapted from Echer<sup>(7)</sup>. It followed the guidelines of the SQUIRE 2.0 instrument (Equator Network) to guide the methodology.

This study was conducted in the period from January to June 2019, in a public teaching hospital, a reference for the training of professionals and development of research in health care and which plays an important role in health care in a state of the Brazilian Northeast, being integrated with the Unified Health System (UHS).

### Population or sample; inclusion and exclusion criteria

For the study sample, priority was given to family members of people with VU who presented the nursing diagnosis "Ineffective health control", seen at the specialized wound care service of the general surgery outpatient clinic. The sample selection was random and by convenience. The established selection criteria were: people 18 years of age or older, who lived or lived with the person with VU. Those whose physical or mental health status was compromised to the point of making it impossible to answer the interview questions were excluded. A previous analysis of the service scheduling was carried out to identify people with the aforementioned diagnosis. Upon arriving at the service, if the person was accompanied by a family member, the researcher contacted him/her, explaining the objectives of the study and inviting him/her to participate in the interview.

In the content and appearance validation phase, the 26 judges were divided into two groups: one with 23 stomal therapist nurses; and another with three technical judges, made up of design and advertising professionals. The judges were chosen through a search on the Lattes Platform. The selection was made by accessing the "Lattes Platform" website, in the "Lattes CV" window, choosing the option "Search Lattes CV". In the "Subject" box, it was written "Stoma Therapist", "Health Educational Technologies", "Wounds". The base "Doctors" and "Other researchers" were selected. Due to the specificity of the studied theme, there was a need for the selection of judges through network sampling or "snowballing", according to Fehring's criteria<sup>(8)</sup> and Jasper<sup>(9)</sup> adapted.

Fifteen family members of VU patients who met the inclusion criteria also took part: age 18 years or older; living with the VU patient; full control of consciousness; level of education compatible with reading and understanding the material; attendance at the outpatient clinic accompanying the family member with VU during the proposed data collection period; and availability

of 20 to 30 minutes to participate in the booklet reading and to answer the validation instrument. Those with cognition deficits and with difficulties that made communication and answers to the instrument unfeasible were excluded.

### Study protocol

For the theoretical basis of the booklet, evidence was sought through scientific knowledge, striving to provide safety and support in its use. The methodology was carried out through an integrative literature review, following all the systematization that this type of study proposes. To guide the study, the following question was asked: "What are the actions and needs to support the person with venous ulcer with the goal of wound healing and prevention of recurrences?"

The bibliographic survey was carried out through consultations in the databases Latin American and Caribbean Literature on Health Sciences (LILACS), Nursing Database (BDENF), Spanish Bibliographic Index of Health Sciences (IBECs) and Medical Literature Analysis and Retrieval System on-line (MEDLINE), using the controlled descriptors: Varicose Ulcer (Varicose Ulcer); Nursing care (Nursing care); Healing (Wound Healing). For the search equation, the Boolean operator AND. Articles that contemplated the proposed objective, published in the last ten years, available electronically in full in English, Portuguese, or Spanish, were included. Abstracts, letters to the editor, reviews, and study protocols were excluded.

For the situational diagnosis, a semi-structured interview was carried out, with a script that included objective questions to identify the sample's socio-demographic profile and subjective questions related to personal knowledge about the pathology in question, treatment, care, as well as difficulties and changes in life planning after the onset of VU in the family member. The subjective questioning was carried out by means of a voice recording system. The data obtained from the interviews was transcribed and qualitatively analyzed<sup>(5)</sup>.

After reading the scientific material from the review and analyzing the speeches, we proceeded with the construction of the booklet, which approached the VU theme with information directed to family members, so that they could appropriate the knowledge about the pathology, seeking the integration of these people in the instituted therapeutic process. The texts were elaborated with a clear, objective language, seeking coherence in its organization, in order to achieve the best understanding of the reader. To highlight the requirements to be considered in the creation of printed educational materials, such as language, illustration, layout and design of the material, theoretical and methodological references were selected<sup>(10-11)</sup> and *A Guide to Creating and Evaluating Patient Materials*<sup>(12)</sup>.

Then, the content and appearance of the booklet were validated by selected judges, as explained, through the Lattes Platform.

The judges were previously contacted through the WhatsApp application or by e-mail, with an invitation letter containing the study objectives. After acceptance, the FICT, the first version of the booklet in PDF, and two Google Forms links were sent by e-mail: the first led to a questionnaire that characterized the judges; and the second, to the form containing the validation instrument of the booklet.

In order to formalize the acceptance, it was emphasized, by e-mail, the need to return the signed FICT, electronically or manually, to the researcher. For this return and response to the forms, a period of ten days was given. Those who did not return the forms within the previously established period were contacted again, offering pertinent clarifications, emphasizing the importance of the evaluation, and giving another ten days to return them. The judges who did not respond within 20 days were not included in the survey.

Technical judges from the design and advertising area carried out the adequacy of the material. Seven potential participants were invited to participate in the study: four accepted the invitation, but only three completed the validation. The contact methodology was the same with the content and appearance specialists.

In the validation with the target audience, the participants were informed about the objectives of the validation and, after acceptance, they were asked to sign the FICT. After signing, the booklet was handed to them, and they were given 20 to 30 minutes to explore and read the material. For this moment, we sought a room that offered a minimum of comfort and absence of noise, and we used the nursing office, which had air conditioning, chairs, and tables. To provide privacy and encourage concentration, the researcher preferred to be absent from the space during the exploration of the material by the participant.

The data collection instruments of the content and appearance judges included information about the participant's profession, time and area of activity, academic degree and scientific production and items for evaluating the material, organized in a Likert-type scale, distributed in three domains (objectives; structure and presentation; and relevance of the booklet), containing four levels of assessment, ranging from "inadequate" to "totally adequate". The answers indicated a specific level of agreement or disagreement in each statement, and thus were scored and added up, generating the total score. At the end of the instrument, subjective questions were asked that consisted of the evaluator's opinion about the instrument: "What did you like about the booklet? What did you not like? What should be added? What should be revised?"

The second instrument, intended for technical judges in the field of design and advertising, was the Suitability Assessment of Materials (SAM), which consists of a checklist distributed into six categories (content, text comprehension, illustration, presentation, motivation, and cultural adaptation). It evaluates educational materials based on objective criteria: "superior" (2 points); "adequate" (1 point); and "not adequate" (0 point). These criteria make it possible to calculate both the average of the values and the percentage analysis<sup>(10)</sup>.

The third instrument was directed to the target audience and is divided into two parts: the first has items for characterization of the participants, and the second brings the evaluative items of the booklet about the domains: organization, writing style, appearance and motivation of the educational material.

### Analysis of results and statistics

The judges were characterized as to social and professional data by means of descriptive statistics. For numerical variables, measures of central tendency and dispersion were taken into

consideration; categorical variables were expressed in absolute and relative frequencies.

In the validation process, the Content Validity Index (CVI) was calculated. It was calculated by averaging the responses with scores of "3" and "4" selected by the judges. For appearance and content validation by the judges, the items should present CVI  $\geq 0.78$ ; and the instrument, total CVI  $\geq 0.90$ <sup>(13)</sup>.

For the SAM, a percentage analysis of the scores was performed, so that if the educational material reached 70% to 100% of the scores, it would be considered "very adequate"; from 40% to 69%, "adequate"; and from 0% to 39%, "inadequate"<sup>(10)</sup>.

In the analysis of the data obtained with the judgment of the target audience, the items with a minimum 75% level of agreement in the positive responses were considered validated. Items with a concordance index lower than 75% were considered subject to change or exclusion. The answers to the question "In general, what did you think of the booklet? The participants were identified by the letter "F" followed by a number representing the order of participation in data collection.

## RESULTS

The construction of the textual script of the booklet occurred as the results of the 19 articles selected for the integrative review were obtained. These articles provided the theoretical support and the situational diagnosis. The content obtained was reviewed, and the information was directed, prioritizing the key points that must be addressed in the treatment of VU.

After the preparation of the textual script, a professional specialist in design and layout was hired to make the educational booklet. The primary draft was built in Microsoft Power Point<sup>®</sup> 2013, consisting of the textual script, images available on the Internet and photos from the researcher's own collection. The first version of the educational material in booklet format, entitled "Caring for the person with venous ulcer", had its content divided into five

parts: Presentation; Knowing the venous ulcer; Venous ulcer care; Importance of healthy living habits; and The family involved in care.

In this stage of finalizing the first version of the booklet, the material was formatted, with a total of 30 pages, including the outside (cover and back cover) and inside: pre-textual elements (title page and summary), textual elements (presentation and content), and post-textual elements (references). The available extension was PDF, for printing on coated paper and in A5 format (148 x 210 mm). Thus, the booklet went on to the validation stage with the judges.

The judges of content and appearance had extensive professional experience (over ten years), predominantly professionals with master's and doctoral degrees. The length of time working in stoma therapy was well balanced, five had been working for less than ten years, and six declared they had been working longer. All professionals had experience in VU care, elaboration and/or evaluation of educational technologies and teaching activities.

In the validation (Table 1), the domains Objectives, Structure and Presentation, and Relevance presented CVI equal to 0.94, 0.88, and 0.95, respectively. Only item 11, in the Structure and presentation domain, had an item smaller than 0.78, making it subject to change. The total CVI of the technology was 0.92, which denotes an excellent level of agreement between the judges.

As for the suggestions for improvement of the technology, the judges pointed out the need to adjust the font and spacing between lines; review grammatical concordances; clarify some terms, such as "work activity", "sterile" and "humidity"; insert relevant information, such as the periodicity of dressing change according to exudate, importance of multi-professional care, nursing guidelines and the visit to the vascular surgeon; highlight the importance of the compressive bandage and stockings for the treatment and prevention of VU; emphasize the role of the family member/caregiver for the control of comorbidities; and leave a space for recording the characteristics of the lesions observed during the change (type of smell, amount of secretion, presence of lesions on the surrounding skin).

**Table 1** – Validation of the content and appearance of the booklet by the judges, Fortaleza, Ceará, Brazil, 2019

Items	CVI
Objectives	0.94
1 - Are consistent with the information needs for family members of patients with venous ulcers to assist them in patient care.	0.91
2 - It is feasible to promote change in behavior and attitudes.	0.91
3 - It can be circulated in the scientific environment in the area of venous ulcers.	1.00
Structure and presentation	0.88
5 - It is appropriate for orientation of family members of people with venous ulcers to assist them in patient care.	0.91
6 - The messages are presented in a clear and objective manner.	0.82
7 - The information presented is scientifically correct.	1.00
8 - There is a logical sequence of the proposed content.	0.82
9 - The material is appropriate to the sociocultural level of the proposed target audience.	0.78
10 - The information is well structured in terms of agreement and spelling.	0.87
11 - The writing style corresponds to the knowledge level of the target audience.	0.74
12 - Information on the cover, back cover, acknowledgements, and/or presentation is coherent.	1.00
13 - Illustrations are expressive and sufficient.	1.00
14 - The number of pages is adequate.	0.95
15 - The length of the title and topics is adequate.	0.87
Relevance	
16 - The themes portray the key aspects that should be reinforced.	0.91
17 - The material proposes to the relative of a venous ulcer patient to acquire knowledge on venous ulcer problems.	1.00
18 - The material addresses the issues necessary to prevent complications.	0.91
19 - It is suitable for use by any healthcare professional in their educational activities.	1.00
tCVI	0.92

CVI - Content Validity Index; tCVI - Total Content Validity Index.

The technical judges, in assessing the adequacy of the material (Figure 1), found that all items scored as “superior”, with percentages ranging from 75% to 100%, with the lowest score obtained in the domain Illustration (S = 9, 75%), Stimulation and motivation (S = 14, 77%). The ones that received highest approval among the judges referred to the content and presentation, with percentages of 100%.

Technical Judge	Content S (score)	Language S (score)	Illustrations S (score)	Presentation S (score)	Stimulation and Motivation S (score)	Cultural adequacy S (score)	Sum of SAM S (score)	Interpretation according to the calculation (%)
<b>JT1</b>	6	10	4	4	6	4	34	100%
<b>JT2</b>	6	9	1	4	4	3	27	79%
<b>JT3</b>	6	10	4	4	6	4	34	100%
	18	29	9	12	14	11	95	
Total	100%	96%	75%	100%	77%	96%	93%	93%

**Figure 1** – Sum of Suitability Assessment of Materials (SAM) scores based on the technical judges’ evaluation, Fortaleza, Ceará, Brazil, 2019

T1 left no suggestions, while JT2 suggested using brighter colors and creating an environment in the illustrations to facilitate the familiarization of the target audience with the material, however, the suggestions were not followed. The illustrations that had no background environment aimed to draw attention only to the fact demonstrated. JT3 praised the organization and

purpose of the booklet, as well as the illustrations, and said that they help in the textual understanding.

After the completion of the validation of content and appearance (teaching and assistance judges) and adequacy of the educational technology (technical judges), the booklet was sent to the hired professional (graphic design) for the appropriate changes and improvement of the material; then, it was sent for evaluation with the target audience. Thus, the second version of the booklet was composed of: cover; 3 pre-textual pages; 18 for the content; 5 post-textual pages; and back cover. It totaled 28 pages, which were printed on coated paper, specific for printing high quality illustrations, in A5 format (148 × 210 mm).

In the validation with the target audience, 15 family members participated. Most were female (10; 66.6%), aged between 19 and 73 years, and only seven had completed high school. The time of living with the person with active VU was from six months to 25 years. The interval which presented the highest number was from six to 12 years, with 46.7% of the total participants.

The items dealing with organization, writing style, appearance and motivation of the booklet were validated by the target audience, reaching an agreement rate higher than 75%, which was the desired value.

All other items were certainly positively evaluated by the target audience. At the end of the questioning about the material, the participants were asked to give their general opinion about what they thought of the booklet. Overall, the public felt that it was well developed, organized, had appropriate illustrations, and will help family members with ulcer treatment.

Considering that no suggestions were accepted in this stage of the study, the booklet “Caring for the person with venous ulcer” was kept in its second version (Figure 2). At the end, the booklet was validated, being considered valid and appropriate in terms of content and appearance by teaching, assisting and technical judges, and by the target audience.

**Table 2** – Validation of the target audience regarding the organization, writing style, appearance, and motivation of the booklet, Fortaleza, Ceará, Brazil, 2019

Variables	Positive answers		Imparcial answers	
	n	%	n	%
Organization				
1.1 Did the cover catch your attention?	15	100	-	-
1.2 Is the sequence of the content appropriate?	14	93.3	1	6.7
1.3 Is the structure of the educational booklet organized?	15	100	-	-
Style of writing				
2.1 Regarding the understanding of the sentences, are they...? (Easy to understand/Difficult to understand/Don't know)	15	100	-	-
2.2 The written content is...? (Clear/confusing/not sure)	15	100	-	-
2.3 The text is...? (Interesting/uninteresting/not sure)	15	100	-	-
Appearance				
3.1 Are the illustrations...? (Simple/complicated/other)	15	100	-	-
3.2 Do the illustrations serve to complement the text? (Yes/No/Not sure)	15	100	-	-
3.3 Do the pages or sections seem organized? (Yes/no/not sure)	15	100	-	-
Motivation (Yes/no/don't know)				
4.1 In your opinion, will any family member/caregiver of a VU patient who reads this booklet understand what it is about?	15	100	-	-
4.2 Did you feel motivated to read the booklet until the end?	15	100	-	-
4.3 Does the educational material address the issues necessary for family members of VU patients to perform proper wound care?	15	100	-	-
4.4 Did the educational booklet suggest action or thinking about lower limb care?	15	100	-	-



Figure 2 – Final version of the booklet “Caring for the person with venous ulcer”, Fortaleza, Ceará, Brazil, 2019

DISCUSSION

The purpose of the educational booklet prepared was to make it possible for family members of people with VU to know about this type of wound and variables that interfere in the healing process and in the control of the underlying etiology, considered venous hypertension. The information considered relevant was planned using theoretical content, written in a simple and objective language and supported by illustrations carefully planned in order to clarify and complement the transmitted idea, facilitating visual communication and the understanding of the target audience.

The images sought to represent the orientations that demanded greater detail, seeking to bring the illustrations as close as possible to reality and to maintain a closer approximation to the local cultural reality<sup>(14)</sup>. A face-to-face meeting was held with the professional so that all details could be aligned and understood for a better result of the material to be built. It is convenient to highlight the importance of illustration to relax and facilitate the readability and comprehension of the text. It can awaken and maintain interest in reading in order to complement and reinforce the information<sup>(7,11)</sup>.

Likewise, authors point out that visual resources are fundamental in communication, since they help the reader to direct his attention to what is important<sup>(10)</sup>. Building an educational material that is attractive and motivates the reader to finish reading, with the understanding of the ideas contained therein, is a challenging task. Primers are made to strengthen the guidance to family members and patients, and can contribute favorably to the communication process, increase adherence to treatment and decision-making power<sup>(14)</sup>. Therefore, it was sought to use information with clear and objective language, using the active voice, simple definitions and, when necessary, analogies familiar to the audience, as well as short paragraphs, structured in topics to facilitate understanding<sup>(12)</sup>.

Validity, in general, refers to the degree to which an instrument actually measures the variable it intends to measure<sup>(13)</sup>. Among the types of validity, we sought to validate content and appearance, in order to deliver a material with correct and relevant information and visually attractive, in order to develop critical sense<sup>(15)</sup>. Considering that the material being built must meet the needs and expectations of the intended audience, the evaluation stage by judges, considered to be authorities on the subject, is seen as a rich moment of knowledge<sup>(14)</sup>.

In general, corrections in spelling and grammatical concordance were suggested by the judges, and a revision of all the material was made in order to meet the adjustments. The suggestion to increase the font size and line spacing was accepted: the font size went from 12 to 14 throughout the text, and the designer made adjustments to the spacing. The literature shows that, when preparing material for an adult audience, you should use, at least, font size 14 for the text, leaving the titles and subtitles in a larger size<sup>(11)</sup>. Among the topics covered in the booklet, there were many suggestions that the text should be rewritten in a more didactic way, with fewer technical terms, in order to facilitate its understanding. Thus, the whole text was revised and rewritten seeking to use a more colloquial language and making analogies in the terms that the researchers thought pertinent to bring up.

The judges requested the inclusion of work activities requiring long periods of standing or sitting, since this is a risk factor for chronic venous insufficiency; and hair loss in skin adjacent to the VU as one of the frequent complaints. One of the most prevalent risk factors for VU is long periods of standing or sitting. Sedentary behavior or working in the standing or sitting position, without the proper alternation with walking, impairs venous return, favoring the appearance of the ulcer<sup>(16)</sup>.

It was suggested the valorization of the hand washing process, with this orientation becoming the first in the care for home dressing; and the need for evaluation and orientation of the nurse who follows VU treatment, so that home care follows an adequate routine and systematization. However, it is not the objective of this booklet to teach the family member to become an expert in wound care.

Furthermore, textual changes were made, in order to leave sentences in direct voice. The positioning of the illustration that shows a leg with varicose veins and another with a healthy vein was changed, and it was suggested that the visualization becomes more pleasant, seeing first the normal functioning and then seeing the image with the circulatory alteration. Taking into account the recommendation of authors to arrange the illustrations in a way that facilitates their understanding by the reader, the researcher thought it pertinent to invert<sup>(17-18)</sup>.

A multidisciplinary approach in the treatment of the person with VU is required most of the time. Appropriate vascular evaluation is essential, which aims to observe the anatomical and functional status of the entire venous system of the lower limbs, as well as the need to implement drug and surgical therapies<sup>(5)</sup>. For this reason, it was decided to insert in the booklet, as suggested by the judges, the need for evaluation with a vascular surgeon and with a nutritionist, whenever possible.

The care of people with VU should be focused on measures to control venous hypertension and control systemic factors, thus providing a suitable environment to promote wound healing<sup>(19)</sup>. The adoption of healthy habits and lifestyle focused on body weight control, proper nutrition, as well as the continuous use of compressive therapy and alternating moments of rest with walking favor the control of chronic venous insufficiency<sup>(20)</sup>.

It is very important to characterize the target population before developing a health education material, because the materials usually present a mismatch between the instructions and their understanding by the people to whom they are directed<sup>(21)</sup>. However, the target audience also evaluated the booklet positively, considering it important for promoting knowledge, with rich content combined with clarity, appropriate format, and explanatory illustrations.

Validating the educational material with representatives of the target audience is a necessary attitude and an important benefit for the researcher and the team involved. It is a moment in which one realizes what is really missing, what was not understood,

and the distance that exists between what is written and what is understood and how it is understood<sup>(15)</sup>.

It is believed that by focusing on health education aimed at the family members of people with VU, the possibility of achieving integral care centered on the systematization of nursing care is increased, since it becomes possible to count on a supporter in the family environment, in order to contribute to the implementation stage of the actions prescribed in the nursing consultation for VU care.

### Study limitations

A limitation of this study is the reduced number of content and technical judges, due to the short time allotted for collection and the lack of return from some professionals, reducing the sample size.

### Contributions to Nursing and Healthcare

By having a focus on health education, the booklet can contribute to good practices in order to reduce the healing time of the wound, control the signs and symptoms of the underlying disease, promote health and prevent new wounds through the approach and insertion of family members in the step of the nursing process of implementing the prescribed actions.

### CONCLUSION

The construction of the educational material was based on scientific knowledge, in search of the best evidences on the VU theme. A situational diagnosis was carried out in order to know, in loco, the need for information and the difficulties encountered by family members in caring for the person with VU. Then, there was a rigorous process of material elaboration and evaluation by stoma therapist judges, technical judges in the design and advertising area and representatives of the target public.

The technology achieved positive results, demonstrating its relevance in the context of health education, which comprises the dissemination of knowledge and the achievement of behavioral patterns that influence health care. It is important to stress that the study does not end here, because the technology must be constantly updated, considering the scientific progress. It is also desired to proceed to clinical validation to assess the efficacy and effectiveness of the material in terms of knowledge, attitudes and practices of the target audience before and after its use.

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