Original Article

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DEVELOPMENT AND VALIDATION OF AUDIOVISUAL EDUCATIONAL TECHNOLOGY FOR FAMILIES AND PEOPLE WITH COLOSTOMY BY CANCER

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ABSTRACT

Objective: produce and validate an educational technology in the form of video for people and families who experience colostomy and cancer.
Method: educational technology development study conducted in two phases: production and validation of audiovisual technology, which includes the stages of construction and validation of the script, video production and audio-visual validation. Twelve people participated in the validation, being seven expert judges and two families (five people). The appearance and content were validated by Content Validity Index greater than or equal to 0.70% (IVC ≥0.7) and interview.
Results: the script content has been validated by the expert judges, with a Global Content Validity Index equal to 0.99 and by the target audience with a Global Content Validity Index of 1. The validation of audio-visual content obtained a Global Content Validity Index equal to 0.99.
Conclusion: the validated audiovisual educational technology represents a resource enhancement for the educational practices of nursing in the care of people with stoma and their families.

DESCRIPTORS: Educational technology. Educational films and videos. Health education. Family. Colostomy. Neoplasms. Nursing.

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DESENVOLVIMENTO E VALIDAÇÃO DE TECNOLOGIA EDUCATIVA AUDIOVISUAL PARA FAMÍLIAS E PESSOAS COM COLOSTOMIA POR CÂNCER

RESUMO

Objetivo: produzir e validar uma tecnologia educativa na forma de vídeo para pessoas e famílias que vivenciam a colostomia e o câncer.
Método: estudo de desenvolvimento de tecnologia educativa elaborado em duas fases: produção e validação da tecnologia audiovisual, que incluem as etapas de construção e validação do roteiro, produção do vídeo e validação áudio-imagética. Participaram na validação 12 pessoas, sendo sete juízes-especialistas e duas famílias (cinco pessoas). A aparência e o conteúdo foram validados pelo Índice de Validade de Conteúdo maior ou igual a 0,70% (IVC ≥0,7) e entrevista.
Resultados: o conteúdo do roteiro foi validado pelos juízes-especialistas, com Índice de Validade de Conteúdo global igual a 0,99 e pelo público-alvo com Índice de Validade de Conteúdo global igual a 1. A validação do conteúdo áudio-imagético obteve Índice de Validade de Conteúdo global igual a 0,99.
Conclusão: a tecnologia educativa áudio-visual validada representa um recurso potencializador para as práticas educativas da enfermagem no cuidado às pessoas com estoma e suas famílias.

DESCRITORES: Tecnologia educacional. Filmes e vídeos educativos. Educação em saúde. Família. Colostomia. Neoplasias. Enfermagem.

DESARROLLO Y VALIDACIÓN DE LA TECNOLOGÍA EDUCATIVA AUDIOVISUAL PARA FAMILIAS Y PERSONAS CON COLOSTOMÍA POR CÁNCER

RESUMEN

Objetivo: producir y validar una tecnología educativa en forma de video para personas y familiares que conviven con la colostomía y el cáncer.
Método: estudio de desarrollo de tecnología educativa elaborado en dos etapas: producción y validación de la tecnología audiovisual, que incluyen las etapas de construcción y validación del guión, producción del vídeo y validación del audio-imagética. Participaron en la validación 12 personas, siendo siete jueces-especialistas y dos familiares (cinco personas). El aspecto y el contenido se validaron a través del Índice de Validez de Contenido mayor o igual a 0,70% (IVC ≥0,7) y de la entrevista.
Resultados: el contenido del guión fue validado por jueces especialistas con un índice de validez de contenido global igual a 0,99 y por el público objetivo con un índice de validez de contenido global igual a 1. La validación del contenido de audio-imagen obtuvo un índice de validez de contenido global igual a 0,99.
Conclusión: la tecnología educativa audio-visual validada representa un gran recurso para las prácticas educativas de la enfermería en el cuidado de personas con estoma y sus familiares.

DESCRIPTORES: Tecnología educacional. Películas y vídeos educativos. Educación en salud. Familia. Colostomía. Neoplasias. Enfermería.

INTRODUCTION

The issue of cancer in Brazil has gained significant space in the political and governmental scene, given its epidemiological, social and economic relevance. The projection of the disease for the biennium 2016-2017 predicts an incidence of approximately 600 thousand new cancer cases in the country, reinforcing its significance. Among the different types of cancer, colon and rectum neoplasia is among the five most prevalent presentations.[1]

The colorectal tumor affects a segment of the large intestine (colon) and/or rectum. The primary therapy for this pathology consists of surgical resection of the affected site, and is often necessary to perform a colostomy.[2] The experience of a cancer and a colostomy is a challenge experienced by the patient and his family, since the changes resulting from stomization interfere directly in the context of the family organization and the quality of life of these people.[3]

The presence of a colostomy demands specific care that may favor the process of adaptation to the new condition of life, being indispensable follow-up by the nurse as an educator and a facilitator of this process. From this perspective, it is imperative that nursing seek alternatives for the health education of these people, with a view to accommodate emerging aspirations, as well as supporting the adaptation of patients and their families.[4] In this context, family is defined as a group of individuals linked by emotional bonds, with the sense of participation in each other's lives, and may be associated with blood ties or not.[5]

Therefore, it is important for the health care to integrate the individual and the family, since the family group is the main source of support involved in the therapeutic process, being indispensable its participation in the transformations about the ambivalence of the cancer and colostomy.[4] Thus, considering the importance of involving the family in nursing care actions, it is relevant to direct the research to the development of interventions capable of accommodating the family in the context to which they belong, observing cultural, social and economic factors. This perspective makes it possible to intervene directly on reality, transforming and humanizing the actions of nursing care.[6]

Among the various types of interventions, we highlight those that use audio and visual resources, such as educational videos, which are a possibility to direct educational activities with patients, families, students and professionals.[7–12] This modality of intervention is being widely developed, validated and used in nursing care actions, aiming to stimulate and strengthen the target audience, providing subsidies to develop coping, socializing and care strategies.[8,12–13]

Educational videos are intended not only to provide new knowledge, but also to strengthen existing ones, as well as to help patients and their families according to their needs. A study carried out with families who experience cancer illness and the use of colostomy reports that they suffer the initial impact when they are surprised by the diagnosis.[14] However, understanding what the disease means and what to expect from it, causes everyone in the family to gain strength and resources to better cope with adversity and coping with illness.

In the context of the diagnosis of colorectal cancer, the needs of the family are mainly focused on issues related to cancer knowledge and treatment, implications for family members and patients, as well as the care needed to deal with the colostomy, the pouch collector, food and issues related to social interaction.[14]

In the meantime, it is evident that research aimed at the development and validation of health education technologies can favor and innovate the quality of nursing educational actions, helping patients and families to actively reflect and participate in issues involving the disease and its treatment. In addition, the development of educational resources promotes a thriving teaching environment and strengthens educational interventions.[15]

Among these possibilities, it is considered promising the development of an educational video addressing basic aspects related to the daily care of people with cancer colostomy, in order to subsidize care practices performed at home and contribute to the quality of life. Thus, the objective of the study was to produce and validate an educational technology in the form of video for people and families who experience colostomy and cancer.

METHOD

Study of the development of educational technology based on the fundamentals of methodological studies and has as theoretical-methodological reference the proposal developed by authors who focus on the educational technologies applicable in health, highlighting the paths to the construction and the validation process.[16] Its implementation occurred between the months of April to November of 2014, in Santa Maria, Rio Grande do Sul, Brazil. Upon approval of the research project by the Research Ethics Committee.

The study was developed in two phases: production and validation of audiovisual education technology, which occurred in an interdependent and interrelated way. These phases include four steps: the construction of the script of the video content, the validation of the script, using a Likert scale instrument and, later, the development of the storyboard, which based the production of the educational video, that is, the association of the text validated in the script to the images to be recorded in each scene, according to the order in which they would appear in the filming.[11] Audio-visual validation was then performed.

The first phase involved the initial conceptions of the educational video, being developed a guiding script with detailed information about the content to be approached. The preparation of this script was guided by the results of a previous study with families and people with colostomy by cancer,[14] which identified that the needs were centered in the clarification on the diagnosis, the basic care and the daily social. It was also based on the information provided in the guidelines for the care of the stoma of the Brazilian National Cancer Institute (INCA)[17] since this institution, linked to the Ministry of Health, is a reference in the development and coordination of integrated actions for the prevention and control of cancer in Brazil.

In the design of the script, it was decided to address some primordial aspects for the contextualization and care in face of the reality imposed by the colostomy, such as: colon and rectum cancer and its implications for the relatives and the patients of the colostomy, the treatments available and how they are performed, the necessary care to deal with the colostomy and the collector bag, the care with food and issues related to social interaction and family.

To validate the script, seven expert judges and two families (five people) were invited as representatives of the target audience, totaling 12 people selected by convenience.

The expert judges were chosen for their expertise related to the health area with regard to the treatment, care and management of colostomy due to cancer, or to have knowledge in the area of social communication, especially in the production and edition of videos, and to be willing to participate in all stages of the study. The families, participants of the Group of people with an ostomy, were chosen because they presented a profile similar to those used for educational audiovisual technology, that is, colostomy by cancer, that became available and committed to participate in the entire process of research development. It should be noted that among the invited expert judges there were three refusals.

The second phase was characterized by the validation of the script. For this, it was given to each participant (expert judges and target audience) an adapted evaluation instrument, in the form of Likert scale, with four degrees of rating, being entirely adequate (TA) Suitable (A) Partially Suitable (PA) and unsuitable (I).[16] This instrument was organized in three blocks that contained affirmations related

to the contents to be judged by the participants. The first block had items related to the objectives. The second block referred to the structure and presentation of the technology, while the third block dealt with issues related to the degree of significance of the technology. At the end of each block, it was made available a space so that the judge could justify his answer and insert suggestions, if he wished.

It should be noted that the instrument was group-specific, although it followed the same pattern of answers. Thus, the instrument for the expert judges contained a total of 18 items, while the instrument intended for the target audience consisted of nine. It should be noted that the instrument of the expert judges contained questions related to the scientific aspects of specialized care.

The analysis of the data obtained in these instruments was quantitative, performed by calculating the Content Validity Index (CVI), whose valuation goes from 0 to 1 and is calculated by the sum of the answers considered appropriate, divided by the total sum of answers and multiplied by 100. This calculation measures the proportion of participants who are in agreement on a particular aspect or item of the instrument, being considered a parameter of validity when the index is greater than or equal to 0.70 (70%).[18] At the same time, the analysis of the records made in the spaces destined for annotations in the instrument was developed, being considered in the revision of the script, when pertinent. After the validation of the script, the process of producing the video itself started.

The third phase, corresponding to the development of the educational video, consisted of the staging and filming, the editing of the images, the selection of the scenes to be used and the background music. At the end of the selection of the necessary material, the editing of the video was organized, and the participants were contacted again to carry out the validation of the audio-visual content. The video production process was attended by amateur actors and a person with a colostomy who signed a declaration of consent for use of image and voice, in order to comply with ethical aspects.

This phase of validation was divided into two moments: watch the video (in notebook made available by the researcher) and fill out an evaluation tool and then respond to an interview. The Likert scale instrument, with presentation and assessment similar to the one previously described, contained a total of nine items, grouped into three blocks that evaluated the content of the video, the audiovisual part and the characters. The same instrument was used for both groups.

The interview aimed to know how it was for the experts judges and the target audience to watch the video. In addition, it allowed them to report their perceptions about audio-visual content, as well as offer suggestions for changing, adding or deleting scenes. The average duration of the interviews was 15 minutes. The interviews occurred at the place of preference of the participants, following the completion of the instrument, and recorded in a digital medium and then transcribed for analysis.

As in the analysis of the validation data regarding the content of the script, in this phase, the items obtained in the answers were considered valid, the agreement between the participants was greater than or equal to 70%, or CVI greater or equal to 0.70.

The data obtained in the validation phase of the video, through an interview, were analyzed under the precepts of content analysis, considering the similarities and divergences of the answers.[19] Thus, it was sought to identify recurrent themes or regularities in the data and their natural variation to elaborate generalization from specific observations. To guarantee the anonymity and confidentiality of the information, alphanumeric codes were used to identify the participants, with J1, J2 for the expert judges and F1 - E1, E2 (family and interviewee) for the target audience. All signed the Term of Free and Informed Consent.

It should be noted that this study is part of a larger project aimed at developing, validating, implementing and evaluating the applicability of an audiovisual educational technology to people with colostomy by cancer and their families.

RESULTS

The study participants were divided into two groups: expert judges and target audience, totaling 12 people. Regarding the characterization of expert judges, it is important to mention that among the seven participants, six were healthcare professionals who worked in the hospital area and/or the reference center for the care of people with an ostomy, three of whom were nurses, one was a doctor, a psychologist, a physiotherapist and a social communicator with training in journalism. The training time was from three to 25 years and the time of professional practice in the specialty was from five months to 15 years. As for the degree, five have a specialization, a master's degree and a doctorate. Five of them were female and two males, aged between 26 and 53 years.

Representatives of the target audience were five people, the family one being represented by three people, the person with colostomy, her husband and a friend, indicated as family. Family two consisted of two participants, the person with colostomy and her daughter. The age of the participants ranged from 55 to 83 years. The colostomy usage time was 15 to 30 years. As for schooling, three had secondary education, one had elementary school and one had technical course.

In the phase of validation of the script for the video, which includes the analysis of the answers of the expert judges and the target audience, the assessment attributed to the affirmative was verified, followed by the total analysis of each block and the overall analysis of the instrument.

Table 1 shows that the values that obtained the majority of the answers were TA and A, whose CVI was greater than 0.7 (70%) for all items, indicating the concordance between the answers of the judges. Regarding the evaluation by blocks, it is verified that these were considered adequate in 100% for the objectives and relevance and 98.2% for structure and presentation. In relation to the overall evaluation of the instrument, 99.2% of the answers were found to be adequate. Thus, considering these results, the proposed script was considered validated by the expert judges, with global CVI equal to 0.99.

In Table 2, it can be observed that the target audience considered all the items of the three blocks with TA and A evaluations, whose CVI corresponds to 1 (100%), indicating the agreement of the answers of evaluators, which gives validity to the script proposed with global CVI equal to 1.

Regarding the annotations and suggestions made by the expert judges and the target audience, there was a replacement of terms considered technical by words of common sense necessary for a better understanding of the text.

With the script reviewed and validated, the search for a studio for the production, recording and editing of audio and video began. Once the studio was chosen, meetings were held for discussion, planning, selection of actors, scenarios and possible days for recording. The choice of the actors was based on the ability to perform and interpret the script and understanding of the purpose of the video.

The script was read and rehearsed previously by the team of amateur and production actors. The introductory part was recorded outdoors and offers the viewer brief information about living with colostomy. The following is a narrative of the experience of a person with a colostomy, which was staged in a specific scenario. For the recording of basic care with the colostomy it was necessary the participation of a volunteer person, with colostomy, who could demonstrate the exchange of the bag and the cleaning of the skin. It should be noted that ethical issues related to consent and preservation of image and anonymity were observed, and only the image of the stoma region was disclosed. To address the importance of family participation in the process of accepting and adapting the family's new way of being and living, one of the actors conveys a message of optimism and encouragement.

With the filming completed, the video editing began, with the selection of the scenes to be used, as well as the background music. This process was done and redone several times, until a consensus was reached between the researchers and the production team. The final composition

Table 1 – Expert judge answers regarding the validation of the script, according to the objectives, structure and presentation and relevance. Santa Maria, RS, Brazil, 2014. (n=7)

Items	TA*	A†	PA‡	I§	CVI¶
Block 1 – Objectives					
1.1 The information/content is consistent with the day-to-day needs of the technology audience.	7	0	0	0	1.0
1.2 The information/content is important for the quality of life and/or the work of the technology audience.	6	1	0	0	1.0
1.3 Invites and/or instigates behavior change and attitude.	6	1	0	0	1.0
1.4 Can circulate in the scientific community of the area	6	1	0	0	1.0
1.5 Meets the objectives of institutions that serve/ work with the technology target audience.	5	2	0	0	1.0
Partial total	**30 (85.7%)**	**5 (14.3%)**			**1.0**
Block 2 - Structure and presentation					
2.1 The technology is appropriate for the target audience.	5	2	0	0	1.0
2.2 The messages are presented in a clear and objective way.	5	2	0	0	1.0
2.3 The information presented is scientifically correct.	6	1	0	0	1.0
2.4 The material is appropriate to the sociocultural level of the target audience.	6	1	0	0	1.0
2.5 There is a logical sequence of proposed content.	6	1	0	0	1.0
2.6 The information is well structured.	7	0	0	0	1.0
2.7 The information is well structured in agreement and spelling.	3	4	0	0	1.0
2.8 The writing style corresponds to the level of knowledge of the target audience.	3	3	1	0	0.86
Partial total	**41 (73.2%)**	**14 (25%)**	**1 (1.8%)**		**0.99**
Block 3 – Relevance					
3.1 The themes portray key aspects that should be reinforced.	5	2	0	0	1.0
3.2 The technology allows generalization and transfer of learning to different contexts.	5	2	0	0	1.0
3.3 Technology proposes the construction of knowledge.	6	1	0	0	1.0
3.4 The technology addresses the subjects necessary for the knowledge of the target audience.	5	2	0	0	1.0
3.5 The technology is suitable for use by any professional with the target audience.	6	1	0	0	1.0
Partial total	**27 (77.1%)**	**8 (22.9%)**			**1.0**
Overall total	**98 (77.8%)**	**27 (21.4%)**	**1 (0.8%)**		**0.99**

Abbreviations: *Entirely adequate; †Adequate; ‡Partially Suitable; §Unsuitable; ¶Content Validity Index.

Table 2 – Answers of the target audience regarding the validation of the script, according to the objectives, structure and presentation and relevance. Santa Maria, RS, Brazil, 2014. (n=5)

Items	TA*	A†	PA‡	I§	CVI¶
Block 1 – Objectives					
1.1 Meets the objectives of the target audience of the video.	3	2	0	0	1.0
1.2 Help in the daily life of the target audience.	3	2	0	0	1.0
1.3 It is suitable for use by any professional who works with the target audience.	4	1	0	0	1.0
Partial total	**10 (66.7%)**	**5 (33.3%)**			**1.0**
Block 2 – Organization					
2.1 The information is presented in a clear and objective way.	4	1	0	0	1.0
2.2 The themes are important and appropriate to needs.	4	1	0	0	1.0
Partial total	**8 (80%)**	**2 (20%)**			**1.0**
Block 3 - Writing style					
3.1 Writing is adequate.	3	2	0	0	1.0
3.2 The text is interesting. The tone is friendly.	2	3	0	0	1.0
3.3 The text is clear.	5	0	0	0	1.0
3.4 The writing corresponds to the level of knowledge of the target audience	4	1	0	0	1.0
Partial total	**14 (70%)**	**6 (30%)**			**1.0**
Overall total	**32 (71.1%)**	**13 (28.9%)**			**1.0**

Abbreviations: *Entirely adequate; †Adequate; ‡Partially Suitable; §Unsuitable; ¶Content Validity Index.

of the video comprises the time of 8 minutes and 35 seconds. With the video production completed, the material was submitted to validation by the expert judges and the target audience of the previous stage. To this end, the participants watched the video and filled out the evaluation tool and then an interview was conducted.

Thus, in the validation stage of audio-visual content of the video, which contains the results obtained in the evaluation instrument of the expert judges and the target audience are presented in Table 3.

Table 3 shows that the values that obtained the majority of the answers were TA and A, whose CVI was greater than 0.7 (70%) for all items, indicating the agreement between the answers of the participants. Regarding the block evaluation, it is evident that these were considered adequate in 99.1% for the content. For the audiovisual block the evaluation corresponded to 100%, while for the block characters the evaluation was of 97.2%. In relation to the overall evaluation of the instrument, 99.08% of the answers were found to be adequate. Thus, considering these results, the proposed audio-visual content was considered validated by participants with global CVI equal to 0.99.

With regard to the analysis of the interviews that sought to know the perception of the participants while attending the educational video, it was possible to verify that the content covered raised considerations that refer to the lack of knowledge about the context of who has or lives with a person with a colostomy and the need for information.

The video is about something very common, that people do not know, do not understand. It's just a step, but it's an extra thing for that horizon to expand and see things better (F1 - E1).

Table 3 – Answers of the experts judges and the target audience regarding the validation of the video, second content, audiovisual and characters. Santa Maria, RS, Brazil, 2014. (n=12)

Items	TA*	A†	PA‡	I§	CVI¶
Block 1 – Content					
1.1 The information/content is consistent.	9	3	0	0	1.0
1.2 The information/content is presented in a clear and comprehensible way.	9	3	0	0	1.0
1.3 The way the content is presented in the video is inviting to the viewer.	10	2	0	0	1.0
1.4 Can circulate in the scientific community of the area	9	3	0	0	1.0
1.5 Meets the objectives of the project.	8	4	0	0	1.0
1.6 There is a logical sequence of content.	8	4	0	0	1.0
1.7 The information presented is scientifically correct.	8	4	0	0	1.0
1.8 It is an unrepeated content.	6	5	1	0	0.92
1.9 The content reflects the validated script.	9	3	0	0	1.0
Partial total	**76 (70.4%)**	**31 (28.7%)**	**1 (0.9%)**		**0.99**
Block 2 – Audiovisual					
2.1 The audio of the video is appropriate and helps to understand the content.	9	3	0	0	1.0
2.2 The songs are appropriate to the moment they are used.	8	4	0	0	1.0
2.3 The images that make up the video are appropriate to the content worked.	10	2	0	0	1.0
2.4 The scenario is appropriate.	10	2	0	0	1.0
2.5 The illustrations used are appropriate to the content of the work.	9	3	0	0	1.0
2.6 The lighting and framing of the images are adequate.	9	3	0	0	1.0
Partial total	**55 (76.4%)**	**17 (23.6%)**			**1.0**
Block 3 – Characters					
3.1 Participants in the video speak clearly.	8	4	0	0	1.0
3.2 The way they are presented is adequate.	9	3	0	0	1.0
3.3 The lines are adequate and reflect reality.	9	2	1	0	0.92
Partial total	**26 (72.2%)**	**9 (25%)**	**1 (2.8%)**		**0.99**
Overall total	**157 (72.68)**	**57 (26.40%)**	**2 (0.92%)**		**0.99**

Abbreviations: *Entirely adequate; †Adequate; ‡Partially Suitable; §Unsuitable; ¶Content Validity Index.

The patient is totally out of the question, does not know why he has belly pain, what is coming out, how is it working, how does it change. It's a total panic. I think the video brings that. It's a motivation (J3).

It will be very good for anyone watching the video. You can identify and say: if they did, I can too! (J7).

Considering the knowledge and experience of people who have a colostomy, study participants understand that video can help families get through this experience, since knowing how others have experienced and dealt with similar circumstances can help them to feel more informed and empowered to find ways to deal with the situation of living with the colostomy.

The message contained in the speeches of the characters, considered easy to understand by those who watched the video, favors the families to access some information that is sometimes not offered or is not emphasized in the orientation process for discharge from the hospital and that can bring insecurity to the family.

In the hospital they did not give the correct information. I felt helpless when I left the hospital. I did not know where to appeal. It would have been nice to have seen this (F1 - E2).

You can see clearly that some do not get the information needed. They come here without knowing anything. The video will contribute in this sense, because it brings basic information (J4).

In addressing aspects of the reality of the family, the video instigates reflection and offers a possibility to clarify basic aspects related to the colostomy, as well as to encourage patients and their families to elaborate a report of the lived experience, motivating them to coexist and manage the colostomy.

Although the technology developed contributes to fill gaps related to health education and reinforces the guidelines for stomas care, management and coping, the expert judges and the target audience highlighted the limitations of the technology, pointing out some issues that still needed to be modified, with the objective of making the video closer to reality. In this sense, they emphasize the punctuality addressed in stoma care, the lack of specification of the rights of the person with ostomies, the lack of appointment of the places where to acquire the bags, possible complications and other ways of managing with the stoma, such as irrigation, besides the participation of the family not being possible for all the people.

The part of the care could be a little more extended. Bring the person's rights, who can get the bags in such a place, which can give damage to the skin, but that for this there are some products. Discuss the importance of the bond with the health secretariat (J1).

Talk about the little bags, right? I should go further. That even the irrigation, should be mentioned, take the content further. Talk about prevention too (F1 - E2).

Just one thing I kept wondering. What about the people who have no family? Because there are people who have no one! I think it could cut a little bit from the end, do not leave it so long (J4).

Considering what the validators say, although the video presents limitations, it can be seen that these professionals, patients and relatives rely on the potential of the audiovisual educational technology produced, as a resource that aims to assist people who interact with situations involving colostomy by cancer. Therefore, the criticisms presented allow us to glimpse other educational dimensions related to the subject that could be contemplated in new proposals of educational technologies in health.

DISCUSSION

This study sought to produce and validate an educational technology contemplating all the methodological steps advocated as necessary for its construction. Research that intends to validate educational technologies, such as videos, games and educational manuals, has been used in nursing, both in the field of health education and in the teaching of nursing students.[20–21] In this context, videos represent a useful and effective alternative to health promotion activities.[13]

Although the videos were conceived as a means of disseminating the cinematographic art, it is considered the main basis for the dissemination of audiovisual language, being widely used in all areas for records and documentation of different natures and purposes. The facility of seeing, reviewing and analyzing an audiovisual product, the ability to watch when appropriate, to stop and pause, added to the fact that the video can make visible and concrete what touches the human senses, allowing to see the other, the world and ourselves, are characteristics that give it a form of effective communication with most people.[21] Therefore, audiovisual educational technologies are an interesting resource to be used to promote health, education and learning for those who watch it.

In this perspective, the methodological studies developed by nursing reveal their insertion in an innovative environment of knowledge production, mediated by the development, validation and use of educational technologies as a possibility to instrument the teaching, as well as to strength and expand the educational care in the assistance perspective of the professional praxis. The creation of new technologies, including videos, enables the development of health education, considering the reality for which it is thought and developed, in order to make feasible and potentiate the action of nurse.[22–23]

In order for them to comply, it is imperative that developed educational-care technologies be validated as a scientifically reliable product, and also tested for their effectiveness and suitability for application in the different contexts of nursing care. The validation process of a technology allows to infer legitimacy and reliability for a qualified care producing practice, since it is assumed that an educational material, when well produced and validated, can contribute to modify the reality of the subjects for which it is intended.

In the process of production and validation of the educational technology developed in this study, the suggestions and annotations made by the expert judges and the target audience, both in the evaluation of the script and the audio-visual content of the video, contributed to complement and qualify the contents related to the proposed product. The possibility of freely writing their opinions, without merely answering numerically what was requested in the instrument, provided a different perspective and pertinent contributions to the study. The notes made, in addition to what is included in the evaluation instrument, have been very useful and positive for criticism and suggestions[16] and allowed, in this study, to adjust to the terminology used and to clarify the information transmitted, thus guaranteeing the educational coherence and adequacy of both textual and visual and sound resources.

Considering the assumption that the human being learns more easily and quickly through audiovisual processes than only by verbal explanations,[24] the educational videos offer communication subsidies that integrate resources that promote the apprehension of the subject exposed in multiple perceptive attitudes,[24] constituting a device that enhances the actions of health education carried out by nursing. Thus, they become plausible to be used in activities aimed at the promotion and prevention of health, which favor the development of skills, providing information and guidance in a playful way and contributing to the autonomy and self-confidence of the target audience for which the material was developed.[20]

The content addressed in an audiovisual technology with the potential to raise awareness among the target audience needs to be comprehensible by anyone, being clear in its technical and scientific approach. In this perspective, the participants characterized the video as inviting, since it deals with subjects related to colostomy care and the use of the devices in a sensitized way, contrasting the usual approach that can often be considered technical, “cold” and indifferent.

A study that aimed to validate an educational hypermedia emphasizes the importance of evaluating the usability of the resources available in the technology in question, that is, the amount of information contained in the material.[21] They need to be able to guarantee the understanding and apprehension of the guidelines to be transmitted, besides being clear, simple and direct, making the communication effective.

The comprehension of the content of the video is related to the association between narration, images and musicality, which allows the apprehension of the content by sensorial impulse, since the audiovisual technologies present different forms of language that interact superposed, interconnected, added and not separated.[22] The combination of sensory-kinesthetic communication with audiovisual, the intuition with logic and the emotion with reason has the potential to influence behavior of people.[22] Thus, daily care can be altered by the message available in the educational video, which is able to guide and produce changes that qualify home care, encouraging the person with colostomy and their

relatives. In this sense, it is worth emphasizing that the images in their interactive context contribute to sensitizing, motivating, reaffirming and educating by the perception aroused by transmitting messages that translate complex values to be exposed only in texts.[22,24]

Thus, technology should be used in a way that favors the participation of the individuals in the educational process, contributing to the construction of citizenship and the increase of the autonomy of those involved. Educational materials are capable of exploring resources that meet recognized and valued meanings in the context of users and the community, regardless of the cultural or social environment to which the individual belongs.[14]

However, as evidenced in the literature, educational videos, as well as other educational resources, present limitations, demanding critical content and approach, being an additional contribution to what is being taught.[22,24] In addition, its use requires appropriate environment and equipment to ensure the quality of its display.

As a limitation of this study, the possible singularities concerning the personal and training characteristics of the evaluators, both the specialist judges and the target audience, were restricted to the possibilities of access to professionals and families that included the criteria established for evaluation presential of educational technology. However, it is understood that the obtained results validate the developed video, being necessary to use it in the clinical practice of nursing as a resource for health education, evaluating its educational effectiveness. For this purpose it is recommended to carry out studies in this sense.

CONCLUSION

At the end of this study, it can be affirmed that the educational technology constructed was analyzed and validated by expert judges and target audience, being this participation a criterion of credibility regarding the development and validation of the video. In addition, this process revealed how nursing can act creatively in work activities, revealing a new way of thinking, organizing and managing care.

Pedagogical practices that arouse curiosity and attract the attention of the interlocutors, combining scientific knowledge and technical procedures in a teaching-learning relation, qualify the care provided and result in a satisfactory therapeutic process. The educational video, while an educational-care technology strengthens the praxis of nursing and corroborates with new perspectives of intervention that seek the integrality of the care, enabling the autonomy of the individuals and promoting the quality of life.

In this sense, nursing still needs to invest in the construction, validation and evaluation of educational materials that aim to become technologies for care, in order to assist the exercise of its activities in an agile, creative, reliable and committed way with health and assistance provided.

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NOTES

ORIGIN OF THE ARTICLE

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CONTRIBUTION OF AUTHORITY

Conception of this study: Rosa BVC, Girardon-Perlini NMO,
Data collection: Rosa BVC, Girardon-Perlini NMO,
Analysis and interpretation of data: Rosa BVC, Girardon-Perlini NMO,
Discussion of the results: Rosa BVC, Girardon-Perlini NMO,
Writing and/or critical review of content: Rosa BVC, Girardon-Perlini NMO, Guerrero Gamboa NS, Nietsche EA, Beuter M, Dalmolin A.
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CONFLICT OF INTEREST

There is no conflict of interest.

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