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☑ Knowledge translation and advances in health and nursing practices

Construction and validation of an educational video on the newborn immersion bath

Construção e validação de um vídeo educativo sobre o banho de imersão do recém-nascido

Construcción y validación de un video educativo sobre el baño de inmersión del recién nacido

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ABSTRACT

Objective: To build and validate an educational video about the immersion bath of the newborn.

Method: Methodological research, of technological production, developed in the phases: pre-production, production and post-production in the period from December 2020 to February 2022, validated by nurse practitioners, professionals in the area of social communication, nursing team, puerperal women and family members. The Content Validity Index was used to assess consistency and Cronbrach's Alpha reliability.

Results: The video is eight minutes and 34 seconds long and was organized into before, during and after the shower. The script/script and storyboard were evaluated regarding the objective, content, relevance, environment, verbal language and inclusion of topics and the video regarding functionality, usability, efficiency, audiovisual technique, environment and procedure, all of which achieved indices equal to or greater than 0,80.

Conclusion: The video has technological potential to be used during health education actions and in continuing education practices.

Keywords: Baths. Infant, newborn. Nursing care. Health education. Instructional film and video.

RESUMO

Objetivo: Construir e validar um vídeo educativo sobre o banho de imersão do recém-nascido.

Método: Pesquisa metodológica, de produção tecnológica, desenvolvida nas fases: pré-produção, produção e pós-produção no período de dezembro de 2020 a fevereiro de 2022, validado por enfermeiros doutores,profissionais da área da comunicação social, equipe de enfermagem, puérperas e familiares. Utilizou-se o Índice de Validade de Conteúdo para avaliar concordância entre juízes e público-alvo e Alfa de *Cronbrach* a confiabilidade dos itens.

Resultados: O vídeo tem oito minutos e 34 segundos e foi organizado emantes, durante e após o banho. Roteiro/*script* e *storyboard* avaliados quanto ao objetivo, conteúdo, relevância, ambiente, linguagem verbal e inclusão de tópicos e vídeo quanto a funcionalidade, usabilidade, eficiência, técnica audiovisual, ambiente e procedimento, todos alcançaram índices iguais ou maiores a 0,80.

Conclusão: O vídeo apresenta potencial tecnológico para ser utilizado durante ações de educação emsaúde e práticas de educação permanente.

Palavras-chave: Banhos. Recém-nascido. Cuidados de enfermagem. Educação em saúde. Filme e vídeo educativo.

RESUMEN

Objetivo: Construir y validar un video educativo sobre el baño de inmersión del recién nacido.

Método: Pesquisa metodológica, de produção tecnológica, desenvolvida nas fases: pré-produção, produção e pós-produção no período de diciembre de 2020 a febrero de 2022, validado por enfermeiros doutores, profissionais da area da comunicação social, equipe de enfermagem, puérperas and familiares. Utilizou-se o Índice de Validade de Conteúdo para avaliar concordância e Alfa de Cronbrach a confiabilidade.

Resultados: El video tiene una duración de ocho minutos y 34 segundos y está organizado en antes, durante y después de la ducha. El guion/guion y storyboard fueron evaluados en cuanto al objetivo, contenido, pertinencia, entorno, lenguaje verbal e inclusión de temas y el video en cuanto a funcionalidad, usabilidad, eficiencia, técnica audiovisual, entorno y procedimiento, todos los cuales alcanzaron índices iguales o superiores de 0,80.

Conclusión: O vídeo que presenta potencial tecnológico para ser utilizado durante acciones de educación en salud y prácticas de educación permanente.

Palabras clave: Baños. Recién nacido. Atención de Enfermería. Educación en salud. Película y video educativos.

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INTRODUCTION

The educational approach throughout the pregnancy-puerperal cycle focused on maternal autonomy allows mothers to provide good quality care to their children not only in the hospital environment, but also after discharge. The guidance provided during prenatal care and in rooming-in facilities (AC) contribute to a greater understanding of mothers on the subject and provide important moments of reflection for decision-making and clarification of doubts[1].

Maternal knowledge about feeding, hygiene and safety of the newborn (NB) are essential for care. However, the actions developed in these spaces are fragmented[2]. Parents, family members and health professionals still have doubts about the newborn's body hygiene, especially bathing and cleaning and care of the umbilical cord stump, despite being routine practices[1,3].

Maternal and family preparation, through the demonstration of the practice of bathing, is essential, as it helps the family feel safer to perform care at home, minimizing the stress caused to the NB and promoting bonding[1,3]. After individual demonstration of the bathing technique by the nursing team in the AC, it must be performed by postpartum women and their family members under supervision, for assessment of the skills acquired before discharge[4].

Parents report difficulty in bathing the newborns at home, even after receiving guidance from health professionals, mainly due to the lack of standardization of the technique[1]. Risks of fall, drowning, hypothermia, burns must be considered when the family is not safe or has not been properly guided[3,4]. In the practice of health education, nurses are supposed to seek resources that facilitate communication and understanding of families throughout the educational process of the pregnancy-puerperal cycle[5].

In this regard, technological advances in information and internet access are innovative strategies that have changed the way of teaching and learning. The combination of multimedia materials allows the creation and recreation of them in a way that considers each individual's learning styles.

The use of educational videos has been widely used in nursing education compared to traditional methods. They enable individuals to acquire clinical knowledge, skills and competencies to improve their practical performance[7]. The use of videos in the context of health education with patients is valid, as it facilitates the acquisition of knowledge and the apprehension of information, through sound, reading and image[8]. This tool is characterized as a playful and accessible audiovisual resource, for the fast dissemination of information through online platforms that can be used by anyone, regardless of social class or educational level[9].

Despite the existence of validated videos on different nursing topics[8–11], few address NB bathing. Only one Brazilian study was found that portrays bathing in the bathtub at home, although with the use of drawings[11]. The purpose of this study was to reproduce scenes similar to those experienced by the families, in a realistic environment and with the use of a NB manikin. It is believed that the development and validation of a teaching tool on NB immersion bathing to assist in educational activities can enhance the understanding of this type of care, both for parents and for the nursing staff and students in this field, as it allows that all steps of this procedure are visualized, favoring the promotion of safety and quality in the execution of care.

In this regard, the educational video as a teaching-learning and health education strategy facilitates the educational process, reflecting on the improvement of the quality of care[12].

The elaboration of a realistic educational video with safe practices on the subject, aimed at family members and health professionals, attempted to answer the following guiding questions: What precautions should be included in an educational video about NB immersion in the bathtub? Is the educational video valid as an educational health technology to assist the nursing team in educational activities on NB bathing with the families?

Therefore, the present study aimed to build and validate an educational video about immersion bath for newborns.

METHOD

Applied and methodological research[13], for technology production that involved the development and validation of a teaching tool, an educational video, on the immersion bath for newborns, from December 2020 to February 2022. The video was prepared according to three phases: pre-production, production and post-production[14], and the validation was performed in two stages, as follows: in the first stage, the content and appearance of the script and storyboard were validated, and in the second stage the content and appearance of the educational video were validated after its editing.

In the pre-production phase, the script and storyboard were prepared, and the production team, physical, technological and human resources were recruited. The professor responsible for the research, two doctoral students and a master's student under her supervision, recruited due to their skills in the technique of newborn bathing, and audiovisual technicians hired by the main researcher participated in the production team.

To support the script, a search for national and international evidence was carried out in the following databases:

Medical Literature Analysis and Retrieval System Online (MEDLINE) through the US National Library of Medicine National Institutes of Health (PubMed) search engine.), in Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS) through Biblioteca Virtual em Saúde (BVS), in the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Web of Science.

The descriptors in Health Sciences (DeCS) and Medical Subject Headings (MeSH): bath ("baths") and newborn ("Infant, Newborn"), associated by the Boolean operator AND and their respective synonyms by the OR operator. It was standardized in MEDLINE/PubMed and reproduced in other databases according to the specific criteria of each one, as follows: ("Infant, Newborn"[Mesh] OR (Infants, Newborn) OR (Newborn Infant) OR (Newborn Infants) OR (Newborns) OR (Newborn) OR (Neonate) OR (Neonates)) AND ("Baths"[Mesh] OR (Bath)) were used. Standardization was carried out in MEDLINE/PubMed and reproduction in other databases according to the specific criteria of each database, as follows: ("Infant, Newborn"[Mesh] OR (Infants, Newborn) OR (Newborn Infant) OR (Newborn Infants) OR (Newborns) OR (Newborn) OR (Neonate) OR (Neonates)) AND ("Baths"[Mesh] OR (Bath)) were used. The data were entered in an Excel® spreadsheet and calculated for the construction of the content of the scenes/steps of the script and later for the creation of the storyboard. The script was structured in target audience, objectives, scenario, scenes/steps, manikin, team, equipment and materials. The scenes/steps were organized into care before, during and after the bath adapted from the instrument of "Good practices in bathing the newborn"[15], in line with the care extracted from the search performed.

In the production, validation of content and appearance of the script and storyboard, rehearsal and filming of the scenes, development of images, animations and narration/audio recording were performed. The process of content and appearance validation of the script and storyboard was carried out during the months of December 2020 to May 2021, and made it possible to evaluate, through the adaptation of a validated instrument, the objective, content, relevance, environment, verbal language and the inclusion of topics based on a Likert scale[12].

The judges who made the validation of the content and appearance of the script and storyboard were PhD nurses specialized in the field of social communication. PhD nurses were randomly selected for convenience based on criteria adapted from Ferhing (1987)[16]: master's degree in nursing (4 points), master's degree in nursing, with dissertation in the field of study interest (1 point), doctoral thesis in the study field (2 points), clinical practice of at least one year in the field of study interest (1 point), certificate of clinical practice (specialization) in the field of interest(2 points), and publication of an article on the topic in a reference journal (2 points). Nurses should obtain at least five points and have a doctorate degree to be eligible for selection. The criteria described were verified by the main researcher based on the analysis of the Lattes Curriculum, linked to the platform of the National Council for Scientific and Technological Development (CNPq), using filters related to the field of activity, professional activity and production.

The inclusion criteria for specialists in the field of social communication were as follows: having a degree in social communication, experience with technical support, programming or networking and video editing. In this step, the snowball technique was used where study subjects recruit future subjects, and so on[17]. The first expert was a member of the journalism team at a teaching hospital in Minas Gerais, who recruited two more members. Each one was asked to recommend other names, and so on.

The selection of judges considered theoretical knowledge, skills and abilities on newborn bathing and in the preparation of videos. Since the first validation stage, the inclusion of experts in the field of social communication considered academic training in audiovisual productions to add contributions to the script and storyboard structure, through the referred instrument[12] and a blank field for suggestions.

Twenty-five PhD nurses were invited. Of these, 16 returned the completed instrument in the first evaluation round and ten, in the second round, after three attempts, with the rounds having an interval of one month. The second round was necessary to evaluate the suggested changes. Of the experts in the field of social communication, seven were invited and three answered the instrument in a single round after three attempts.

After being recorded and edited, the educational video underwent a second validation step. At this stage, functionality, usability, efficiency, audiovisual technique, environment and procedure were evaluated through the adaptation of a validated instrument, based on a Likert scale[12].

In this second stage of validation, the evaluators were the PhD nurses and specialists in the area of social communication from the first stage, members of the nursing team, postpartum women and family members. Of the PhD nurses from the first stage, 16 returned the completed instrument and three answered the instrument after three attempts. Regarding the members of the nursing team, invitations were sent to 120 assistant nurses and nursing technicians and, of these, 43 answered the instrument. Forty postpartum women and family members who were in the RI facility of a teaching hospital in Minas Gerais were contacted. Of these, 21 agreed to participate.

The inclusion criterion for the members of the nursing team was: professionals who have been working in the maternal-infant area for more than five years. Selection and recruitment were performed with the use of the snowball technique, and the first person to participate in this process was a technical nurse in charge of the RI facility of a teaching hospital in Minas Gerais, who recruited three other members of the nursing team. Subsequently, the researcher contacted these three professionals mentioned and requested that each one provide another three names, and so on. As soon as the names recommended were repeated, the collection was concluded and the individuals whose names were most cited were invited to participate in the study. As for postpartum women and their families, the inclusion criteria were postpartum women hospitalized in the RI facility with their newborns in a teaching hospital in Minas Gerais. After the first contact at the unit and clarification about the research, the subjects were asked to provide a telephone number so that invitations could be sent to them.

The evaluators were contacted by email, except for postpartum women and their relatives who were invited through WhatsApp®. The Free and Informed Consent Term (ICF), containing information about the objectives, purpose of the study, stages of the research, as well as the guarantee of anonymity, confidentiality and privacy, was presented to the participants. Consent was given when one of the following alternatives was marked: "I was informed about what the researcher is doing and why my collaboration is needed, and I understood the explanation. Therefore, I agree to participate in the study" or "I do not agree to participate". This step was carried out during the months of December to February 2022.

For each stage of the validation process, an instrument in the Hyper Text Markup Language (HTML) standard was developed in Google Forms® to be filled out via the web in three parts: personal and/or professional identification of the participant; script, storyboard or edited educational video and general analysis based on the mentioned instruments.

Data were stored in a database in Excel® format imported from Google Forms®. Then, the data were imported into the Statistical Package for the Social Sciences (SPSS) version 21.0 and submitted to descriptive statistics for analysis of frequency and percentage, position measurements (mean and median) and variability (standard deviation). The agreement between the judges was analyzed using the Content Validity Index (CVI), with the weightings "totally agree" and "agree", grouped as agreement, and "totally disagree" and "disagree" as disagreement. The calculation was the result of application of the following formula: CVI = agreement / total responses, items with agreement above 0.80 were considered valid[13]. Cronbach's Alpha was also used to assess reliability through the internal consistency of the script, storyboard and edited video. This test assesses a single multi-item construct. Values above 0.80 were considered highly reliable. Suggestions for adjustments were incorporated and the instrument was forwarded when necessary.

The project was registered on Plataforma Brasil under the Certificate of Presentation for Ethical Assessment: 46390621.7.0000.8667 and approved by the Research Ethics Committee of the UFTM under Protocol no 4.856.260.

RESULTS

Pre-production, production and post-production steps were followed in the construction of the video. In the search for evidence carried out in pre-production, 25 studies published between 2015 and 2020 addressed care with NB bathing. The main recommendations that supported the scenes/steps of the script were extracted from these studies. The scenes/steps were organized into care before (1), during (2) and after (3) the bath. Scenes/steps 1 and 2 consisted of seven types of care each and scene/step 3 of four types of care. The topics of the contents included are presented in Chart 1.

Two storyboards were created, one for recording and one for editing. The first storyboard had the format of a comic book arranged in columns, containing descriptions of the scenes in hand-drawn drawings by the main researcher and filming plans (Figure 1) and the second storyboard had text, audio aspects such as dialogue, narration and background music.

Rehearsal took place after validation with the purpose of reviewing the content of the script and storyboard, performing rehearsal of scenes, photos, positioning of equipment and cameras on the day of recording. Adjustments were made to obtain a good quality of the technique.

After the rehearsals, the scene was filmed as described in the storyboard in a double room in a real home environment provided by one of the researchers, in May 2021. This location was chosen to provide a realistic scenario, featuring a typical family environment. This room had a double bed, a plastic bathtub, a metal stand and a small plastic bucket. The bath was performed by one of the researchers.

Two Sony A6500 cameras with 35mm, 70-200mm and 16mm lenses, video tripod and LED light were used. All the recording was done in 4k to guarantee the quality of the images and in two or three shots (medium, aerial and closed) to capture different angles of the same scene. The manikin was a solid silicone Reborn® baby modeled for this study.

Scenes/ steps	Contents
1	Organize the materials Prepare the environment Create a relaxing environment Wash hands Put water in the bathtub Check the water temperature Prepare the newborn
2	Clean the face Wash the scalp Dry the baby's face and scalp Place the baby wrapped in a soft cloth in water and wash the front of the body Perform intimate hygiene of the baby Turn the baby and wash the back of the body Wrap the baby in a dry towel
3	Dry the skin and folds Cleaning the umbilical stump Finish putting on the baby's clothes Organize the materials

Chart 1 – Topics of content extracted from the literature review included in the scene/stage of the video "Best practices: bathing the newborn in the bathtub". Uberaba, Minas Gerais, Brazil, 2022
Source: The authors, 2022.

Narration was performed by one of the researchers, based on the script as a guide in the audio recording in August 2021. A zoom H6 recorder with lapel microphone was used for soundproofing studio audio recording.

In editing, in the post-production, the process of assembling all the elements of the storyboard was carried out, in an uninterrupted sequence of scenes with the inclusion of texts, from June to August 2021. Final Cut Pro X was used to edit the scenes and include the audio, and to create the animation for the introduction and inclusion of moving texts, the Adobe After Effects program was used. The soundtrack of the video along with the narration was instrumental "carefree" by artist Kevin MacLeod, in the public domain. These procedures were conducted by the researchers, who were accompanied by professionals with experience in neonatology and audiovisual technicians involved in filming the scenes and editing the video.

The results of the validation steps are presented below. Of the 16 judges who were PhD nurses, 15 (93.7%) were women and one (6.3%) was a man, 11 (68.7%) lived in state of Minas Gerais, two (12.4%) in São Paulo, one (6.3%) in Sergipe, one (6.3%) in Maranhão and one (6.3%) in Santa Catarina. Of these, ten (63.4%) worked in undergraduate nursing courses, three (18%) in Maternal and Child Units, two (12.4%) in teaching and research at a teaching hospital and one (6.2 %) in a technical nursing course. The time elapsed since graduation ranged from six to 35 years, with an average of 16.3 years.

The three experts in social communication were male and from the state of Minas Gerais, two (66.6%) worked with

Long shot

Mother on her back closing the window.

Pick up items from the bed, bed, bedside table and bathtub.

Medium shot and medium right side shot

Mother showing how to hold baby and cover ears.

Right and left.

Grab the edge of the bed and bathub.

Figure 1 – Storyboard fragments for recording. Uberaba, Minas Gerais, Brazil, 2022
Source: The Authors, 2022.

video recording and editing in an educational institution and one (33.4%) was a professor with a doctoral degree.

Of the 43 members of the nursing team, all were female and from the state of Minas Gerais, 33 (76.7%) were nurses and ten (23.3%) were nursing technicians. All professionals worked in maternal-infant units, as follows: 30 (69.7%) in rooming-in facilities and 13 (30.3%) in intensive care. The length of professional experience ranged from five to 20 years, with an average of 11.4 years.

Regarding the 21 postpartum women and their relatives, the average age was 30 years, with a minimum of 20 and a maximum of 42 years, 13 (61.9%) were postpartum women, six (28.5%) were parents and two (9.5%) were grandparents. Of these, nine (42.8%) had postgraduate degrees, five (23.8%) had higher education, four (19.0%) had completed high school and three (14.2%) had completed elementary school.

The suggestions and changes in the validation of content and appearance of the script and storyboard by the doctor nurses involved the bathing technique and making the language more accessible. The scores accepted were: reinforce the sense of head rinsing in the frontal – occipital direction, dry the nostrils and ears before putting the baby in the bathtub, encourage oral hygiene with filtered water and gauze, not mentioning towel, turn off air conditioning and fan, when turning the baby in the water check that his/her face is not in contact with the water and clean the bathtub before and after use. In this first version, it was also suggested to clarify the language for parents and family members. Thus, modifications were made throughout the text to facilitate understanding, without changing the content.

After the modifications were made, the script and storyboard were forwarded to the nurses for a second round. There were no new suggestions and the second version was sent to the experts in social communication, without further consideration. The CVI and Cronbach's Alpha for the validation of content and appearance of the script and storyboard are presented in Table 1.

The suggestions and changes made by PhD nurses regarding the validation of content and appearance of the educational video after its editing were: inserting audio in the initial texts containing the recommendations and including a sentence reinforcing the need to throw out the water immediately after bathing to avoid domestic accidents. After the modifications were made, the edited video was forwarded to the PhD nurses for a second round. There were no new suggestions and the second version was sent to the experts in social communication, to the nursing team, the postpartum women and their relatives, without further consideration. The CVI and Cronbach's alpha for this step are shown in Table 2.

Table 1 – Content Validity Index and Cronbach's Alpha of content validation and script and storyboard appearance. Uberaba, Minas Gerais, Brazil, 2022

Items/Participants		PhD nurses		Experts in the field of social communication
		Round 1 (n=16)	Round 2 (n=10)	Round 1 (n=03)
		CVI		
Objectives	The goals are consistent with newborn bathing practice.	0.97	0.97	1.00
	The goals are consistent with the objectives proposed in the research.	0.97	0.97	1.00
	The goals are suitable to be carried out.	0.97	0.97	1.00
Content	The content presented in the script corresponds to the objectives proposed in the work.	0.95	0.95	1.00
	The content facilitates the teaching-learning process onthe subject.	0.97	0.97	1.00
	The content allows the understanding of the topic.	0.96	0.96	1.00

Table 1 – Cont.

Items/Participants		PhD nurses		Experts in the field of social communication
		Round 1 (n=16)	Round 2 (n=10)	Round 1 (n=03)
		CVI		
Content	The content follows a logical sequence.	0.97	0.97	1.00
	The content incorporates all the steps necessary to bathe the newborn.	0.96	0.96	1,00
	The content includes all the materials needed for bathing the newborn.	0.97	0.97	1.00
	The information presented by the script is correct.	0.97	0.97	1.00
Relevance	The images and scenes illustrate important aspects for the practice of bathing the newborn.	0.97	0.97	1.00
	The images and scenes are relevant so that the bath in newborns is of high quality.	0.97	0.97	1.00
	Images and scenes allow the transfer and generalization of learned content to different contexts.	0.97	0.97	1.00
Environment	The setting is suitable for streaming the video.	0.94	0.94	1.00
	The setting is suitable for learning the subject.	0.94	0.94	1.00
The verbal language	The verbal language used in the script is accessible to the target audience.	0.94	0.94	1.00
	Verbal language is easy to assimilate.	0.95	0.95	1.00
Topic inclusion	Purpose of educational video.	0.97	0.97	1.00
	Purpose of the bath of the newborn.	0.97	0.97	1.00
	Proper sequence and care before, during and after bathing.	0.97	0.97	1.00
Cronbach's alpha		0.98	0.98	1.00

Source: Adapted instrument[10], 2022.

The final version of the edited video lasted eight minutes and 34 seconds and included the introduction with the title, logo of the institution and the funding body, the importance of bathing the newborn, the main recommendations on bathing in the bathtub, the scenes referring to step 1 – before the shower, step 2 – during the shower, step 3 – after the shower and credits (Figure 2).

Table 2 – Content Validity Index and Cronbach's Alpha of content validation and appearance of the educational video after edition. Uberaba, Minas Gerais, Brazil, 2022

Items/Participants		PhD Nurses		Experts in the area of social communication	Nursing Team	Puerperal women and Relatives
		Round1 n=(16)	Round 2 n=(16)	Round 1 n=(3)	Round 1 n=(43)	Round 1 n(21)
		CVI				
Functionality	The video is a suitable tool for the purpose for which it is intended.	1.00	1.00	0.90	0.97	1.00
	The video can generate positive results in the teaching-learning process on the subject.	1.00	1.00	0.90	0.97	1.00
Usability	The video is easy to use.	0.98	1.00	0.90	0.96	1.00
	It is easy to learn the theoretical concepts used and their applications.	0.98	1.00	0.85	0.96	1.00
	It is easy for users to apply the concepts worked in the home environment.	0.98	1.00	0.90	0.96	1.00
Efficiency	The duration of the video (time spent) is adequate for the user to learn the content.	1.00	1.00	0.90	0.96	1.00
	The number of scenes in the video is consistent with the proposed video length.	0.96	1.00	0.85	0.97	1.00
Audiovisual technique	The lighting is suitable for observation of the practice.	0.96	1.00	0.80	0.96	1.00
	The narrator's tone and voice are clear and appropriate.	1.00	1.00	0.85	0.97	1.00
	Video narration is used in an efficient manner and is understandable by the clientele.	1.00	1.00	0.95	0.97	1.00
	It is possible to go back to any part of the scenes of the video whenever this is desired.	1.00	1.00	0.95	0.97	1.00

Table 2 – Cont.

Items/Participants		PhD Nurses		Experts in the area of social communication	Nursing Team	Puerperal women and Relatives
		Round1 n=(16)	Round 2 n=(16)	Round 1 n=(3)	Round 1 n=(43)	Round 1 n(21)
		CVI				
Environment	The video reflects the daily hospital routine practice.	1.00	1.00	0.90	0.97	1.00
	The laboratory environment did not interfere with the fidelity of the procedure related to the newborn bathing.	0.93	1.00	0.90	0.97	1.00
Procedures	Goals of the educational video.	0.98	1.00	0.90	0.93	1.00
	Importance of newborn bathing and maternal bonding during bathing.	0.97	1.00	0.90	0.96	1.00
	There was a complete presentation of the materials used in the procedure.	0.98	1.00	0.90	0.97	1.00
	The stages of the newborn bathing procedure are adequate and could be properly identified.	0.97	1.00	0.90	0.96	1.00
Cronbach's alpha		0.85	1.00	0.98	0.99	1.00

Source: Adapted instrument[10], 2022.

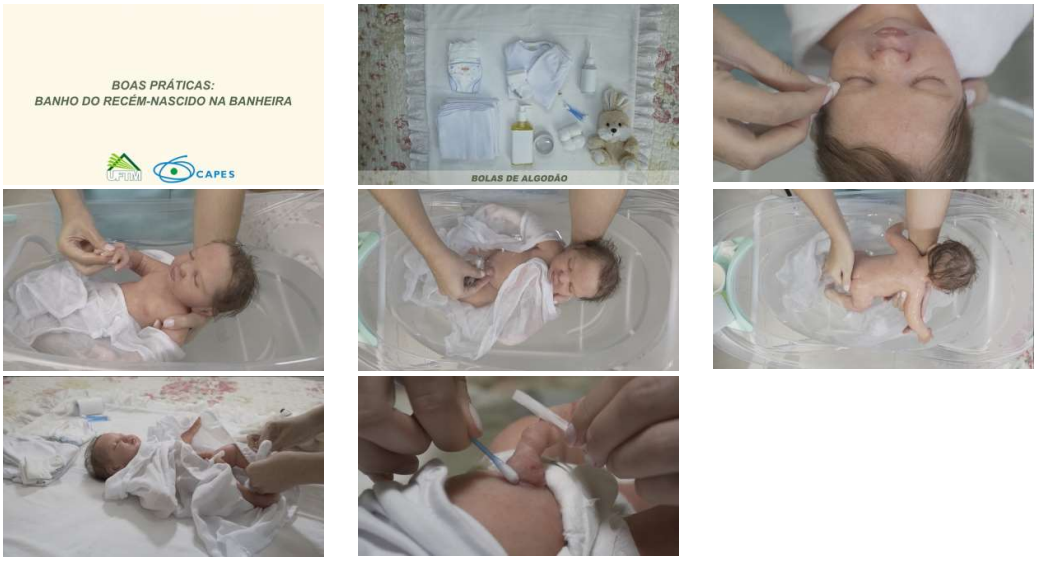

Figure 2 – Images from the video "Good practices: bathing the newborn in the bathtub". Uberaba, Minas Gerais, Brazil, 2022
Source: The Authors, 2022.

DISCUSSION

The use of educational videos has gained prominence in different contexts in the field of health in teaching and in health education practices. A wide range of homemade newborn bath videos can be found on online platforms. A Brazilian study that analyzed the content of 61 of these videos revealed inconsistencies in all of them, which can compromise safety in execution and suggests the development of content based on scientific evidence. [18]. In this sense, we emphasize the importance of the validation process with specialists to contribute to improve the quality of the material developed[19–20].

For a meaningful learning, incentives with specific resources are necessary. In the pregnancy-puerperal cycle, actions are concentrated on mothers and are fragmented, mostly focused on breast feeding[21]. After training for the first bath, the mother, father and family will have to perform this care without assistance at home[22]. Doubts about the proper way to bathe or hold the newborn baby, the ideal water temperature and the number of baths are frequent[1,10]. Studies highlight the importance of baby care programs starting from prenatal care for better planning of the new routine and point out the impact of these actions for the prevention of neonatal mortality, especially where access to health services is limited[1,21,22].

The video can provide valuable assistance, as it will allow access to all stages of the immersion bath at any point in this cycle, whether in prenatal preparation, training in the maternity ward and at home during the first baths. Studies that evaluated the effect of educational videos indicate that the tool contributes to the acquisition of knowledge and reinforces its role as a facilitator of the teaching-learning process[10,23]. More dialogic and dynamic educational strategies favor maternal and family autonomy, providing these people with more confidence to take care of the NB at home[1].

This study was concerned with the creation of a scenario closer to the reality of families in the home environment, with the use of a Reborn® doll with characteristics similar to those of a newborn. Realism instigates the viewers, as well as simulated actions by arousing feelings and emotions[23].

Thus, it is believed that the number of times a single individual watches the video can influence their practical performance and content memorization. The acquisition of skills takes time and each individual has their limitations and specific difficulties to be addressed during hospitalization in the RI facility. Parents report that care is passed on quickly, which makes it difficult to understand the whole process[1]. Some factors can also interfere with this training, such as number of children, baby's cry, type of delivery, fear and anxiety[1]. It should also be noted that the video can help to reinforce the guidelines provided and facilitate the demonstration, as it is an audiovisual technology and contains the necessary step-by-step process.

As for the duration, short videos, which do not exceed eight to 12 minutes, are recommended, since longer videos can lead viewers to lose interest in the content[7,12]. Thus, another important point, in addition to the total length of the video, is the duration of each scene. Sometimes the content to be disseminated is extensive because of detailed explanations, but if it is well organized during script and storyboard planning, short and dynamic scenes can be created, with the use of input and output resources of long and closed shots and different angles. This feature provided more realism to the video developed in this study, with the scenes captured in aerial shot (from above) aiming to convey the idea that the viewer is preparing the bath. Therefore, it is recommended that the instructional design of any content or virtual tool is attractive for better learning outcomes[24].

As for access to this type of technology, it is clear that people are not in the habit of searching for health information on social networks. Despite access to technology, digital natives often do not know how to search for and select valid information from reliable sources. Therefore, it is important that health professionals know the materials and disseminate them[25]. Performing any first-time care can be stressful and challenging. Visualizing what is expected beforehand has positive effects on knowledge, fear, errors, attitudes and behaviors[26].

The description of the technique involved three main steps (care before, during and after the bath) and actions to minimize risks such as hypothermia, burns, falls and drowning. The swaddle immersion bath method for newborns was associated to minimize behavioral stress, as evidenced by the search carried out[27–29]. A study that compared different bathing techniques found that mothers were less afraid of drowning and hurting their newborns in swaddle immersion baths[28]. Newborns wrapped in a swaddle blanket have better stability of physiological and behavioral parameters with less crying and agitation[27–30].

The correct way to hold and turn the newborn in the bathtub is a difficulty reported by parents and family members[1,2,10] and was presented in the video and the content was highlighted in different angles to facilitate the understanding of how to perform each step of this technique. The support of the nursing team to acquire this skill during prenatal and in RI facility is essential for safety in the execution, and the use of videos facilitates viewing[10].

To minimize the risk of hypothermia, in addition to bathing the NB only after 24 hours of life and the care related to

the environment and water temperature, swaddle bathing is recommended, and washing the baby's face and scalp before immersion in the water, drying them immediately to prevent heat loss over the fontanelles[3,4]. Despite the benefits, challenges are reported by parents and the nursing staff, due to the lack of standardization of the technique in different regions[1]. Therefore, wide dissemination of this practice is recommended so that it is consistent with current evidence.

The video covered the main steps of the bath in an objective way and with direct visual language, and has technological potential to be used during health education actions with the family on NB care at any time of the pregnancy-puerperal cycle. For health professionals to use the video in these actions, especially nurses as health educators, it is suggested that this tool is used during professional training and in continuing education practices.

A limitation of this study is the need to update the content, as changes may occur with the development of new scientific evidence and technical regulations. Another limitation is that although this video has been validated by experts, it is necessary to evaluate the usability of this tool with families of newborns.

CONCLUSION

The present study allowed the construction and validation, with specialists in nursing and social communication, of an educational video about immersion bathing of newborns at home. All the items evaluated had CVI and Cronbach's Alpha above 80% and, when necessary, a second round was carried out to verify the suggestions and changes included. The reproduced scenes were similar to the reality experienced by the families, and included a NB manikin to arouse the viewer's interest and bring them closer to the real environment. The video content was organized in three scenes: care before, during and after the bath, including the general recommendations and care related to safety and temperature.

An educational video can be considered a means of translating scientific knowledge in a dynamic and interactive way because it is an audiovisual tool. It is assumed that the use of videos in teaching and health practices will strengthen communication between researchers, healthcare professionals and family members. The video construction process involved the identification of a relevant problem in maternal and child care, the search for evidence and validation with specialists aiming at the reliability of the information. In addition, it provides support for the elaboration of new videos. Further studies should be carried out to assess the effectiveness and impact of videos on educational practices with these target audiences.

SUPPLEMENTARY MATERIAL

Access link to the video "Best practices: bathing the newborn in the bathtub": https://youtu.be/O2JfJZDOr2I.

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