

# Production and validation of educational video to encourage breastfeeding

*Produção e validação de vídeo educativo para o incentivo ao aleitamento materno*

*Producción y validación de video educativo para el fomento de la lactancia materna*

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## ABSTRACT

**Objective:** To produce and validate an educational technology in health in video format to encourage breastfeeding in families.

**Methods:** Methodological study, carried out in a virtual environment, from February to August 2021, in seven stages. The Content Validity Index was used, with desirable values equal to or greater than 0.70.

**Results:** The video lasting 7 minutes and 38 seconds was validated by 20 expert judges and 20 pregnant women, postpartum women, and family members, using a Global Content Validity Index of 0.97 and 1.00, respectively. All items evaluated regarding functionality, usability, efficiency, audiovisual technique, environment, procedure, objectives, organization, video style, appearance and motivation reached indexes equal to or greater than 0.95.

**Conclusions:** The video produced is a validated educational technology that can be used to encourage breastfeeding with families, as it elucidates, in an innovative and creative way, different issues related to breastfeeding.

**Keywords:** Child health. Breast feeding. Instructional film and video.

## RESUMO

**Objetivo:** Produzir e validar uma tecnologia educacional em saúde em formato de vídeo, para o incentivo ao aleitamento materno junto às famílias.

**Métodos:** Estudo metodológico, realizado em ambiente virtual, de fevereiro a agosto de 2021, em sete etapas. Utilizou-se o Índice de Validade de Conteúdo, tendo como desejáveis valores iguais ou maiores a 0,70.

**Resultados:** O vídeo, com duração de 7 minutos e 38 segundos, foi validado por 20 juízes especialistas e 20 gestantes, puérperas e familiares, mediante Índice de Validade de Conteúdo Global de 0,97 e 1,00, respectivamente. Todos os itens avaliados quanto à funcionalidade, usabilidade, eficiência, técnica audiovisual, ambiente, procedimento, objetivos, organização, estilo do vídeo, aparência e motivação alcançaram índices iguais ou maiores a 0,95.

**Conclusões:** O vídeo produzido é uma tecnologia educacional validada, que pode ser utilizada para incentivar o aleitamento materno junto às famílias, pois elucidada, de maneira inovadora e criativa, distintas questões relacionadas à amamentação.

**Palavras-chave:** Saúde da criança. Aleitamento materno. Filme e vídeo educativo.

## RESUMEN

**Objetivo:** Producir y validar una tecnología educativa en salud en formato de video para incentivar la lactancia materna en las familias.

**Métodos:** Estudio metodológico, realizado virtualmente, de febrero a agosto de 2021, en siete etapas. Se utilizó el Índice de Validez de Contenido, teniendo como deseables valores iguales o superiores a 0,70.

**Resultados:** El video de 7 minutos y 38 segundos fue validado por 20 jueces expertos y 20 mujeres embarazadas, puérperas y familiares con Índice de Validez de Contenido Global de 0,97 y 1,00, respectivamente. Todos ítems obtenidos en cuanto a funcionalidad, usabilidad, eficiencia, técnica audiovisual, entorno, procedimiento, objetivos, organización, estilo de video, apariencia y motivación alcanzaron niveles iguales o superiores a 0,95.

**Conclusiones:** El video producido es una tecnología educativa validada que puede ser utilizada para fomentar la lactancia materna en las familias, ya que dilucida, de manera innovadora y creativa, diferentes temas relacionados con la lactancia materna.

**Palabras clave:** Salud del niño. Lactancia materna. Película y videos educativos.

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## ■ INTRODUCTION

Breastfeeding (BF) is a widely spread and recommended practice worldwide, since it is the most sensitive, economic, and effective bonding, affection, protection, and nutrition strategy for reducing infant morbidity and mortality. For women's health, it contributes to uterine involution, reduction of breast and ovarian cancer rates, and protection against anemia<sup>(1)</sup>.

Although exclusive breastfeeding (EBF) rates have been increasing in recent years, they are still below recommendations. The World Health Organization (WHO) classifies the prevalence of EBF up to six months as very good in the range of 90 to 100%; good, from 50 to 89%; reasonable, from 12 to 49%; and bad, from zero to 11%<sup>(2)</sup>. The WHO goal is to increase global rates of exclusive breastfeeding to 50% by the year 2025<sup>(3)</sup>, which has not been achieved in many countries, including Brazil.

In low- and middle-income countries, only 37% of children under six months old are exclusively breastfed<sup>(4)</sup>. In the Brazilian reality, results of the Brazilian National Survey on Child Nutrition (ENANI), conducted between 2019 and 2020, with 14,584 children under five years old, showed that, among those who had less than six months of life, only 45.7% were in EBF; among those with less than four months of life, this rate was 60%; and only 53.1% continued to be breastfed until the first year<sup>(5)</sup>.

Several factors contribute to low rates of breastfeeding, such as low socioeconomic status, limited education, pain when breastfeeding, lack of support, embarrassment and pressure to resort to formula use<sup>(6)</sup>. However, breastfeeding is important for all children and women, regardless of where they live, whether they are rich or poor<sup>(4)</sup>. As a result, assertive measures to encourage immediate and continuous BF must be adopted, helping to increase the prevalence rates of EBF.

The encouragement of BF should be continuous, from prenatal care to the puerperium, and increased, mainly, in the first days after the babies are born<sup>(7)</sup>, period of significant learning and adaptation for mother, child and family<sup>(8)</sup>. Thus, given the importance of the family in nursing actions, research is needed to develop strategies capable of involving family members in the context to which they belong<sup>(9)</sup>.

Educational technologies in health have been increasingly used, and their introduction into nursing actions is highly recommended, in order to provide the individual and the family with easy access, preferably at any time when they feel the need or have doubts. Therefore, the creation of educational videos is a viable and accessible strategy for sharing health information in a simple and effective way, especially

when the content is aligned with the real needs of the target audience<sup>(9-10)</sup>, including in aspects related to breastfeeding.

Although this type of technology contributes to the role of nurses in their educational practices, in the literature, there is little production in this topic<sup>(11)</sup>. In an extensive literature review in six informational resources, conducted by the authors of the current study, no Brazilian article was found on the production and validation of an educational video developed by health professionals, including nurses, to be used by pregnant women, postpartum women and their families, aiming to encourage BF, which presents itself as a knowledge gap and justifies the accomplishment of this research.

It is noteworthy that educational videos are considered teaching-learning instruments that bring the educational environment closer to people's daily life and language<sup>(12)</sup>. Thus, considering the relevance of creating an accessible and updated educational video on the subject, aimed not only at mothers, but also at family members, we sought to find answers to the following guiding questions: what content can be contemplated in the elaboration of an educational video on BF to encourage this practice with families? Is the educational video valid as an educational technology in health for families in terms of encouraging BF?

Therefore, the present study aimed to produce and validate an educational technology in health in video format, to encourage BF in families.

## ■ METHOD

Methodological study, with a quantitative approach, conducted in a virtual environment, from February to August 2021, which encompasses the process of elaboration and validation of an educational technology in health, in seven stages, which were adapted from a study on development and validation of educational video<sup>(12)</sup>.

The stages of the methodological course were: search for themes; theoretical study; production of the educational video with cartoon; validation of the educational video by expert judges; adequacy of the educational video after evaluation by the expert judges; validation of the educational video by the target audience; adequacy of the educational video after evaluation by the target audience.

In the 1<sup>st</sup> stage, it was performed a survey of educational videos aimed at BF on the free video sharing website, YouTube, in February 2021, to evaluate videos that sought to provide guidance aimed at families on the subject and, thus, extract possible themes for the composition of the new educational technology in health. "Breastfeeding" was used as

a keyword. Educational videos were included that addressed the encouragement for BF, in Portuguese, produced in Brazil, and of short duration (up to 10 minutes).

In the 2<sup>nd</sup> stage, scientific evidence and official recommendations on BF were selected to support the construction of the educational video. Thus, publications from the Ministry of Health (MH) were included, in addition to articles selected from the search in six informational resources: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Latin American and Caribbean Health Sciences Literature (LILACS); Web of Science; US National Library of Medicine National Institute of Health (PubMed); Scientific Electronic Library Online (SciELO); and Scopus. The descriptors used were “pregnant women”, “women”, “educational technology” and “breastfeeding” in Portuguese, English and Spanish. Materials were selected regarding the theme produced in the period from 2015 to 2020.

Next, a theoretical study was performed from the selected videos, in the 1<sup>st</sup> stage, and from the materials available in the 2<sup>nd</sup> stage, aiming to select relevant and updated information to compose the theoretical content of the video.

In the 3<sup>rd</sup> stage, a script on encouraging BF with families was developed by members of the research team to guide the production of educational technology in health, containing the description of each scene, speech of the characters, text for display and guiding images. After completion, after three rounds between the authors, a professional illustrator and graphic designer was hired to create and animate the video. It is noteworthy that an animatic was produced for a brief notion of the scenes and, after approval by the researchers, the professional finished the first version of the video.

In the 4<sup>th</sup> stage, the educational video was validated by expert judges, with health professionals with previous experience in educational practices related to breastfeeding. Professionals who only perform administrative activities were excluded. The theoretical references of the validation procedures suggest a number of six to twenty judges participating in this stage<sup>(13)</sup>. Thus, the sample of expert judges consisted of 20 participants, as shown in the literature.

The selection of judges was performed by “snowball” sampling. All judges had to meet the parameters of Fehring’s model, needing to achieve a minimum score of 5 points, following the scoring logic: Doctoral degree = 04 points; Master’s degree = 03 points; publication in an indexed journal on the topic of interest of the study = 02 points; specialization on the topic of interest of the study = 02 points; clinical practice of at least 5 years in the area of interest of the study = 02 points; participation in a scientific event in the last 2 years on the topic of interest of the study = 1 point<sup>(12)</sup>.

The validation form was adapted to the topic from an instrument previously validated for educational video<sup>(12)</sup>, doing relation to BF, comprising seven categories: characterization of the judges; functionality; usability; efficiency; audiovisual technique; environment; and procedure, being converted to online format in Google Forms. At this stage, the invitation to participate in the research was sent to the judges through messages, by WhatsApp and/or e-mail, with the link directing to the data collection instrument, and the Free and Informed Consent Form (FICF) and the first version of the video were also made available. A period of ten days was determined for the return of the material. Sequentially, the 5<sup>th</sup> stage refers to the adjustment of the educational video from the evaluation and judges’ considerations in the evaluative instrument.

In the 6<sup>th</sup> stage, the educational video was validated by the target audience, also considering 20 people, as recommended by studies of this nature<sup>(13)</sup>. Pregnant women, postpartum women and family members of newborns and live infants, over 18 years of age, who had access to the internet, were included. Pregnant women, postpartum women, or family members of newborns and live infants who are functionally and/or digitally illiterate were excluded, which would make it impossible to respond to the form.

It was used an instrument already applied in the validation of educational video with families, adapted for the present theme<sup>(9)</sup>, relating the questions to BF, consisting of five categories: objectives, organization, video style, appearance and motivation, also converted to online format in Google Forms. At this stage, the target audience was captured through the social networks of the researchers themselves (Facebook, Instagram and/or WhatsApp). The invitation was sent through messages on the social media with the research link, containing the data collection instrument, as well as the FICF and the second version of the video. A period of ten days was determined for the return of the material. The 7<sup>th</sup> stage corresponded to the final adequacy of the educational video, according to the evaluation and possible suggestions of the target audience.

After each validation stage, a quantitative analysis was performed, using the Microsoft Excel 2010<sup>®</sup> software, from the responses through the Content Validity Index (CVI) according to the different assessments: inadequate (1); partially inadequate (2); partially adequate (3); and totally adequate (4). The CVI was calculated from the sum of responses three and four, divided by the total number of responses. It was considered the index greater than or equal to 0.70 (70%) as a parameter of validity. Items that did not reach this goal would be adjusted<sup>(9)</sup>.

The study was approved by the Research Ethics Committee (REC) of *Universidade Federal Fluminense*, under Opinion 4,622,089 and Certificate of Presentation for Ethical Consideration (CAAE) 43457721.0.0000.5243. Participants were assured about the secrecy, anonymity, and confidentiality of the data, emphasizing that all data collected would be treated anonymously and confidentially, without exposing any participant. The acceptance of the FICF was online, made available via Google Forms, with the availability of the download. The present research did not generate physical risks to the participants, but it could cause a possible embarrassment when having to evaluate an educational material. Thus, the participants were informed that they could refuse to respond or give up at any time, withdrawing their consent, which was not requested. An alphanumeric code was used (J – judge; T – target audience) in order of participation. The present research was not funded by any organization, and the full costs were responsibility of the researchers.

## ■ RESULTS

In the 1<sup>st</sup> stage, 228 videos were searched on YouTube, but only six met all the inclusion criteria. The first video lasts 2'6", being a campaign held to encourage the donation of breast milk to human milk banks (HMB), focusing on the benefits of breastfeeding only for the baby. The second, lasting 1'32", portrays that BF does not distinguish between ethnicities, genders, or socioeconomic status, emphasizing that it is a natural but challenging process, and advising mothers to seek support from specialist nurses and other significant people.

The third lasts 3'30", bringing information, such as strengthening the bond between mother/baby through breastfeeding, benefits and WHO recommendations, however it does not show the importance of including the family in this process. The fourth lasts for 2'11", addressing the advantages of breastfeeding for the mother, baby, and family, such as increasing affective bonds. The fifth video, lasting 8'47", informs that breastfeeding brings benefits to the father, mother, and family, such as an increase in affective bonds, that the uterus returns faster to its pre-pregnancy size, and is a method of family planning, in addition to demonstrating the best way to breastfeed. The sixth, with 2'56", emphasizes the MH recommendation to exclusively breastfeed until the sixth month of life, maintaining until the age of two, not presenting the benefits of breastfeeding for the family.

In the 2<sup>nd</sup> stage, through an integrative literature review, six articles were selected, helping to support the theoretical content of educational technology in health. In one of the studies, in the educational approach used, adequate positioning of the baby and ways to improve comfort during

breastfeeding were portrayed, such as to recognize the signs of quality lactation and adequate suction of the nipple-areola complex<sup>(14)</sup>. In another article, it was seen that the expert judges asked to show the mother's upper areola when demonstrating the correct handle, thus contributing to the success of breastfeeding<sup>(15)</sup>. Another study exposes myths and truths about breastfeeding, also showing signs that breastfeeding is being satisfactory for the baby, such as: the child stays calm, hardly cries; gains weight; releases the breast spontaneously after breastfeeding<sup>(16)</sup>.

Research that developed an application exposed the benefits of BF to stimulate women to breastfeed, using images of other women breastfeeding to remind that this practice occurs all over the world<sup>(17)</sup>. In another investigation on the creation of an application aimed at parents, there were some suggestions applied by health professionals, such as the technology having short and objective information<sup>(18)</sup>. The article that created a parody in a music video to promote breastfeeding for young adults challenges listeners to see breastfeeding as something normal, to be performed anywhere or at any time, considering the baby's free demand<sup>(6)</sup>.

In addition to the research, the MH Primary Care Notebook 23 on BF and complementary nutrition was also selected to incorporate the new technology, containing reasoned and official recommendations. A guide to encourage, support and protect BF was also used, which, among other aspects, emphasizes that breast milk is ideal and sufficient to feed the baby during the recommended period<sup>(19,20)</sup>.

From the critical analysis of the videos (1<sup>st</sup> stage) and the conceptual bases (2<sup>nd</sup> stage) located and the need to address primordial issues, a survey was made of the main themes to compose the theoretical content to be presented in the educational video, namely: benefits of breastfeeding for mother, baby and family; best position for breastfeeding; tips for correct handle; and recommendations on exclusive breastfeeding for the first six months of life and supplemented breastfeeding for up to two years or more. Sequentially, it was possible to build a script to guide the development of educational technology in health, with scientific basis and reliable information that encourage BF with the target audience.

In the 3<sup>rd</sup> stage, to produce the video with cartoon, a script was created containing description of the scenes, speech of the characters based on literature, written text, which appears in certain exhibitions, and images, to guide the professional hired. The video scenes take place on a prenatal day at the nursing office, through dialogue between the nurse and the parents, addressing the importance of BF with the families, and a postpartum day at the parents' home, with the presence of the family. Still in this phase, based on the script, an animatic was produced, thus enabling a preview

of the characters and the sequence of the scenes for analysis by the research team (Figure 1).

After the animatic's approval, the first version of the video was produced with colored images to draw the viewer's attention, voiceover with different voices and drawings symbolizing the speeches. To this end, the drawings were elaborated in Illustrator software, the animations in After Effects, and the setting of the scenes and audio in Premiere, all Adobe software. The dubbing of the characters was performed by one of the researchers and her family, using a voice recorder application. Throughout the video, the benefits of breastfeeding for mother, baby and family are presented, the correct position and handle, the importance of not offering artificial nipples to the child and any other food before six months of life, in addition to tips on how to identify that the baby is well fed and the importance of the mother in maintaining a healthy diet.

In the 4<sup>th</sup> stage, 20 expert judges on the theme participated, being 90% (n=18) female and 10% (n=2) male, aged between 23 and 67 years, with an average of 41.8 years. It was identified that, from these, 75% (n=15) were nurses, 10% (n=2) were nutritionists, 10% (n=2) were from other areas of health (biologist/dentist) and 5% (n=1) were physicians. As for professional training, 20% (n=4) were specialists in the neonatal and/or pediatric area, 20% (n=4) were masters and 60% (n=12) were doctors. Regarding professional experience, 85% (n=17) had more than five years of experience, 55% (n=11) had published an article on BF and 75% (n=15) participated in a scientific event in the last two years about BF.

In Chart 1, each category of analysis is described and the number of judges who judged each item as "Inadequate and Partially Inadequate", "Partially Adequate and Totally Adequate" and the total CVI per item and the global. Among the items evaluated, there was a variation of agreement between 0.95 (95%) and 1.0 (100%).

It is noteworthy that the evaluation of the educational video was satisfactory, since the overall mean CVI reached 0.97 (97%), and all evaluative items reached a CVI equal to or greater than 0.95 (95%). Therefore, the video was considered validated by the expert judges.

In the 5<sup>th</sup> stage, we sought to adjust the educational video, according to the judges' suggestions. Despite the satisfactory evaluation, several contributions were suggested by the expert judges in order to make the material even more complete and efficient to be made available to the target audience. Chart 2 shows the suggestions and whether they were attended or not, as possible.

Some of the contributions could not be accepted, for reasons such as: more information would add too much time to the video and/or change the proposal of the main theme; some were already exposed; technical and financial infeasibility, such as including images that illustrate inadequate handle, whitish or flattened breasts, nipples with red stretch marks, stretched or deformed during breastfeeding; and the content met what is postulated by the MH, as it was suggested to evaluate the term "red stretch marks". However, the aspects that could be changed were asked to the professional illustrator and graphic designer, to carry out the adjustments.



**Figure 1** – Animatic scenes of video preview. Rio das Ostras, Brazil, 2021

Source: The authors, 2021.

Item	Inadequate and Partially Inadequate	Partially Adequate and Totally Adequate	Item CVI
<b>As for functionality</b>			
The video presents itself as an adequate tool for the purpose for which it is intended	1	19	0.95
The video allows to generate positive results regarding the teaching-learning process of the act of breastfeeding	1	19	0.95
<b>As for usability</b>			
Video is easy to use	0	20	1.00
In the video, it is easy to learn the theoretical concepts used and their applications	0	20	1.00
The video allows clients/users to easily apply the concepts addressed in the video in the daily life of breastfeeding	1	19	0.95
<b>As for efficiency</b>			
The duration (time of the video) is adequate for the user to learn the content	1	19	0.95
The scene time is consistent with the time proposed for the video	1	19	0.95
<b>As for the audiovisual technique</b>			
Video image quality is adequate for watching scenes	0	20	1.00
The narrator's tone and voice are adequate	0	20	1.00
Video voiceover is used efficiently and understandably to the target audience	0	20	1.00
It is possible to return to previous scenes as soon as desired	0	20	1.00
<b>As for the environment</b>			
The video reflects the daily lives of families	0	20	1.00
The environment reproduced in animation did not interfere with the fidelity of the breastfeeding process	0	20	1.00
<b>As for the procedure</b>			
The objectives of the educational video are clear and well structured	0	20	1.00
Breastfeeding techniques and guidance were explained correctly	0	20	1.00
The purpose of encouraging breastfeeding was presented	0	20	1.00
The objectives of encouraging breastfeeding are clear and correct	1	19	0.95
The stages of breastfeeding were identified and adequate	0	20	1.00
<b>Overall mean CVI = 0.97</b>			

**Chart 1** – Evaluation of the expert judges regarding functionality, usability, efficiency, audiovisual technique, environment, and procedure. Rio das Ostras, Brazil, 2021

Source: The authors, 2021.

Judges' suggestions	Changes attended
Cite being an introductory video and change encouraging to "promotion, protection and support" and include more the role of the father and/or family in the breastfeeding process.	NO
Establish a greater approximation between the nurse and the baby's mother at the initial moment of the orientations and in the postpartum period and a greater interaction of the father in the family environment.	YES
Mention the importance of not having obstacles between the baby's body and the mother's body, such as cloths, the baby's arm and/or the mother's hand.	NO
Mention the importance of alternating breasts, emptying one completely before offering the other and that the intermediate use of silicone, like other artificial nipples, is not recommended.	YES
Improve the family's language, as it seems technical and review the nurse's orientations and speeches so that it does not become imposed.	YES
Show closely the baby breastfeeding, so that it is possible to observe the correct handle and all the details mentioned, show the sucking scene in more detail, and include images that illustrate the inadequate/correct handle, as it is more efficient than just speech of the nurse.	NO
Review the stimulation of hydration as a way to meet the needs of the nursing mother, but not as a factor to stimulate the production of breast milk.	YES
Put an enhanced, quiet sound and change the color of the water filling the glass to transparent.	YES
Include illustrations about BF on the walls of the environments, rethink the structure of the nurse behind the table and improve spontaneity.	NO
Should the characters not wear masks, since we are in a COVID-19 pandemic, or bring information about breastfeeding and the use of mask and hand hygiene by the puerperal woman?	NO
Improve the educational process so that it is less vertical.	YES
Include, at the end, HMB contacts or breastfeeding room for mothers who need help, or the e-mail address of the HMB Global Network.	YES
Change the answer when the father asks, "And how do we know if our baby is breastfeeding properly?" to "attentive to the signs indicating that the baby is not breastfeeding properly", respecting the father's question.	NO
Explore the difficulties of breastfeeding and guide positioning to the breast, if "flattened or whitish areas" are observed on the breasts or nipples and evaluate the term "red stretch marks".	NO
The green color over the blue was difficult to visualize.	YES
Divide the video into two parts: one referring to the prenatal consultation, and the other to the immediate postpartum period, due to the length of the video.	NO

**Chart 2** – Synthesis of the qualitative analysis of the changes suggested by the judges. Rio das Ostras, Brazil, 2021

Judges' suggestions	Changes attended
Speed up the scenes so that the lines are not so slow, especially of the mother, reduce the video time and highlight in writing the other benefits of breastfeeding.	NO
When returning to the previous scene, the video is shown, temporarily muted, and it is also difficult to stop at the desired scene.	NO
Women who breastfeed, and do not have a support network, sometimes not even a partner, may not feel represented.	NO
Include that alcohol is bad for the baby and the mother as well.	YES
Correct the speech "you can leave nurse, I will follow all the "tips".	YES
Vary the tone of voice that represents the baby's father; in some moments it is difficult to understand and leave it only in one of the situations.	NO
Put the mother of the pregnant woman or mother-in-law in the prenatal consultation, keeping everyone in the breastfeeding scenario. The super special armchairs in the office do not reflect the reality of the general population.	NO
Mention that the mother undergoing surgery should also breastfeed as soon as possible and that the desire to breastfeed in the first hour of life can be included in the birth plan and remember that the team will respect the mother's choice to breastfeed or not, being a learned experience.	NO
State the objectives of the material at the beginning and cite the child's notebook.	NO
When talking about colostrum, it should be highlighted that the "descent of milk", the abundance of milk can last from 3 to 5 days, depending on the type of childbirth delivery.	NO
Include orientation for the different positions for breastfeeding, the importance of using a bra (comfortable, without cups and with wide straps) and mention the importance of not having obstacles between the baby's body and the mother's body, such as cloths, the baby's arm and /or mother's hand.	NO

**Chart 2** – Cont.

Source: The authors, 2021.

In the 6<sup>th</sup> stage, 20 people participated. Among them, 85% (n=17) were female and 15% (n=3) were male, with 75% (n=15) mothers (pregnant women or puerperal women), 15% (n=3) fathers, 5% (n=1) grandparents and 5% (n=1) aunts. The age of the participants ranged from 18 to 40 years, with a mean of 27.1 years. Regarding the level of education, 50% (n=10) have incomplete higher education, 25% (n=5) have completed higher education, 20% (n=4) have completed high school and 5% (n=1) have incomplete high school.

In Chart 3, each category of analysis and the number of people who judged each item as "Inadequate and Partially Inadequate", "Partially Adequate and Totally Adequate" are described, as well as the total CVI per item and the overall CVI. All items were evaluated with an agreement of 1.0 (100%).

From the CVI calculation, it was seen that both the Overall Mean CVI and the evaluative items reached a CVI of 1.00 (100%), therefore, the video was considered validated by the target audience.

Item	Inadequate and Partially Inadequate	Partially Adequate and Totally Adequate	Item CVI
<b>As for the objectives</b>			
The information/content is consistent with the needs of the families	0	20	1.00
Meets the objectives of providing guidance on breastfeeding	0	20	1.00
It is adequate to be used by the families	0	20	1.00
<b>As for the organization</b>			
The technology is adequate for the families	0	20	1.00
Messages are presented in clear and objective forms	0	20	1.00
The video has a logical sequence	0	20	1.00
There is consistency between the information in the video	0	20	1.00
The video is adequate	0	20	1.00
Video length is adequate	0	20	1.00
The themes portray important aspects	0	20	1.00
<b>As for the video style</b>			
The writing is in an adequate style	0	20	1.00
The text is interesting. The tone is friendly	0	20	1.00
Vocabulary is accessible	0	20	1.00
There is association of the theme of each scene with the corresponding text	0	20	1.00
The video text is clear	0	20	1.00
The writing style corresponds to the level of knowledge of the families	0	20	1.00
<b>As for the appearance</b>			
The video scenes seem organized	0	20	1.00
The illustrations are simple, preferably the drawings	0	20	1.00
The images serve to complement the texts	0	20	1.00
The images are expressive and sufficient	0	20	1.00

**Chart 3** – Evaluation of the target audience regarding objectives, organization, video style, appearance, and motivation. Rio das Ostras, Brazil, 2021

Item	Inadequate and Partially Inadequate	Partially Adequate and Totally Adequate	Item CVI
<b>As for the motivation</b>			
The video is adequate for the families	0	20	1.00
Video contents are presented logically	0	20	1.00
The interaction is invited by the texts, actions are suggested	0	20	1.00
The video addresses the issues for the daily lives of families	0	20	1.00
Invites/instigates changes in behavior and attitude	0	20	1.00
The video proposes knowledge for families	0	20	1.00
<b>Overall mean CVI = 1.00</b>			

**Chart 3 – Cont.**

Source: The authors, 2021.

In the 7<sup>th</sup> stage, the evaluation of the educational video by pregnant women, postpartum women and their families was essential, being of paramount importance to emphasize and confirm the evaluation made by the expert judges, showing that educational technology is effective for both groups.

At this stage, there were no adjustments, since the video was well evaluated and the suggestions that were indicated could not be met due to financial infeasibility and for increasing the video length too much, such as: increasing the video time and being more interactive; draw more attention to

the topic; talk about the methods that help breastfeeding, such as breastfeeding pads or pillows, and the guarantee of a quiet environment, with low light and adequate furniture to guarantee comfort for the mother and the baby.

The video was finished (Figure 2) and its final version was entitled “Encouraging breastfeeding with family members”, with a duration of 07 minutes and 38 seconds, made available on the YouTube platform and other social networks, to disseminate the educational video, as an incentive to BF with family members, reaching a greater number of individuals.



**Figure 2 –** Scenes from the finished video. Rio das Ostras, Brazil, 2021

Source: The authors, 2021.

## ■ DISCUSSION

The present study obtained as a final result the production and validation of the educational video "Encouraging breastfeeding with family members", with overall CVI and by items well above the desirable, reaching the proposed objective.

It is worth mentioning that nursing, in its care praxis, has been making use of technologies of the most diverse modalities in order to facilitate the teaching-learning process in health, especially in BF education<sup>(16)</sup>, which reinforces the importance current educational technology that is validated and available for use.

In agreement with the current research, educational materials must be correctly elaborated and validated before their use by the target population, since the validation process provides greater reliability to educational technologies, thus subsidizing practices and research focused on nursing<sup>(15)</sup>, which was rigorously respected.

The evaluation of the video by the expert judges was very satisfactory, in all aspects (functionality, usability, efficiency, audiovisual technique, environment and procedure). Still, it was evidenced in the field of suggestions that the video is extremely necessary, for bringing an easy-to-understand language, in addition to give visibility to nursing, for being a qualified health professional for the management of breastfeeding.

Such findings indicate that the technology validated in this research can be used by health professionals, including nurses, as it presents itself as an interesting audiovisual resource to be used to promote health, education and learning for those who care for<sup>(9)</sup>. Therefore, having an educational technology in health that collaborates to encourage BF corroborates the intention of the current study and another, which aimed to build, validate and evaluate an educational intervention using a flip chart to promote breastfeeding and which also highlighted the importance of nurses in health education<sup>(14)</sup>.

It is noteworthy that, regarding the duration of instructional videos, the literature points out that it is not recommended to exceed 15 minutes, as it can become tiring and induce the dispersion of the viewer's attention<sup>(12)</sup>. Thus, following this recommendation, the present video lasted 7 minutes and 38 seconds, proving to be adequate, including the evaluation of the judges and the target audience.

Regarding the voice and tone of the video voiceover, it was opted for a clear, calm, accessible language with greater understanding by the target audience, as recommended in the production of educational materials in health, with a view to improving the understanding of a theme<sup>(12)</sup>. Such

feature was considered adequate in the present study by all evaluators, therefore, the video voiceover was used efficiently and understandably to the target audience. Furthermore, the image quality of the video was also judged to be adequate for the observation of the scenes, being possible to return to the previous scene, if desired.

Making the target audience to identify with the educational video was one of the proposed goals, bringing the reality of a part of the population. It is evident, therefore, that the figures must be part of the educational material to facilitate the reader's understanding, and, for this, they need to contemplate characters, scenarios, and experiences closer to the target audience, which is in line with the literature about educational videos.<sup>(12)</sup> The material managed to reach this level, not interfering with the fidelity of the breastfeeding process, according to the evaluators.

A study on the construction and validation of an educational game for adolescents about breastfeeding also used the CVI for data analysis, and, even reaching the objective, accepted some suggestions from the judges regarding images and texts, to make the material more effective<sup>(15)</sup>, as was also performed in the present study.

Most judges agreed that the video's objectives were clear and well-structured. The purpose was presented, the techniques and orientation on breastfeeding were explained correctly, however excerpts from the video were appropriate, according to the suggestions, when possible. Another study on the validation of an educational video on clean intermittent bladder self-catheterization also received suggestions and, as a result, underwent modifications until reaching the final version<sup>(12)</sup>.

Regarding the breastfeeding process, it was suggested to emphasize the importance of alternating breasts and to mention, in addition to the pacifier, bottle or dummy, the non-recommendation of the intermediate use of other artificial nipples, which is consistent with the literature<sup>(19)</sup>. In the matter of the stimulation of hydration, it was instructed to emphasize that it is necessary to meet the needs of the nursing mother and not as a stimulus to the production of breast milk. In addition, it was suggested to include the HMB contacts or breastfeeding rooms for mothers who need help, as well as the e-mail address of the HMB Global Network. Thus, it was included a message with this information at the end.

In line with the current results, the content addressed in an audiovisual technology with the potential to sensitize the target audience needs to be understandable by anyone, being clear in its technical and scientific approach<sup>(9)</sup>. Regarding the information and content of the video, being consistent with the needs of families, meeting the objective of guide

the BF and being adequate for use by the target audience, the video proved to be effective, according to unanimity among the target audience.

In the social and family nucleus, opinions and concepts tend to stimulate actions and decisions related to BF<sup>(1)</sup>, which makes it important for the family to be informed about the benefits and ways to help the mother in the breastfeeding process, reinforcing the importance of this new educational video.

Regarding the appearance of the video, the judges absolutely agreed that the scenes are organized, have simple illustrations, the images being expressive and sufficient, and a complement to the texts. Thus, it corroborated another study, which sought to produce and validate an educational technology in video format for people and families experiencing colostomy and cancer. This study shows that interactive images contribute to sensitize, motivate, reaffirm and educate through the perception raised in the messages, by translating complex values that could not be exposed only in texts<sup>(9)</sup>.

With regard to the motivation, the video proved to be effective in all aspects, as evaluated by the target audience. Based on the result obtained through the overall CVI, it was found that the evaluation with pregnant women, postpartum women and family members was exceptional in all items (objectives, organization, video style, appearance, and motivation). This entire process made this educational technology validated by both expert judges on the theme and the target audience.

Studies of this nature reinforce that nursing needs to invest in the construction, validation and evaluation of educational technologies for care, with the objective of helping the exercise of professional activities in an agile, creative, reliable and committed way with the health and care provided<sup>(9)</sup>.

It is emphasized that it is extremely important to include the family in the orientations, since its members are a fundamental support network in the breastfeeding process. Many women lose confidence in themselves after returning home due to pressure from family and friends to offer infant formula to their children<sup>(14)</sup>. Therefore, educational materials also need to be directed to family members, as intended by the current study.

## ■ CONCLUSION

The educational video "Encouraging breastfeeding with family members" was produced and validated by expert judges on the subject and by the target audience. It is considered innovative and motivating, as it was developed based on

scientific evidence and official recommendations, in addition to helping not only mothers, but also family members in BF, in a didactic, attractive, and stimulating way. Educational technology is available for free use by health professionals and family members, at the link below [https://www.youtube.com/watch?v=\\_a8FHspBES4&t=11s](https://www.youtube.com/watch?v=_a8FHspBES4&t=11s).

The present educational technology elucidates, in an innovative and creative way, different issues related to breastfeeding, such as the benefits, the correct handle, the importance of the presence of the father and of people who support the woman. Thus, as it is a free and easily accessible technology, it can be used in the clinical practice of health professionals, including nurses, at different levels of health care, with a view to guide and encourage families for the practice of BF.

Moreover, it can also be applied in management and teaching, for example, in raising awareness among health professionals and academics about the importance of educational practices with families that promote BF, in favor of actively collaborate in reducing early weaning rates which are still high.

As a limitation of the study, it is highlighted that the validation with the target audience did not reach a variety of family members, as the largest number was of mothers. Another limitation refers to the fact that the practical applicability of educational technology was not evaluated. Such limitations are configured as suggestions for future studies. In addition, it is suggested the development, validation and evaluation of new educational videos aimed at breastfeeding, because educational health technologies must always have their content updated, to continually share relevant and reliable information.

## ■ REFERENCES

1. Dias LMO, Batista AS, Brandão IM, Carvalho FLO, Martins FL, Costa DM, et al. Amamentação: influência familiar e a importância das políticas públicas de aleitamento materno. *Saúde Foco*. 2019 [cited 2021 Jul 22];11:634-48. Available from: [https://portal.unisepe.com.br/unifia/wp-content/uploads/sites/10001/2019/06/057\\_Amamenta%C3%A7%C3%A3o-Influ%C3%Aancia-familiar-e-a-import%C3%A2ncia-das-pol%C3%ADticas-p%C3%BAblicas-de-aleitamento-materno\\_634\\_a\\_648.pdf](https://portal.unisepe.com.br/unifia/wp-content/uploads/sites/10001/2019/06/057_Amamenta%C3%A7%C3%A3o-Influ%C3%Aancia-familiar-e-a-import%C3%A2ncia-das-pol%C3%ADticas-p%C3%BAblicas-de-aleitamento-materno_634_a_648.pdf)
2. Freitas MG, Werneck AL, Borim BC. Exclusive breastfeeding: adhesion and difficulties. *J Nurs UFPE online*. 2018;12(9):2301-7. doi: <https://doi.org/10.5205/1981-8963-v12i9a234910p2301-2307-2018>
3. World Health Organization [Internet]. Geneva: WHO; 2021 [cited 2021 Jul 07]. Infant and young child feeding; [about 6 screens]. Available from: <https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding>
4. Victora CG, Bahl R, Barros AJD, França GVA, Horton S, Krasevec J, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and life long effect. *Lancet*. 2016;387(10017):475-90. doi: [http://doi.org/10.1016/S0140-6736\(15\)01024-7](http://doi.org/10.1016/S0140-6736(15)01024-7)

5. Universidade Federal do Rio de Janeiro (UFRJ). Estudo Nacional de Alimentação e Nutrição Infantil – ENANI-2019: resultados preliminares – indicadores de aleitamento materno no Brasil [Internet]. Rio de Janeiro: UFRJ; 2020 [cited 2021 Jul 02]. Available from: <https://enani.nutricao.ufrj.br/wp-content/uploads/2020/08/Relatorio-preliminar-AM-Site.pdf>
6. Austen EL, Beadle J, Lukeman S, Lukeman E, Aquino N. Using a music video parody to promote breastfeeding and increase comfort levels among young adults. *J Hum Lact*. 2017;33(3):560-9. doi: <http://doi.org/10.1177/0890334417706360>
7. Vargas GS, Alves VH, Rodrigues DP, Branco MBLR, Souza RMP, Guerra JVV. Atuação dos profissionais de saúde da estratégia saúde da família: promoção da prática do aleitamento materno. *Rev Baiana Enferm*. 2016;30(2):1-9. doi: <http://doi.org/10.18471/rbe.v30i2.14848>
8. Rodrigues AP, Dodt RCM, Oriá MOB, Almeida PC, Padoin SMM, Ximenes LB. Promotion of breastfeeding self-efficacy through a group education session: randomized clinical trial. *Texto Contexto Enferm*. 2017;26(4):e1220017. doi: <http://doi.org/10.1590/0104-07072017001220017>
9. Rosa BVC, Girardon-Perlini NMO, Gamboa NSG, Nietsche EA, Beuter M, Dalmolin A. Development and validation of audiovisual educational technology for families and people with colostomy by cancer. *Texto Contexto Enferm*. 2019;28:e20180053. doi: <http://doi.org/10.1590/1980-265X-TCE-2018-0053>
10. Adam M, Tomlinson M, Le Roux I, LeFevre AE, McMahon SA, Johnston J, et al. The Philani MOVIE study: a cluster-randomized controlled trial of a mobile video entertainment-education intervention to promote exclusive breastfeeding in South Africa. *BMC Health Serv Res*. 2019;19(1):211. doi: <http://doi.org/10.1186/s12913-019-4000-x>
11. Scorpinski RM, Ravelli APX, Julek L, Matos MR, Skupien SV, Alves FBT. Vídeos educativos em aleitamento materno: educação em saúde online. *Ext Foco*. 2020;(21):127-43. doi: <http://doi.org/10.5380/ef.v0i21.69716>
12. Faleiros F, Cucick CD, Neto ETS, Rabeh SAN, Favoretto NB, Käppler C. Development and validation of an educational video for clean intermittent bladder catheterization. *Rev Eletr Enferm*. 2019;21:53973. doi: <https://doi.org/10.5216/ree.v21.53973>
13. Salvador PTCO, Mariz CMS, Vitor AF, Ferreira Júnior MA, Fernandes MID, Martins JCA, et al. Validation of virtual learning object to support the teaching of nursing care systematization. *Rev Bras Enferm*. 2018;71(1):11-9. doi: <http://doi.org/10.1590/0034-7167-2016-0537>
14. Dodt RCM, Joventino ES, Aquino PS, Almeida PC, Ximenes LB. An experimental study of an educational intervention to promote maternal self-efficacy in breastfeeding. *Rev Latino-Am Enfermagem*. 2015 [cited 2021 Jul 01];23(4):725-32. Available from: <https://www.revistas.usp.br/rlae/article/view/105681>
15. Silva AKC, Oliveira KMM, Coelho MMF, Moura DJM, Miranda KCL. Development and validation of an educational game for adolescents about breastfeeding. *Rev Baiana Enferm*. 2017;31(1):e16476. doi: <http://doi.org/10.18471/rbe.v31i1.16476>
16. Franco MS, Carvalho JW, Lira DS, Reis ER, Cirino IP, Lima LHO. Educational technology for empowerment in maternal breastfeeding self-efficacy. *J Nurs UFPE on line*. 2019;13:240857. doi: <https://doi.org/10.5205/1981-8963.2019.240857>
17. Meedya S, Win K, Yeatman H, Fahy K, Walton K, Burgess L, et al. Developing and testing a mobile application for breast feeding support: the Milky Way application. *Women Birth*. 2021;34(2):e196-e203. doi: <http://doi.org/10.1016/j.wombi.2020.02.006>
18. White BK, Martin A, White JA, Burns SK, Maycock BR, Giglia RC, et al. Theory-based design and development of a socially connected, gamified mobile app for men about breastfeeding (milk man). *JMIR Mhealth Uhealth*. 2016;4(2):e81. doi: <http://doi.org/10.2196/mhealth.5652>
19. Ministério da Saúde (BR). Cadernos de atenção básica: saúde da criança: aleitamento materno e alimentação complementar [Internet]. 2. ed. Brasília (DF): Ministério da Saúde; 2015 [cited 2021 Jul 01]. Available from: [https://bvsms.saude.gov.br/bvs/publicacoes/saude\\_crianca\\_aleitamento\\_materno\\_cab23.pdf](https://bvsms.saude.gov.br/bvs/publicacoes/saude_crianca_aleitamento_materno_cab23.pdf)
20. Universidade Federal do Estado do Rio de Janeiro, Campos LK, coordenadora. Guia de incentivo, apoio e proteção ao aleitamento materno (CIAM-HUGG). Rio de Janeiro: UNIRIO; 2021 [cited 2021 Jul 02]. Available from: [https://espacoeducativoparaocuidadodemaebebe.files.wordpress.com/2021/03/cartilha\\_ciam19\\_03-2.pdf](https://espacoeducativoparaocuidadodemaebebe.files.wordpress.com/2021/03/cartilha_ciam19_03-2.pdf)

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