

ORIGINAL ARTICLE

**DEVELOPMENT AND VALIDATION OF EDUCATIONAL VIDEOS FOR
ADOLESCENTS ABOUT GENERAL AND ORAL HEALTH**

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Highlights: (1) Collaborative creation and validation process involving adolescents and specialists from Dentistry, Education, and Audiovisual fields, ensure methodological rigor in educational content development. (2) Educational technologies, such as videos, can be tools for disseminating scientific knowledge. (3) Internet as a powerful health tool

PRE-PROOF

(as accepted)

This is a preliminary, unedited version of a manuscript that was accepted for publication in Revista Contexto & Saúde. As a service to our readers, we are making this initial version of the manuscript available, as accepted. The article will still be reviewed, formatted and approved by the authors before being published in its final form.

<http://dx.doi.org/10.21527/2176-7114.2026.51.15704>

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How to cite:

Baldiotti ALP, Barbosa MCF, Dias MLL de S, Resende JL, Granville-Garcia AF, Fraiz FC. et al. Development and validation of educational videos for adolescents about general and oral health. Rev. Contexto & Saúde. 2026;26(51):e15704

ABSTRACT

Objective: This is a methodological study aimed at the development and validation of six educational videos—considered educational technologies—on general and oral health for adolescents, using a mixed-methods approach. **Methods:** Participated in the research ten adolescents and ten specialists from the fields of Dentistry, Education, and Audiovisual Media. The research followed the methodology proposed by Teixeira and Mota (2011) and was conducted entirely online. It was carried out in ten structured steps, including the validation of both the script and the video using interviews and validating instruments. **Results:** The videos covered the following topics: dental caries, bullying, diseases transmitted by kissing, electronic cigarettes, oral piercings, and malocclusion. The scripts were evaluated by adolescents and specialists based on their aims, structure, rationale, organization, and writing style, all of which received approval ratings of 70% or higher. The videos were assessed for content, audiovisual quality, and character representation, with all criteria achieving approval ratings of 80% or higher from both groups. Feedback from interviews was used to improve the final versions of the videos. The average duration of the videos was 2 minutes and 4 seconds. **Conclusion:** The videos were found to be appropriate in terms of content accuracy, audiovisual quality, and character representation. Therefore, they are considered suitable for adolescents aged 13 to 18 years old. Educational technologies such as the videos developed in this study can be tools for the translation of scientific knowledge.

Keywords: Health Literacy; Health Education; Instructional Film and Video.

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INTRODUCTION

Adolescence is a stage marked by physical, cognitive, and social changes¹. At this point in life, there is an increased chance of risky behaviors and a greater self-awareness and interest in one's health^{1,2}. Access to health information in this phase is important for having good health behaviors and making informed decisions³. The 21st-century adolescents are part of a world where 5.3 billion people are connected, a number that continues to grow each day, and they use the internet intuitively, as a natural part of their lives⁴. In Brazil, 96% of teenagers aged 15 to 17 use cell phones to access the internet; 85% report using it to search for information for schoolwork, and 96% maintain a presence on some form of social media⁵. Also, playing online games and engaging in social media platforms are parts of young people's routines^{6,7}. In this context, educational videos are an educational technology (ET) that can ally in scientific-based health information dissemination and topics commonly experienced by adolescents⁸.

ET can serve as an effective and accessible channel of communication between adolescents and qualified professionals and as a bridge between science and the broader population⁹. This approach has the potential to overcome financial and geographic barriers while providing access to high-quality health information¹⁰.

Health researchers have begun to adopt ET in the form of videos to disseminate scientific knowledge¹¹⁻¹⁹. The nursing area leads most of these studies. It is crucial to make ET based on a rigorous methodology, which includes validating the script before recording the video²⁰. This is something that most studies fail to do¹¹⁻¹⁶. To date, some studies have developed videos targeting various audiences, some directed at family members, others at patients themselves, and others at healthcare professionals¹¹⁻¹⁸. Existing videos in the health field cover topics such as respiratory diseases, obstetric cardiac arrest, prevention of ulcers in the elderly, care for children with disabilities, bathing immersion for newborns, excessive screen time in children, and errors in laboratory test collection¹¹⁻¹⁸. Studies specifically targeting adolescents remain scarce. We identified a study that developed a video on preventing sexual violence during adolescence; however, the intended audience for that video was nursing professionals¹⁶. One study validated an educational video specifically for adolescents, in this case, adolescents with Down syndrome, based on health literacy principles¹⁹. However, this paper did not validate the script¹⁹.

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Dentistry-related videos remain in the early stages of development. In 2014, a research group validated a script and video on oral hygiene for patients undergoing chemotherapy²¹. In 2015, Narvai and Leite produced a *cordel*-style video advocating for water fluoridation, and in 2022, Narvai also released a documentary on the Oral Health Policy implemented in São Paulo between 1989 and 2002, both of which are available on YouTube^{22,23}. However, these initiatives were not specifically targeted at adolescents and did not prioritize short, accessible formats designed to engage this audience. To the best of our knowledge, no study to date has developed educational videos specifically tailored for adolescents using a rigorous methodology that includes script validation, despite the growing number of health topics that are crucial to address in an accessible and engaging format for this population.

When aiming to communicate with adolescents, the content that tends to capture their attention is characterized by speed, accessible language, and engaging visuals²⁴. As a result, the use of short videos has gained a spotlight and ascension, especially on social media such as Instagram and TikTok²⁴. However, most studies done so far are aimed at the adult population, don't cover health topics that could be interesting to adolescents, and are longer, which makes them less attractive and less shareable.

Hence, this study aims to develop and validate six educational videos, audiovisual ET, about general and oral health specifically designed for adolescents aged between 13 and 18 years old. These videos aim to effectively communicate information on both oral and general health conditions, addressing issues frequently encountered within this age group.

METHODS

Design

This is a methodological study focused on development and validation using mixed methods. The study adhered to the protocol for the creation and validation of educational technologies (ET) proposed by Teixeira and Mota in 2011 in their book *Tecnologias Educacionais em Foco* (Educational Technologies in Focus), and following the protocol for audiovisual ET based on the work of Rosa in 2015^{20,25}.

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Team, materials, and ethical concerns

This study was developed by two Ph.D. students and three dental students guided by an experienced professor. The technological tools essential for this study encompassed a notebook, a cell phone, a tripod, and a ring light.

All work was conducted between April 2022 and May 2023 and was approved by the Research Ethics Committee of the Federal University of Minas Gerais (Protocol: 5.073.567), complying with Resolution n. 466/12 of the Guidelines and Norms for Research Involving Human Beings of the National Health Council.

Participants and Eligibility Criteria

Twenty volunteers participated in this study: ten served as expert judges, and ten represented the target audience.

According to the inclusion criteria, ten professionals from the fields of Dentistry, Education, and Audiovisual Media were selected to serve as expert judges. Audiovisual professionals were required to have completed at least a specialization course, while dentistry and education professionals needed a minimum of four years of experience and at least a master's degree in their respective areas.

According to the inclusion criteria, ten adolescents were selected to be part of the jury representing the target audience. The criteria included: adolescents aged between 13 and 18 years, with caregiver consent, and who provided their assent. Adolescents with any cognitive disability and/or who were not literate were excluded from the study.

The participants were selected by convenience sampling. The number of ten individuals per group was determined based on the methodology proposed by Teixeira and Mota (2011), which assumes that this number is sufficient to reach data saturation²⁰.

Setting:

This study was carried out entirely online through e-mails, WhatsApp (Meta Platforms, Inc. - <https://web.whatsapp.com/>), and the Zoom platform (Zoom Video Communications - <https://zoom.us/>).

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Selection of video topics:

The selection of video topics focused on health-related issues that were considered both relevant and engaging for adolescents. To identify topics of interest, the researchers conducted conversations with teenagers in their social circles, gathering insights on what they found important and intriguing. The research team then reviewed and discussed these insights until a consensus was reached. The final topics selected were: dental caries, bullying, diseases transmitted through kissing, electronic cigarettes, oral piercings, and malocclusion.

Data collection and analysis:

The study was conducted in ten stages as shown in Figure 1. Each one of these stages is explained below.

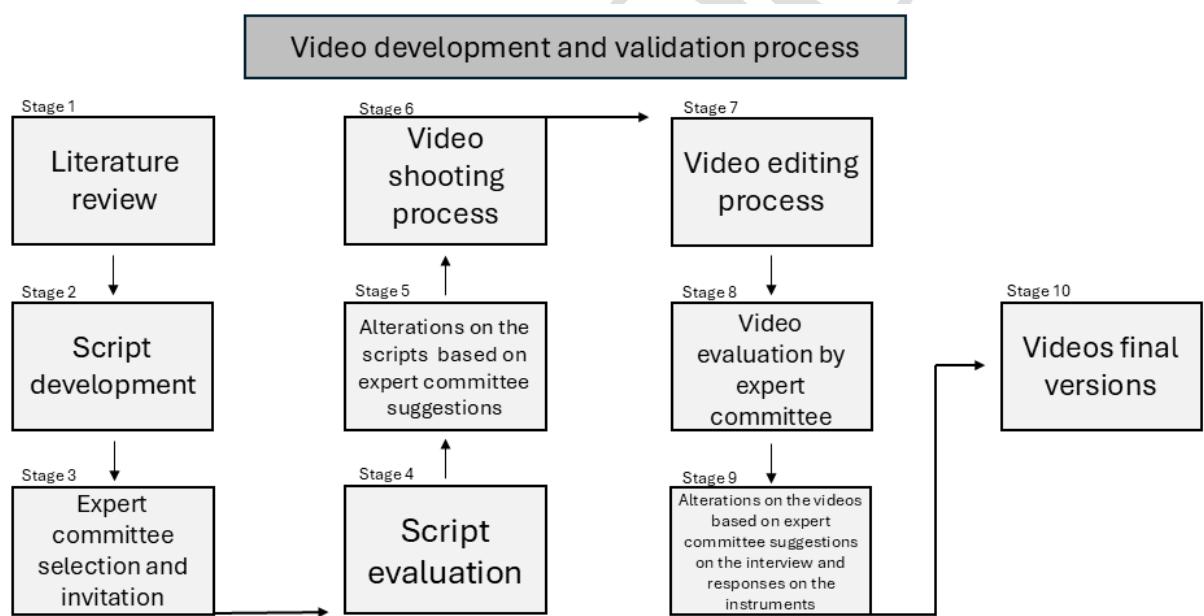


Figure 1. Research flowchart

During the first stage of the study, a comprehensive literature review on each of the topics was conducted. To support the development of the video scripts, scientific evidence was gathered through searches in the Medical Literature Analysis and Retrieval System Online (MEDLINE), using the PubMed database from the U.S. National Library of Medicine, and the National Institutes of Health.

In the second stage, the six scripts were written describing lines, environment, and audiovisual elements such as images, photos, videos, and texts. The content of each script was carefully defined to present the information in a logical, sequential, understandable, and

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engaging manner appropriate for the target age group. The videos are in Portuguese and have subtitles in English. The formal aspects of the six scripts were guided by the Brazilian version of the Clear Communication Index (BR-CDC-CCI)²⁶.

In the third stage, judges were selected, based on the eligibility criteria previously described.

In the fourth stage, the judges received the six scripts for evaluation. They were sent via email or WhatsApp. Judges were encouraged to make corrections and suggestions directly on the documents to enhance the accuracy and appeal of the content. Along with the scripts, they were given an evaluation instrument designed to assess script quality. This instrument was originally developed by Teixeira and Mota (2011) and later adapted for audiovisual ET by Rosa (2015)^{20,25}. It consists of questions about aim, structure, rationale, organization, and writing style, with four response options: Fully Adequate, Adequate, Partially Adequate, and Inadequate. For the jury composed of members of the target audience (aged 13 to 18), the language of the instrument was adjusted to ensure clarity and appropriateness for their age group.

During the fifth stage, the revisions proposed by the judges were implemented, leading to the final and validated version of the script.

The sixth stage involved the filming process, which took place indoors under controlled lighting conditions. One of the researchers performed in the video, delivering the lines from the validated script.

After the videos were recorded, the editing process was carried out in the seventh stage by a professional in audiovisual production.

In the eighth stage, the video was assessed by the judges via a recorded online meeting conducted on the Zoom platform. The videos were presented during the meeting, after which the judges filled out a quantitative evaluation instrument also developed by Teixeira e Mota and adapted by Rosa (2015)^{20,25}. In this instrument, there were questions related to content, audiovisual characteristics, and the characters' non-verbal expressions. Each question offered four response options: Fully Adequate, Adequate, Partially Adequate, and Inadequate. In addition, the judges participated in an interview as part of the qualitative evaluation, where they answered the following questions: *What did you think of the video in general? Do you consider*

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that the video achieved its goal? What would you change in the video? What did you like the most about the video?

In the ninth stage, the quantitative instruments were analyzed. The researchers examined whether there was a response pattern among the study participants by evaluating each item. The responses "Fully adequate" and "Adequate" were grouped as agreement, while "Partially adequate" and "Inadequate" were grouped as disagreement. Agreement among the expert judges was assessed based on percentage adequacy. Items that received 70% or more positive responses ("Fully adequate" and "Adequate") were considered valid. Items that did not reach this 70% threshold were revised. The qualitative analysis was based on the phenomenological discourse analysis approach developed by Martins and Bicudo²⁷. Data obtained through interviews were transcribed from video recordings. From this material, *meaning units* were extracted, and through the convergence of interpretations, it was possible to identify analytical categories, that is, elements considered important and commonly shared by the participants. The suggestions that emerged from this process were subsequently incorporated into the videos.

In the tenth and final stage, the quantitative and qualitative data were integrated to guide video improvements. Adequacy percentages from the video validation instruments were reviewed alongside the analytical categories identified in the qualitative analysis. Items with less than 70% agreement were revised, with adjustments guided by insights from the judges' interview responses. This combined analysis led to the final refinement and the production of final video versions.

The videos developed in this study will be disclosed to the population through the UFMG Pediatric Dentistry Department's official web pages.

RESULTS

Among the 10 expert judges, seven were female, and three were male. Five held a Ph.D., three had a master's degree, and two had completed a specialization course. Graduation time ranged from 4 to 37 years, with a mean of 11.6 (± 10.74) years. All judges lived in Brazil: three in the state of Minas Gerais, three in São Paulo, two in Paraná, and one in Goiás (Figure 2).

In the jury representing the target audience, there was an equal gender distribution, with five female and five male participants. Regarding their educational level, three were enrolled in elementary school and seven in high school. In terms of age, one participant was 13 years

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old, two were 14, one was 15, three were 16, and three were 18 years old. All from the state of Minas Gerais (Figure 3).

Figure 2. Experts judge's characterization

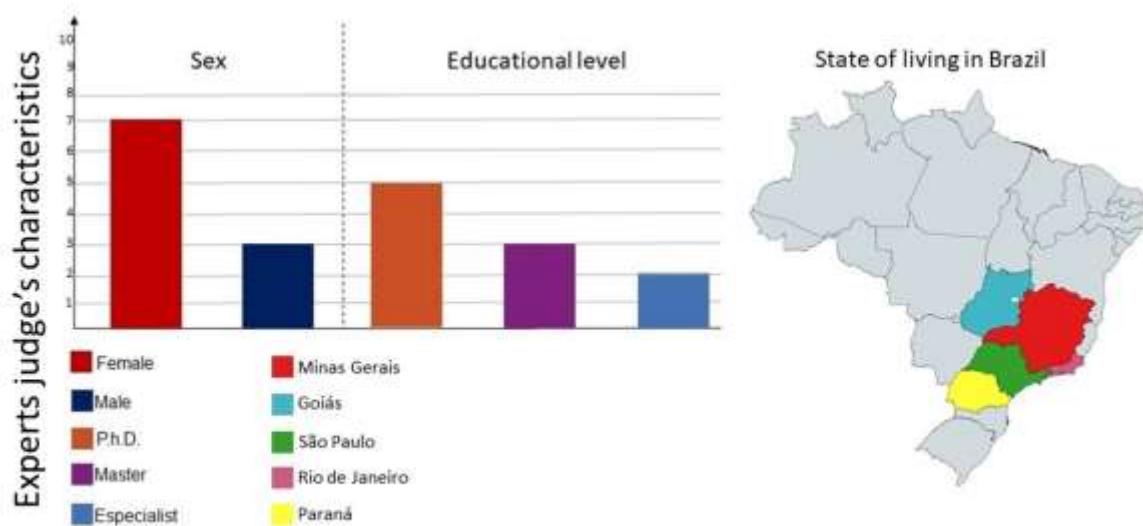
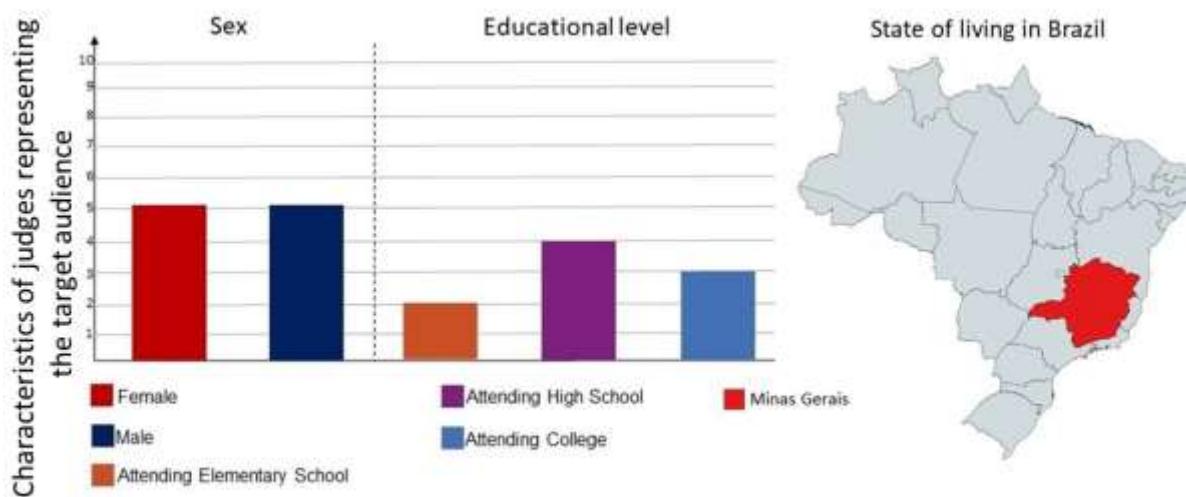


Figure 3. Characteristics of the judges representing the target audience



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Regarding the script analysis, items related to aim, structure, rationale, organization, and writing style were evaluated across all six scripts. All topics achieved approval rates equal to or greater than 70%, as shown in Table 1. The specialized jury considered script four on *electronic cigarettes* as the best followed by script six on *malocclusion*. According to the judges representing the target audience, scripts one on *dental caries* and script three on *diseases transmitted by kissing* were the ones that obtained the highest scores. All scripts evaluated by the jury had positive responses regarding the evaluated items (Table 1).

Regarding video analysis, questions related to the content, audiovisual characteristics, and characters were analyzed in each video. All topics reached rates equal to or greater than 80%, as described in Table 2. There was unanimity between the specialized jury and the jury representatives of the target audience. Both groups gave the maximum score for all items evaluated in videos three (*diseases transmitted by kissing*) and five (*Oral Piercings*) (Table 2).

In the qualitative analysis, the judges provided several suggestions to enhance the quality of the video. The analytical categories and corresponding meaning units are presented in Frame 1. All suggestions were adopted.

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Table 1. Percentage of positive responses (Fully adequate and Adequate) according to the jury regarding scripts.

Item evaluated by the specialized jury	Positive responses (%)						Item evaluated by adolescent's jury representing the target audience	Positive responses (%)						
	Scripts							Scripts						
	1	2	3	4	5	6		1	2	3	4	5	6	
Aim: The information is consistent with the everyday needs of the technology's target audience.	80%	90%	90%	100%	70%	90%	Aim: Meets the goals of the technology's target audience.	100%	90%	100%	90%	80%	90%	
Aim: The information is important for the quality of life and/or work of the technology's target audience.	90%	100%	100%	100%	100%	100%	Aim: It helps during the daily life of the target audience.	90%	90%	90%	90%	80%	90%	
Aim: It invites and/or instigates changes in behaviour and attitude.	90%	80%	90%	100%	90%	100%	Aim: It is suitable for use by any professional who works with the target audience.	80%	80%	80%	90%	80%	90%	
Aim: It can circulate in the scientific area environment.	90%	90%	100%	100%	90%	100%	Organization: The information is presented in a clear and objective manner.	100%	100%	100%	90%	80%	90%	
Aim: Meets the goals of the institutions that work with the technology target audience.	90%	90%	100%	100%	90%	90%	Organization: The themes are important and suitable to the needs.	90%	90%	90%	90%	90%	90%	
Structure: The technology is suitable for the target audience.	90%	100%	100%	100%	90%	100%	Writing style: The writing is in proper style.	90%	90%	100%	90%	90%	90%	
Structure: The information is presented in a clear and objective way.	90%	90%	70%	100%	90%	100%	Writing style: The text is interesting. The tone is friendly.	100%	90%	100%	90%	90%	90%	
Structure: The information presented is scientifically correct.	80%	90%	80%	100%	90%	100%	Writing style: The text is clear.	90%	80%	90%	90%	100%	90%	
Structure: The material is suitable for the sociocultural level of the target audience.	90%	90%	100%	100%	90%	100%	Writing style: The writing corresponds to the target audience's level of knowledge	100%	80%	90%	90%	100%	100%	
Structure: There is a content logical sequence.	100%	90%	100%	100%	100%	90%								
Structure: The information is well structured in agreement and spelling.	100%	100%	100%	100%	100%	100%								
Structure: The style of writing corresponds to the level of knowledge of the target audience.	90%	90%	100%	100%	90%	100%								
Rationale: The themes portray key aspects that should be reinforced.	100%	90%	100%	100%	100%	100%								
Rationale: The technology allows generalization and transfer of learning to different contexts.	100%	90%	100%	100%	100%	100%								
Rationale: The technology proposes the construction of knowledge.	100%	90%	100%	100%	100%	100%								

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Rationale: The technology addresses necessary issues for the target audience.	100%	100%	90%	100%	90%	100%
Rationale: The technology is suitable to be used by any professional with the target audience.	80%	80%	90%	90%	80%	90%

Table 2. Percentage of positive responses (Fully adequate and Adequate) according to the jury regarding videos.

Item evaluated by the jury	Positive responses -Specialized jury (%)						Positive responses – Target audience (%)					
	Videos						Videos					
	1	2	3	4	5	6	1	2	3	4	5	6
Content: The information/contents are coherent.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: The information/content is presented in a clear and understandable way.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: The way of presenting the content in the video is inviting for those who watch it.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: It can circulate in the scientific area environment.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: Meets project goals.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: There is a logical content sequence.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: The information presented is scientifically correct.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: Content is not repeated.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Content: The content reflects the validated script.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Audiovisual: The video audio is suitable and helps in understanding the content.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Audiovisual: The songs are appropriate for the moment they are used.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Audiovisual: The video images are suitable for the content being worked on.	90%	90%	100%	80%	100%	90%	100%	100%	100%	100%	100%	100%
Audiovisual: The scenario is suitable.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Audiovisual: The illustrations are suitable to the work content.	90%	100%	100%	80%	100%	90%	100%	100%	100%	100%	100%	100%

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Audiovisual: The images' lighting and framing are suitable.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Characters: The video participants speak clearly.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Characters: The way they present themselves is suitable.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Characters: The statements are suitable and reflect the reality.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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Frame 1. Qualitative Feedback from the Judge Committee on the Videos

VIDEO	ANALYTICAL CATEGORY	MEANING UNITS
To all videos	Making the video attractive: The judges raised concerns regarding the song volume and color choices in the video, particularly in the background elements. Also, there were concerns about the representation of diverse individuals in the images and videos, to ensure that adolescents could see themselves reflected and relate to the content.	<p><i>“A color palette with shades of purple and yellow will be more attractive than the one with warm colors that is in the script”</i></p> <p><i>“Turn down the background music volume”</i></p> <p><i>“Be aware of [diversity] representation in the images and videos”</i></p>
	Changing the subtitles: The judges raised concerns regarding the subtitles, and offered suggestions on how to make them more functional and easier to follow.	<p><i>“I suggest changing the subtitle color to yellow or black”</i></p> <p><i>“The subtitle would look better in yellow”</i></p> <p><i>“Put the subtitle a little higher [than it is]”</i></p>
Video 1 - Dental caries	Changing the floss video: The judges raised concerns about the type of dental floss shown at the beginning of the video. It was a hook-style floss, which is more expensive and less commonly used in Brazil. Therefore, they suggested replacing it with the more commonly used string-type floss to make the content more relatable.	<p><i>“I think you could change this video [with hook-style floss] to one with traditional floss”</i></p> <p><i>“Is there a video with ‘regular’ floss?”</i></p> <p><i>“This type of [hook-style] floss is more expensive and harder to find”</i></p> <p><i>“Put on the traditional [string-type] dental floss in the video”</i></p>
	Highlighting the importance of reducing sugar consumption: Since dental caries is a sugar-dependent disease, the judges suggested emphasizing the role that sugar plays in its development and the importance of reducing sugar consumption.	<p><i>“Include candy pictures in this [caries] scheme along with the bacteria...”</i></p> <p><i>“Make it clear that they [adolescents] have to reduce sugar consumption”</i></p> <p><i>“Include the sugar consumption frequency importance [to dental caries development]”</i></p>
	Highlighting the importance of fluoride: Given that fluoride is a key preventive measure against dental caries, the judges recommended highlighting its role in the video.	<p><i>“Bring more attention to fluoride”</i></p> <p><i>“I felt a lack of information about fluoride”</i></p>
	Enhancing the Video’s Relatability and Appeal: To make the video more relatable and engaging for the target audience, the judges suggested incorporating adolescent characters and increasing the font size of the text and visual schemes presented.	<p><i>“Should be adolescents in these pictures”</i></p> <p><i>“Increase the letter size in the caries scheme”</i></p>
	Making a prevention checklist:	<p><i>“It would be nice to have a checklist on how to do prevention... Eat fewer sweets, brush your teeth, etc”</i></p>

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	The judges suggested creating and adding a checklist at the end of the video with clear instructions on how to prevent dental caries.	
Video 2 – Bullying	Clarifying the Definition of Bullying: To ensure clarity and educational value, the judges recommended verifying that the definition of bullying used in the video aligns with established guidelines.	<i>“Check the bullying concept”</i>
	Seeking school professionals' help: The judges recommended encouraging adolescents to reach out to school professionals for support when experiencing bullying-related situations.	<i>“Include the suggestion to seek help from school professionals”</i>
Video 3 – Diseases transmitted by kissing	Enhancing the Video's Relatability and Appeal: To enhance the video's relatability and for the target audience, the judges recommended substituting the kissing image with one with older teenagers.	<i>“Change the kiss image”</i> <i>“Put the kiss photo with older adolescents”</i>
	Adding COVID-19: The judges suggested incorporating an image of the COVID-19 virus alongside the other microorganisms featured in the video.	<i>“Put the image that represents the COVID-19 virus together with the fungi”</i>
Video 4 – Electronic cigarettes	Changing the ‘vape’ images: The judges suggested updating the images of electronic cigarettes to more current models so that adolescents could better recognize and relate to them.	<i>“Put on a modern vape in the cover”</i> <i>“Put pictures of more current vapes”</i>
	Making it real: The judges expressed concern that certain words and images in the video might be portraying vaping appealingly, and suggested changing them.	<i>“Replace the word ‘healthy’ with the term ‘less harmful’”</i> <i>“Change that video with the girl smoking... it's attractive”</i>
Video 5 - Oral piercings	Emphasizing Key Information: The judges suggested visual or textual emphasis can help highlight critical information, making the content more effective.	<i>“Put the word ‘abscess’ written on the screen”</i> <i>“Put the lettering ‘Qualified professional’, ‘Suitable location’ and ‘Well sanitized’ on the screen on screen”</i>
Video 6 - Malocclusion	Allowing more screen time: The judges suggested keeping the images of the different types of malocclusions on screen longer to allow viewers more time to observe and understand them.	<i>“Leave the images of malocclusion types for more time on screen”</i>
	Including treatment options: The judges suggested including images of aesthetic aligners, as they are also options for orthodontic treatment.	<i>“Put pictures of the aesthetic aligners”</i>
	Highlighting the Consequences of Illegal Orthodontic Devices: The judges recommended highlighting the consequences of using illegal orthodontic devices to raise awareness about the risks and potential harm.	<i>“Place an arrow pointing to injuries caused by illegal devices”</i>

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As the final product, we developed and validated six educational videos focused on oral health, general health, and issues commonly experienced by adolescents aged 13 to 18. The average duration of the videos was 2 minutes and 4 seconds. The topic and duration of each video are detailed in Table 3.

Table 3. Each video characteristics

Video topic	Time
Video 1 – Dental caries	2:05
Video 2 – Bullying	2:38
Video 3 - Diseases transmitted by kissing	1:31
Video 4 - Electronic cigarettes	2:14
Video 5 – Oral piercings	2:22
Video 6 – Malocclusion	1:32

DISCUSSION

This study developed and validated, through a collaborative network between adolescents, specialists from Dentistry, Education, and Audiovisual fields, six scripts and videos regarding oral health, general health and situations commonly experienced in adolescence. This collaborative team ensured methodological rigor in this research and created tools to translate scientific knowledge to Brazilian adolescents between 13 and 18 years old.

Differences in evaluation criteria among the judges were observed. The Dentistry specialists focused primarily on the accuracy and relevance of the content, while the Education expert emphasized the clarity and pedagogical approach to presenting the information. In contrast, the audiovisual professionals concentrated on elements such as color schemes, background music, and subtitle quality. This highlights the value of involving multidisciplinary experts whose perspectives complement each other in pursuit of a common goal. The adolescent jury, representing the target audience, also provided valuable feedback—mainly related to the videos' appeal and the clarity and accessibility of the messages. Combined with the high scores given through evaluation instruments, this feedback reinforces confidence in the quality of the educational technologies, especially considering they are intended for their peers.

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ET studies have been growing in recent years^{11-19, 21-23}. However, most health-related studies still overlook essential steps such as script validation by both experts and the target audience, focusing solely on the final video product^{14-16,25,26}. Additionally, these videos tend to be longer, making them less engaging and harder to share. To the best of our knowledge, all published studies to date have developed only one video per study. Considering that today's adolescents were born into a digitally connected world and frequently seek health information online²⁸, this study aims to demonstrate how ET can serve as an effective and innovative communication strategy. By offering validated, youth-oriented health content in a format that aligns with their media consumption habits, this work contributes to addressing a critical gap in the field.

We acknowledge as a limitation of the study the lack of representativeness from other regions of Brazil among the evaluating judges. These factors may have inadvertently influenced the results, partially compromising the generalization of the findings. However, it is important to emphasize that the study followed a detailed and robust methodology with ten qualified professionals from different areas that showed, especially in the interviews, complementary points of view that were incorporated into the videos. The ETs developed in this study were suitable for the specialists and the target audience and obtained scores equal to or higher than 70% in all evaluated items.

Given the significant impact of the internet on adolescents' lives and its vast potential for disseminating information, it should be harnessed as a powerful tool for health education. This prompts important reflections: *Are we communicating clearly and effectively with our target audience? What other relevant health topics could be transformed into engaging, shareable videos to further benefit the population?*

CONCLUSION

This study developed and validated six educational videos addressing topics related to oral health, general health, and common situations experienced during adolescence. The videos were found to be appropriate in terms of content accuracy, audiovisual quality, and character representation. Therefore, they are considered suitable for adolescents aged 13 to 18 years old.

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Educational technologies such as the videos developed in this study can be tools for the translation of scientific knowledge. The adoption of these practices could strengthen communication between health professionals and adolescents.

REFERENCES

1. Wartberg L, Kammerl R. Empirical relationships between problematic alcohol use and a problematic use of video games, social media and the internet and their associations to mental health in adolescence. *Int J Environ Res Public Health.* 2020;17(17):6098. doi:10.3390/ijerph17176098.
2. Bozzola E, Spina G, Agostiniani R, Barni S, Russo R, Scarpato E, et al. The use of social media in children and adolescents: scoping review on the potential risks. *Int J Environ Res Public Health.* 2022;19(16):9960. doi:10.3390/ijerph19169960.
3. Chen J, Wang Y. Social media use for health purposes: systematic review. *J Med Internet Res.* 2021;23(5):e17917. doi:10.2196/17917.
4. International Telecommunication Union. Measuring digital development: facts and figures – 2022 [Internet]. Geneva: ITU; 2022 [cited 2025 May 13]. Available from: https://www.itu.int/hub/publication/d-ind-ict_mdd-2022/.
5. Centro Regional de Estudos para o Desenvolvimento da Sociedade da Informação. TIC Kids Online Brasil – 2022: Crianças e adolescentes [Internet]. São Paulo: CETIC.br; 2023 [cited 2025 May 13]. Available from: <https://cetic.br/pt/tics/kidsonline/2022/criancas/>.
6. Marin MG, Nuñez X, de Almeida RMM. Internet addiction and attention in adolescents: a systematic review. *Cyberpsychol Behav Soc Netw.* 2021;24(4):237–49. doi:10.1089/cyber.2019.0698.
7. Shannon H, Bush K, Villeneuve PJ, Hellemans KG, Guimond S. Problematic social media use in adolescents and young adults: systematic review and meta-analysis. *JMIR Ment Health.* 2022;9(4):e33450. doi:10.2196/33450.
8. Marchetti G, Fraiz FC, Nascimento WMD, Soares GMS, Assunção LRDS. Improving adolescents' periodontal health: evaluation of a mobile oral health app associated with conventional educational methods: a cluster randomized trial. *Int J Paediatr Dent.* 2018;28(4):410–9. doi:10.1111/ipd.12371.
9. Giovanelli A, Ozer EM, Dahl RE. Leveraging Technology to Improve Health in Adolescence: A Developmental Science Perspective. *J Adolesc Health.* 2020 Aug;67(2S):S7-S13. doi:10.1016/j.jadohealth.2020.02.020. PMID: 32718517; PMCID: PMC8765767.

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10. Ramos TB, Bokehi LC, Torres RDSG, Gomes MDSA, de Oliveira EB, Costa MN, et al. O papel dos vídeos do YouTube na divulgação de uso do MMS (Mineral Miracle Solution). *Rev Contexto Saúde*. 2023;23(47):e11922. doi:10.21527/2176-7114.2023.47.11922.
11. Vilaça de Almeida VA, Torres de Carvalho LW, da Conceição Antão S. Desenvolvimento e validação de vídeo educativo para cuidadores de crianças com doenças respiratórias. *Rev Movimenta*. 2024;17(1):e20240001.
12. Correia Muniz ML, Galindo Neto NM, Sá GGDM, Pereira JDCN, Nascimento MCD, Santos CSD. Construção e validação de vídeo educativo para estudantes de enfermagem sobre a parada cardiorrespiratória obstétrica. *Esc Anna Nery*. 2022;26:e20210466. doi:10.1590/2177-9465-EAN-2021-0466pt.
13. de Meneses JCBC, de Araújo Alves D, Alencar AMPG, Lisboa KWDS, de Oliveira CRT, Sampaio LRL, et al. Desenvolvimento e validação de vídeo educativo sobre cuidados podiátricos para prevenção de úlceras em idosos com diabetes. *Res Soc Dev*. 2022;11(7):e59411729777. doi:10.33448/rsd-v11i7.29777.
14. Klüsener RDCR, Bandini HHM, Ferreira ACRG, dos Santos AA. Estruturação de um vídeo educativo sobre cuidados com criança com deficiência. *Braz J Dev*. 2022;8(2):9945–58. doi:10.34117/bjdv8n2-099.
15. Ribeiro ÁM, de Sousa Neiva EL, de Melo JPL, Magalhães JM, de Sousa Batista PV. Elaboração e validação de vídeo educacional sobre o uso excessivo de telas em crianças. *Rev Eletr Acervo Saúde*. 2023;23(6):e13318. doi:10.25248/reas.e13318.2023.
16. Souza VP, Perrelli JGA, Brandão Neto W, Pereira MBFLDO, Guedes TG, Monteiro EMLM. Construção e validação de vídeo educacional para prevenção da violência sexual de adolescentes. *Texto Contexto Enferm*. 2022;31:e20210171.
17. Silva MPC, Rocha NHG, Fonseca LMM, Ruiz MT, Stacciarini TSG, Contim D. Construção e validação de um vídeo educativo sobre o banho de imersão do recém-nascido. *Rev Gaúcha Enferm*. 2022;43:e202201190112. doi:10.1590/1983-1447.2022.2190220112.pt.
18. de Moraes Ferreira R, Júnior PRR, Pinheiro OL. Construção e validação de vídeo educativo sobre erros de coleta de exames laboratoriais. *Rev Contexto Saúde*. 2023;23(47):e13552. doi:10.21527/2176-7114.2023.47.13552.
19. Silva MDCA, Cabral LA, Martins AMEGL, Galiza DDFD, Melo NFRD, Pinto MF, et al. Construção e validação de vídeos educativos para adolescentes com síndrome de Down fundamentados no letramento em saúde – Programa LISA Down. *Rev Bras Saúde Mater Infant*. 2023;23:e20220231.
20. Teixeira AE, Mota VMSS. Tecnologias educacionais em foco. 1st ed. São Paulo: Difusão; 2011.
21. Braga FTMM, Garbin LM, Marmol MT, Khouri VY, Vasques CI, Carvalho EC. Higiene bucal de pacientes em quimioterapia: construção e validação de um vídeo educativo. *Rev Enferm*

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UFPE On Line [Internet]. 2014 [cited 2025 May 13];8(10):3331–9. Available from: <https://doi.org/10.5205/1987-8963-v8i10a10064p3331-3339-2014>

22. Narvai PC, Leite CN. O dragão da Maldade contra a Fluoretação da Água [Internet]. [place unknown]: YouTube; [cited 2025 May 13]. Available from: https://www.youtube.com/watch?v=IEEn_KQyfic

23. Narvai PC. Bucaleiros: a Saúde Bucal na São Paulo de Luiza Erundina 1989-92 [Internet]. [place unknown]: YouTube; [cited 2025 May 13]. Available from: <https://www.youtube.com/watch?v=Sgwo8eJfnSs&t=571s>

24. McCashin D, Murphy CM. Using TikTok for public and youth mental health – a systematic review and content analysis. *Clin Child Psychol Psychiatry*. 2023;28(1):279–306. doi:10.1177/13591045221106608

25. Rosa BVCD, 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:e20180190.

26. Marinho AMCL, Baur C, Costa LEO, Mambrini JVDM, Ferreira FM, Borges-Oliveira AC, et al. Some psychometric properties of the Brazilian CDC Clear Communication Index. *HLRP Health Lit Res Pract*. 2022;6(2):e84–7. doi:10.3928/24748307-20220315-01

27. Martins J, Bicudo MAV. A pesquisa qualitativa em psicologia: fundamentos e recursos básicos. São Paulo: Centauro; 2005.

28. Barbosa MCF, Baldiotti ALP, Braga NS, Lopes CT, Paiva SM, Granville-Garcia AF, et al. Cross-cultural adaptation of the Digital Health Literacy Instrument (DHLI) for use on Brazilian adolescents. *Braz Dent J*. 2023;34(5):104–14.

Submitted: February 22, 2024

Accepted: July 2, 2025

Published: January 2, 2026

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All authors approved the final version of the text.
Competing interests: There is no conflict of interest.
This study was supported by the Federal University of Minas Gerais (UFMG) and financed by CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, Brasil) – Finance Code 001, CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico) – Process numbers 406204/2021-7 and 309181/2022-4, and FAPEMIG (Fundação de Amparo à Pesquisa do Estado de Minas Gerais) – Process number APQ-00360-22.
Funding:
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