



Validation of educational videos on urinary incontinence

Validação de vídeos educativos que versam sobre incontinência urinária

Validación de videos educativos que versan sobre incontinencia urinaria

Jordana Barbosa Silva 

Federal University of São Carlos (UFSCar) – São Carlos (SP) – Brazil

Juliana Falcão Padilha 

Federal University of Amapá (UNIFAP) – Macapá (AP) – Brazil

Ana Paula Rodrigues Rocha 

Federal University of São Carlos (UFSCar) – São Carlos (SP) – Brazil

Michele Elisabete Rúbio Alem 

Federal University of São Carlos (UFSCar) – São Carlos (SP) – Brazil

Patricia Driusso 

Federal University of São Carlos (UFSCar) – São Carlos (SP) – Brazil

ABSTRACT

Objective: To develop and validate educational videos in the field of Women's Health Care, focusing on urinary incontinence, its condition, and treatment. **Methods:** This is an action research conducted between November 2020 and February 2021, involving four experienced physiotherapists under the supervision of a specialist in Women's Health Care. The process was divided into four stages: (1) literature review, (2) content production, (3) video validation (assessment of content, language, illustrations, and general aspects, with a cut-off score of 0.78), and (4) accessibility and dissemination (including subtitles in English and translation into Brazilian Sign Language [LIBRAS]). **Results:** After conducting a bibliographic review to create content based on high-quality methodological articles, three different scripts were developed for the videos. These scripts were evaluated by both experts and the target audience. Following adjustments, the same professionals and the target audience reassessed the final video content in the third stage. The content validity index and the target population validity were both greater than 0.80 for most items in all educational videos. The target audience's evaluation agreement was above 90%, and most items received 100% agreement in evaluations conducted by both continent and incontinent women. After final adjustments, the videos were published on YouTube, featuring accessible content based on scientific evidence. **Conclusion:** The three videos published on the YouTube channel were validated by experts and the target audience, indicating that the content is appropriate for use as a health education strategy for women with urinary incontinence.

Descriptors: Urinary Incontinence; Instructional Films and Videos; Health Education; Physiotherapy Specialty; Women's Health.

RESUMO

Objetivo: Desenvolver e validar vídeos educativos no campo da Atenção à Saúde de Mulher, sobre incontinência urinária, condição e tratamento. **Métodos:** Pesquisa de ação realizada entre novembro de 2020 e fevereiro de 2021, envolveu quatro fisioterapeutas experientes, supervisionados por um especialista em Saúde da Mulher. O processo foi dividido em quatro etapas: (1) revisão da literatura, (2) produção de conteúdo, (3) validação dos vídeos (avaliação de conteúdo, linguagem, ilustrações e aspectos gerais, de acordo com o ponto de corte de 0,78), e (4) acessibilidade e divulgação (inclusão de legendas em inglês e tradução para LIBRAS). **Resultados:** Após o levantamento bibliográfico para criar conteúdo baseado em artigos de alta qualidade metodológica, foram desenvolvidos três roteiros diferentes para vídeos e estes foram avaliados por especialistas e público-alvo. Após ajustes, na terceira etapa, os mesmos profissionais e público-alvo avaliaram o conteúdo final dos vídeos, sendo que o índice de validade de conteúdo e a validade da população-alvo foram de >0,80 para a maioria dos itens em todos os vídeos educativos. A concordância da avaliação realizada pela população-alvo foi superior a 90% e a maioria dos itens obteve 100% de concordância na avaliação realizada por mulheres continentares e incontinentes. Após ajustes, os vídeos foram publicados no YouTube, com conteúdos acessíveis e baseados



This Open Access article is published under the a Creative Commons license which permits use, distribution and reproduction in any medium without restrictions, provided the work is correctly cited

Recebido em: 09/03/2023

Aceito em: 07/02/2024

em evidências científicas. **Conclusão:** Os três vídeos publicados no canal YouTube são válidos de acordo com a avaliação realizada por especialistas e público-alvo, indicando que o conteúdo é adequado para ser utilizado como estratégia de educação em saúde para mulheres com incontinência urinária.

Descritores: Incontinência Urinária; Filmes e vídeos instrucionais; Educação saudável; Especialidade de Fisioterapia; Saúde da mulher.

RESUMEN

Objetivo: Desarrollar y validar videos educativos en el campo de la Atención a la Salud de la Mujer, sobre incontinencia urinaria, condición y tratamiento. **Métodos:** Investigación de acción realizada entre noviembre de 2020 y febrero de 2021, con participación de cuatro fisioterapeutas experimentados, supervisados por un especialista en Salud de la Mujer. El proceso fue dividido en cuatro etapas: revisión de literatura; producción de contenido; validación de los videos (evaluación de contenido, lenguaje, ilustraciones y aspectos generales), y accesibilidad y publicidad (inclusión de leyendas en inglés y traducción para libras). **Resultados:** Después de la búsqueda bibliográfica para crear contenido basado en artículos de alta calidad metodológica, fueron desarrollados tres guiones diferentes para videos y estos fueron evaluados por especialistas y público objeto. Después de ajustes, los mismos profesionales y público objeto evaluaron el contenido final de los videos, siendo que el índice de validez de contenido y la validez de la población objeto fueron de >0,80 para la mayoría de los elementos. La concordancia de la evaluación realizada por la población objeto fue superior a 90% y la mayoría de los elementos obtuvo 100% de concordancia realizada por mujeres continentales e incontinentes. Después de ajustes, los videos fueron publicados en YouTube, con contenidos accesibles y basados en evidencias científicas. **Conclusión:** Los videos publicados son válidos de acuerdo con la evaluación realizada por especialistas y público objeto, indicando que el contenido es adecuado para ser utilizado como estrategia de educación en salud para mujeres con incontinencia urinaria.

Descriptores: Incontinencia Urinaria; Película y video educativos; Educación saludable; Especialidad de fisioterapia; Salud de la mujer.

INTRODUCTION

Urinary incontinence (UI) is more common in women but can affect individuals of various age groups⁽¹⁾. The prevalence of UI is known to range from around 5% to 70% and can increase with age⁽²⁾. This condition directly and negatively impacts quality of life⁽³⁾, with the potential to become a psychosocial issue that can cause embarrassment and negative self-perception⁽⁴⁾. However, it is estimated that only one in four women with UI seeks help from specialists to treat this specific symptom⁽⁴⁾. The reasons may be related to the embarrassment women feel when discussing the condition with a healthcare professional, as well as their belief that UI is a normal part of aging⁽⁵⁾.

The fact that many women feel uncomfortable seeking professional help may lead them to other sources of information, often found on the internet. People use social media not only for entertainment but also to seek health information⁽⁶⁾. The online video platform YouTube, for example, is used not only by patients but also by students as a source for mapping existing knowledge in the medical field⁽⁷⁻⁹⁾.

YouTube has increasingly been used as a platform for sharing information related to health education and promotion⁽¹⁰⁾. The platform reaches about 95% of internet users and has over one billion monthly viewers⁽¹¹⁾. However, a common concern about online material, especially publicly available videos, is their quality. We believe that videos published as educational material should have high-quality production and aim to present appropriate content based on high scientific evidence, formatted in an educational way. Low-quality content on YouTube can negatively impact the doctor-patient relationship⁽¹²⁾, making the quality of materials available on social media a critical factor that directly affects patient behavior. This concern should be shared among health professionals, as anyone can upload content to the platform without a prior quality and accuracy review⁽¹³⁾.

A previous study concluded that 87.5% of videos related to UI available on YouTube are not comprehensible⁽¹⁴⁾, contributing to the low percentage of quality content on the platform. Additionally, the authors reported that all videos related to urinary incontinence were published before 2016, approximately five years ago⁽¹⁴⁾. Another study also found that the primary content of YouTube videos was related to commercial advertisements, non-conservative treatments, and the use of pads to manage UI⁽¹⁵⁾. However, there is a low percentage of videos on YouTube addressing the physiology and physical therapy treatment of UI. Moreover, there is still a gap in the literature on studies that report the development and validation of videos related to UI treatment.

Recently, social media has seen an exponential increase in content related to Women's Health, yet this type of content is typically not validated before being published, which is particularly concerning when it pertains to health.

To prevent women from receiving inaccurate information about physical therapy's role in managing UI, many authors have recommended that health care professionals develop and disseminate high-quality content on UI through social media⁽¹⁴⁾. Specialized professionals should create and coordinate strategies to foster dialogue and awareness around UI, aiming to reduce the presence of risk factors related to the prevalence of the condition and increase engagement with therapies and treatment methods. Therefore, the aim of this study was to develop and validate educational videos in the field of Women's Health Care, focusing on urinary incontinence, its condition, and treatment.

METHODS

This was an action research study involving the development, production, and validation of videos related to the management of UI. The study was conducted by researchers from the Women's Health Research Laboratory (LAMU), which is part of the Physical Therapy Department at the Federal University of São Carlos (UFSCar), between November 2020 and February 2021.

The proposal was submitted and approved by the UFSCar Research Ethics Committee under the Certificate of Presentation for Ethical Consideration No. 38813520.9.0000.5504. The submission was necessary to include the participation of specialists and the target audience who would evaluate the content of the produced material. The study followed ethical guidelines, and all participants involved in the validation of the videos agreed to participate in the study by completing electronic informed consent forms.

Four physical therapy researchers were responsible for conducting this study. Each had more than three years of experience in physiotherapeutic treatment for urinary symptoms. They were supervised by a senior physiotherapist, certified as a specialist in Women's Health by the Brazilian Federal Council of Physical Therapy, who also coordinated a graduate program in Physical Therapy. The production and validation of the educational material were carried out in four stages, detailed in Figure 1.

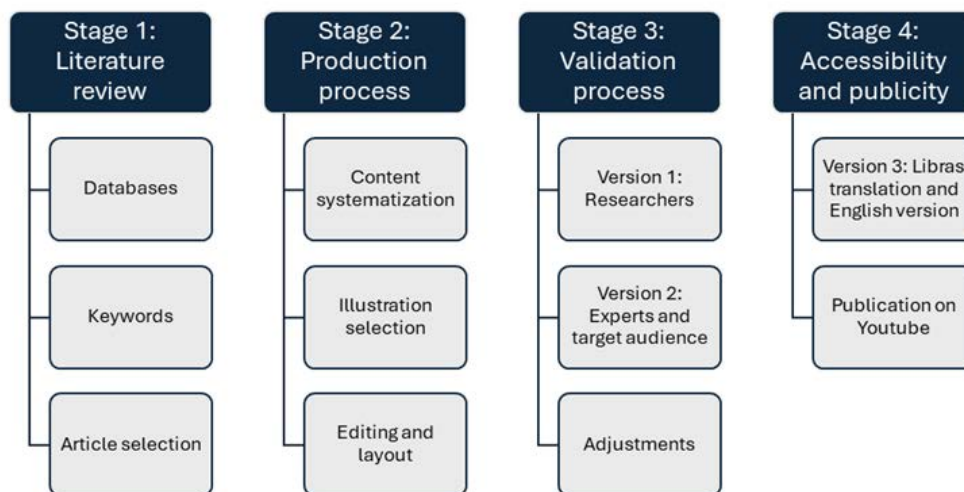


Figure 1 – Stages of the production and validation process. Prepared by the authors.

Stage 1: Literature review

Initially, a literature search was conducted for scientific articles and guidelines in the field of urogynecology (e.g., the International Continence Society (ICS) and the International Urogynecological Association (IUGA)) addressing topics such as the physiology, prevalence, and risk factors related to stress urinary incontinence, urge urinary incontinence, and mixed urinary incontinence, as well as the physical therapy approach to treating urinary dysfunctions. The following databases were consulted: PubMed, the Virtual Health Library (VHL) of the Brazilian Ministry of Health, the Latin American and Caribbean Center on Health Sciences Information (LILACS), and the Scientific Electronic Library Online (SciELO). Search terms used were taken from the Health Sciences Descriptors and Medical Subject Headings collections: "Urinary Incontinence, Stress," "Urinary Incontinence, Urge," "Urinary Bladder," "Pelvic Floor," and "Physical Therapy Modalities." The controlled term "Urinary Incontinence" was combined with the other terms

using the Boolean operator “AND.” The Boolean operator “OR” was used to combine terms with similar meanings (e.g., “urinary incontinence OR urinary leakage”). The literature review included studies^(2,16-24) published in English between 2015 and 2020, and the review period lasted one month (in September 2020).

Stage 2: Content production process

Scripts for the videos were developed by four researchers following consensus meetings over the course of one month (October 2020). The content of the educational videos was based on the results of the bibliographic research conducted in the previous stage. Three scripts were written, each for a different video.

To enhance the clarity of the material, simple language with straightforward vocabulary was used, featuring short, easy-to-understand sentences^(25,26). After systematizing the script, audiovisual elements such as images, animations, and graphic art were selected through electronic searches on Google. Once the script was finalized and the images were chosen, narration in Brazilian Portuguese was recorded to be incorporated into the material. The content to be included in the videos was sent to a professional in graphic production. Subsequently, the first version of the video prototypes was developed.

These prototypes were evaluated using the modified Delphi method⁽²⁷⁾.

Stage 3: Validation process

After the suggested changes from the team were incorporated into the videos, a third version was sent to experts and the target audience for evaluation.

Experts consisted of 40 physical therapists specializing in or certified in Women’s Health Physical Therapy, in accordance with the Brazilian Federal Council of Physical Therapy and Occupational Therapy (COFFITO).

Target audience was composed of 28 women from the community: 16 continent and 12 incontinent. The women were invited to participate after researchers reviewed the database of the laboratory where the research was conducted. Potential participants were identified based on a simple database from the Women’s Health Research Laboratory (LAMU) at the Physical Therapy Department (DFisio), Federal University of São Carlos (UFSCar), where the research took place, using previously established eligibility criteria.

The evaluation of urinary symptoms in the target audience was conducted through self-completion of the following questions from the King’s Health Questionnaire⁽²⁸⁾: “Do you leak urine when you have a strong urge to urinate?” and “Do you leak urine during physical activities, such as coughing or running?” Affirmative answers to at least one of these questions classified the women as incontinent.

Both experts and the target audience received the educational videos via email. They were instructed to individually evaluate the three videos by completing an electronic form created in Google Forms, containing specific questions that were grouped into four assessment domains: [1] content (evaluation of the information provided by the videos); [2] language (evaluation of the clarity of the language and its suitability for the target audience); [3] illustrations (evaluation of the clarity, quantity, and quality of the images shown in the videos); and [4] general aspects (evaluation of the appropriate length of the videos and their overall appearance, including colors, video quality, font size, and type).

In all domains, an open-response option was included, which both experts and the target audience could use to add personal comments on the content being evaluated. The assessments and suggestions provided by the two groups were then reviewed by the researchers and sent to the professional responsible for graphic production so that they could be incorporated into the educational material. The material review period for experts and the target audience lasted three months (from November 2020 to January 2021).

Data collected during the evaluation phase were processed using Excel 2010 software. Frequencies and percentages were calculated, as well as central tendency measures (means and medians) and dispersion (standard deviation). The content validity index (CVI) and the percentage of absolute agreement were calculated to assess the validity of the videos. A description of the items is provided below.

The content validity indexes (CVI), both at the item level (I-CVI) and the scale level (S-CVI), were used to analyze the validity of the videos. The I-CVI analysis was based on a basic mathematical formula: the number of experts who rated the content as relevant (ratings of 4 or 5 on the Likert scale) was divided by the total number of experts. The cut-off score for considering the content relevant was set at 0.78⁽²⁹⁾. The S-CVI was calculated by summing all the I-CVI values and dividing the result by the number of items in the instrument’s subtopic. In this case, the cut-off score adopted was 0.80⁽³⁰⁾.

All questions included open spaces for comments, allowing participants to provide critiques and suggestions. After receiving the evaluations and suggested adjustments, the educational material underwent further editing and

layout adjustments.

The validation by the target audience was analyzed by calculating the percentage of absolute agreement. The women were grouped into two categories: a) women with UI, and b) women without UI. Two calculations were performed. The first involved summing the positive responses from women with UI and dividing the result by the total number of incontinent women. The second involved summing the positive responses from women without UI and dividing the result by the total number of continent women. The minimum level of agreement required in literature is 75%⁽³¹⁾.

The researchers collected and reviewed all the evaluations provided by the experts and the target audience, and then submitted the suggested adjustments to the producer, who completed the production of the material.

Stage 4: Accessibility and external dissemination of the videos

English subtitles and Brazilian Sign Language (LIBRAS) translation were included to increase the accessibility of the content to foreigners and the deaf community. The text was translated into English by the researchers and reviewed by an experienced translator. The LIBRAS translation was done by an interpreter from the UFSCar LIBRAS/Portuguese Translation and Interpretation Service.

RESULTS

This study was planned and conducted in four stages. The first stage involved a literature review, followed by the transcription of information from scientific articles into educational video scripts, with the subsequent integration of the scripts with relevant images. Next, the content of the videos was evaluated and validated by specialists and the target audience. Afterward, the videos were finalized and published on YouTube, on an institutional channel related to the research laboratory of the authors of this study (<https://www.youtube.com/@lamu.ufscar>).

Literature review included 10 references published between 2015 and 2020 in English^(2,16-24), and the content was organized into three categories: 1. UI; 2. Types of UI; 3. Physical Therapy Approach in the Treatment of UI. The content of the video scripts is described below:

Video 1 script – “Do you know what urinary incontinence is?”: This video covers the definition of UI, its prevalence, and risk factors as well as the role of physiotherapists in treating this condition. The duration of video 1 is one minute and three seconds.

Video 2 script – “Do you know the types of urinary incontinence?”: This video explains the different types of UI, the physiological mechanisms of the three most common types (stress, urgency, and mixed incontinence), an introduction to female pelvic anatomy, the location of pelvic floor muscles, and the role of physiotherapists in treating urinary dysfunctions. The duration of video 2 is three minutes and five seconds.

Video 3 script – “Physical therapy treatment for urinary incontinence”: This video defines stress UI, discusses the location and function of pelvic floor muscles, introduces physiotherapy options for treating stress UI, defines urgency UI, and presents physiotherapy treatment options for urgency UI. The duration of video 3 is two minutes and 22 seconds.

In the second phase, three video production scripts were developed based on the material selected in the literature review. During the content production phase, a professional specialized in graphic content worked with the research team. In addition, specialists and the target audience were invited to evaluate the script production. After analyzing the material, suggestions were made to improve the quality and flow of information in the videos. Once the necessary changes were made, the prototypes were sent back to the production expert. This process occurred twice, which was the number of revisions needed for the researchers and the production team to reach a consensus on the quality of the material.

The analyses resulting from this process are presented in Tables 1 to 3. In the fourth stage of the project, subtitles were added to the videos to enhance accessibility and external dissemination.

Regarding the results from the third stage, 40 physiotherapists specializing in Women’s Health Physical Therapy and 28 women from the target audience evaluated the videos. Among the 28 women, 12 were incontinent (mean age 45.9±14.3 years), and 16 were continent (mean age 38.7±14.6 years). The symptoms that classified the women as incontinent included urgency urinary incontinence (n=5; 41.7%), stress urinary incontinence (n=4; 33.3%), and

mixed urinary incontinence (n=3; 25%). Table 1 presents the characteristics of the specialists and the target audience.

Table 1. Characteristics of specialists and target audience presented in frequencies and percentages, except where otherwise specified. São Carlos, São Paulo, Brazil, 2022.

Variables	Specialists (n=40)	Target audience (n=28)
Age (mean±standard deviation)	33.5±7.8	41.8±14.7
Years since graduation (mean±standard deviation)	10.3±7.6	NA
Region of Brazil		
North	1 (2.5)	1 (3.6)
Northeast	1 (2.5)	1 (3.6)
Midwest	2 (5.0)	0
Southeast	28 (70.0)	10 (35.7)
South	8 (20.0)	16 (57.1)
Education level		
High school	0	6 (21.4)
Higher education completed	2 (5.0)	6 (21.4)
Graduate	0	16 (57.2)
Specialization	12 (30.0)	NA
Master's Degree	15 (37.5)	NA
Doctorate	11 (27.5)	NA
Current occupation		
Clinical area	16 (40.0)	NA
Teaching area	4 (10.0)	NA
Clinical and teaching	20 (50.0)	NA

NA = Not applicable

Source: The authors

Table 2 presents the results of the I-CVI and S-CVI analyses. The agreement indices for all sections analyzed in the I-CVI were above the cutoff score of 0.78, except for one item (2.1), which related to the evaluation of the language used in Video 2. The S-CVI parameter, used to analyze the overall average index of the produced videos, exceeded 0.80, which validated the content.

Table 2. Content validity index (CVI) for each item of video material evaluation. São Carlos, São Paulo, Brazil, 2022.

Content evaluation sections and items	CVI*		
	Vídeo 1	Vídeo 2	Vídeo 3
Content (S-CVI)	0.96	0.89	0.97
Are the provided information accurate?	0.92	0.85	0.97
1.2 Is the information suitable for the target audience?	1.00	0.92	0.97
1.3 Is the information relevant to the target audience's context?	0.97	0.90	0.97
Language (S-CVI)	0.92	0.84	0.94
2.1 Is the language understandable and appropriate for the target audience?	0.87	0.72	0.92
2.2 Are all concepts presented clearly and objectively?	0.92	0.80	0.90
2.3 Does the video contain any errors or harmful ideas regarding the information presented?	0.97	1.00	1.00
Illustrations (S-CVI)	0.94	0.93	0.93
3.1 Is the visual arrangement appealing and well-organized?	0.92	0.92	0.90
3.2 Is the number of illustrations appropriate?	0.97	0.97	0.97
3.3 Are the illustrations relevant?	0.95	0.92	0.92
Overall (S-CVI)	0.96	0.91	0.96
4.1 Is the length of the material appropriate?	0.97	0.92	0.97
4.2 Is the length of the text (number of pages) appropriate?	0.97	0.85	0.97
4.3 Is the presentation of the material (e.g., colors) appropriate?	0.95	0.97	0.95

I-CVI: Item Content Validity Index
Source: The authors

The percentage of absolute agreement for the evaluation conducted by the target audience is presented in Table 3. All items achieved over 90% agreement, and most items received 100% agreement in the evaluations conducted by both continent and incontinent women.

Table 3. Percentage of absolute agreement in the evaluation conducted by the target audience (incontinent and continent women). São Carlos, São Paulo, Brazil, 2022.

Content evaluation sections and items	% of absolute agreement					
	Incontinent women (n=12)			Continent women (n=16)		
	Video 1	Video 2	Video 3	Video 1	Video 2	Video 3
Content						
1.1 The information in the video is useful.	100%	100%	100%	100%	100%	100%
1.2 I will use the information from the video to prevent or treat urinary incontinence.	100%	100%	100%	100%	100%	100%
1.3 I will share the video with others who may be interested in the topic.	100%	100%	100%	100%	100%	100%
Language						
2.1 I clearly understood the words used in the video and audio.	100%	100%	100%	100%	100%	100%
Illustrations						
3.1 The video is visually appealing and well-organized.	91%	100%	100%	100%	100%	100%
3.2 The number of images in the video is adequate.	100%	91%	100%	91%	100%	100%
3.3 The images are easy to understand.	100%	100%	100%	100%	100%	91%
Overall						
4.1 The length of the video is appropriate.	100%	100%	100%	100%	100%	100%
4.2 The presentation of the material is appropriate (colors, characters, audio, etc.)	100%	100%	100%	100%	100%	100%

Supplementary Materials 1 and 2 present the suggestions provided by the specialists and the target audience, respectively. These suggestions were accepted and incorporated into the revisions of content presentation, language improvement, and illustration adjustments, among other aspects.

After the material was produced, a YouTube channel titled "LAMU, UFSCar" was created, linked to the research laboratory's email, where this study was conducted. The videos were uploaded in chronological order (Video 1, Video 2, and Video 3). The content included in the educational videos was based on scientific evidence and the literature review. The first video, titled "Do you know what urinary incontinence is?", has a duration of one minute and three seconds (available from <https://youtu.be/12loL8Hp-aE>). The second video, titled "Do you know the types of urinary incontinence?", lasts three minutes and five seconds (available from <https://youtu.be/5YJlrRACLQU>). The third video is titled "Physical therapy treatment for urinary incontinence", with a duration of two minutes and 22 seconds (available from <https://youtu.be/xNHwqmr46eg>).

DISCUSSION

This study aimed to validate educational material on the physiology, evaluation methods, and treatment of women with UI. A bibliographic review was conducted to ensure the quality of the information presented in the videos. As a result, health care professionals, as well as men and women interested in the physiology, evaluation, and treatment of UI, can benefit from the published content.

While previous studies have reported on the quality of content in other YouTube videos in the field of urogynecology^(32,33), we found no articles discussing the development and validation of video materials related to UI made available online. By validating the content of educational materials, health care professionals and researchers can prevent the dissemination of nonscientific materials that do not meet the needs of the target audience⁽³⁴⁾.

Moreover, delivering educational materials through technological platforms such as videos appears to have a greater influence on people's decision-making than interventions that rely solely on written text⁽³⁵⁾. However, the creation and validation of educational materials should occur before they are uploaded to digital platforms, as YouTube videos are often not subject to review processes, meaning the content may include insufficient or even inaccurate

information. This is particularly concerning when the subject matter relates to health⁽³⁶⁾.

Globally, videos have proven to be an excellent resource for communicating health-related information^(35,37,38), serving as both educational and technological tools that promote critical awareness and health education⁽³⁹⁾. In addition to introducing new knowledge, videos can consolidate pre-existing information⁽⁴⁰⁾ and positively influence the knowledge and attitudes of viewers who access audiovisual content^(41,42).

In this study, the videos were designed to simplify information related to UI by using simple language and clear illustrations. These adjustments were necessary to convey accurate information to the target audience in a less complex manner⁽²⁵⁾. Furthermore, the evaluation by the target audience before uploading the videos can be highlighted as a strength of this study, as this step helps create material that meets the specific needs of the audience.

A key highlight of this study is the development of videos that can be used independently during health education activities. Although the process of creating the three videos was conducted simultaneously, the material is now available in a way that viewers do not need to watch all the videos at once, resulting in no interdependence between them.

Another strength of the study is the inclusion of LIBRAS translations in the educational videos, ensuring accessibility for the deaf community. The lack of educational materials to promote health and prevent diseases can hinder the implementation of strategies within the deaf community⁽⁴³⁾. Similarly, the addition of English subtitles increases the likelihood of the videos being shared in foreign communities, thereby expanding their international reach.

A possible limitation of the study is that the educational material was only made available on one online platform, which restricts access to individuals who do not have consistent internet access. However, it is hoped that the material developed in this study will be disseminated to communities by healthcare professionals who work with these groups, thereby expanding health prevention and treatment strategies. Additionally, future studies should investigate (I) the knowledge and attitudes of women after receiving information via educational video materials, and (II) the number of views these videos can accumulate.

CONCLUSION

This study was conducted according to a pre-defined plan for the development of three educational videos containing scientific information related to UI. In the digital age, it is undeniable that online content plays a significant role in providing information. However, few materials undergo a validation process to ensure their accuracy and coherence.

In this context, the production of these videos involved a rigorous content validation process by specialists in Women's Health Physical Therapy as well as by continent and incontinent women from community. After validation, the videos were made available on a free online platform, ensuring broad access to the educational material. Therefore, the material produced from this study can serve as a useful resource for preventing UI or even encouraging physiotherapeutic treatment for UI. The importance of validating the information made available to the target audience through educational videos is emphasized, reducing the likelihood of disseminating incorrect or incoherent information.

ACKNOWLEDGMENTS

We would like to thank the expert professionals and the women from the community who evaluated the quality of the content, Walklenguer for the audiovisual design, and Ityara Aguiar da Silva Pinto Girke for the LIBRAS translation.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Jordana Barbosa-Silva, Juliana Falcão Padilha, Ana Paula Rodrigues Rocha, Michele Elisabete Rúbio Alem contributed to the study design, data acquisition, analysis, interpretation, manuscript drafting, and review. **Patricia Driusso** contributed to the study design, data analysis, and final manuscript review.

FUNDING

This study was supported by the National Council for Scientific and Technological Development (process number: 140664/2019-0) and the Coordination for the Improvement of Higher Education Personnel (Financial Code 001).

REFERENCES

1. Nguyen TT, Mobashery S, Chang M. Roles of Matrix Metalloproteinases in Cutaneous Wound Healing. In: Alexandrescu V., editor. *Wound Healing - New insights into Ancient Challenges* [Internet]. London: IntechOpen; 2016. [cited 2023 Mar 9]. p.37-71. Available from: <https://doi.org/10.5772/64611>
2. Milsom I, Gyhagen M. The prevalence of urinary incontinence [Internet]. *Climacteric*. 2019 [cited 2023 Mar 9];22(3):217-222. Available from: <https://doi.org/10.1080/13697137.2018.1543263>
3. Pizzol D, Demurtas J, Celotto S, Maggi S, Smith L, Angiolelli G et al. Urinary incontinence and quality of life: a systematic review and meta-analysis [Internet]. *Aging Clin Exp Res*. 2021[cited 2023 Feb 9]; 33(1):25–35. Available from: <https://doi.org/10.1007/s40520-020-01712-y>
4. Nygaard IE, Heit M. Stress Urinary Incontinence [Internet]. *Obstetrics & Gynecology*. 2004[cited 2023 Feb 9];104(3):607-620. Available from: <https://doi.org/10.1097/01.AOG.0000137874.84862.94>
5. Fante JF, Silva TD, Mateus-Vasconcelos ECL, Ferreira CHJ, Brito LGO. Do Women have Adequate Knowledge about Pelvic Floor Dysfunctions? A Systematic Review [Internet]. *Rev. bras. ginecol. obstet*. 2019[cited 2023 Feb 9];41(08):508-19. Available from: <https://doi.org/10.1055/s-0039-1695002>
6. Smailhodzic E, Hooijsma W, Boonstra A, Langley DJ. Social media use in healthcare: A systematic review of effects on patients and on their relationship with healthcare professionals [Internet]. *BMC Health Serv Res*. 2016[cited 2023 Feb 9];16(1):442. Available from: <https://doi.org/10.1186/s12913-016-1691-0>
7. Liu Q, Geertshuis S, Gladman T, Grainger R. Student video production within health professions education: A scoping review [Internet]. *Med. educ. online*. 2022[cited 2023 Feb 9];27:2040349 Available from: <https://doi.org/10.1080/10872981.2022.2040349>
8. Karic B, Moino V, Nolin A, Andrews A, Brisson P. Evaluation of surgical educational videos available for third year medical students [Internet]. *Med. educ. online*. 2020[cited 2023 Jan 5];25:1-6. Available from: <https://doi.org/10.1080/10872981.2020.1714197>
9. Sowan AK. Multimedia applications in nursing curriculum: The process of producing streaming videos for medication administration skills [Internet]. *Int. j. med. inf*. 2014[cited 2023 Jan 5]; 83(7):529-535. Available from: <https://doi.org/10.1016/j.ijmedinf.2014.04.004>
10. Wang AT, Sandhu NP, Wittich CM, Mandrekar JN, Beckman TJ. Using Social Media to Improve Continuing Medical Education: A Survey of Course Participants [Internet]. *Mayo. Clin. Proc*. 2012[cited 2023 Jan 5];87(12):1162–1170. Available from: <https://doi.org/10.1016/j.mayocp.2012.07.024>
11. Tolu S, Yurdakul OV, Basaran B, Rezvani A. English-language videos on YouTube as a source of information on self-administer subcutaneous anti-tumour necrosis factor agent injections [Internet]. *Rheumatol.Int*. 2018 [cited 2023 Jan 5];38:1285-1292. Available from: <https://doi.org/10.1007/s00296-018-4047-8>
12. Madathil KC, Rivera-Rodriguez AJ, Greenstein JS, Gramopadhye AK. Healthcare information on YouTube: A systematic review [Internet]. *Health Informatics J*. 2015[cited 2023 Jan 5];21(3):173-94. Available from: <https://doi.org/10.1177/1460458213512220>.
13. Salman MY, Bayar G. Evaluation of quality and reliability of YouTube videos on female urinary incontinence [Internet]. *Gynecol. Obstet. Hum. Reprod*. 2021[cited 2023 Jan 12];50(10):102200. Available from: <https://doi.org/10.1016/j.jogoh.2021.102200>
14. Baran C, Baran Y. S. Youtube videos as an information source about urinary incontinence [Internet]. *Gynecol. Obstet. Hum. Reprod*. 2021[cited 2023 Jan 12];50(10):1-6. Available from: <https://doi.org/10.1016/j.jogoh.2021.102197>
15. Sajadi KP, Goldman HB. Social Networks Lack Useful Content for Incontinence [Internet]. *Urology*. 2011 [cited 2023 Jan 12];78(4):764-767. Available from: <https://doi.org/10.1016/j.urology.2011.04.074>
16. Aoki Y, Brown HW, Brubaker L, Cornu JN, Daly JO, Cartwright R. Urinary incontinence in women [Internet]. *Nature Reviews Disease Primers*. 2017 [cited 2023 Feb 5];3(17042):1-20. Available from: <https://doi.org/10.1038/nrdp.2017.42>
17. Stewart F, Berghmans B, Bø K, Glazener CMA. Electrical stimulation with non-implanted devices for stress

- urinary incontinence in women (Review) [Internet]. Cochrane Database of Systematic Reviews. 2017[cited 2023 Feb 5];(12):1-163. Available from: <https://doi.org/10.1002/14651858.CD012390.pub2>
18. Dumoulin C, Cacciari LP, Hay-Smith EJC. Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women [Internet]. Cochrane Database of Systematic Reviews [Internet]. 2018[cited 2023 Feb 5];(10):1-155. Available from: <https://doi.org/10.1002/14651858.CD005654.pub4>
 19. D'Ancona C, Haylen B, Oelke M, Abranches-Monteiro L, Arnold E, Goldman H et al. The International Continence Society (ICS) report on the terminology for adult male lower urinary tract and pelvic floor symptoms and dysfunction [Internet]. *Neurourol Urodyn*. 2019[cited 2023 Feb 5];38(2):433-477. Available from: <https://doi.org/10.1002/nau.23897>
 20. Corcos J, Przydacz M, Campeau L, Gray G, Hickling D, Honeine C at al. CUA guideline on adult overactive bladder [Internet]. *Can Urol Assoc J*. 2017[cited 2023 Mar 01];11(5): E142-E173. Available from: <https://doi.org/10.5489/cuaj.4586>
 21. Nambiar AK, Bosch R, Cruz F, Lemack GE, Thiruchelvam N, Tubaro A et al. EAU Guidelines on Assessment and Nonsurgical Management of Urinary Incontinence [Internet]. *Eur Urol*. 2018[cited 2022 Dec 01];73(4):596-609. Available from: <https://doi.org/10.1016/j.eururo.2017.12.031>
 22. Bø K, Frawley HC, Haylen BT, Abramov Y, Almeida FG, Berghmans B et al. An International Urogynecological Association (IUGA)/ International Continence Society (ICS) joint report on the terminology for the conservative and nonpharmacological management of female pelvic floor dysfunction [Internet]. *Int Urogynecol J*. 2017[cited 2022 Dec 01];28(2):191-213. Available from: <https://doi.org/10.1007/s00192-016-3123-4>
 23. Bø K. Physiotherapy management of urinary incontinence in females [Internet]. *J Physiother*. 2020 [cited 2022 Dec 01];66(3):147-154. Available from: <https://doi.org/10.1016/j.jphys.2020.06.011>
 24. Abrams P, Cardozo L, Wagg A, Wein A, editors. *Incontinence 6th Edition 2017*. Bristol, Reino Unido: ICI-ICS, International Continence Society; 2016.
 25. Rodrigues JC, Avila MA, Driusso P. Cartilha educativa para promoção da saúde entre mulheres com dismenorrea primária [Internet]. *Rev Bras Promoç Saúde*. 2021[citado 01 dez 2022]; 34:11471. Disponível em: <https://doi.org/10.5020/18061230.2021.11471>
 26. Reberte LM, Hoga LAK, Gomes ALZ. Process of construction of an educational booklet for health promotion of pregnant women [Internet]. *Rev. Latino-Am. Enfermagem*. 2012 [cited 2022 Dec 01];20(1):101-8. Available from: <https://doi.org/10.1590/S0104-11692012000100014>
 27. Boukdedid R, Abdoul H, Loustau M, Sibony O, Alberti C. Using and reporting the Delphi method for selecting healthcare quality indicators: a systematic review. *PLoS One*. 2011;6(6):e20476
 28. Tamanini JTN, D'Ancona CAL, Botega NJ, Rodrigues N Netto Júnior. Validação do "King's Health Questionnaire" para o português em mulheres com incontinência urinária [Internet]. *Rev. Saúde Pública*. 2003[citado 01 dez 2022];37(2):203-11. Disponível em: <https://doi.org/10.1590/S0034-89102003000200007>
 29. Polit DF, Beck CT. The content validity index: Are you sure you know what's being reported? critique and recommendations [Internet]. *Research in Nursing & Health*. 2006[cited 2022 Dec 01];29(5):489-97. Available from: <https://doi.org/10.1002/nur.20147>
 30. Lynn MR. Determination and quantification of content validity [Internet]. *Nursing Research*. 1986[cited 2022 Dec 01]; 35(6):382-5. Available from: <https://doi.org/10.1097/00006199-198611000-00017>
 31. Matos DAS. Confiabilidade e concordância entre juízes: aplicações na área educacional [Internet]. *Estudos em Avaliação Educacional*. 2014[citado 01 dez 2022];25(59):298-324. Available from: <https://doi.org/10.18222/eaee255920142750>
 32. Orhan A, Gokturk GG, Ozerkan K, Kasapoglu I, Aslan K, Uncu G. Mesh complications on YouTube [Internet]. *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 2020 [cited 2022 Dec 01]; 252:144-9. Available from: <https://doi.org/10.1016/j.ejogrb.2020.06.040>
 33. Çintesun FNİ, Çintesun E, Seçilmiş Ö. YouTube as a source of information on gonadotropin self-injections [Internet]. *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 2021[cited 2022 Dec 01]; 264:135-40. Available from: <https://doi.org/10.1016/j.ejogrb.2021.07.015>

34. Maia ER, Lima JF Junior, Pereira JS, Eloi AC, Gomes CC, Nobre MMF. Validação de metodologias ativas de ensino-aprendizagem na promoção da saúde alimentar infantil [Internet]. *Rev. Nutr.* 2012[citado 05 dez 2022];25(1):79-88. Disponível em: <https://doi.org/10.1590/S1415-52732012000100008>
35. Bywall KS, Veldwijk J, Hansson MG, Baecklund E, Raza K, Falahee M et al. Does being exposed to an educational tool influence patient preferences? The influence of an educational tool on patient preferences assessed by a discrete choice experiment [Internet]. *Patient Education and Counseling.* 2021[cited 2022 Dec 01];104(10):2577-85. Available from: <https://doi.org/10.1016/j.pec.2021.03.013>
36. Ranade A, Belthur M, Oka G, Malone J. YouTube as an information source for clubfoot: a quality analysis of video content [Internet]. *J Pediatr Orthop B.* 2020[cited 2022 Dec 09];29(4):375-8. Available from: <https://doi.org/10.1097/BPB.0000000000000694>
37. Dahodwala M, Geransar R, Babion J, Grood J de, Sargious P. The impact of the use of video-based educational interventions on patient outcomes in hospital settings: a scoping review [Internet]. *Patient Education and Counseling.* 2018[cited 2022 Dec 09];101(12):2116-24. Available from: <https://doi.org/10.1016/j.pec.2018.06.018>
38. Tam J, Son C, Dyck D, Schmitter-Edgecombe M. An educational video program to increase aging services technology awareness among older adults [Internet]. *Patient Education and Counseling.* 2017[cited 2022 Dec 09];100(8):1564-1571. Available from: <https://doi.org/10.1016/j.pec.2017.03.020>.
39. Razera APR, Buetto LS, Lenza N de FB, Sonobe HM. Vídeo educativo: estratégia de ensino-aprendizagem para pacientes em tratamento quimioterápico [Internet]. *Ciência, Cuidado e Saúde.* 2014[citado 05 dez 2022];13(1):173-8. Disponível em: https://periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/19659/pdf_156
40. Rosa BVC, Girardon-Perlini NMO, Gamboa NSG, Nietzsche EA, Beuter M, Dalmolin A. Development and Validation of Audiovisual Educational Technology for Families and People With Colostomy by Cancer [Internet]. *Texto & contexto enferm.* 2019[cited 2022 Dec 09];28:1-15. Available from: <https://doi.org/10.1590/1980-265X-TCE-2018-0053>
41. Davis S, Carpenter D, Blalock S, Budenz D, Lee C, Muir KW et al. A randomized controlled trial of an online educational video intervention to improve glaucoma eye drop technique [Internet]. *Patient Education and Counseling.* 2019[cited 2022 Dec 09];102(5):937-43. Available from: <https://doi.org/10.1016/j.pec.2018.12.019>
42. Febrero B, Almela-Baeza J, Ros I, Pérez-Sánchez MB, Pérez-Manzano A, Cascales P et al. The impact of information and communications technology and broadcasting on YouTube for improving attitude toward organ donation in secondary education with the creation of short films [Internet]. *Patient Education and Counseling.* 2021[cited 2022 Dec 09];104(9):2317-2326. Available from: <https://doi.org/10.1016/j.pec.2021.02.037>
43. Pimentel K, Conde I, Mendes R, Feitosa C, Paixão G, Pantoja K. Produção e Avaliação de Vídeos em Libras para Educação em Saúde [Internet]. *Rev. Educ. Espec.* 2018[citado 05 dez 2022]; 31(60):181–196. Disponível em: <https://doi.org/10.5902/1984686X24101>

Corresponding author

Patricia Driusso
Laboratório de Pesquisa em Saúde da Mulher (LAMU),
Departamento de Fisioterapia
Universidade Federal de São Carlos (UFSCar)
Rodovia Washington Luís, 235 km
Bairro: Monjolinho
CEP: 13.565-905 / São Carlos (SP) – Brasil
E-mail: pdriusso@ufscar.br

How to cite: Silva JB da, Padilha JF, Roca APR, Além MER, Driusso P. Development and criterion validation of videos related to urinary incontinence available on YouTube. *Rev Bras Promoç Saúde.* 2024;37:14325.
