http://www.periodicos.uem.br/ojs/index.php/CiencCuidSaude
ISSN on-line1984-7513
DOI: 10.4025/ciencuidsaude.v24i1.66077

ORIGINAL ARTICLE

SCRIPT FOR AN AUDIOVISUAL EDUCATIONAL TECHNOLOGY ON ENDOMETRIOSIS: PRODUCTION AND EVALUATION[1]

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ABSTRACT

Objective: to evaluate the content of a script produced to guide the development of an audiovisual educational technology on endometriosis. **Methodology:** development survey, including steps for content design, script production, content evaluation with experts and script review. In order to evaluate the content, an instrument was used with questions related to objective, structure and presentation and relevance, sent online to selected experts according to criteria of thematic expertise. In order to analyze the answers, the Agreement Index between the assertions of the instrument was considered. **Results:** the design was supported by a literature review. The script was produced with 12 topics-questions and from a two-column model. The Agreement Index on the content among the 22 experts was 0.94. Suggestions to include, change, reinforce and revise were considered, and the script was updated. The final version of the material was made available in printed format. **Conclusion:** the script was produced, evaluated and updated, serving as a guide for the development of audiovisual educational technology on endometriosis.

Keywords: Endometriosis. Educational Technology. Health Education. Validation Study.

INTRODUCTION

Endometriosis is a chronic, inflammatory and recurrent disease that occurs during the woman's reproductive period, characterized by the presence of endometrial glandular epithelium/stroma outside the uterine cavity, leading to inflammation of the site, causing lesions and adhesions in various organs [1,2].

Approximately 190 million women around the world have endometriosis. Epidemiological data indicate a prevalence of 10%-15% among women of reproductive age. Studies indicate that the disease is increasingly being detected in young women and adolescents [2,3].

Although the estimates consider women, it is worth highlighting an important differentiation: the expressions "men's sexual health" and "women's sexual health" are indicated with more emphasis, without taking into account that trans men and transmasculine people can have a uterus and, therefore, face complications similar to those that cis women experience when diagnosed with endometriosis. In this sense, there is a need to expand the discussion to the specificities that some trans and transmasculine men may have. Moreover, in the care and educational processes, one should take into account that there are "people with a uterus", who deserve adequate and sensitive care.

There are theories in the literature to explain the etiopathogenesis of endometriosis: coelomic metaplasia theory, where there is a transformation of mesothelium into endometrial tissue; endometrial theory, about stem cells, where primitive cells become displaced and migrate from the uterus; retrograde menstruation theory, where menstrual blood is refluxed through the fallopian tubes and deposited in the pelvic cavity[4].

Among the clinical manifestations evidenced in endometriosis, the following stand out: pelvic

[1]Manuscript extracted from a dissertation entitled "Audiovisual Educational Technology for Women on Endometriosis", presented to the Postgraduate Program in Public Health Nursing at the School of Health Sciences of the Amazonas State University (UEA), in 2021.

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and chronic pain of high intensity, dysmenorrhea, dyschezia, dyspareunia, fatigue, infertility and dysuria[5,6]. The clinical manifestations can affect various areas of the lives of people with a uterus, such as professional, economic, social, emotional, family and sexual life, which compromises quality of life [7,8].

One of the problems evidenced in the literature is related to the delay in the diagnosis of the disease, as the time elapsed from the onset of symptoms to the diagnosis varies on average from 4 to 6 years[9]. Because of late diagnosis, there are negative consequences for the person's life, since, in general, when he/she gets the diagnosis, he/she is at a more advanced stage. In this sense, the early diagnosis of the disease becomes an ally to achieve effective treatment and to inhibit or minimize complications.

In this context, it is important to disseminate information about the theme in question, especially among people with a uterus, leading them to know the characteristics of endometriosis, its clinical manifestations and forms of treatment, which can facilitate the identification of the disease and the search for a health professional as soon as possible[10].

Educational practices that favor the dissemination of information about endometriosis, both for symptomatic and asymptomatic people, expand and facilitate the recognition of symptoms, becoming fundamental in the fight against the disease[11].

In order to mediate educational practices on endometriosis, professionals can make use of educational technologies (ET), important tools that enhance the teaching process, favoring the dissemination of information and the expansion of knowledge[12]. An effectively produced educational technology should allow individuals to seek to develop a critical reflective behavior based on information to favor the construction of themselves[12]. In the educational work process, nurses need technological resources; and individuals, when accessing the contents contained in such resources, applies them to their needs[13].

In a literature survey, eight technologies produced in this area were identified: two protocols, two instruments for measuring quality of life, an endometriosis research system (EndoReS), a computer program (ENEAS software) to store, retrieve, compare and correlate data collected in different endometriosis centers, a self-administered questionnaire (SF-36, version 2) to measure eight health concepts and a self-administered questionnaire (DEPHI) to measure painful symptoms of endometriosis. It was found that they were produced by health professionals, with a predominance of researchers in the medical field. However, there was a lack of nurses involved in the production of technologies aimed at endometriosis, as well as technologies aimed at people with information about the disease.

Based on the above, the objective of this study is to evaluate the content of a script produced to guide the development of an audiovisual educational technology on endometriosis.

METHODOLOGY

It is a development survey[14] carried out in four stages: content outline, script production, content evaluation with experts, and script update. It was held between 2020 and 2021, by two professors from a public university in the Northern region of Brazil. The study follows the guidelines of the *Revised Standards for Quality Improvement Reporting Excellence* (SQUIRE 2.0), which provide a framework for describing new knowledge on how to improve health care[15].

In the first stage, a survey was carried out in the PubMed and CINAHL databases based on the inclusion criteria: articles published in the last 5 years, available for free access, with full text, in English, Spanish and Portuguese. The search was guided by the controlled descriptor "*endometriose*" (endometriosis), associated by means of the Boolean operator AND with the descriptors: "*epidemiologia*" (epidemiology) "*incidência"* (*incidence*), "*custos da doença*" (disease cost), "*fatores de risco*" (risk factors), "*sintomas*" (symptoms), "*comorbidade*" (comorbidity), "*diagnóstico*" (diagnosis), "*atraso de diagnóstico*" (delay in diagnosis), "*tratamento*" (treatment), "*tratamento complementar*" (complementary treatment), "*qualidade de vida*" (quality of life) and "*experiência das mulheres*" (experience and woman), with a view to identifying content on endometriosis relevant to encourage early

detection of endometriosis and self-care.

In the second stage, based on the synthesis of the content obtained in the survey, the first version of the script on endometriosis was prepared. At this stage, the researchers had the support of an audiovisual products technologist linked to the university's telehealth program. The production was based on a two-column model[16], complemented by a third, with a view to inserting images.

In the third stage the emphasis was on the content and the evaluation of a committee of experts for the evaluation[14]. In order to select the participants, seven inclusion criteria were listed[17], where at least two criteria had to be met. The snowball sampling technique was also used[14]. The application of the criteria was through consultation of the curriculum on the Lattes Platform, as well as direct consultation when indicated by another expert.

An instrument with a Likert scale was sent to the experts, where it was requested that the reading of the submitted script should be based on the following question: is the script content adequate to guide the development of audiovisual educational technology on endometriosis? The questionnaire with 17 questions related to objective, structure and presentation and relevance had a space for suggestions and comments. Each question could be scored as: "fully adequate" (FA), "adequate" (A), "partially adequate" (PA) and "inadequate" (I).

The instrument was made available digitally, through *Google Forms*. Contact was established via email. At first, the experts received the invitation letter; after receiving a positive response, the informed consent form was sent. Afterwards, a copy of the audiovisual script in PDF and the link to access the instrument were sent. In this act, they were also asked to make notes in the ET itself and insert suggestions in the instrument. The parameter established[14] in terms of the number of experts (6 to 20) was adopted.

In the analysis, the Agreement Index (AI)[18] was used, which made it possible to measure the proportion or percentage of agreement among the experts in relation to each of the questions of the instrument. The AI is calculated by the sum of all items divided by the sum of the items with the options "totally adequate" and "adequate". Items with the scores "partially adequate" and "inadequate" should be reviewed or eliminated, taking into account the suggestions made by the experts. Descriptive statistics were applied, observing the absolute and relative frequencies. A satisfactory AI was considered to be one equal to or greater than 0.70, with a level of agreement greater than or equal to 70% in the options "totally adequate" and "adequate"[14].

The survey is part of an integrated project that was approved by the Research Ethics Committee under Opinion nº 2.719.952.

RESULTS

Designing the script content

In the first stage, where a literature review was carried out, a final sample of 79 articles was obtained. After reading, the contents were extracted to compose the audiovisual script. The content was organized into 12 topics-questions: What is endometriosis? What causes endometriosis? How many women are affected by endometriosis? How much does endometriosis cost the health system? What are the risk factors of endometriosis? What does a woman feel when she has endometriosis? What other diseases can be associated with endometriosis? How is endometriosis diagnosed? What is the appropriate treatment for those living with endometriosis? Can a complementary treatment be given? How do women living with endometriosis see their quality of life? What is the experience of women living with endometriosis?

Producing the script

In the second stage, the script was structured in topics, content and illustrations. The images were taken from an image database, free to use, preserving copyrights. The script in the first version was consisted of 10 pages and 32 illustrations and was entitled "ENDOMETRIOSIS: QUESTIONS AND ANSWERS".

Evaluating the script content

Of the 60 experts who received the invitation, 22 returned the questionnaire and sent the Free and Informed Consent Form (FICF). The experts who participated were mostly female, 17 (77.3%), aged between 23 and 56 years (M=38.13 years), with time since graduation between 6 and 31 years (M= 16.16 years).

Concerning the areas of training, medicine (n=10), nursing (n=8), pharmacy, psychology, nutrology and physiotherapy (n=1 each area) emerged. As for degrees, they had doctorate (n=2), master's degree (n=9) and specialization (n=11). Regarding professional activity, care area (n=10), teaching in higher education (n=4), management of a health institution (n=2), diagnostic imaging (n=3), transplant coordination (n=1), direction of a society of experts (n=1) and coordination of a group of women with endometriosis (n=1) were cited.

As regards the objectives, 62 marks were obtained for Totally Adequate-TA (56,4%), 44 (40.0%) for Adequate-A, 2 (1.8%) for Partially Adequate (PA) and 2 (1.8%) for Inadequate-I. According to the experts' evaluation, TA and A together totaled 106 marks, representing 96.4% of the valid answers. The total AI of the block was 0.96, which represented the evaluation of the content in relation to the objectives (Table 1).

Table 1. Experts' evaluation of the objectives of the script. Manaus-AM, Brazil, 2020

Items	Scores (n=22)				
	TA	A	PA	I	*AI
Block 1 – Objectives					
1.1 The information/content is consistent with the daily needs of ET's target audience	12	09	-	01	0.95
1.2 The information/content is important for the quality of work/quality of life of ET's target audience	17	5	-	-	1.0
1.3 It invites and/or instigates changes in behavior and attitude	11	10	01	-	0.95
1.4 It can circulate in the scientific environment of the area	10	12	01	01	0.90
1.5 It meets the objectives of the institutions where it works/serves ET's target audience	12	10	-	-	1.0

*AI= Agreement Index

As for structure and presentation, 92 marks (59.7%) were obtained for TA, 53 (34.5%) for A, 9 (5.8%) for PA, with no marks for I. According to the experts' answers to items TA and A, which totaled 145 (94.2%) marks, the total AI of the block was 0.94, thus being considered validated with regard to structure and presentation (Table 2).

Table 2. Experts' evaluation of the structure and presentation of the script. Manaus-AM, Brazil, 2020

Items	Scores (n=22)				
	TA	A	PA	I	*AI
Block 2 – Structure and presentation					
1.1 The script content is appropriate for the target audience	17	4	1	-	0.95
1.2 The messages are presented in a clear and objective way	11	10	1	-	0.95
1.3 The presented information is scientifically correct	16	6	-	-	1.0
1.4 There is a logical sequence of the proposed content	11	10	1	-	0.95
1.5 The script is appropriate to the sociocultural level of the target audience	15	6	1	-	0.95
1.6. The information is well structured in terms of spelling and agreement	11	9	2	-	0.90
1.7 The style of the writing corresponds to the level of knowledge of the target audience	11	8	3		0.86

*AI= Agreement Index

Regarding relevance, 78 (70.9%) were marked for TA, 24 (21.8%) for A and 8 (7.3%) for PA. There were no marks for option I. According to the experts' answers to items TA and A, which totaled 102 (92.7%) marks, the total AI of the block was 0.92, thus being considered validated with regard to relevance (Table 3).

Table 3. Experts' evaluation of the relevance of the script. Manaus-AM, Brazil, 2020

Items	Scores (n=22)				
	TA	**A**	**PA**	**I**	***AI**
Block 3 – Relevance					
3.1 The themes portray key aspects that should be strengthened	16	5	1	-	0.95
3.2 The technology allows generalization and transfer of learning to different contexts	17	3	2	-	0.90
3.3 The technology proposes the construction of knowledge	15	6	1	-	0.95
3.4 Technology addresses the issues required for the knowledge of the target audience	15	5	2	-	0.90
3.5 The technology is suitable to be used by any professional with the target audience	15	5	2	-	0.90

*AI= Agreement Index

The global AI of the audiovisual script was 0.94, confirming the evaluation of the content with the experts. Based on the suggestions (Chart 3), the script was revised and updated, with 13 pages, 13 topics and 70 illustrations. There was no change in the title.

Chart 3. Experts' suggestions for the script. Manaus-AM, Brazil, 2020

Include
-Folk sayings used to refer to symptoms - Symptoms presented by adolescents -Mention of the man, who can observe the symptoms presented and help the person to seek specialized health service -On the topic of symptoms, the six Ds of endometriosis -Image of gestrinone implant and reproductive system anatomy -Information about adenomyosis and ovarian endometriosis, which are diseases associated with endometriosis
Alter
-Information regarding estimates of people with endometriosis around the world - Words that are difficult to understand
Reinforce
-That other theories are associated with the theory of retrograde menstruation -Why people with a higher level of education appear in studies as a prevalent group -That endometriosis is underdiagnosed and, therefore, does not appear among the main chronic non-communicable diseases -That it is possible to live with endometriosis and have a good quality of life. - That there is no cure, but that there is outpatient treatment that should be started as soon as possible -That deep endometriosis occurs in the kidneys, right diaphragm, lungs, and pericardium structures, with emphasis on characteristics. - That laparoscopic surgery is indicated only when the disease compromises quality of life and infertility -That there is no scientific evidence for complementary treatments, but that they are welcome when associated with conventional treatments, especially hormonal ones.- The most common symptoms
Revise
-Information about ovarian cysts - Indication of the biomarker CA 125 with regard to diagnosis -Spelling -Treatment information

DISCUSSION

The ET script content obtained a global AI of 0.94, with agreement among the experts regarding the content, which exceeded the minimum index of 0.70[14]. The evaluation process is fundamental for the identification of possible disagreements that may hinder the understanding of the target audience, as there is a need to consider the responsibility that the researcher has to include information with veracity and reliability.

In this study, there was the participation of experts from different areas of health, with experience in the thematic area of ET, a favorable aspect, since it is a pathology where there is little knowledge about the theme. The

participation of experts from different areas of expertise makes it possible to group different professional knowledge. The incorporation of different perspectives, in an interdisciplinary perspective, is valid in studies where the object of analysis is bordering, such as endometriosis, which favors multiple considerations in the evaluations, contributing to the potential of the material[19].

Regarding the suggestion of inclusion of the symptoms presented by adolescents in studies on endometriosis, it is highlighted that the disease usually begins in adolescence after years of dysmenorrhea, nausea and pelvic pain, and the treatment is complex at this stage, significantly affecting education, activity and social interactions[20].

Another suggested and accepted inclusion was to insert popular sayings that people use to describe the symptoms of endometriosis, which were described in a study of narratives of women with endometriosis[21]. The suggestions for changes in the estimates of people with endometriosis around the world allowed us to insert updated information in the study, giving more clarity to the data. The information transmitted must be understood and expressed through language that is understandable to people with different levels of education[19].

As regards the suggestions to reinforce complementary treatments, it is emphasized that these treatments are inserted as a way to relieve symptoms in endometriosis, being adjuvant to conventional treatments, thus acting on the anti-inflammatory activity of the disease and helping in immunity and pain management. It should be noted, however, that more studies are required to evaluate their efficacy and safety[22].

As for the suggestion to review the indication of CA 125 in the diagnosis of endometriosis, it is important to highlight that studies advise that this marker should be requested to assist in the diagnosis of deep endometriosis and ovarian endometriosis, and the guidelines for its collection should be followed to achieve effective results[23].

Audiovisual educational technologies are considered to be devices to mediate health education actions. Health education is an intervention strategy and an important tool for health promotion, as it helps individuals to make decisions about their health-disease process. When practicing health education, nurses develop and use technologies for the benefit of health promotion[24].

The script content is adequate to favor early detection and self-care among people with a uterus. Self-care encourages people to monitor signs and symptoms in themselves and, through access to information, they can develop autonomy, coping strategies, as well as build their empowerment process; since, currently, the recommendations for health education value concepts that advocate autonomy, participation, strategies to stimulate empowerment and self-care[25].

Early detection warns of the recognition of the signs and symptoms of a disease, contributing to its detection in less advanced stages, favoring the beginning of treatment, increasing the chances of success and reducing pain and positive perspectives of infertility[24].

The topics of the script cover epidemiological indications of the disease, as well as the experience of people with endometriosis, including aspects of diagnosis and treatment. Studies that experience the disease describe that it entails general physical, social and existential consequences. In order to deal with that, people had to fight for coherence, raising understanding, confrontation and the construction of new meanings[25].

Studies point to the quality of life of people living with endometriosis, which is lower than others, due to the negative impacts that the disease causes in the psychosocial and physical areas[23]. In this context, nurses, as educators, can intervene by providing information that disseminates knowledge and strategies that can direct the confrontation with chronic diseases like endometriosis[26]. In terms of early diagnosis and self-care, it is important that people with a uterus have information about endometriosis based on scientific knowledge about the disease. Scientific knowledge is interconnected with prevention, adherence and treatment; conversely, lack of knowledge results in an even greater problem, hindering the process of prevention and decision-making related to their bodies[19].

The proposition of developing a script for the development of audiovisual educational technology is supported by the fact that this type

of ET can favor and enable the construction of knowledge related to endometriosis. In educational practices, audiovisual resources have been relevant, as they bring the arrangement of elements like images, text and sound in a single resource for promoting knowledge, as it is a simple resource, with little expense, easy implementation and understanding, with no need for the presence of a professional at the time of viewing[27].

It is believed that one of the limitations of the study refers to the fact that it did not reach experts from all regions of Brazil; since, even though they were invited to meet such an amplitude, there was no response to the invitation. Regarding this aspect, it is noteworthy that the years 2020 and 2021 were atypical, where the routines of health professionals were completely affected.

CONCLUSIONS

The script was produced, evaluated and updated, and can guide the development of audiovisual educational technology to mediate health education actions on endometriosis. There is a need for public policies aimed at people affected by endometriosis, greater ease in carrying out examinations, more access to surgery and medications, more understanding of the disease by society, health professionals and the family. It is required that the diagnosis arrives earlier in people's lives. It is time to reduce the existing abysses between people in terms of diagnosis and treatment of the disease, enabling benefits through effective actions. ENDOMETRIOSIS CALLS FOR ACTION!

ROTEIRO PARA TECNOLOGIA EDUCATIVA AUDIOVISUAL SOBRE ENDOMETRIOSE: PRODUÇÃO E AVALIAÇÃO

RESUMO

Objetivo: avaliar o conteúdo de um roteiro produzido para guiar o desenvolvimento de tecnologia educativa audiovisual sobre endometriose. **Método:** pesquisa de desenvolvimento, incluindo etapas para delineamento do conteúdo, produção do roteiro, avaliação do conteúdo com especialistas e revisão do roteiro. Para a avaliação do conteúdo, utilizou-se instrumento com questões relacionadas a objetivo, estrutura e apresentação e relevância, encaminhado via *on-line* para especialistas selecionados segundo critérios de *expertise* temática. Para análise das respostas, foi considerado o Índice de Concordância entre as assertivas do instrumento. **Resultados:** o delineamento foi subsidiado por revisão da literatura. O roteiro foi produzido com 12 tópicos-questões e a partir de um modelo de duas colunas. O Índice de Concordância sobre o conteúdo entre os 22 especialistas foi de 0,94. As sugestões de incluir, alterar, reforçar e revisar foram consideradas, e o roteiro foi atualizado. A versão final do material foi disponibilizada no formato impresso. **Conclusão:** o roteiro foi produzido, avaliado e atualizado, servindo de guia para o desenvolvimento de tecnologia educativa audiovisual sobre endometriose.

Palavras-chave: Endometriose. Tecnologia Educacional. Educação em Saúde. Estudo de Validação

GUION PARA TECNOLOGÍA EDUCATIVA AUDIOVISUAL SOBRE ENDOMETRIOSIS: PRODUCCIÓN Y EVALUACIÓN

RESUMEN

Objetivo: evaluar el contenido de un guion producido para dirigir el desarrollo de tecnología educativa audiovisual sobre endometriosis. **Método**: investigación de desarrollo, incluyendo pasos para el diseño del contenido, producción del guion, evaluación del contenido con expertos y revisión del guion. Para la evaluación del contenido, se utilizó un instrumento con preguntas relacionadas con el objetivo; la estructura y presentación; y relevancia, enviado en línea a especialistas seleccionados según criterios de experticia temática. Para el análisis de las respuestas, se consideró el Índice de Concordancia entre las afirmaciones del instrumento. **Resultados**: el diseño fue auxiliado por revisión de la literatura. El guion fue producido con 12 temas-preguntas y a partir de un modelo de dos columnas. El Índice de Concordancia sobre el contenido entre los 22 expertos fue de 0,94. Las sugerencias de incluir, modificar, reforzar y revisar fueron consideradas, y se actualizó el guion. La versión final del material se ha puesto a disposición en formato impreso. **Conclusión**: el guion fue producido, evaluado y actualizado, sirviendo de guía para el desarrollo de tecnología educativa audiovisual sobre endometriosis.

Palabras clave: Endometriosis. Tecnología Educacional. Educación en Salud. Estudio de Validación.

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Submitted:30/11/2022
Accepted: 22/10/2024