CONTENT VALIDATION OF AN EDUCATIONAL TECHNOLOGY ABOUT MEN'S HEALTH

VALIDAÇÃO DE CONTEÚDO DE UMA TECNOLOGIA Educacional sobre saúde do homem

VALIDACIÓN DE CONTENIDO DE UNA TECNOLOGÍA EDUCATIVA SOBRE LA SALUD DEL HOMBRE

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Objective: to validate the content of the educational technology "Men's Health: tips for a healthy life". Method: this is a methodological study of content validation with expert judges. A validated questionnaire was applied using the Likert scale. The instrument assesses three blocks of aspects: objectives, structure and presentation, relevance. Descriptive statistics were used to obtain the content validity index. Nine expert judges participated. Results: the content validity index by blocks was 0.84, 0.73, 0.84. The overall index was 0.78. The judges' suggestions contributed to the review of the educational technology and were considered and included in the final version. Conclusion: the manual was validated as an educational technology to disseminate relevant information to the male population and also to be a mediating device for educational practices of the multidisciplinary team, especially for nurses, which can positively contribute to the quality of life of the male population.

Descriptors: Men's Health. Education in Health. Biomedical Technology. Educational Technology. Health Technology.

Objetivo: validar o conteúdo da tecnologia educacional "Saúde do Homem: dicas para uma vida saudável". Método: trata-se de estudo metodológico de validação de conteúdo com juízes especialistas. Aplicou-se um questionário validado que utiliza a escala do tipo Likert. O instrumento avalia três blocos de aspectos: objetivos, estrutura e apresentação, relevância. Utilizou-se a estatística descritiva para a obtenção do índice de validade de conteúdo. Participaram nove juízes-especialistas. Resultados: o índice de validade de conteúdo por blocos foi de 0,84, 0,73, 0,84. O índice geral foi de 0,78. As sugestões dos juízes contribuíram para a revisão da tecnologia educacional e foram consideradas e incluídas na versão final. Conclusão: validou-se o manual como tecnologia educacional para disseminar informações relevantes para a população masculina e também ser um dispositivo mediador de práticas

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educativas da equipe multidisciplinar, principalmente para o enfermeiro, podendo contribuir positivamente na qualidade de vida da população do sexo masculino.

Descritores: Saúde do Homem. Educação em Saúde. Tecnologia Biomédica. Tecnologia Educacional. Tecnologia em Saúde.

Objetivo: validar el contenido de la tecnología educativa "Salud del Hombre: consejos para una vida saludable". Método: estudio metodológico de validación de contenido con jueces expertos. Se aplicó un cuestionario validado utilizando la escala Likert. El instrumento evalúa tres bloques de aspectos: objetivos; estructura y presentación; relevancia. Se utilizaron estadísticas descriptivas para obtener el índice de validez de contenido. Participaron nueve jueces expertos. Resultados: el índice de validez de contenido por bloques fue de 0.84, 0.73, 0.84. El índice general fue de 0, 78. Las sugerencias de los jueces contribuyeron a la revisión de la tecnología educativa y fueron consideradas e incluidas en la versión final. Conclusión: el manual fue validado como una tecnología educativa para difundir información relevante a la población masculina y también como un dispositivo mediador para las prácticas educativas del equipo multidisciplinario, especialmente para las enfermeras, lo que puede contribuir positivamente a la calidad de vida de la población masculina.

Descriptores: Salud del Hombre. Educación en Salud. Tecnología Biomédica. Tecnología Educacional. Tecnología de Salud.

Introduction

With special increase and diffusion in the area of Nursing, the development of Educational Technologies (ET) to support educational practices in different contexts for multiple subjects stands out in the area of health. Such practices aim to not only disseminate information but also to promote self-care among the population. An ET comprises, in an organized and systematized way, scientific knowledge and evidence that are available in the literature, with a view to operating a translation for the target audience for whom it is intended. It is noteworthy, however, that in addition to production, ET require a validation process⁽¹⁻²⁾.

This study focuses on the need for ET that can mediate the educational praxis of nurses and other health professionals with the male population. The first studies on men's health were developed in the United States of America in the 1970s, which, since that time, has already shown enormous differences in relation to morbidity and mortality in a comparison with women⁽³⁾.

In Brazil, in 2009, the Política Nacional de Atenção Integrada à Saúde do Homem – PNAISH (National Policy for Integrated Attention to Men's Health, in free translation) was launched, and the objectives are: to qualify male health care from the perspective of lines of care that safeguard comprehensiveness and to qualify primary care so that it is not restricted to recovery only, ensuring, above all, the promotion of health and the prevention of avoidable diseases⁽⁴⁾.

It is also important to highlight, in relation to the health of the male population, that studies have pointed out difficulties, obstacles and resistance in this population, considering the specificities of being a man in coping with the health-disease process. Such challenges need to be considered by Nursing. This consideration is important, since the number of studies on the *caring-care* practices in relation to men's health are still considered insufficient, aggravated by the low presence of males in the different health services⁽⁴⁾.

The higher frequency of deaths among the male population due to chronic, degenerative and violent diseases, raises not only studies, but also products that favor the promotion of health and disease prevention, the awareness of the male population regarding risky behaviors, and education in health in schools. Such products will be extremely useful for changing the current scenario⁽⁵⁾.

In this perspective of thinking about products for health education, a central aspect of this study, an ET can be an aid and consultation device, with a facilitating character, as it contains specific guidelines and information for a specific target audience, and can offer support in a way that they participate with more security and understanding of the health-disease process⁽⁶⁾.

Taking into account the issues addressed, a printed educational technology was produced,

entitled "Men's Health: tips for a healthy life", with a view to subsidizing educational health practices towards the male population.

After this production, the following questions emerged: Is the manual produced a valid device for mediating educational practices with the male population? What are the suggestions of expert judges on the content of the manual?

This study aims to validate the content of the educational technology "Men's Health: tips for a healthy life".

Method

This is a methodological study, with an emphasis on content validation, through the manifestation of expert judges. Methodological research focuses on production, testing and/or validation processes, as well as the improvement of different devices and also methodological strategies⁽⁷⁾. In the content validation, the respective construct, its scope and representation were evaluated⁽¹⁻²⁾.

For the production of an ET, a literature review was carried out. Then, after reading the final sample, the selection of themes that could contribute to the composition of the first version was proceeded⁽⁸⁾. In the review, no other product created for this purpose was found. The technology produced had 25 pages typed in the Word 2016 text document creation and editing software, in a predominantly Georgia 10 font, in portrait mode, on A4 paper.

The ET was organized into topics of interest to the target audience, with 16 themes emerging from the literature review, containing the following parts: cover, summary, 1. presentation, 2. sedentary lifestyle, 3. obesity, 4. smoking, 5. alcoholism, 6. main factors for the protection of men's health, 7. healthy eating, 8. physical activity, 9. main health problems for men, 10. hypertension, 11. diabetes, 12. neoplasms, 13. traffic accidents / violence, 14. sexual health of men, 15. sexually transmitted diseases, 16. erectile dysfunction (sexual impotence), closing words, references. The study was anchored in the practice scenarios of the Universidade do Estado do Amazonas (UEA), Manaus (AM), Brazil, from August 2017 to July 2018.

For content validation, expert judges were selected, according to the following criteria of expertise: having proven scientific production on men's health (articles and papers presented at events); having a master's or doctor's degree in health; have proven clinical and/or assistance experience (minimum of three years) with male populations; be identified and recognized by at least three other specialists as an expert on the subject (snowball sampling). Such criteria have been used in studies of content validation of educational technologies^(1,6).

After the identification and selection of the group of expert judges, out of a total of 15, 9 met the established criteria and participated in the validation. An invitation was then made to participate in the research, explaining the objectives and procedures, and those who agreed, signed the Free and Informed Consent Form. Each expert judge received an email with a PDF copy of the booklet and a link with the instrument to be completed on the Google Forms online platform. At this time, they were also asked to make notes on the ET, which was beneficial and positive.

For data collection, a validated questionnaire was applied, using the Likert scale⁽⁶⁾. The instrument is organized into three blocks: objective, structure and presentation, relevance. After the evaluative assignment of the judges, a score was obtained that varied from 0.00 - 1.00 in each of the items of each block. Each block has its subdivision into topics, which aims to facilitate the attribution of scores. The objective block contains five topics, the structure and presentation block contains twelve topics, and finally, the relevance block also contains 5 evaluative topics.

A Content Validity Index (CVI) was used. An instrument becomes validated when multiple measures are used to answer a single research question. In this regard, researchers should calculate the agreement index, which indicates the extent to which the expert judges' opinions/ considerations/ suggestions are appropriate. The agreement value, as a standard to establish the excellence of the content validity of what is being measured, can vary from 0.7 to $1.0^{(6)}$. We chose to adopt a CVI greater than 0.7 for the consideration of validity.

For data analysis, statistical techniques were applied, and, specifically, the analysis of behavioral representation. The tendency of the judges was observed according to their answers, whether they agree or disagree. Valuation was verified for most responses to the instrument. Therefore, it was possible to infer whether or not there was a significant indication of disagreement.

Ethical aspects were respected at all stages. This study was guided by Resolution no. 466/12, of the Conselho Nacional de Saúde – CNS (National Health Council, in free translation). The project was approved by the Research Ethics Committee of the Universidade do Estado do Amazonas, CAAE 61776516.0.0000.5016.

Results

Nine expert judges participated in the validation. As for age, they were between 34 and 63 years old; as for sex, five female and four male; as for the training area, four had studied Medicine, three, Nursing, two, Psychology; as for training time, from 10 to 37 years; in relation to the current function, all were teachers of higher education. Regarding the degree, five had a doctorate and four a master's degree; concerning academic titles, three in urology, one in nursing, one in psychology, one in rehabilitation, one in surgery, and one in science.

In relation to "Block 1 – Objectives", which refer to the purposes, goals and points that are desired to be achieved with the use of the booklet, 16 (35.56%) Totally Adequate (TA), 22 (48.89 %) Adequate (A), 7 (15.56%) Partially Adequate (PA), and none Inadequate (I). According to the answer options given by the judges, the TA and A scores totaled 38, which corresponds to a Content Validity Index (CVI) of 0.84 (Table 1).

| Block 1 | Totally Adequate | Adequate | Partially Adequate | Inadequate |
|---------|------------------|-------------|--------------------|------------|
| 1.1 | 3 | 5 | 1 | 0 |
| 1.2 | 3 | 6 | 0 | 0 |
| 1.3 | 3 | 2 | 4 | 0 |
| 1.4 | 4 | 4 | 1 | 0 |
| 1.5 | 3 | 5 | 1 | 0 |
| TOTAL | 16 (35.56%) | 22 (48.89%) | 7 (15.5 6%) | 0 |

Table 1 - Evaluation of the first part of the instrument on objectives. Manaus, Amazonas, Brazil - 2020

Source: Own elaboration.

In relation to "Block 2 - Structure and presentation", which refers to the way of presenting the guidelines, which includes the general organization, structure, presentation strategy, coherence and formatting, 34 markings for TA were obtained (32.08 %), 48 for A (45.28%), 21 for PA (19.81%), and 3 for I (2.83%). According to the judges' evaluation, PA and A totaled 82 together, representing 77.36% of valid responses. The CVI was 0.73 (Table 2).

Table 2 – Evaluation of the second part of the instrument on structure and presentation. Manaus,Amazonas, Brazil – 2020(continued)

| Block 2 | Totally Adequate | Adequate | Partially Adequate | Inadequate |
|---------|------------------|----------|--------------------|------------|
| 2.1 | 4 | 3 | 2 | 0 |
| 2.2 | 3 | 2 | 3 | 1 |
| 2.3 | 3 | 4 | 2 | 0 |

| Block 2 | Totally Adequate | Adequate | Partially Adequate | Inadequate |
|---------|------------------|-------------|--------------------|------------|
| 2.4 | 2 | 5 | 1 | 1 |
| 2.5 | 3 | 3 | 1 | 0 |
| 2.6 | 3 | 3 | 3 | 0 |
| 2.7 | 4 | 3 | 1 | 1 |
| 2.8 | 3 | 4 | 2 | 0 |
| 2.9 | 3 | 5 | 1 | 0 |
| 2.10 | 3 | 5 | 1 | 0 |
| 2.11 | 2 | 6 | 1 | 0 |
| 2.12 | 1 | 5 | 3 | 0 |
| TOTAL | 34 (32.08%) | 48 (45.28%) | 21 (19.81%) | 3 (2.83%) |

 Table 2 – Evaluation of the second part of the instrument on structure and presentation. Manaus,

 Amazonas, Brazil – 2020
 (conclusion)

Source: Own elaboration.

In relation to "Block 3 - Relevance", which refers to the degree of significance of the educational material presented, there were 20 (44.44%) markings for TA, 18 (40.00%) markings for A, 7 (15.56%) marking for PA and no marking

for I. According to the answer options given by the judges, the TA and A scores totaled 38, which is equivalent to 84.44% of valid responses and all were directed to TA and A (100%). This block reached a CVI of 0.84 (Table 3).

Table 3 – Evaluation of the third part of the instrument on relevance. Manaus, Amazonas, Brazil – 2020

| Block 3 | Totally Adequate | Adequate | Partially Adequate | Inadequate |
|---------|------------------|-----------------|--------------------|------------|
| 3.1 | 6 | 3 | 0 | 0 |
| 3.2 | 2 | 4 | 3 | 0 |
| 3.3 | 4 | 3 | 2 | 0 |
| 3.4 | 4 | 5 | 0 | 0 |
| 3.5 | 4 | 3 | 2 | 0 |
| TOTAL | 20 (44.44 | (40.00%) |) 7 (15.56%) | 0 |

Source: Own elaboration.

The ET obtained 70 TA markings (35.71) and 88 A markings (44.90), totaling 158 markings. Were obtained 35 PA (17.86) and 3 I (1.53%). An overall CVI of 0.78 was achieved. Regarding the CVI per item (Table 4), among the 22 items, there were 14 items above 0.70 and 8 below 0.70.

| Items | Percentage Index |
|--------------------------------------|------------------|
| Block 1 - Objectives | |
| 1.1 | 0.89 |
| 1.2 | 1.00 |
| 1.3 | 0.56 |
| 1.4 | 0.89 |
| 1.5 | 0.89 |
| Block 2 – Structure and Presentation | |
| 2.1 | 0.78 |
| 2.2 | 0.44 |
| 2.3 | 0.78 |
| 2.4 | 0.67 |
| 2.5 | 0.67 |
| 2.6 | 0.67 |
| 2.7 | 0.67 |
| 2.8 | 0.78 |
| 2.9 | 0.89 |
| 2.10 | 0.89 |
| 2.11 | 0.89 |
| 2.12 | 0.67 |
| Block 3 - Relevance | |
| 3.1 | 1.00 |
| 3.2 | 0.67 |
| 3.3 | 0.78 |
| 3.4 | 1.00 |
| 3.5 | 0.89 |
| Final Content Validity Index | 0.78 |

Table 4 – Content Validity Index according to each item in the Blocks. Manaus, Amazonas, Brazil – 2020

Source: Own elaboration.

There was only one evaluation round with the expert judges. After reading the suggestions, which were fully accepted, the changes were made without the need for a second evaluation round. The second version of the ET was 29 pages long, organized into 16 topics: cover, summary, 1. Presentation, 2. Sedentary lifestyle, 3. Obesity, 4. Main factors of protection for men's health, 5. Healthy eating, 6. Physical activity, 7. Smoking, 8. Alcoholism, 9. Top Men's health issues, 10. Hypertension, 11. Diabetes, 12. Neoplasms, 13. Traffic accidents / violence, 14. Sexual health of men, 15. Sexually transmitted diseases, 16. Erectile dysfunction (sexual impotence), closing words, references. Figure 1 represents the cover of the final version.



Figure 1 - Cover of the ET Men's Health: Tips for a healthy life

Source: Own elaboration.

Discussion

The analysis carried out of the evaluation of the expert judges, analysis of behavioral representation, is the name given to the value of the calculated statistic that corresponds to the arithmetic mean of the scores of the items analyzed by the expert judges: +1 is used when the evaluation is positive, that is, totally adequate (TA) or adequate (A); 0 (zero) when it is neither positive nor negative, that is, partially adequate (PA); and -1 when the evaluation is negative, that is, inadequate (I). Were considered validated items that obtained in their responses indexes of agreement among the expert judges with a value greater than or equal to 0.7. A Block-by-Block analysis was carried out^(6,9-10).

When adopting for the consideration of validity, a CVI greater than 0.7, the parameter most used in the studies published by the Rede de Estudos de Tecnologias Educacionais – RETE (Network for the Study of Educational Technologies, in free translation)⁽¹¹⁾ was adopted.

In this study, the evaluation was carried out by expert judges from different areas of knowledge. Ensuring such participation in the validation process of an educational technology favors multidisciplinarity, as well as a wider scope of view⁽⁹⁻¹¹⁾.

This perspective is consistent with the reorganization of health care and the composition of the teams to guide the work process, as well as being considered as a starting point for interprofessionality, which favors the implementation of collaborative health practice, with the incorporation of the experience of professionals from different centers of knowledge, which encourages communication between areas, between expertise, and between different fields of knowledge⁽¹²⁾; which was sought in this study.

It is worth noting that the participation of expert judges favored obtaining different opinions and approaches on men's health, which minimized a perspective centered on the researchers' points of view⁽¹⁰⁾.

Multidisciplinary expertise is considered in several evaluative studies, because when the object under analysis is borderline, such as men's health, the plural composition justifies the incorporation of different disciplinary views. According to public policy experts, the transition from "disciplinary monologues" towards greater "conversational competence" between different fields of knowledge can contribute to a more complete understanding of the objects under analysis and evaluation⁽¹³⁾. And it was this crosssectional perspective that guided the researchers when they decided to include expert judges with different backgrounds and areas of qualification.

In Block 1, which assesses the objectives of educational technology, contained in the first part of the instrument used, it was identified that, of the five items, four met the CVI validation percentage and one required adjustments for the final version. Assessing such aspects is relevant, since the printed educational materials, in their final versions, must be reliable, favoring the social empowerment of the individuals for whom they are intended; and must contain correct and contextualized information⁽¹¹⁻¹⁴⁾.

Educational materials have been widely used for health education, and are vehicles for socializing knowledge; the objective then is to contribute to the improvement of the population's living and health conditions⁽¹⁵⁾.

When the expert judges evaluated the objectives, they called the attention of the material's authors to meet what was intended with such material, which was accomplished in this study with the final version adjusted after the evaluation.

It is relevant to add that educational technologies must have the purpose of promoting health, ensuring effectiveness of care for the target audience. Therefore, the referred "objective" domain of an instrument is important for understanding the content to be studied⁽¹⁵⁾.

Regarding Block 2, which evaluates the structure and presentation of the educational technology, of the 12 items, 6 obtained an evaluation below the minimum index, which alerted for adjustments and changes to be made. It is essential to be aware, in the evaluation processes of educational materials in health, to the coherent, cohesive, organized, sufficient and adequate language structure. As for cohesion and coherence, it is very valuable that such content remains focused on the proposed theme and that in its topics, paragraphs or excerpts there is a logical sequence of ideas, starting from general questions to more delicate or specific themes⁽¹⁵⁾.

In multiple studies, it is mentioned that during the process of diagramming and illustration, the material is periodically revised in relation to the language, layout and way in which information is conveyed. These procedures aim to enhance the inclusion of illustrations that ensure adequate information to the theoretical framework employed and to the precepts established by official health institutions in Brazil and in the world^(9-11,16). Regarding Block 3, which assesses the relevance of educational material, it is noteworthy that only one of the five items was rated below the minimum index. Even so, it alerted the authors to review the educational technology, in order to reach the final version.

For content to be current and relevant, it is essential that the authors of educational technology take into account the social context of the target audience, inserting aspects related to their needs and particularities. Theme and topics covered in educational content must meet the needs of the participant, providing empowerment on the subject addressed⁽¹⁵⁾.

When analyzing the suggestions and comments of the judges, it is worth noting that the recommendations received were contributions and observations, in order to guarantee the best quality of the educational material for the population; such details contribute to the enrichment of the final product and to the improvement of its applicability, by reformulating information, replacing terms and revising the illustrations⁽¹⁷⁾.

A study with the male population concluded that there is a need to enhance comprehensive health care for men. One of the challenges pointed out is to attract the male population to the health scenario, which can be mediated by ET that deals with aspects directly related to a healthy life of the male contingent. In the speeches of the men participating in the study, a gap was demonstrated in relation to their understanding of the function of the health service, with emphasis on the mention of the absence of actions; and there is also an absence of products aimed at the male audience. It is urgent to think of the units and services as spaces for the production of care, which requires the reorientation of knowledge and practices to meet the expectations of this population⁽¹⁸⁾.

A study with health professionals pointed out that there are measures for health promotion and disease prevention aimed at the quality of life of the male population, but there are limits and obstacles to carrying out educational activities, one of the pillars of primary care. For professionals, these are felt to be a need of difficult provision. The study concludes that, in order to achieve better health care for men, it is required, among other aspects, to improve communication and information, so that this segment can obtain the highest level and quality of care⁽¹⁹⁾.

The 16 ET topics cover aspects of health promotion, as well as prevention and action in cases of diseases that affect the male population; it should be noted that the judges did not suggest exclusion or inclusion of other topics. A study with the male population highlights that it is considered a priority to inform this group of topics aimed at health promotion, disease prevention, treatment and rehabilitation; the goal is to ensure that they feel they are protagonists of their health. Thus, professionals are responsible for carrying out health education actions, as well as providing quality care, taking into account men's health needs⁽²⁰⁾.

A study conducted with men found that the health care of this population is a challenge to be overcome and indicates, in this perspective, that health professionals, especially nurses, have a significant role both in planning actions aimed at strengthening actions that are linked to the health concepts of the male population as well as in educational practices⁽²¹⁾.

It is believed that one of the limitations of the study is that the semantic perspective of the ET in relation to the target audience, men, could not be evaluated in this research, since the participation of representatives of the target audience in the process was not contemplated, which will be the objective of further research

Conclusion

After the investigation, the findings of this study indicated that the ET was considered statistically valid by the expert judges who participated in the evaluation process, as a global CVI of 0.78 was obtained. It is worth mentioning, however, in the item assessment according to each of the instrument's blocks, that some did not obtain an agreement index of 0.70 or greater than 0.70, which led to changes in language and content.

The ET, after the stage of validation with the target audience, will be registered and made available digitally, with a view to contributing with students and health professionals in the mediation of health education actions with the male population.

It is important that health professionals can have access to ET, aiming to enhance practices aimed at the male population in health units, and thereby strengthen the educational work process of health teams and improve the assistance offered. The validated ET proved to be satisfactory to be applied in the work process.

Therefore, the manual was validated as an educational technology to disseminate relevant information to the male population and to be also a mediating device for the multidisciplinary team's educational practices, mainly for nurses, which can positively contribute to the quality of life of the male population. The validated manual is an invitation to read and reflect, in a clear and updated way, on multiple aspects that contribute to the promotion of healthy practices in daily life.

Collaborations:

1 – conception, design, analysis and interpretation of data: Darlisom Sousa Ferreira, Elizabeth Teixeira, Daniel Oliveira Brown, Rodrigo Koch and Wagner Ferreira Monteiro;

2 – writing of the article and relevant critical review of intellectual content: Darlisom Sousa Ferreira, Elizabeth Teixeira, Wagner Ferreira Monteiro, Edinilza Ribeiro dos Santos and Marília Muniz Cavalcante de Oliveira;

3 – final approval of the version to be published: Darlisom Sousa Ferreira, Elizabeth Teixeira, Wagner Ferreira Monteiro and Edinilza Ribeiro dos Santos.

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