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WEBSITE DIABETES NEWS EM PAUTA CONTENT VALIDITY AND APPEARANCE

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ABSTRACT

Objective: to validate the content and appearance of a website for adolescents living with Diabetes Mellitus.
Method: this is methodological research based on the DADI (Definition, Architecture, Design, Implementation) theoretical framework. A total of 16 health professionals participated in content validity, who answeres a questionnaire prepared on Google Forms® with 19 items related to objectives, structure/presentation, relevance. Website appearance validity was carried out by 12 Information Technology professionals through a questionnaire with 15 items divided into two domains (appearance and design*)*.
Results: the overall Content Validity Index was 0.98, and all items assessed obtained agreement values > 0.80. The overall Kappa coefficient was 0.6374, considered statistically significant (p-value <0.0001). The Appearance Validity Index presented a general index of 0.91 (above 0.9 considered validated).
Conclusion: the website for adolescents living with Diabetes Mellitus was validated in terms of content and appearance, creating an educational technology with safe, necessary and pertinent information to help adolescents living with Diabetes Mellitus understand this chronic condition and support them in self-care safely and effectively.

DESCRIPTORS: Computer communication networks. Adolescent. Diabetes mellitus. Validation study. Nurses. Educational technology.

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VALIDAÇÃO DE CONTEÚDO E APARÊNCIA DO WEBSITE DIABETES *NEWS* EM PAUTA

RESUMO

Objetivo: validar o conteúdo e a aparência de um *website* para adolescentes que convivem com Diabetes *Mellitus*.
Método: pesquisa metodológica embasada no referencial teórico DADI (definição, arquitetura, *design*, implementação, avaliação). Participaram da validação de conteúdo 16 profissionais da área da saúde, os quais responderam a um questionário elaborado no *Google Forms*® com 19 itens, relacionados aos objetivos, estrutura/apresentação, relevância. A validação da aparência do *website* foi realizada por 12 profissionais da Tecnologia da Informação, por meio de um questionário com 15 itens divididos em dois domínios (aparência e *designer)*.
Resultados: o Índice de Validade de Conteúdo geral foi de 0,98, todos os itens avaliados obtiveram valores de concordância >0,80. O coeficiente de Kappa geral foi 0,6374, considerado estatisticamente significativo (p-value<0,0001). O Índice de Validade de Aparência apresentou Índice geral de 0,91 (acima de 0,9 considerado validado).
Conclusão: o *website* para adolescentes que convivem com Diabetes *Mellitus* foi validado, quanto ao conteúdo e à aparência, configurando-se como uma tecnologia educacional com informações seguras, necessárias e pertinentes para auxiliar os adolescentes que convivem com Diabetes *Mellitus* na compreensão dessa condição crônica e subsidiá-los para o autocuidado com segurança e eficácia.

DESCRITORES: Redes de comunicação de computadores. Adolescente. Diabetes Mellitus. Estudo de validação. Enfermeiros. Tecnologia educacional.

VALIDACIÓN DEL CONTENIDO Y LA APARIENCIA DEL SITIO WEB DIABETES NEWS EM PAUTA

RESUMEN

Objetivo: validar el contenido y apariencia de un sitio web para adolescentes que viven con Diabetes Mellitus.
Método: investigación metodológica basada en el marco teórico DADI (definición, arquitectura, diseño, implementación). En la validación de contenido participaron 16 profesionales de la salud, quienes respondieron a un cuestionario creado mediante Google Forms® con 19 ítems relacionados con objetivos, estructura/presentación, relevancia. La validación de la apariencia del sitio web fue realizada por 12 profesionales de Tecnologías de la Información a través de un cuestionario con 15 ítems divididos en dos dominios (apariencia y diseño).
Resultados: el Índice de Validez de Contenido general fue de 0,98, todos los ítems evaluados obtuvieron valores de concordancia > 0,80. El coeficiente Kappa global fue de 0,6374, considerado estadísticamente significativo (valor de p <0,0001). El Índice de Validez de Apariencia presentó un Índice general de 0,91 (por encima de 0,9 se considera validado).
Conclusión: el sitio web para adolescentes que viven con Diabetes Mellitus fue validado en contenido y apariencia, configurándose como una tecnología educativa con información segura, necesaria y pertinente para ayudar a los adolescentes que viven con Diabetes Mellitus a comprender esta condición crónica y apoyarlos en el autocuidado de forma segura y efectiva.

DESCRIPTORES: Redes de comunicación de computadores. Adolescente. Diabetes mellitus. Estudio de validación. Enfermeras y enfermeros. Tecnologia educacional.

INTRODUCTION

Epidemiological transition and high prevalence of chronic diseases, as the main cause of death, have, over the years, demanded activities focused on health education from health professionals as a strategy to facilitate behavioral changes, prevent complications[1] and integrate scientific, popular and common sense knowledge, thus enabling the acquisition of healthy habits and more assertive decision-making in relation to health by the individuals involved"[2:2].

Considering this demand, in the last 20 years there has been an increasing use of websites, social networks and mobile devices for health education actions, especially among adolescents who access digital platforms in search of learning and fun. The pandemic caused by SARS-CoV-2 resulted in a significant increase in internet use, bringing with it both beneficial and adverse effects on public health. Among the negative consequences, the spread of false information stands out, while, on the other hand, positive effects emerge, such as the dissemination of innovative ideas and knowledge, in addition to the possibility of exchanging experiences among individuals who share common interests and goals[3], as is the case of people living with a chronic disease such as Diabetes Mellitus (DM).

Among the various categories of DM, type 1 DM (1DM) stands out, characterized by episodes of persistent hyperglycemia due to destruction of pancreatic beta cells, causing deficiency in insulin production. This type of DM has become an increasingly growing problem among children and adolescents, with estimates that there are more than 1 million people under the age of 20 currently living with the disease[4–5].

As it is a disease that affects an increasingly technological audience, it is essential to think about digital health education strategies developed with theoretical and methodological rigor that can help adolescents develop skills and adequately manage DM[6].

Considering that there are many places on the internet to access knowledge about DM and, for the most part, with little or no reliable content[7], this study focuses on validating a website built for adolescents who live with DM.

When designing an educational technology, the validity process plays an extremely important role, as this procedure ensures a higher level of reliability with regard to the material made available. This results in a substantial improvement in its quality and, therefore, contributes to obtaining more effective results in relation to the proposed objectives. The purpose of validating an educational technology is to assess not only the relevance of its content, but also other aspects, such as its appearance and usability. The underlying intention is to provide it with reliability replication capacity and substantial information to satisfactorily assist the intended audience[3,8].

Therefore, this study aimed to validate the content and appearance of a website for adolescents living with DM.

METHOD

This is a methodological study of construction and validity of a website, carried out in three adapted steps: exploratory phase, technology construction and validity[9–10]. Methodological studies deal with the development, validity and assessment of research tools and methods[9]. In this manuscript, all study steps will be presented for the purpose of understanding the process developed; however, the detailed form was carried out only in the validity step, the focus of this manuscript.

A survey was carried out in April 2022 with adolescents who follow the Instagram® account @ controladaporinsulina, administered by one of the researchers, and with adolescents who participate on Facebook®, on a page titled *Insulina do Amor*.

The research was published on these social networks, and adolescents who expressed interest in participating were asked for their parents' authorization by signing the Informed Consent Form (ICF) via Google Forms®, whose access link was posted on the aforementioned Instagram® account and Facebook® page. Those who had authorization were included in the WhatsApp® group called *Clube da Insulina*, which was made up of 20 adolescents.

To remain in the group, everyone signed the Assent Form and then received a questionnaire via Google Forms® to identify the most valued topics of interest to them to compose the website and the educational strategies that could help in learning about self-care. For the purpose of choosing a name for the website, a survey was carried out with these adolescents with suggestions.

Afterwards, aiming to support the eligibility of the contents listed by adolescents to compose the website, a narrative review of the reading was carried out in publications of Brazilian Diabetes Society (SBD – *Sociedade Brasileira de Diabetes*), International Diabetes Federation (IDF), National Library of Medicine (PubMed), Virtual Health Library (VHL), including Medical Literature Analysis and Retrieval System Online (MEDLINE), Scientific Electronic Library Online (SciELO) and Latin American and Caribbean Literature in Health Sciences (LILACS) from 2018 to 2022.

This step took place from July 2022 to January 2023. With the help of an Information Technology (IT) professional, hired for this purpose, the website was created on the website creation platform called Wix.com®, following the DADI method steps, proposed by Graphic Design Clement Mok, with D: Definition; A: Architecture; D: Design; I: Implementation.

Definition (D): meetings were held among research team members (professors, graduate student and IT professional) to discuss the studies selected in the literature and the data from the research carried out with the target audience. Afterwards, the modules and educational technologies that would be used to address the topics were designed. A schedule was also developed for achieving goals.

Architecture (A): with the help of an IT professional, the information from the previous phase was observed, with the aim of determining the key points of the website, mainly the navigability part. Subsequently, screen layouts, navigation menus and basic functions for each screen were defined.

Design (D): at this step, the website graphics were defined (type of text, font, images, colors). The content indicated by adolescents was produced in the format of educational technologies, also suggested by them, in the form of videos, folders, podcasts, interviews and testimonials from people who live with DM called success stories. The website logo was also created.

Implementation (I): with the help of an IT professional, tests were carried out on different browsers and, after the necessary adjustments, the website was hosted on the homepage diabetesnewsempauta.com/ and then subjected to content and appearance validity.

Content validity was carried out in February 2023 by 16 health with experience (proven by teaching and/or research and/or assistance activities) with adolescents living with DM and/or with DM education course.

To gather participants, the following strategies were used: invitation on the Child Health Nursing Network called *REDE ENSI BRASIL* WhatsApp® group, formed by 206 nurse participants, of which one of the authors is a member, and an invitation to an endocrinologist who is from the contact network of one of the researchers, who, in turn, shared the invitation in a multidisciplinary WhatsApp® group. Those who expressed interest in participating received via individual WhatsApp® the ICF for signature, the link to access the website and the questionnaire to validate the content, prepared on Google Forms®. Those who did not answer the invitation within the specified 20 days and/or the content validity questionnaire were excluded. The content validity questionnaire consisted of 19 items, divided into three domains (objectives, with seven items; structure/presentation, with eight items; relevance, with four items). Each item should be scored according to a Likert scale, considering 1 – Totally adequate, 2 – Adequate, 3 – Partially adequate and 4 – Inadequate[11].

Appearance validity was carried out in March 2023 by 12 IT professionals and followed the snowball sampling method[12]. The invitation to the first selected participant was intentional, carried out by a research team member. The first participant nominated another co-worker and so on. Those who have a degree in the area of computer science and/or information systems, with professional experience in the area of at least five years, working as a systems analyst and/or software engineer, were included. Those who did not answer the invitation within 20 days and/or did not answer the appearance validity questionnaire were excluded. For those who met these criteria and agreed to take part in the research, an invitation to participate was sent by email, along with the ICF, the website access link and the appearance validity form created on Google Forms®.

For this validity, an instrument[13] was adapted, consisting of 16 items divided into two domains (appearance and design), with each item being assessed according to a five-point Likert scale: TD – Totally disagree; D – Disagree; PD – Partially disagree; A – Agree; TA – Totally agree[14].

To define the number of content validity judges, the concepts of psychometrics were used, which recommends six to 20 experts. This same recommendation was followed for appearance validity judges[15].

The Content Validity Index (CVI) was computed so that the value of each element assessed was equal to or greater than 0.8, serving as an acceptable criterion to validate content. The formula used to calculate CVI consisted of adding answers 1 (Totally adequate) and 2 (Adequate) and dividing by the total number of answers[9].

To verify the measure of agreement among content judges, the Kappa coefficient was also calculated aiming to guarantee the consistency of the validity carried out, indicating that it is not the result of any random choice or great variation in evaluators' perception. When interpreting the results, the following values were considered: less than zero demonstrates that there is no agreement; between zero and 0.20 corresponds to minimum agreement; 0.21 and 0.40 corresponds to reasonable agreement; values between 0.41 and 0.60 demonstrate moderate agreement; values between 0.61 and 0.80 correspond to substantial agreement. For perfect agreement, the Kappa coefficient values must be between 0.81 and 1.0[16].

To validate the website appearance, the Appearance Validity Index (AVI) was considered on a five-point scale. To calculate the AVI for each item (I-AVI), the total number of judges, who answered 4 or 5, was considered, divided by the total number of judges. The interpretation of total AVI (I-AVI) results took into account: values ≥ 0.78 were considered excellent; scores between 0.60 and 0.77 indicated need for adjustments; values below 0.60 were classified as inadequate. For T-AVI, the established requirement is that the value be ≥ 0.90[14].

This study was approved by the Research Ethics Committee of the university where it was carried out, meeting scientific requirements in research participant treatment, which was part of the macro research "*Desenvolvimento de tecnologias para a consulta do enfermeiro na Rede de Atenção à Saúde*".

Judges were assured of confidentiality and anonymity. To guarantee anonymity, content validity judges were identified by the letters CJ (content judge) followed by the Arabic number corresponding to the order in which the questionnaire was returned (CJ1, CJ2...CJ16). The judges who validated appearance were identified by the letters AJ (appearance judge) followed by the Arabic number corresponding to the order in which the questionnaire was returned (AJ1, AJ2...AJ12).

RESULTS

Based on adolescents' suggestions, in the first step of the method, the website was named Diabetes News *em Pauta*. This consists of 11 instructional tabs, the first and second (Start and About us) were intended for welcome, explanations about the website, its objectives and introduction of authors. The other tabs were composed of topics suggested by adolescents, such as diabetes and its types, hypoglycemia and hyperglycemia, diagnosis and treatment. In the "Other contents" tab, care related to insulin administration devices, menstruation and diabetes, mental health and diabetes, physical activity and diabetes, carbohydrate count and success stories were presented. This content was made available in the form of videos, booklets, interviews, podcasts and folders, as indicated by adolescents.

The website content was validated by 16 health professionals (judges), including 13 nurses, two doctors and a nutritionist, aged between 27 and 61 years, one resident in Portugal and 15 in Brazil, in the states of São Paulo (2), Minas Gerais (2), Rio de Janeiro (2), Distrito Federal (1), Santa Catarina (3), Paraná (2), Sergipe (1), Ceará (1) and Mato Grosso do Sul (1).

Regarding professional practice time, the shortest period was five years and the longest was 42 years. Regarding degrees, of the 16 participants, four (25%) graduated, 12 (75%) had a *stricto sensu* graduate degree (2) and 10 had a *lato sensu* specialization, being an educator in diabetes (6) and chronic non-communicable diseases (4).

Regarding judges' work with adolescents living with DM, 13 (81%) carried out or had already carried out care activities and 3 (18%) carried out research. The general CVI was 0.98, and all items obtained agreement values > 0.80, being considered acceptable results. The overall Kappa coefficient was equal to 0.6374, being statistically significant ($p < 0.0001$), ruling out a random assessment. The CVI results are presented in Table 1.

Table 1 – Item and overall Content Validity Index (objectives, structure/presentation, relevance). Chapecó, SC, Brazil, 2022 (n=16).

Criterion description	Scores				
	1	2	3	4	CVI*
Objectives: purposes, goals or aims					
1. Website covers the proposed topic Diabetes Mellitus in adolescence	13	2	1	0	0.93
2. Website content, which focuses on Diabetes Mellitus in adolescence, is suitable for the health education process	14	1	1	0	0.93
3. Website presents information about Diabetes Mellitus treatment	14	2	0	0	1
4. Content clarifies doubts about the topic covered	14	2	0	0	1
5. Content provides reflection on the topic	12	4	0	0	1
6. Content presented on the website encourages behavioral changes in relation to self-care in adolescents with Diabetes Mellitus	12	4	0	0	1
7. Information/content may circulate in scientific circles in the area	12	3	1	0	0.93
Structure/presentation: organization, structure, strategy, coherence and sufficiency					
8. Website language is suitable for the target audience: adolescents	14	2	0	0	1
9. Appropriate language, with clear, concise and error-free writing.	15	1	0	0	0.93

Table 1 – Cont.

Criterion description	Scores				
	1	2	3	4	CVI*
10. Language is interactive, allowing active involvement in the educational process, capable of holding adolescents' attention	12	3	1	0	0.93
11. Sources and references are of widely recognized origin and have a good reputation	14	2	0	0	1
12. Information is objective, clear and enlightening	14	2	0	0	1
13. Information is necessary and relevant	14	2	0	0	1
14. Topic is current and relevant	14	2	0	0	1
15. Text size and font are appropriate	14	1	1	0	0.93
Relevance: significance, impact, motivation and interest					
16. Website encourages learning	15	1	1	0	0.93
17. Website contributes to knowledge about Diabetes Mellitus	14	2	0	0	1
18. Website content arouses interest in the topic	13	2	1	0	0.93
19. Educational technologies (videos, booklets, interviews, podcast, folders) for adolescents living with Diabetes Mellitus presented on the website are adequate	14	2	0	0	1
				Overall CVI	0.98

* Content Validity Index

Only one of the judges who validated the content made a suggestion regarding content: *I consider that in general the content is enlightening, but it should be more in-depth regarding physical exercise, given that each case is different and therefore each adolescent, individually, must be assessed. However, adolescents should be informed about the precautions to be taken before, during and after physical exercise* (CJ5).

Due to this comment, after content validity, three infographics were created with information on what to do before, during and after physical activity, and added to the physical exercise and diabetes tab.

Appearance validity was carried out by 12 IT professionals (judges), of which nine were information systems analysts and three were computer engineers, aged between 30 and 50 years, residing in the states of Santa Catarina (6), Paraná (2), São Paulo (3) and Rio de Janeiro (1). Participants' shortest training time was five years and the longest was 30 years. Of these, 9 (69.2%) had a degree, 3 (30.8%) were specialists in web, mobile devices, cloud computing and UX.

The website's T-AVI was 0.85, considered excellent. As for I-AVI, 12 (80%) of items were above 0.78 (considered excellent), however the items "the website is easy to navigate" and "the website design is pleasant and clean" had I-AVI of 0.75 (between 0.60 and 0.77 considered good), and item "Were you able to access the website on your mobile device?" had I-AVI of 0.58 (<0.59 considered poor) (Table 2).

Table 2 – Website overall and Appearance Validity Index (appearance and design) for each item. Chapecó, SC, Brazil, 2022 (n=12).

Items	Scores					
	TD†	D‡	PD§	A‖	TA¶	AVI**
Objectives: purposes, goals or aims						
1. Credentials of website authors have been provided	1	0	0	0	11	0.91
2. Website provides the author's contact addresses	1	0	0	0	11	0.91
3. Includes the date the website was created	0	1	0	0	11	0.91
4. Includes the date the content was created	1	1	0	0	10	0.83
5. The webiste's purpose is presented	1	0	0	0	11	0.91
6. The website's objective is clear	1	0	0	0	11	0.91
7. Website mentions the audience for which the information is intended	0	1	0	0	11	0.91
Design						
8. Website is easy to navigate	1	2	0	4	5	0.75
9. Website design is nice and clean	1	2	0	7	2	0.75
10. Website has back links on all pages	1	0	0	2	9	0.91
11. Website links work	1	0	0	1	10	0.91
12. Pages are light and load quickly. The website can be accessed in more than one browser (browser)	1	1	0	3	7	0.83
13. Were you able to access the website on your mobile device?	1	4	0	4	3	0.58
14. Website has mechanisms to increase the font	0	2	0	7	3	0.83
15. Website provides the same content in various formats (text, audio and video)	0	1	0	4	7	0.91
				Total AVI		0.85

†Totally disagree. ‡ Disagree. §Partially disagree. ‖ Agree. ¶ Totally agree. ** Appearance Validity Index.

The judges who validated the appearance also made suggestions for changes in relation to the website design, according to comments: *The website does have a clean design, but it is not very interesting, especially when the target audience is young people. A simple "perfumery" job could do the trick. Some more eye-catching colors, a font that makes it easier to read. Perhaps a remodeling of the way content is presented* (AJ1). *Pleasant yes, but not clean. Precisely because it is inserted within the university website, it is obligatory to use the website's header and footer* (AJ2). *To attract adolescents, I believe a more attractive page would be useful* (AJ3). *It is easy to use the website, as long as users are experienced, as the options in the top menu belong to the university, and not the website itself, which can cause confusion and distraction to users* (AJ4). *Terrible for use on mobile devices. Considering that adolescents are unlikely to use the website on a computer, several things can be adapted, adjusting the writing, videos and images, as not everyone will understand that they need to turn their smartphone to the side to view the website in full* (AJ5).

Based on validity, complemented by judges' comments about important changes that should be made to make the website more attractive to the target audience, modifications were made to improve appearance. Initially, the website was hosted on a platform that did not allow the use of a more attractive and interactive layout, as it had to follow a standard defined by the university. Therefore, it was decided to host the website on another platform, which allows image expandability, allowing the page to be viewed without cuts on the mobile device screen. A more colorful, pleasant and attractive design was also created (Figure 1).

Figure 1 – Website Diabetes News *em Pauta,* final version. Chapecó, SC, Brazil, 2022.

After the changes made, the website was sent again to the five judges who scored the three items (8, 9 and 13) as "Totally disagree" and "Disagree for new assessment". The classification obtained in the new reassessment was 1 (Totalaly agree) by judges. Considering the new assessment of the website's T-AVI, a score of 0.91 was reached, being considered validated in terms of its appearance (Table 3).

Table 3 – Website Appearance Validity Index (designer) after reformulation carried out with the suggestions from the first round. Chapecó, SC, Brazil, 2022 (n=5).

Items	Scores				
	TD†	D‡	PD§	A‖	TA¶
Design					
8. Website is easy to navigate	0	0	0	2	3
9. Website design is nice and clean	0	0	0	0	5
13. Were you able to access the website on your mobile device?	0	0	0	0	5

†Totally disagree. ‡ Disagree. §Partially disagree. ‖ Agree. ¶ Totally agree

DISCUSSION

The website "Diabetes News *em Pauta*" presented satisfactory percentages of agreement for CVI and I-AVI and T-AVI. This demonstrates its validity and reliability for use by adolescents living with DM. Content validity was carried out by a group of judges, from the health area, who were responsible for assessing whether the content was relevant, updated and complete[17]. The validity process made it possible to recognize the quality of the website, which was a determining factor in giving legitimacy to research results.

The method followed for content validity was adopted by other studies, which developed instructional resources such as videos, booklets, interviews, and in the present study the same reference values were adopted[18–19].

Content validitys are essential, as countless information is available on the internet, often without theoretical foundation and/or false. Especially in the health area, the quality and veracity of content available can lead people to undertake care that could further harm their condition[13,19]. Therefore, it is important to draw attention to the importance of educational technologies "not only being constructed empirically, but being subjected to the scientific process of content validity", as this process allows for adjustments recommended by professionals with expertise in the subject[20:8].

In studies[17,19], content judges were also selected for their expertise in the topic presented on the website, which guarantees that they have the technical and scientific capacity to assess this educational technology in terms of objectives, organization, relevance, in addition to appearance and design that attract attention and arouse the target audience's interest. Educational websites, when well assessed by professionals with expertise in the subject, give this technology greater credibility in terms of the content presented, allowing them to be made available for access by people looking for information to build their knowledge and empower themselves for self-care.

Regarding appearance validity, its importance is emphasized, as it assesses the aesthetic representation consisting of lines, shapes, colors and movement of images that must harmonize with information content. Illustrations can persuade readers to read the educational material and increase their attention by 43%, encouraging emotions, avoiding distractions by anticipating previous experiences on the topic and directing readers to the main information contained in the message[14].

In a website's visual identity, color is the first intuitive factor for users. This is an element "that represents the largest proportion of the interface area and is the first to capture users' line of sight, leaving a deep impression on users in the process of navigating the page"[21:3]. Based on these considerations, the website logo was created by one of the research team members and approved by the others, using Canva®. The highlight was the acronym DN in red, as this color has the ability to improve interaction, as it is quickly captured by the human eye, as it is a primary color and one of the most attractive colors there is. To compose the website background, the color chosen was blue as it is the favorite color of 46% of men and 44% of women, in addition to inspiring tranquility, confidence and knowledge[22].

In the present study, IT professional assessment regarding the website navigability and appearance was a *sine qua non* condition to give it greater suitability in its navigation and to make it more attractive to the target audience, as, in the first round, T-AVI was 0.85, considered a good result, but not giving it validated status. After the suggested adjustments, the website was remodeled and underwent a second round of validity, reaching a T-AVI of 0.91, which allows us to accept that its appearance is considered valid.

A study carried out with the aim of validating a school nursing guide appearance to promote young students' health presented a value close to that found in this study, also having two suggestions for improving the educational technology appearance[23].

The website validity process gives it a reliable and safe status to be accessed by the intended audience. DM control and management present numerous challenges and, according to a study, when there is diabetes education, it is possible that people living with this chronic disease begin to view their condition in a less pessimistic way, facilitating adherence to treatment, reducing long-term complications and, consequently, improving their quality of life[24].

A study[25] reinforces that greater engagement in different self-care activities is necessary to adopt a lifestyle that is suitable for controlling DM. Success in treatment is associated with considering people who live with DM as active subjects and co-responsible for their self-care.

In the world of the internet, social media stands out, which are widely used by adolescents, both for entertainment and for studying. These online channels facilitate dissemination of information, making any user a content creator; however, this facility allows the opening of dangerous paths, with false and distorted content[26]. Therefore, the process of construction and validity of technologies anchored in adequate theoretical and methodological references is important so that they can be used safely by the intended public and also by health professionals in their educational practices[27].

In relation to educational practices, a systematic review carried out with the objective of identifying educational strategies used in teaching insulin therapy to children and adolescents with type 1 DM revealed nurses as the professionals most present in the studies, reiterating "their role as health educator and promoter of self-care for young people with DM1"[28:17]. In this context, attention is drawn to the importance of nurses taking advantage of social media, as they allow connecting with people, sharing information and creating content. Furthermore, they are able to optimize and qualify the care provided, especially to adolescents, in addition to being able to expand the reach of people who live with the same condition, promoting their health in a more relaxed and effective way[27,29].

The relevance of educational technologies being produced based on the target audience's demand is also highlighted. In this study, adolescents had an active participation, indicating the contents they considered necessary and technologies with the greatest potential to promote learning in this age group. It can be said that, according to a study[30], the target audience's participation, in this study, is considered of medium intensity, as it was possible for them to participate before developing the website in the content definition step, at which time they indicated important topics for the process of understanding and self-care with DM in the daily lives of those living with this chronic disease.

CONCLUSION

The content that makes up the website was produced collaboratively and interactively, taking into account the context of intended users and also being presented in different ways and different media, such as videos, interviews, booklets and infographics, which are easy-to-understand educational materials and devices.

This way of presenting the website could contribute to health education focused on DM. From this perspective, the website can also be considered an educational technology, as it can be accessed by users for free on different devices and as many times as necessary. This will be updated periodically with technologies that meet new recommendations to ensure that the target audience has access to the most relevant and current knowledge.

The main limitation of this study is the lack of studies involving educational technologies aimed at adolescents living with DM. This fact draws attention as, when we consider that this chronic condition is increasing among adolescents and that this population is increasingly connected to the internet, we expected to find more materials and information related to DM care.

It is believed that the website "*Diabetes News em Pauta*" presents itself as a viable educational technology to be used in the health education process of adolescents living with DM, helping them in their self-care.

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NOTES

ORIGIN OF THE ARTICLE

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CONFLICT OF INTEREST

There is no conflict of interest.

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