# Original Article

# Website on sexuality and prevention of Sexually Transmitted Infections for Catholic teenagers

Website sobre sexualidade e prevenção de infecções sexualmente transmissíveis para adolescentes católicos

Sitio web sobre sexualidad y prevención de infecciones de transmisión sexual para adolescentes católicos

Adriana Gomes Nogueira Ferreira[1] https://orcid.org/0000-0003-3705-3918
Patrícia Neyva da Costa Pinheiro[2] https://orcid.org/0000-0001-7022-8391
Neiva Francenely da Cunha Vieira[2] https://orcid.org/0000-0002-9622-2462
Marcos Venícios Oliveira Lopes[2] https://orcid.org/0000-0001-5867-8023
Fabiane do Amaral Gubert[2] https://orcid.org/0000-0003-3016-9619
José Antonio Trasferetti[3] https://orcid.org/0000-0001-5650-9867
Leilane Barbosa de Sousa[4] https://orcid.org/0000-0003-0266-6255
Andréa Soares Rocha da Silva[2] https://orcid.org/0000-0001-5584-7071

## Abstract

**Objective:** To develop and assess content and interface of website on sexuality and sexually transmitted infection prevention for Catholic teenagers.

**Methods:** A research on methodological and technological development, whose stages of assessment on the website were: development, assessment and distribution. The development included the analysis and planning phases; modeling; establishment and assessment of the website. The assessment consisted of the judgment of 19 participants, with ten judges in content, four in the area of computing and design, and five teenagers. Finally, there was distribution for online free access.

**Results:** The website *Papo de Adolescente* (Teen Chat) was developed, which addressed the contents of religion, adolescence, sexuality, Sexually Transmitted Infections/HIV/AIDS, prevention and main doubts. The overall content rating index attributed by judges who knew the topic was 0.88 and, by the judges in the area of computing and design, 0.70. After the analysis, suggestions and readjustments were incorporated into the website, such as the reorganization of the design and the contents on adolescence, sexuality and Sexually Transmitted Infections/HIV/AIDS, in addition to the rewriting of the text on Sexually Transmitted Infections/HIV/AIDS regarding the criteria of authorship, first impression, ease of navigation and use of graphics. The website was rated by teenagers, who rated it as 0.94 overall.

**Conclusion:** The website presented an assessment of its content and adequate interface, to address sexuality and prevention of Sexually Transmitted Infections with Catholic teenagers.

## Resumo

**Objetivo:** Desenvolver e avaliar conteúdo e interface de *website* sobre sexualidade e prevenção de infecção sexualmente transmissível para adolescentes católicos.

**Métodos:** Pesquisa de desenvolvimento metodológico e tecnológico, cujas etapas de avaliação do *website* foram: desenvolvimento, avaliação e distribuição. O desenvolvimento contemplou as fases de análise e planejamento; modelagem; implementação e avaliação do *website*. A avaliação consistiu no julgamento de 19 participantes, sendo dez juízes em conteúdo, quatro da área de computação e *design*, e cinco adolescentes. Por fim, houve a distribuição para acesso *on-line* gratuito.

**Resultados:** Foi desenvolvido o *website* denominado *Papo de Adolescente*, que abordou os conteúdos religião, adolescência, sexualidade, Infecções Sexualmente Transmissíveis/HIV/AIDS, prevenção e principais dúvidas. O índice geral de avaliação do conteúdo atribuído pelos juízes conhecedores do tema foi 0,88 e, pelos juízes

[1]Universidade Federal do Maranhão, São Luís, MA, Brazil.
[2]Universidade Federal do Ceará, Fortaleza, CE, Brazil.
[3]Pontifícia Universidade Católica de Campinas, Campinas, SP, Brazil.
[4]Universidade da Integração Internacional da Lusofonia Afro-Brasileira, Redenção, CE, Brazil.
**Conflicts of interest:** article extracted from the doctoral thesis named "*Papo de adolescente: website sobre sexualidade e prevenção de DST/HIV/Aids para adolescentes envolvidos na igreja*", presented to the Graduate Program of the *Universidade Federal do Ceará* (UFC), Fortaleza, CE, Brazil.

da área de computação e *design*, foi 0,70. Após a análise, sugestões e readequações foram incorporadas ao *website*, como a reorganização do *design* e dos conteúdos sobre adolescência, sexualidade e Infecções Sexualmente Transmissíveis/HIV/AIDS, além da reescrita do texto sobre Infecções Sexualmente Transmissíveis/HIV/AIDS, referente aos critérios autoria, primeira impressão, facilidade de navegação e uso dos gráficos. O *website* foi avaliado pelos adolescentes, que atribuíram avaliação geral de 0,94.

**Conclusão:** O *website* apresentou avaliação de seu conteúdo e interface adequados, para abordar sexualidade e prevenção das Infecções Sexualmente Transmissíveis com adolescentes católicos.

## Resumen

**Objetivo:** Desarrollar y evaluar el contenido e interfaz de un sitio web sobre sexualidad y prevención de infecciones de transmisión sexual para adolescentes católicos.

**Métodos:** Investigación de desarrollo metodológico y tecnológico, cuyas etapas de evaluación del sitio web fueron: desarrollo, evaluación y distribución. El desarrollo contempló la fase de análisis y planificación, modelado, implementación y evaluación del sitio web. La evaluación consistió en la apreciación de 19 participantes, de los cuales 10 eran jueces de contenido, 4 del área de computación y diseño y 5 adolescentes. Por último, se realizó la distribución para el acceso en línea gratuito.

**Resultados:** Se desarrolló el sitio web denominado *Papo de Adolescente* (Charla de Adolescentes), que abordó contenidos sobre religión, adolescencia, sexualidad, infecciones de transmisión sexual/VIH/SIDA, prevención y las principales dudas. El índice general de evaluación del contenido adjudicado por los jueces conocedores del tema fue de 0,88 y por los jueces del área de computación y diseño, 0,70. Luego del análisis, se incorporaron sugerencias y se realizaron adaptaciones en el sitio web, como la reorganización del diseño y de los contenidos sobre adolescencia, sexualidad e infecciones de transmisión sexual/VIH/SIDA, además de reescribir el texto sobre infecciones de transmisión sexual/VIH/SIDA, con relación a los criterios autoría, primera impresión, facilidad de navegación y uso de los gráficos. El sitio web fue evaluado por los adolescentes, que le adjudicaron una evaluación general de 0,94.

**Conclusión:** El sitio web presentó una evaluación de contenido e interfaz adecuada para abordar la sexualidad y la prevención de las infecciones de transmisión sexual con adolescentes católicos.

## Introduction

Worldwide, teenagers and young people represent an increasing share of people living with HIV. In 2017, 590 thousand young people between 15 and 24 years old were infected with this virus, of which 250 thousand were teenagers between 15 and 19 years old.[1]

When considering the overview of the AIDS epidemic in adolescence, it is essential to promote health with a focus on sexuality and prevention of Sexually Transmitted Infections, since the risks associated with sexual behavior are also influenced by psychosocial processes that favor the construction of normative identities of genre.[2]

Adolescence is a period of psychosocial and biological development, which presents a high risk for acquisition and transmission of Sexually Transmitted Infections, related to socioeconomic conditions, early sexual activity, gender differences, communication difficulties and access to services such as Primary Health Care, among others. [3,4] Thus, it is important that educational strategies are developed that include content related to adolescence, sexuality, prevention of Sexually Transmitted Infections and religion.

Regarding religion, it is emphasized that some teenagers find in the idea of God and in the practice of praying important resources to face adversities, operating, through religion, cultural changes[5] and reinforcing the role of the church and people involved in it. Data from the last Brazilian census carried out show that 86.7% of the population follows Christianity. Of these, 64.6% are Catholic, of which 17.4% are teenagers.[6]

Religiosity is an aspect that can delay the beginning of sexual life. Often, to understand the view of sex and sexuality, it is necessary to consider religious values conscious or not, since religion can act in daily life in a subtle and veiled way.[7]

Catholic integrality seeks, in this setting, to reach the sexual dimension and the valorization of ethics, being contrary to sexuality governed by its own rules. In modern times, the church, family and school have been weakened as institutions that transmit cultural heritage, reinforcing the educational mission of the church that permeates faith in culture, promoting values and, above all, assuming and improving faith in a profound, solid and lasting way.[8]

Among Catholic teenagers, concepts, norms and positions about sexuality, in the light of the Catholic Church, are not explicit, which allows their association with sin. Thus taboos arise, which disadvantages the church in relation to sex and pleasure.[9] Teenagers are therefore ashamed to talk about

sexuality, making it difficult to dialogue with family members, teachers and church representatives.

Currently, the Catholic Church goes beyond its walls and transmits a universal message of openness to dialogue on the problems that harm social and human well-being, awakening, in turn, concerns that affect not only youth, but also religious,[5] In this context, it is adequate to develop educational strategies that combine information on sexuality and the prevention of Sexually Transmitted Infections, contextualized in Catholic values.

Information and Communication Technologies can help teenagers about sexuality and the prevention of Sexually Transmitted Infections/HIV/AIDS. To be effective, however, it is important that, in addition to providing quality information, it is attractive and interactive.[10]

The use of the internet by teenagers and young people has shown a considerable increase as there are more than 24 million young people between 9 and 17 years old who use the network. Of these, 84% use it daily, and their main activities are linked to education and the search for information.[11,12] This is also the first option to search for information on sexual and reproductive health.[13]

Information globalization on the Internet has brought important concerns, such as privacy and confidentiality, but, above all, unreliable content. In this perspective, this space should be valued by the nurse, responsible for health promotion based on safe and responsible guidelines.[14]

Thus, nursing can contribute to the effective use of educational technology resources on sexuality and the prevention of Sexually Transmitted Infections/AIDS, such as, for example, the creation of websites that address relevant topics. This study aimed to develop and assess the content and interface of website on sexuality and prevention of Sexually Transmitted Infections for Catholic teenagers.

## Methods

The study was approved by the Research Ethics Committee with human beings, under Protocol 121,756/2012, and developed from 2013 to 2014.

It is about technological research, methodological and evaluative development, in which the content and interface of the referred website were assessed. The study was carried out with the following steps: development, assessment and distribution of the website. It was based on a previous study, which used the Paulo Freire method to discuss sexuality and the prevention of Sexually Transmitted Infections/HIV/AIDS with young people from the Catholic Church.[9]

For development, the phases of analysis and planning, modeling and establishment were followed. For analysis and planning, the resources available to facilitate the educational process were defined: objectives; target audience; contents covered; how and when to use the website; and selection of informative texts, videos, images and music. This phase considered the literature search, and the perception of Catholic teenagers about the internet, sexuality and prevention.[15]

For the modeling of the website, three models were used: conceptual, navigation and interface.[16] The first refers to the hyperbase, which is the set of hyperdocuments, that is, pages of the application developed with its multimedia resources and connections stored in a medium[17] were organized according to the selected subjects and subsequent analysis. The contents made available were religion, adolescence, sexuality, Sexually Transmitted Infections/HIV/AIDS, prevention and main doubts, in addition to the "talk to us" and "discussion forum" tools. The second model was built in an intuitive perspective, to avoid user disorientation and reduce cognitive overload with the use of menus. The layout of the interface creates the visual identity of the product;[16] on the website *Papo de Adolescente*, content organization, presentation sequence, colors, images and videos were organized in order to be in harmony with the layout of the interface.

After modeling, the establishment was carried out, which included the production and digitalization of the media in the creation process, including sounds, images and videos, using specific software. The analysis of the information occurred at the end of each phase.[16]

The assessment was divided into two moments: assessment of the general structure (interface of the website) and of the content included, which were carried out by judges and teenagers. Fourteen judges participated in the study, ten of which were content specialists (health education, sexuality, prevention of Sexually Transmitted Infections/HIV/AIDS and theology) and four from the area of computing and design, selected by sampling the type of snowball and convenience. For content judges, selection criteria were adopted, such as academic training, scientific production and participation in a research group in the following areas: prevention, health education, sexuality, prevention of Sexually Transmitted Infections/HIV/AIDS, theology, virtual education, sexuality in adolescence, and development of website. For the computing and designer judges, it was also used the criterion professional experience of, at least, 5 years in development of websites. Five teenagers participated in the assessment of the website selected according to the age group between 10 and 19 years old, which was to participate assiduously in church groups and have domain and access to the internet.

The scale that assessed the content and interface in the website development was composed by the criteria: authorship, which refers to the information and the mechanisms of contact with the author; general content, which is related to the conformity of the information with the objectives; presentation of information characterized by graphic design, illustrations, ease of navigation and didactics; and pertinence, in which the accuracy, the updating, the adequacy of the fonts, and the existence of grammatical and typing errors were assessed.[18]

For the computing and designer judges, in addition to authorship, the speed criteria were used to verify the page loading time (download time); first impression, being assessed the graphic design of the home page, as motivation and incentive to browse the website; ease of navigation, which verified the navigability of the pages, section and link of the site, considering clarity, efficiency and intuitive navigation; use of graphics, which referred to the representativeness and definition of the images.[19] In both questionnaires, a Likert-type scale was used with zero levels if very bad, 1 if bad, 2 if regular, 3 if good, 4 if very good and 5 if excellent.

After assessing the judges, the necessary adjustments were made to the website and the teenagers who checked the criteria for accessibility, usability, functionality, content, relevance, efficiency and environment were continued.[20] In this, the Likert scale presented levels 1 for not applicable, 2 for totally disagree, 3 for disagree, 4 for agree and 5 for totally agree, the score 1 indicates that the item was not considered by the evaluator.

To assess the website, three rating indices were calculated: the average of the individual content rating indices for all scale indices (overall index), the proportion of items on the scale that received scores 4 and 5 from all the judges, and index that assessed the individual content of each item.[21] They were considered adequate when the indexes reached values ≥0.80.[22]

Distribution took place after assessment and adequacy with the website's availability on the worldwide web, since, during the assessment, the access was given through login and the users password.

## Results

The website developed was named *Papo de Adolescente*, containing the following items: presentation page; information on the website; religion; adolescence; sexuality; Sexually Transmitted Infections/HIV/AIDS; prevention; and main doubts. The presentation page included a top menu, highlighting the main contents, and a side menu, which included quick access to all available content, including the sublinks of each section (Figure 1).

After the website development, it was presented to the judges on content, computing and design, and to teenagers to assess the technology. In Table 1, the assessment carried out by the judges on content is observed.

All items related to the authorship and general content criteria reached an index higher than 0.80. The general content of information criterion considered the presentation of the information. The
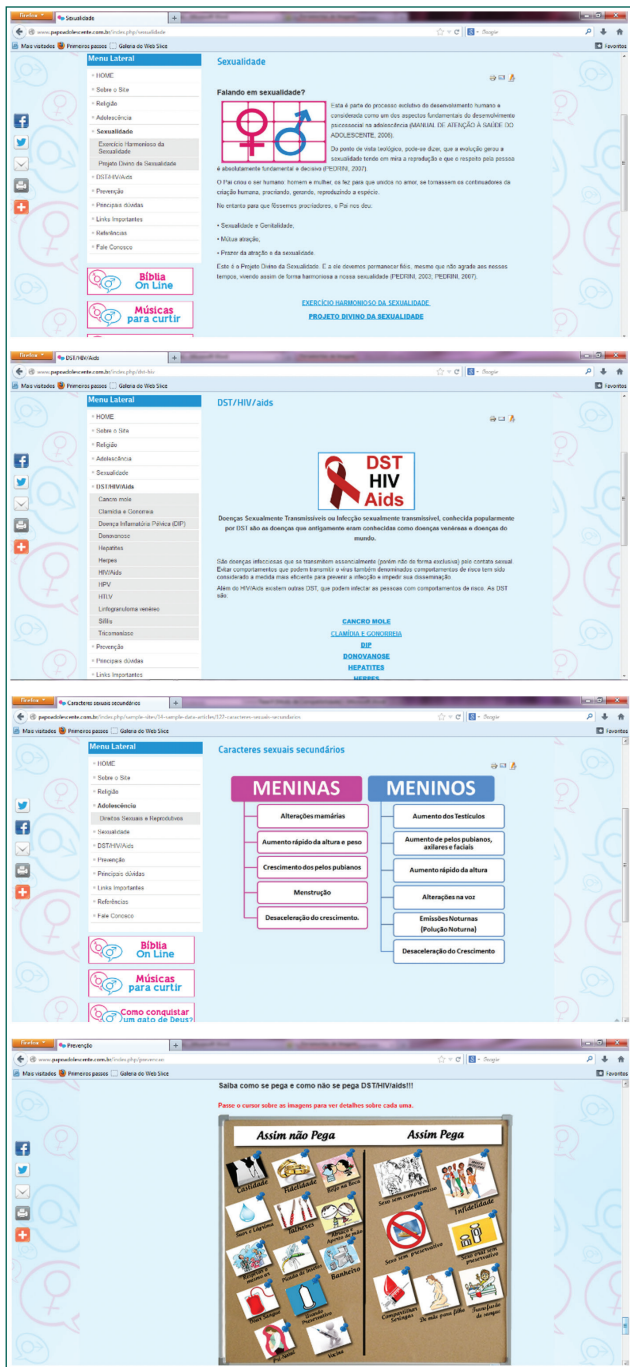
**Figure 1.** Pages of the final version of the website *Papo de Adolescente*

**Table 1.** Individual assessment indexes, according to the content judges' analysis

| Criterion | Item | Index |
|---|---|---|
| Authorship | Clear indication of the author and his qualification | 0.95 |
| | Mechanisms by which it is possible to establish contact with the author | 0.80 |
| Overall content of the information provided | The website provides information reported on the objectives | 0.80 |
| | Information is clearly indicated and organized | 0.85 |
| | The information content presented in the links is adequate | 0.82 |
| | The information content in the references section adds value to the information presented on the website | 0.85 |
| Presentation of the information | The design graphic of the pages favors learning | 0.82 |
| | The engravings (graphic images) used add knowledge | 0.78 |
| | The engravings are consistent with the texts related to them | 0.80 |
| | The user has ease of navigation | 0.87 |
| | The presentation of the content contributes to learning and attention | 0.85 |
| Relevance of information | The website is organized in a clear and logical way | 0.82 |
| | The information is reliable and will add knowledge | 0.92 |
| | The information is up to date and there is evidence that it is being maintained and updated | 0.77 |
| | The research sources used in the elaboration are credible | 0.80 |
| | The information is free of typographical or grammatical errors | 0.70 |
| Overall index | | 0.88 |

and typographical or grammatical errors, with an index of 0.77 and 0.70, respectively. The indication of this result led to the revision of this item on the website. In Table 2, the assessment of computing and design judges is observed.

**Table 2.** Individual assessment indexes, according to the analysis of computing and design judges

| Criterion | Items | Index |
|---|---|---|
| Authorship | Clear indication of the author and his qualification | 0.50 |
| | Mechanisms by which it is possible to establish contact with the author | 0.75 |
| Speed | Speed with which the homepage "loads" | 0.93 |
| | Speed with which most of other pages "load" | 0.87 |
| First impression | Homepage features attractive design | 0.50 |
| | Homepage features a design that is clear and sufficiently capable of being successfully handled by ordinary users | 0.56 |
| Ease of navigation | The user has easy navigation without getting lost or confused | 0.56 |
| | All links are clearly defined and serve an easily identified purpose | 0.81 |
| | The links made available operate efficiently | 0.87 |
| Use of graphics | Graphics or images are clearly displayed | 0.68 |
| | Graphics or images serve a clear and adequate purpose | 0.62 |
| Overall index | | 0.70 |

Regarding the criteria of authorship, first impression and use of graphics, both presented indexes <0.80. These items have been revised to make the website more effective and attractive to the target audience. After the analysis of the judges, the suggestions and readjustments were incorporated into

items that made up this criterion were satisfactory, with an index higher than 0.80, except for the one that dealt with the knowledge added by the engravings, which presented an index of 0.78, including engravings, mainly related to Sexually Transmitted Infections, and reorganized existing ones. In the pertinence criterion, two questions had an index <0.80: updated information and research sources

the website, among which the reorganization of the design and the contents of adolescence, sexuality and Sexually Transmitted Infections/HIV/AIDS stood out, in addition to rewriting the text Sexually Transmitted Infections/HIV/AIDS, later the assessment was concluded with the teenagers, as shown in Table 3.

**Table 3.** Individual assessment indexes, according to the analysis of teenagers

| Criteria | Items | Index |
|---|---|---|
| Accessibility | *Papo de Adolescente* is easy to access | 0.95 |
| | Facilitates interaction and communication | 0.95 |
| | Access is fast | 1.00 |
| | Access to figures is quick | 0.95 |
| Usability | Ease-of-use | 1.00 |
| | Easy to understand information | 0.95 |
| | The environment allows you to browse content | 1.00 |
| | The website provides help clearly | 0.90 |
| | The appearance time on the screen is convenient | 0.95 |
| | The colors used are adequate | 0.95 |
| | The (source) colors used are adequate | 0.95 |
| Functionality | The website does what has been proposed | 1.00 |
| | Communication functions are established | 0.75 |
| | The appearance time on the screen is convenient | 1.00 |
| | The design of the pages is consistent with the proposed | 0.95 |
| | The speed of execution of the functions is adequate | 0.95 |
| Content | Content corresponds to the objectives of the site | 0.95 |
| | Content is varied | 0.90 |
| | Content meets the theme | 0.95 |
| | The information is well structured | 0.85 |
| | Writing style is easy to understand | 0.90 |
| | The presentation of the site has a different and pleasant appearance | 0.90 |
| | The use of images corresponds to the information in the text | 0.95 |
| Relevance | The illustrations help to understand the key aspects | 0.95 |
| | The divisions of the themes helped in understanding the content | 1.00 |
| | Returned to the website to ask questions | 0.90 |
| | Chatted or exchanged ideas with colleagues and others about the website | 0.85 |
| Environment | The pages are adequate for the types of information presented | 1.00 |
| | The website proposes learning situations | 1.00 |
| | Would like to continue using the website to study the subject | 0.90 |
| | Would like to have another theme available on the website | 0.80 |
| Overall index | | 0.94 |

For teenagers, all the criteria assessed were greater than 0.80, except for the communication functions established in the functionality criterion, which presented an index of 0.75. Maintenance was performed with updating and reviewing the contents periodically, and the website was made available on the internet through the unique address (http://www.papodeadolescente.com.br ), in which, after assessment, the page had free access, without the need for an authentication and authorization mechanism.

## Discussion

The website *Papo Adolescente was* developed to disseminate information on sexuality and prevention of Sexually Transmitted Infections contextualized in the teachings of the Catholic Church and related topics such as masturbation, nocturnal pollution, dating, virginity, chastity and a divine project related to sexuality. Presenting the themes in a related way corroborates a study that identified that young people who practiced a religion were less exposed to risky behaviors and, when practicing habits oriented by religion, they were protected, configuring it as a protective factor for risky behaviors.[7,23] Furthermore, the content presented favors greater acceptance for Catholic teenagers.

Teenagers are in a unique period of psychosocial, biological development, and high risk of acquiring and transmitting Sexually Transmitted Infections. However, it is important that sexual history is confidential, and screening for Sexually Transmitted Infections is included in routine care, as many of those who care, even health professionals, do not discuss sexuality, although primary care is opportune for educate about sexual health, promote healthy relationships and discuss the prevention of Sexually Transmitted Infections and HIV.[14] Moreover, the website, in addition to ensuring confidentiality, favors information, which is often omitted in health, school and family services.

Understanding vulnerabilities is also important in the prevention of Sexually Transmitted Infections/HIV/AIDS, as they are diseases that unfold the intimacy of those who do not have adequate information, raising the need to demonstrate the forms of transmission of Sexually Transmitted Infections, illustrated on the website *Papo de Adolescent* in the tableau "This way you get it/This way you don't get it".

The various technologies and applications, including interactive websites, challenge the sending of messages to the recipient, as, unlike traditional interventions, they do not need personal participation, and access to intervention materials is unlimited.[24] This aspect was observed in the website developed, guaranteeing anonymity and information for users. When using information technology, nursing

seeks solutions to perform tasks in the best possible way, facilitating the performance of activities.[25]

In the assessment of the engravings presented on the website, the index was 0.78, making it necessary to adapt the images to enable greater knowledge. When it comes to education, the images must be observed carefully, considering the characteristics of the teenagers of this generation of Internet users, always connected.[26] It is important to consider issues related to design and usability, as these affect the use and possible future health outcomes.[27]

When it comes to health education, information pertinence and content updating are fundamental. The indexes obtained for both were 0.77 and 0.70, respectively, requiring adjustments. Teenagers consider that the search for information, the understanding of the diagnosis and the form of health care favor independence, making them an active participant; navigating the virtual environment can be a simple activity, but it is not always easy, especially when a series of questions disturbs them.[14] Therefore, content must be reliable and updated. Regarding reliability, it is emphasized that Catholic teenagers may not accept guidance on the prevention of Sexually Infected infections offered in schools and other spaces, as they understand that they stimulate early sexuality, being contrary to what is recommended in the Catholic Church.[9]

Regarding the authorship criterion, the indexes achieved were 0.50, for clear indication and qualification of the author, and 0.75, for the mechanisms through which it is possible to establish contact with the author. When inserting information in a virtual environment, the target audience must be considered, since the content launched on the network must reach the proposed objective and present security. Teenagers, due to their immaturity and being in the process of discovering, have difficulties to assimilate and distinguish between right and wrong, and it should be remembered that, behind the virtual icons, there are people, trained or not to exercise the activity online, which are subject to errors, successes and all human potential.[14]

For the first impression criterion, the judges in computing and design assessed it negatively, with indexes of 0.50 and 0.56, respectively. This criterion is directly related to the user's perception and final satisfaction. For the user, aspects such as attractiveness (before use) and the final perception of pleasantness, confidence and believing that he was able to reach his initial expectations are very important. Thus, interfaces considered complex are perceived as organized, attractive and reliable, being understood as the easiest to read and to recognize functional zones; more pleasant; and that best meets initial expectations.[28]

For the criterion ease of navigation, in the item about the user not being lost or confused, the index was 0.56. In a study carried out for the development of website with content for nursing, the screens created were configured in order to make understanding easy, with regard to use, avoiding visual pollution, data repetition and establishing a standard to facilitate the system's final design.[29]

Regarding usability, the index in all responses was> 0.80, whereas, in the functionality criterion, the index was 0.75. Most studies use modalities based on sites, but an increasing number of researchers have explored technologies relevant to youth that offer key functions relevant in the context of HIV, such as anonymity, social support, assessment, feedback in time real and other engaging features.[30] Still on the usability assessment, in a study that assessed an educational technology in the format of serious games obtained positive responses by participants. The suggestions contributed to the quality of the functions and interaction, favoring the improvement of the final version of the game.[31] The "contact us" and "forum" functions, included in the website, are then highlighted as strategies to encourage user participation.

As for the interaction functions, the role of the moderator is emphasized. In a study carried out on the moderation of conversations among teenagers, the authors reinforce the importance of the moderator to balance the surveillance function, enabling the function of social support and facilitator of the conversation to promote social support among peers on the web.[32]

Regarding content, all items had indexes >0.80. There is no doubt that a technology in the virtual format is effective with teenagers. A study devel-

oped on technology for HIV testing and Sexually Transmitted Infections proved its effectiveness, in addition to serving as a model to integrate behavioral prevention, in addition to other biomedical prevention strategies.[33] Considering that the target audience of the *website* are Catholic teenagers, it should be noted that the content presented is articulated with Christian principles, reinforcing the church's view on the topics addressed.

For relevance, only the item that addresses the possibility of talking to another person about the website presented a "disagree" response, the index being 0.85. The network is an option for sharing information and knowledge, which provides spaces in which people with common goals and interests exchange experiences, generating relevant innovations and solutions. Educational interventions carried out through social networks, when compared to traditional interventions, presented advantages, as the participant does not need to attend the sessions in person and unlimited access to intervention materials whenever he wishes.[24]

Similar to the results presented, in which the teenagers assessed the website positively, with an overall Content Validity Index of 0.94, in a study carried out on the development of educational games for adherence to HIV treatment, teenagers and young adults assessed the educational technology, provided relevant comments and demonstrated that the widespread use of technological resources can favor health promotion and disease prevention in teenagers.[34]

As for the environment, the need to adapt the pages was signaled. Specifically on this last criterion, one teenager disagreed (index of 0.80), although the other four participants agreed, and no topic was suggested to be addressed on the website.

The website's overall index was 0.88 for content judges, 0.70 for computing judges and design and, after corrections and adjustments, it was analyzed by teenagers, with an overall index of 0.94, the website *Papo de Adolescente* being considered adequate.

## Conclusion

The knowledge of the experiences and culture of the target audience for the development of the web-

site *Papo de Adolescente* makes it possible to better meet the learning needs of the adolescent, having been considered adequate educational material regarding its content and interface. m The differential of this *website* was the presentation of content related to sexuality and the prevention of Sexually Transmitted Infections/HIV/AIDS associated with the Catholic context, focusing on ethical, human and Christian principles, in order to be accepted by the Catholic public, and can be disseminated by educators, nursing professionals and church members who deal with teenagers.

## Collaborations

## Acknowledgments

Development of Maranhão (FAPEMA - Fundação de Amparo à Pesquisa e ao Desenvolvimento Científico e Tecnológico do Maranhão), National AIDS Ministry, the judges and teenagers who participated in the development and assessment of the website.

## References

1. Fundo das Nações Unidas para a Infância (UNICEF). HIV/AIDS. Turning the tide against AIDS will require more concentrated focus on adolescents and young people [Internet]. 2018 [cited 2018 Oct 18]. Available from: https://data.unicef.org/topic/adolescents/hiv-aids/

2. Saura S, Jorquera V, Rodríguez D, Mascort C, Castellà I, García J. Percepción del riesgo de infecciones de transmisión sexual/VIH en jóvenes desde uma perspectiva de género. Aten Primaria. 2017;1–10.

3. Wangu Z, Burstein GR. Adolescent Sexuality: Updates to the Sexually Transmitted Infection Guidelines. Pediatr Clin North Am. 2017;64(2):389–411.

4. Oliveira PS, Abud AC, Inagaki AD, Alves JA, Matos KF. Vulnerability of adolescents to sexually transmissible diseases in primary care. J Nurs UFPE on line. 2018;12(3):753-62.

5. Castro SS. A atividade eclesial do Papa Francisco: um estudo de caso. Identidade. 2017;22(2):265–72.

6. Instituto Brasileiro de Geografia e Estatística (IBGE). Censo Demográfico 2010. Características gerais da população, religião e pessoas com deficiência [Internet]. Rio de Janeiro: IBGE; 2010 [citado 2018 Out 18]. Disponível em: http://www.ibge.gov.br/home/estatistica/populacao/censo2010/caracteristicas_religiao_deficiencia/default_caracteristicas_religiao_deficiencia.shtm

7. Duarte AJ. Religião e comportamento sexual: concepções cristãs sobre sexualidade. Rev Relegens Thréskeia. 2017;6(1):74–98.

8. Esquivel JC, Alonso JP. Actores y discursos religiosos en la esfera pública: los debates en torno a la educación sexual y a la "muerte digna" en Argentina. Sexualidad. Salud Soc. 2015;21:85–110

9. Ferreira AG, Vieira NF, Trasferetti JA, Galvão MT, Gubert FA, Pinheiro PN. Dialogando com adolescentes de grupos religiosos sobre HIV: desafios para a enfermagem. Texto Contexto Enferm. 2013;22(4):952–60.

10. Pinto A, Scopacasa L, de Araújo Lira Bezerra L, Pedrosa J, da Costa Pinheiro P. Use of information and communication technologies in health education for adolescents: integrative review. J Nurs UFPE on line 2017;11(2):634-44.

11. TIC Kids Online Brasil. Pesquisa sobre o uso da internet por crianças e adolescentes no Brasil 2016. [Internet]. São Paulo: Comitê Gestor da Internet no Brasil; 2017 [citado 2018 Out 18]. Disponível em: https://cetic.br/media/docs/publicacoes/2/TIC_KIDS_ONLINE_2016_LivroEletronico.pdf

12. Livingstone S, Mascheroni G, Staksrud E. Developing a framework for researching children's online risks and opportunities in Europe. EU Kids Online [Internet]. 2015 [cited 2018 Oct 18]. Available from: http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EUKidsIV/PDF/TheEUKidsOnlineresearchframework.pdf

13. Gondim PS, Souto NF, Moreira CB, Cruz ME, Caetano FH, Montesuma FG. Accessibility of adolescents to sources of information on sexual and reproductive health. J Hum Growth Dev. 2015;25(1):50–3.

14. Santos GS, Tavares CM, Aguiar RC, Queiroz AB, Ferreira RE, Pereira CS. Buscando informações em saúde online: Estratégia de enfrentamento dos adolescentes com doenças crônicas. Rev Portuguesa Enferm Saúde Mental. 2016; (Spe 4):33-8.

15. Ferreira AG, Teixeira RM, Neves CS, Bezerra LL, Scopacasa LF, Pinheiro PN. Internet, sexualidade e prevenção de DST/HIV/aids: percepção de adolescentes católicos. Rev Paraninfo Digital [Internet]. 2015 [cited 2018 Oct 18];22. Available from: http://www.index-f.com/para/n22/293.php#com

16. Falkembach GA. Concepção e desenvolvimento de material educativo digital. RENOTE. 2005];3(1):1-15. https://doi.org/10.22456/1679-1916.13742.

17. Paiva DM, Nunes MG, Pimentel MG. Avaliação qualitativa de um conjunto de requisitos para sistemas de autoria hipermídia educacional. In: Simpósio Brasileiro de Informática na Educação - SBIE, Porto Alegre (RS); 28-37 nov 2001. https://doi.org/10.5753/cbie.sbie.2001.28-37.

18. Marques IR, Marin HF. Enfermagem na Web: o processo de criação e validação de um Web site sobre doença arterial coronariana. Rev Lat Am Enferm. 2002;10(3):298–307.

19. Joseph L. WWW CyberGuide Ratings for Content Evaluation [Internet]. Cybebee, 1999 [cited 2018 Out 18]. Available from: http://www.cyberbee.com/content.pdf

20. Aguiar RV, Cassiani SH. Desenvolvimento e avaliação de ambiente virtual de aprendizagem em curso profissionalizante de enfermagem. Rev Lat Am Enferm. 2007;15(6):1086-91.

21. Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? Critique and recommendations. Res Nurs Health. 2006;29(5):489–97.

22. Alexandre NM, Coluci MZ. Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. Cien Saude Colet. 2011;16(7):3061–8.

23. Cerqueira-Santos E, Koller S. Sexual risk-taking behavior: the role of religiosity among poor Brazilian youth. Univ Psychol. 2016;15(4):1–9.

24. Mesquita AC, Zamarioli CM, Fulquini FL, Carvalho EC, Angerami EL. Social networks in nursing work processes: an integrative literature review. Rev Esc Enferm USP. 2017;51(0):e03219.

25. Lins TH, Marin HF. Avaliação de website sobre assistência de enfermagem na sala de recuperação pós-anestésica. Acta Paul Enferm. 2012;25(1):109–15.

26. Gomes CS. Imagens meméticas e a comunic(ação) na web: um experimento analítico, reflexões e aplicabilidades acerca do discurso multimodal do Facebook. Texto Livre. Linguagem e Tecnologia. 2015;8(2):54–68.

27. Høybye MT, Olsen PR, Hansson HE, Spiegel D, Bennetsen H, Cheslack-Postava E. Virtual environments in cancer care: pilot-testing a three-dimensional web-based platform as a tool for support in young cancer patients. Health Informatics J. 2018;24(4):419–31.

28. Fernandes FR, Botura Junior G, Paschoarelli LC. Complexidade visual da interface digital e satisfação de uso: uma analise em websites de caráter informacional. InfoDesign – Rev Bras Design Info. 2017;17(1):66-88.

29. Silva K, Évora Y, Cintra C. Desenvolvimento de software para apoiar a tomada de decisão na seleção de diagnósticos e intervenções de enfermagem para crianças e adolescentes. Rev Lat Am Enferm. 2015;23(5):927–35.

30. Hightow-Weidman LB, Muessig KE, Bauermeister J, Zhang C, LeGrand S. Youth, technology and HIV: recent advances and future. Curr HIV/AIDS Rep. 2015;12(4):500–15.

31. Serafim AR, Silva AN, Alcântara CM, Queiroz MV. Construção de serious games para adolescentes com diabetes mellitus tipo 1. Acta Paul Enferm. 2019;32(4):374–81.

32. Windler C, Clair M, Long C, Boyle L, Radovic A. Role of moderators on engagement of adolescents with depression or anxiety in a social media intervention: content analysis of web-based interactions. JMIR Ment Health. 2019;6(9):e13467.

33. Mustanski B, Madkins K, Greene GJ, Parsons JT, Johnson BA, Sullivan P, et al. Internet-based HIV prevention with at-home sexually transmitted infection testing for young men having sex with men: study protocol of a randomized controlled trial of keep it up! 2.0. JMIR Res Protoc. 2017;6(1):e1.

34. Castel AD, Qasmieh S, Greenberg D, Ellenberger N, Howell TH, Griffith C, et al. Digital gaming to imporve adherence among adolescentes and young adults living with HIV: mixed-methods study to test feasibility and acceptability. J Med Internet Res. 2018;20(10):150.