

## Validation of educational booklet for HIV/Aids prevention in older adults

*Validação de cartilha educativa para prevenção de HIV/Aids em idosos*  
*Validación de una cartilla educativa para la prevención del VIH/sida en ancianos*

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### ABSTRACT

**Objective:** To describe the process of manufacturing and validation of an educational booklet for HIV/Aids prevention in older adults **Methods:** Methodological study developed in two phases – manufacturing of the booklet and validation of the educational material by judges. The manufacturing process involved a situational diagnosis with older adults, and its result indicated gaps in the knowledge with respect to HIV/Aids. The validation process was performed by nine judges, selected by convenience. It was considered an agreement index of at least 0.80, analyzed through the content validity index. **Results:** We opted for a dialogue between two older adults divided into three categories: myths and taboos; ignorance; and prevention and importance of diagnosis. The average of the items was 0.90. The suggestions made by the judges were observed and modified for the final version. **Conclusion:** The material had relevant content for the judges, in addition to being able to be used by health professionals in the education and clarification of issues on the subject.

**Descriptors:** Older People; Teaching Materials; Sexually Transmitted Diseases; Geriatric Nursing; HIV.

### RESUMO

**Objetivo:** Descrever o processo de construção e validação de cartilha educativa para prevenção de HIV/Aids em idosos. **Método:** Estudo metodológico desenvolvido em duas etapas — construção da cartilha e validação do material educativo por juízes. O processo de construção envolveu um diagnóstico situacional com idosos, cujo resultado apontou lacunas no conhecimento com relação ao HIV/Aids. Já o processo de validação foi realizado por nove juízes, selecionados por conveniência. Considerou-se uma concordância de no mínimo 0,80, analisado pelo índice de validade de conteúdo. **Resultados:** Optou-se por um diálogo entre dois idosos dividido em três categorias: mitos e tabus; desconhecimento; e prevenção e importância do diagnóstico. A média dos itens foi de 0,90. As sugestões realizadas pelos juízes foram acatadas e modificadas para a versão final. **Conclusão:** O material apresentou conteúdo relevante para os juízes, além de poder ser utilizado pelos profissionais de saúde no ensino e esclarecimento de questões sobre a temática.

**Descritores:** Idoso; Materiais de Ensino; Doenças Sexualmente Transmissíveis; Enfermagem Geriátrica; HIV.

### RESUMEN

**Objetivo:** Describir el proceso de construcción y validación de una cartilla educativa para la prevención del VIH/sida en los ancianos. **Método:** Estudio desarrollado en dos etapas: construcción de la cartilla y validación del material educativo por los jueces. El proceso de construcción implicó una diagnosis situacional de ancianos que señaló lagunas en el conocimiento del VIH/sida. Ya el proceso de validación fue realizado por nueve jueces, seleccionados por conveniencia. Se consideró una concordancia de por lo menos 0,80, analizada por el índice de validez de contenido. **Resultados:** Se optó por un diálogo entre dos ancianos dividido en tres categorías: mitos y tabúes; desconocimiento; prevención e importancia de la diagnosis. El promedio de los ítems fue de 0,90. Las sugerencias de los jueces fueron acatadas y modificadas para la versión final.

**Conclusión:** El material presentó contenido relevante para los jueces y puede ser utilizado por los profesionales de la salud en la enseñanza y en la clarificación de cuestiones sobre el tema.

**Descriptores:** Ancianos; Materiales de Enseñanza; Enfermedades de Transmisión Sexual; Enfermería Geriátrica; VIH.

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## INTRODUCTION

Acquired Immunodeficiency Syndrome (Aids) is a chronic disease, of emerging character and caused by the Human Immunodeficiency Virus (HIV), which is able to attack the host's immune system, leaving them susceptible to new infections<sup>(1-2)</sup>.

The initial focus of the Aids epidemic in Brazil happened in 1980, concentrated in the Southeast, with 465,000 cases registered by the Ministry of Health (MS), and was composed of a population of homosexuals; later, injection drug users, blood transfusion patients, women, children and older adults were infected by HIV<sup>(2)</sup>.

Another global challenge to health services is associated with the aging of the population. According to statistical projections from the World Health Organization (WHO), in 2025, Brazil will occupy the sixth place regarding the contingent of older adults, with about 32 million people aged 60 or older. People aged 50 or older who live with HIV are also considered to be older adults, due to the immune impairment caused by the disease<sup>(3)</sup>.

Epidemiological studies related to Aids, by age group in Brazil, point to the 80% increase in detection rates of HIV in relation to the population aged 60 or older, in the last 12 years. From 1980 to 2016, 28,122 cases of older adults infected with HIV per 100,000 inhabitants were notified, in total. The elderly population occupies the 10th place with higher incidence of Aids in the country<sup>(4-5)</sup>.

The high number of elderly people infected with HIV is due to several factors: increased life expectancy, availability of pharmacological alternatives for erectile dysfunction and for hormone replacement, physical and psychological vulnerability; and due to other types of exposure to HIV, in addition to the sexual, such as blood transfusion, illicit drug use and increase of the survival rate of people living with HIV/Aids<sup>(6-7)</sup>.

However, there are still taboos regarding the sexuality of older adults, which can contribute to the increase in Sexually Transmitted Infections (STIS) such as HIV/Aids<sup>(8)</sup>.

Many older adults are skeptic in what concerns the risk of HIV infection, because they believe that it is only likely in people who lead a promiscuous life. They show resistance to condom use, for considering it to be a contraceptive method only. In addition, some existing campaigns are targeted primarily towards the younger population<sup>(9-11)</sup>.

Certain health professionals do not feel qualified in allocating assistance in relation to the sexual health of older people, in addition to there being shortcomings with regard to the use of light technologies, with careful implementation for establishing personal relationships based on general structured knowledge, such as educational booklets<sup>(12)</sup>.

Therefore, a gap in the actions aimed at the population of older adults with regard to the prevention of HIV/Aids may be noted. It is also known that health education actions should be

reconsidered, since the approach used with older adults cannot be the same as the one used with young adults.

Given the lack of information of this population due to them rarely being the target audience of campaigns and of training offered by health professionals, the relevance of the use of educational printed materials for providing information and for the prevention of HIV/Aids in this population is inferred.

Printed educational materials have been used as a tool for health education to facilitate knowledge, clarify myths and taboos related to the topic. In this way, the use of educational booklets has been increasing, also for being a resource that the person may use also in the absence of the health professional<sup>(13-15)</sup>.

Content validation is required in order to infer the scientific nature of the material, to help in guiding older adults on the importance of HIV/Aids prevention<sup>(16)</sup>.

Considering the importance of these aspects, the objective of this study was to describe the process of manufacturing and validation of an educational booklet for HIV/Aids prevention in older adults

## METHOD

### Ethical aspects

The project was submitted to and approved by the Research Ethics Committee. The ethical and legal principles were complied with, considering the respect for human dignity and for the special protection to the participants of scientific researches involving human beings, in accordance with resolution 466/2012 of the National Health Council<sup>(17)</sup>.

### Study design, location and period

This is a survey of methodological character, resulting from the collective health research group of the University of Fortaleza, covering the topic of HIV in older people. The educational booklet is titled "*Cuidar de si é se amar: Um diálogo sobre HIV/Aids entre idosos*" [Taking care of yourself is loving yourself: A dialogue about HIV/Aids in the older population].

The educational booklet was made according to the recommendations for the manufacturing and evaluation of educational materials for older adults, according to the items: content, language, illustrations, layout, and design<sup>(18)</sup>. In the process of manufacturing of the booklet, the situational diagnosis, in which six field researches conducted between the period from 2008 to 2013 were analyzed, was made, the results having showed gaps in relation to the knowledge of older adults regarding HIV/Aids.

The results indicated the following gaps and myths: "older adults do not need to use condoms", "older adults can't have Aids", "condoms are only used to avoid pregnancy", "people with Aids suffer rejection from society", "Aids and HIV are the same thing". Thus, after the analysis of the results of the

researches, the assembling of the booklet was conducted according to the main gaps and myths that needed to be demystified in relation to HIV/Aids among older adults.

From the identification of the gaps and myths, a survey of the literature was conducted in the LILACS, Medline/PubMed and Scopus databases, using Health Sciences descriptors/ Medical subject Heading (DECS/MeSH): "aged", "sexually transmitted diseases", "HIV", "Health education", "Aids serodiagnosis", "condoms". The controlled descriptor "aged" was used, associated through the boolean operator AND to the above descriptors.

The design and layout of the images was done by a professional graphic designer, and the illustrations were sent to the researchers for approval. The images were described in detail and then edited in Adobe Illustrator.

For the validation of the content of the booklet, the concept of content validation was used, i.e., the extent of the representativeness of each of its elements was assessed by the judges<sup>(19)</sup>.

The judges' evaluation instrument was divided into two parts. The first relates to their characteristics as regards to vocational training and identification data, such as: age, gender, current occupation, area of practice, titling, training time, participation in scientific research and production groups. The second part of the instrument referred to the instructions for the filling of the instrument and to the evaluation items of the booklet, totaling 30 items distributed in five evaluative aspects: aim, language, relevance, illustrations, layout and design. A Likert scale was used for the answer options. The scale used a 5-point score system (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = totally agree)<sup>(19)</sup>. It is worth noting that the domains which represent content are: aim, significance and content. And the domains which represent appearance are: illustration and language.

The data were collected in the period between August and November 2015.

#### **Population or study sample; inclusion and exclusion criteria**

For validation, nine judges were selected through consultations in the Lattes platform, of the National Council for Scientific and Technological Development (CNPq). In their selection, the following aspects were considered: developing prevention and/or health promotion actions aimed at older adults; having professional experience in the area of health of older adults and/or of persons with STI/HIV/Aids, for more than two years; having developed scientific papers on the health of older adults and/or of adults with STI/HIV/Aids; having knowledge on educational technology; having knowledge on the process of manufacturing and validation of instruments; having a master's or doctoral degree with scientific production in the area of health of older adults and/or of adults with STI/HIV/Aids or with production of educational technology. The judges with less than five years of experience in the area of healthcare for older adults were excluded.

#### **Study protocol**

The process of validation of the educational booklet was guided by the theoretical referential of validity of content<sup>(20)</sup>,

which describes how the percentage of experts who agreed on the content of the material must be measured. Thus, it is necessary for the experts to be references in the field of interest of the content, because only in this way they will be able to assess satisfactorily the representative content of the educational material<sup>(19)</sup>.

Firstly, a survey on these experts was conducted through the Lattes Platform of the CNPq web portal. The search by subject was initiated (keywords: aged/HIV/Aids/Health Education/Printed educational materials) with the *simple search* option, and filters were used to refine the criteria.

In addition to the aforementioned selection criteria, the selection of the experts was conducted through *snowball* sampling: thus, when a subject who fit the established criteria for inclusion was identified, it was asked that they suggested other participants<sup>(20)</sup>. To contact the experts, an e-mail address was used, along with a letter of invitation.

After the application of the criteria of inclusion, an invitation to the experts was made via email or in person, the objectives of the study having been listed. Then, the experts who agreed to participate in the study received an Informed Consent Form and the Educational Booklet.

The work of the experts consisted in conducting a critical reading of the booklet to fill the evaluation instrument, which was composed of items that encompassed its aims, content, language, illustrations, layout, and design.

A period of 15 days was established for them to carry out the analysis, fill out the evaluation instrument and return it to the researcher in person or by e-mail. Finally, the information described by the experts for the adequacy of the booklet in accordance with the suggested recommendations was assessed.

#### **Analysis of the results and statistics**

The validation data were entered in the program Excel 7.0 and arranged in tables, being analyzed in accordance with the Content Validity Index (CVI), calculated based on three mathematical equations: S-CVI/Ave (average of the indexes of content validation for all indexes of the scale), S-CVI/UA (proportion of the items assigned with a 4/5/agree and 5/totally agree score by all judges) and I-CVI (content validity of individual items)<sup>(19)</sup>. It is worth noting that the CVI ranges from -1 to 1 and considers valid the item which had agreement between the judges equal to or greater than 0.80<sup>(19)</sup>.

## **RESULTS**

The nine judges agreed to participate in the survey and evaluate the educational material. The professional profile indicated: a journalist with a master's degree, working as an adviser and with experience in preventive interactions of people living with HIV/Aids; eight nurses, among them, six with a doctoral and two with a master's degree, working with technical assistance in the field of IST/Aids and Viral Hepatitis in the Municipal Health Secretariat of Fortaleza, with the manufacturing of educational technologies, working with the production of researches involving older adults and participating in the Collective Health research group.

For a better understanding of the content of the booklet, a dialogue between two friends was used, in which one of them has erroneous and prejudicial ideas on the subject, and the other is an older person infected by HIV. The sequence of the dialogue was developed based on three main categories: myths and taboos; ignorance; and prevention and importance of diagnosis. Such topics were listed after the reading of the selected material in association with the answers obtained in the situational diagnosis.

The title of the booklet, "CUIDAR DE SI É SE AMAR: Um diálogo sobre HIV entre idosos" [Taking care of yourself is loving yourself: A dialogue about HIV/Aids in the older population] was chosen for being objective and thus allowing a clearer comprehension by the older adult in relation to self-care as a whole, as it is a form of love.

The category myths and taboos was originated based on real events, which show that many older adults have insufficient knowledge on Aids. This can occur due to the lack of interest for subjects pertaining to reality, or even for taboo subjects, seeing it is a Sexually Transmitted Infection.

The question "Do older people need to use condoms?", by older adults, is a consequence of the fact that health education campaigns and Aids prevention are more aimed at the young population, thus resulting in older adults becoming less informed about HIV and less aware of how to protect themselves from the infection<sup>(10)</sup>.

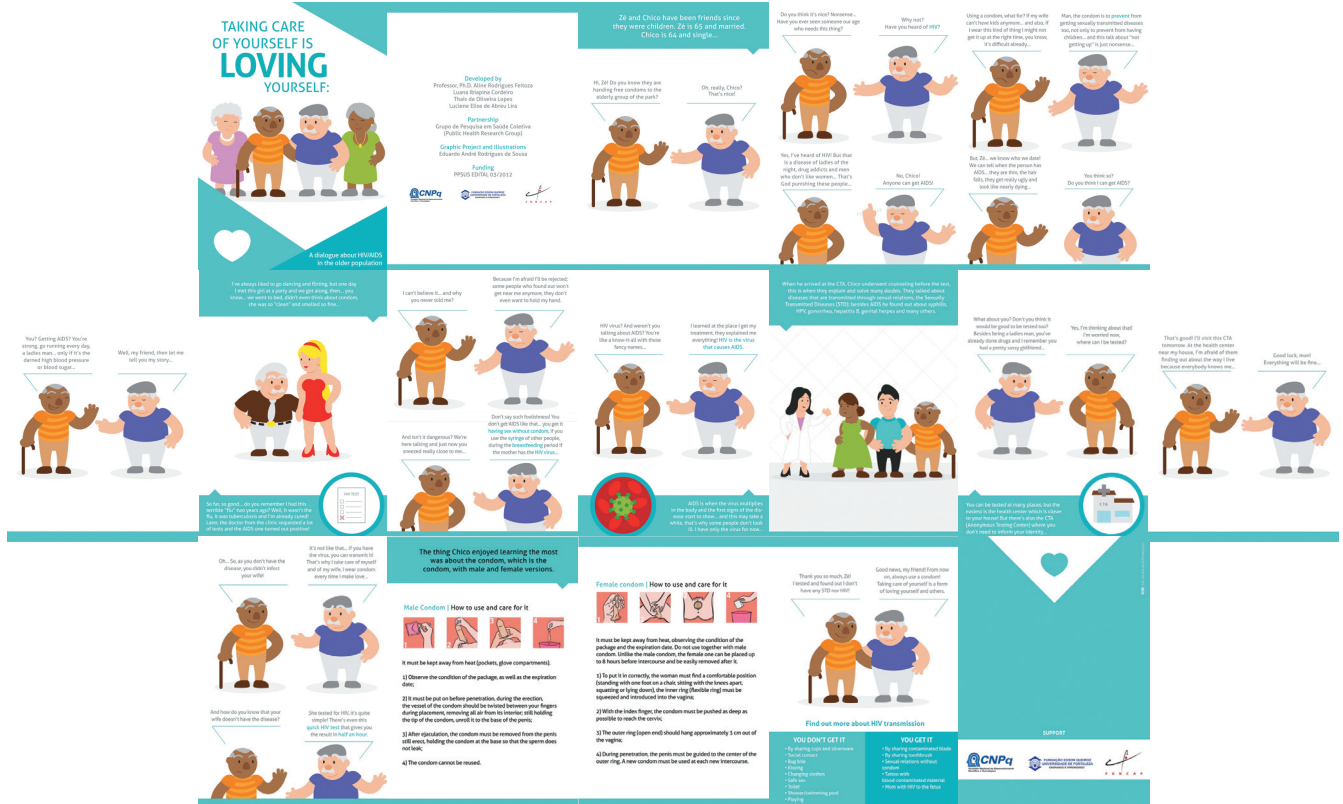
In addition, the aging population has not experienced the appealing use of the condom, as is evidenced nowadays.

In relation to the ignorance category, many gaps may be perceived in the understanding of older adults about the reality of HIV/Aids, as became clear through the assessment of the researches of the situational diagnosis, having direct association with the increase in the vulnerability of the older population.

Another gap in their knowledge concerns HIV transmission. Many older adults still believe in the idea that used to be had in the beginning of the epidemic, according to which personal contact and contact through objects were also forms of transmission of Aids. Ignorance breeds prejudice.

The last category, prevention and the importance of early diagnosis, was illustrated with six figures in the booklet, which focus on key points about HIV prevention and the importance of knowing the serological status. In addition to prevention through the use of male and female condoms, it was decided to address the care with the partner and the exposure of women to HIV contamination. However, it was evidenced through illustrations that the early knowledge of HIV infection and the search for a suitable control can contribute to strengthen the system of prevention of Aids.

The addressing of the importance of the diagnosis is to show older adults how easy the access to HIV testing is, and to highlight the work carried out by the Testing and Counseling Centers (CTA).



Source: Feitoza; Cordeiro; Lopes, 2015.

Figure 1 – Cover and pages of the booklet for HIV prevention in older adults, Fortaleza, Ceará, Brazil, 2015

As for the content validation performed by the judges, they presented a positive assessment of the booklet and indicated the material as an excellent complement in the practical training carried out by health professionals on the subject, mainly for the conversational style with which the contents were exposed, which could lead the target audience, when reading the materials, to feel more motivated to follow the proposed guidelines. The judges' suggestions were included in the booklet, and it was revised for the producing of the final version.

In what concerns the agreement among the judges regarding the educational material, a I-CVI of 0.95 was obtained, considering a S-CVI of 1 for the relevance domain, a S-CVI of 0.91 for the aim domain and a S-CVI of 0.91 for the contents domain.

In what concerns the agreement among the judges regarding the educational material, a I-CVI of 0.95 was obtained, considering a S-CVI of 0.92 for the illustrations domain, a S-CVI of 0.95 for the language domain and a S-CVI of 0.91 for the layout and design domain.

**Chart 1** – Summary of the qualitative analysis of the changes suggested by the judges, Fortaleza, Ceará, Brazil, 2016

Domains	Suggestion of the judges
Aims	To reinforce the use of condoms in all sexual relations and for protection against STIs, in addition to addressing the homosexual bias.
Content	In relation to the method of transmission, there is a need for reformulation of the phrase "tattoo with blood-contaminated material", because it might seem that the tattoo is only made with contaminated blood; further explore the difficulty that older adults have in using a condom correctly and the stigma of erection due to the condom.
Language	Replace the term "vessel" by "tip" or "end"; change the expression "male" by another more used among older adults; replace the terms "not getting up" for "failing" and "nonsense" for "rubbish".
Illustration	The order of the characters changes in only one slide; diversification of the images to make the material more attractive; put the figures of orientation on the use of condoms next to each corresponding orientation.
Layout and design	Increase font size; white colors are very present, making the reading less attractive; I suggest changing the color of Zé's pants and darkening the illustration's backgrounds a little; change the main background, because having only one makes reading boring.

Note: STI - Sexually Transmitted Infections

**Table 1** – Evaluation of the agreement index of the educational booklet's adequacy in relation to the Content Validity Index, Fortaleza, Ceará, Brazil, 2015

Domains	Items	I-CVI*
Aim	1.1 To generate reflections on the care which needs to be taken by older adults in their sexual relations	1
	1.2 To promote a change in behavior and attitude before the dangers of lack of prevention	0.89
	1.3 To promote the demystification of the HIV/Aids issue among older adults	1
	1.4 To clarify the information on the forms of HIV contamination	0.78
	1.5 To mitigate the biased ideas on the subject of HIV	0.89
CVI** – Total		0.91
Content	2.1 Appropriate for the orientation of older adults in the prevention of STD/HIV/Aids	1
	2.2 Able to clarify doubts about the forms of contamination	1
	2.3 The messages are presented in a clear and objective manner	1
	2.4 The information presented are scientifically correct	0.89
	2.5 The contents are varied and sufficient to achieve the objectives of the booklet	0.89
	2.6 There is a logical sequence of the content proposed	1
CVI** – Total		0.96

Notes: \* I-CVI – Content Validity of Individual Items; \*\* CVI – Content Validity Index

**Table 2** – Evaluation of the agreement index of the educational booklet's adequacy in relation to appearance, Fortaleza, Ceará, Brazil, 2015

Domains	Items	I-CVI*
Relevance	4.1 Opportunity of acquiring knowledge about the HIV/Aids issue	1
	4.2 Adequacy of the booklet for use by health professionals with their patients	1
	4.3 Adequacy of the booklet as a health education tool	1
	4.4 Elucidation of the issue addressed to the population	1
	4.5 Focus on the key aspect that should be reinforced.	1
CVI** – Total		1
Illustrations	5.1 Emphasis on important points and ideas of the text	0.89
	5.2 Relevant to the material's contents	1
	5.3 The number of illustrations is enough to express the contents satisfactorily	0.89
	5.4 The subtitles are appropriate and help the reader to understand the image	0.89
CVI** – Total		0.92
Language	3.1 Comprehensibility of the content by the way it is presented in the form of a conversation	1
	3.2 Comprehensibility of the content by the use of objective and short texts	0.89
	3.3 Comprehensibility of the content by the use of the active voice with familiar words that have simple definitions	1
	3.4 Comprehensibility of the content by the good structuring of the discourse with the use of correct spelling and good grammatical concord	0.89
CVI** – Total		0.95
Layout and design	6.1 The presentation of the booklet is attractive and well organized	1
	6.2 The typographic font used was suitable to the target audience	1
	6.3 The typographic fonts of the text are adequate and easy to read	1
	6.4 The number of pages is appropriate	1
	6.5 The most important information are arranged in the text correctly for a better understanding	1
	6.6 The use of matte printing improved the readability of the text	1
CVI** – Total		1

Notes: \* I-CVI – Content Validity of Individual Items; \*\* CVI – Content Validity Index

## DISCUSSION

The evaluation of the judges showed that the educational booklet is an educational material with relevant and valid content in what concerns the issues assessed (HIV/Aids prevention in older adults) with an attractive appearance that motivates its reading, with excellent individual CVIs for each domain. Despite the result of the CVI-Total of all domains being above 0.8, the judges suggested some changes.

In relation to the domains, changes were suggested both in the content as in the illustrations, in relation to the reformulation of some sentences. The suggestions of replacements and explanation of terms considered inappropriate and confusing and the adding of relevant information are needed, because the guidance provided by the health professionals cannot be different or conflicting. In addition, the interest of these professionals, especially those working in the field, in using printed technology, is demonstrated<sup>(21-22)</sup>.

Reinforcement concerning the use of condoms in all sexual relations was requested, because this is a practice still denied by

older adults. The use of condoms, male or female, by sexually active people is the most effective way of reducing the risk of transmission of HIV and other STIs, which applies to every sexual intercourse<sup>(23)</sup>.

The objective of the booklet was to raise the discussion on HIV/Aids, though other sexually transmitted infections (STIs) also need to be discussed with this specific population.

There has been an increase in the number of people with a diagnosis of STI in Brazil in the age group above 60 years old. This can be a result of the increase in the number of sexual relations practiced by this population, which — probably due to educational, cultural, economic issues, among others — still abnegates the use of male and female condoms<sup>(23-24)</sup>.

Old age has been problematized as variable of cultural changes and innovations in the modern world, in which older adults are responsible for the creation of new lifestyles<sup>(24)</sup>.

The replacement of difficult terms was requested, because the use of the language must be consistent with the message of

the instrument and its target audience; it should be easy to read and understand<sup>(13)</sup>. Educational materials intended for older people must have an accessible language, avoiding technical terms or terms which are difficult to understand, being clear, objective and facilitating the reflection on the subject<sup>(15,18)</sup>.

The term “vessel”, used in the explanation of the male and female condoms, is difficult to understand. Thus, it was suggested to replace it with “tip” in the following sentence: “the vessel at the end of the condom should be put before penetration, during erection”. The vocabulary used should be consistent with the message and the target audience; complex words and technical terminology should be avoided<sup>(25)</sup>.

In order to make the booklet a didactic material, easy and enjoyable for reading, it was suggested to put the figures representing the orientations next to the written text for each of them. Thus, it would be possible to read the orientation and compare it with the corresponding figure. It is worth noting the importance of the illustration for the readability and comprehension of the text. Its function is to attract the reader, awaken and keep his/her interest for the reading, complement and enhance the information provided by the health care professional regarding HIV/Aids prevention<sup>(18)</sup>.

Images that do not depict reality create misrepresented visions on the real characteristics of the environment or the characters. In addition, illustrations must be part of the educational material to facilitate the understanding of the reader, thus they need to contemplate characters, scenarios and experiences associated with the target audience, allowing the opportunity to build new meanings and enabling the understanding of everyday life<sup>(26)</sup>.

### Study limitations

In light of this need for diversification, the material needs to be altered to become more attractive for readers, with changes in the order of the characters, expressions, and background.

Older adults have a reduction in visual acuity, in such a way that the white colors present in the material can generate eyestrain. It was suggested that background images were darkened a little for a better contrast between the figures, and

that font size was increased. The layout and design make the material easier to read and more attractive to the reader<sup>(19,27)</sup>.

### Contributions to the fields of nursing, health or public policy

Educational works carried out in the form of booklets have fundamental importance in the education of populations which are resistant to matters pertaining to their sexual intimacy, such as the population of older adults, as it can often lead to embarrassment, intimidation and shame. In addition, such material can be used as an educational technology by health professionals, targeted towards the teaching and clarification of issues on the subject.

### CONCLUSION

The technology used was shown to be effective while preserving the privacy of the older adults, clarifying their doubts, providing knowledge on the STIs/Aids, their forms of transmission, prevention and demythologizing the myths, without the need to verbalize them, exposing their intimacy without interference from others, minimizing anxieties and fears. It should be noted that this is evident mainly in older educated populations.

The objectives related to the fluency of reading, accessibility of language, appropriateness of content, relevancy of characteristics and illustrations were achieved. These goals help in understanding the text and making the material attractive.

Subsequently, it is intended to perform the clinical and aesthetic validation with older adults, in order to ascertain what was not understood, what should be added or improved, in addition to noting what has been seized by the target audience.

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