

Relationship between knowledge about HIV/AIDS and education of elderly users of the Unified Health System

Relação entre conhecimento sobre HIV/AIDS e escolaridade de idosos usuários do Sistema Único de Saúde

Relación entre el conocimiento sobre el VIH/SIDA y la escolaridad de los ancianos usuarios del Sistema Único de Salud (SUS) brasileño

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Objective: to verify knowledge about HIV/AIDS and its relationship with education in the elderly. **Methods:** cross-sectional research carried out in a Family Health Strategy team in a medium-sized city in the state of Minas Gerais, Brazil, with a random probabilistic sample using the 2022 *Questionnaire on HIV in old age*. **Results:** 208 elderly people participated, mostly female (64.6%), with a steady partner (60.6%), with more than four years of study (57.7%). The highest rates of correct answers were related to the identification of the virus by laboratory testing (71.6%), use of condoms to prevent spreading of the virus (75.5%), contamination by sharing syringes and needles (89.9%) and the existence of treatment (73.1%). **Conclusion:** an education level of more than four years of study proved to be a protective factor for preventing contamination.

Descriptors: Aged; HIV; Sexually transmitted diseases.

Objetivo: verificar o conhecimento sobre HIV/AIDS e sua relação com a escolaridade em idosos. **Método:** pesquisa de caráter transversal realizada em uma equipe da Estratégia de Saúde da Família em uma cidade de médio porte no interior de Minas Gerais, com uma amostra probabilística aleatória utilizando-se *Questionário sobre HIV na terceira idade 2022*. **Resultados:** participaram 208 idosos, predominantemente do sexo feminino (64,6%), com companheiro fixo (60,6%), mais de quatro anos de estudos (57,7%). As maiores taxas de respostas corretas foram relacionadas à identificação do vírus por exames laboratoriais (71,6%), uso da camisinha para prevenção contra o vírus (75,5%), contaminação pelo compartilhamento de seringas e agulhas (89,9%) e existência de tratamento (73,1%). **Conclusão:** a escolaridade maior que quatro anos de estudo mostrou-se como fator protetor para prevenção da contaminação.

Descritores: Idoso; HIV; Infecções sexualmente transmissíveis.

Objetivo: verificar el conocimiento sobre VIH/sida y su relación con la escolaridad en ancianos. **Método:** estudio transversal realizado en un equipo de la Estrategia de Salud de la Familia de una ciudad mediana del interior de Minas Gerais, Brasil, con muestra probabilística aleatoria, utilizando el *Cuestionario sobre VIH en la tercera edad 2022*. **Resultados:** participaron 208 ancianos, 64,6% de sexo femenino, 60,6% con pareja de hecho, 57,7% con más de cuatro años de escolaridad. Las mayores tasas de respuestas correctas se relacionaron con la identificación del virus por pruebas de laboratorio (71,6%), uso de preservativo para prevenir el virus (75,5%), contaminación por compartir jeringas y agujas (89,9%) y existencia de tratamiento (73,1%). **Conclusión:** la escolaridad superior a cuatro años de estudio demostró ser un factor protector para prevenir la contaminación.

Descriptorios: Anciano; VIH; Enfermedades de transmisión sexual.

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INTRODUCTION

The perception of sexuality is different for each gender. This is more explicit in old age, in which elderly men associate sex only with intercourse, based on biological satisfaction, while elderly women see the end of sex life as natural and value emotional issues more¹.

In the aging process, there are evident physiological body changes that can interfere with sexual practice. Such changes solidifies the culture of asexuality in the elderly and favor the stereotype of sexual intercourse restricted to younger people. In addition, the image of the elderly is strongly related to loss, disability, limitations and sexual inactivity¹⁻³. However, the improvement in quality of life and availability of drugs and treatments benefited active aging and prolonged sex life^{4,5}.

The elderly population is one of the most vulnerable to sexually transmitted infections (STIs), due to beliefs on asexuality of this age group and the lack of public policies aimed at this part of the population^{3,4}. Also, there are many gaps in the way health teams address this issue with the elderly⁶.

HIV/AIDS infection is a global dynamic and unstable phenomenon, which has been undergoing significant epidemiological transformations⁷, especially in the population over 60 years of age. Mortality from the HIV/AIDS virus has declined in the last decade in all age groups, except for the elderly, which increased 27.7%⁸.

Among the reasons associated with the increase in the number of elderly people living with HIV/AIDS, the silent sexuality among the elderly stands out, resulting in a lack of information about prevention⁹. With this, the present study aims to verify knowledge about HIV/AIDS and its relationship with education in the elderly.

METHODS

This is a descriptive, quantitative, cross-sectional study, carried out from July to December 2022, with users registered in a Family Health Strategy (eSF) team in the municipality of Montes Claros, in the state of Minas Gerais, Brazil.

The sampling process was simple random, and a sample calculation was previously performed. The criteria for the calculation considered the total universe of elderly people registered in the aforementioned eSF (No=560), accepting a margin of error of 5%. For the calculation, a prevalence of 50% was considered, considering a loss of 10%. Randomization was performed in an electronic spreadsheet in the Microsoft Excel™ 2013 software, with the name

of all users aged 60 years and older. After the calculations, it was inferred that at least 208 elderly people needed to participate for the sampling to be representative.

Inclusion criteria were: being registered in the eSF and being 60 years old or older. Bedridden elderly and people with serious illnesses that compromise their cognition were excluded.

Data collection was carried out in person, during home visits and/or during clinical consultations of the selected participants, only in the presence of the elderly person and the interviewer. After clarifying the research proposal and obtaining a signature on the Free and Informed Consent Form, the *Questionnaire on HIV in old age* (QIV3I) was applied, validated in Brazil in 2008, and which covers general characteristics such as socioeconomic level, age, educational level in years, presence of a steady partner and religion, and is organized in the domains "Concept", "Transmission", "Vulnerability" and "Treatment", which present options for answers as "true", "false" and "I don't know"¹⁰. Despite the questionnaire being self-administered, the questions were asked in the form of a direct interview, in order to avoid possible errors in reading and interpretation. The answer "I don't know" was considered incorrect, as it indicated a lack of knowledge on the subject.

The collected data were organized in Microsoft Excel™ 2013 software by three researchers and transferred to the Statistical Package for Social Sciences (SPSS) version 20, for statistical analysis of frequency distribution (descriptive statistics) and inference, using the Test Pearson's chi-square. A significance level of 5% ($P < 0.05$) was assumed, considering the bivariate association between education level and the other variables that make up the "Concept", "Transmission", "Vulnerability" and "Treatment" domains.

This study was approved by the Research Ethics Committee of the Universidade Estadual de Montes Claros (UNIMONTES) approved under No CAAE: 60278722.6.0000.5146 and opinion No 5.520.376.

RESULTS

The study considered 208 elderly people, most of whom were female (64.4%), with a mean age of 69.65 years and a standard deviation of 6.77 years. Most participants (57.7%) had more than four years of study, had a monthly income of only one minimum wage (57.7%), were Catholics (70.7%) and had a steady partner (60.6%). The sociodemographic characteristics of the study participants are shown in Table 1.

Table 1. Sociodemographic characteristics of the elderly participants in the research, Montes Claros-MG, 2022.

Variables	No	%
Sex		
Female	134	64.4
Male	74	35.6
Years of education		
0 to 3 years	88	42.3
4 years of more	120	57.7
Monthly income		
Up to a minimum wage*	120	57.7
More than one minimum wage	88	42.3
Religion		
Catholic	147	42.3
Evangelical	51	24.5
Other	10	4.8
Has a steady partner		
Yes	126	60.6
No	82	39.4

*Brazilian minimum wage equal to RS 1202.00 as of 01/01/2022.

Table 2 describes the knowledge of the elderly participants in relation to HIV/AIDS, in the domains "Concept", "Transmission", "Prevention" and "Vulnerability".

In the "Concept" domain, it was found that most participants recognize the HIV virus as the cause of AIDS (66.8%) and that this virus can be diagnosed through laboratory tests (71.6%). On the other hand, 77.4% of the elderly are unaware of the asymptomatic phase of the disease, believing that people living with HIV/AIDS will always show signs and symptoms.

In the "Transmission" domain, it can be seen that the elderly do not know how to identify the correct form of transmission of the HIV virus, in which 50.5% believe that among the forms of transmission that can lead to HIV infection are sharing soaps, towels, toilets, kissing, hugging and drinking from the same cup.

Regarding the "Prevention" domain, 75.5% of the elderly recognized the condom as an effective barrier method against contamination by the HIV virus and most (58.2%) are aware of the existence of the female condom. In the "Vulnerability" domain, it was observed that most participants (57.2%) responded that HIV/AIDS infection does not only affect homosexuals, prostitutes and drug users and 66.8% recognize that they need to be concerned about the infection, because it does not only affect younger people, as described in Table 2.

The association of education with the variables of knowledge about HIV/AIDS is described in Table 3. Study time for more than four years was associated with correct answers in the domains: "Concept", "Transmission", "Vulnerability" and "Treatment".

Table 2. Correct and incorrect answers in the domains “concept”, “transmission”, “prevention”, “vulnerability” and “treatment” Montes Claros-MG, Brazil, 2022.

Variables	Incorrect No (%)	Correct No (%)
Concept		
Does the HIV virus cause AIDS?	69 (33.2)	139 (66.8)
Does a person with the AIDS virus always show the symptoms of the illness?	161 (77.4)	47 (22.6)
Is the AIDS virus identified through laboratory testing?	59 (28.4)	149 (71.6)
Transmission		
Can the AIDS virus be transmitted through the use of soaps, towels and toilet seats?	105 (50.5)	103 (49.5)
Can the AIDS virus be transmitted through hugging, kissing on the cheek and drinking from the same glass?	108 (51.9)	100 (48.1)
Can the AIDS virus be transmitted through mosquito bites?	100 (48.1)	108 (51.9)
Prevention		
Does using a condom during sexual intercourse prevent the transmission of the AIDS virus?	51 (24.5)	157 (75.5)
Is there a specific condom for women?	87 (41.8)	121 (58.2)
Does the use of shared syringes and needles by several people transmit AIDS?	21 (10.1)	187 (89.9)
Vulnerability		
Is AIDS an illness that affects only male homosexuals, prostitutes and drug users?	89 (42.8)	119 (57.2)
Should elderly people not be concerned about AIDS, as it only affects young people?	69 (33.2)	139 (66.8)
Treatment		
Is there a treatment for AIDS?	56 (26.9)	125 (73.1)
Is there a cure for AIDS?	88 (42.3)	120 (57.7)
Is AIDS a punishment from God for those who have sinned?	84 (40.4)	124 (59.6)

Table 3. Association of schooling with knowledge about HIV/AIDS, Montes Claros-MG, Brazil, 2022.

Variables	Up to 3 years of education No (%)	More than 4 years of education No (%)	P - Value
Does the HIV virus cause AIDS?			
Incorrect	33 (15.9)	36 (17.3)	0.256
Correct	55 (26.4)	84 (40.4)	
Does a person with the AIDS virus always show the symptoms of the illness?			
Incorrect	75 (36.1)	86 (41.3)	0.021*
Correct	13 (6.2)	34 (16.3)	
Is the AIDS virus identified through laboratory testing?			
Incorrect	34 (16.3)	25 (12.0)	0.005*
Correct	54 (26.0)	95 (45.7)	
Can the AIDS virus be transmitted through the use of soaps, towels and toilet seats?			
Incorrect	57 (27.4)	48 (23.1)	<0.001*
Correct	31 (14.9)	72 (34.6)	
Can the AIDS virus be transmitted through mosquito bites?			
Incorrect	55 (26.4)	45 (21.6)	<0.001*
Correct	33 (15.9)	75 (36.1)	
Does using a condom during sexual intercourse prevent the transmission of the AIDS virus?			
Incorrect	25 (12.0)	26 (12.5)	0.264
Correct	63 (30.3)	94 (45.2)	
Is there a specific condom for women?			
Incorrect	40 (19.2)	47 (22.6)	0.364
Correct	48 (23.1)	73 (35.1)	
Does the use of shared syringes and needles by several people transmit AIDS?			
Incorrect	13 (6.2)	8 (3.8)	0.055
Correct	75 (36.1)	112 (53.8)	

Is AIDS an illness that affects only male homosexuals, prostitutes and drug users?

Incorrect	49 (23.6)	40 (19.2)	0.001*
Correct	39 (18.8)	80 (38.5)	

Should elderly people not be concerned about AIDS, as it only affects young people?

Incorrect	38 (18.3)	31 (14.9)	0.009*
Correct	50 (24.0)	89 (42.8)	

Is there a treatment for AIDS?

Incorrect	19 (9.1)	37 (17.8)	0.138
Correct	69 (33.2)	83 (39.9)	

Is there a cure for AIDS?

Incorrect	47 (22.6)	41 (19.7)	0.006*
Correct	41 (19.7)	79 (38.0)	

Is AIDS a punishment from God for those who have sinned?

Incorrect	42 (20.2)	42 (20.2)	0.065
Correct	46 (22.1)	78 (37.5)	

*Significant statistical association with Pearson's chi-square test.

DISCUSSION

Brazil is experiencing a relevant moment in the process of demographic transition, which is accompanied by an increase in the incidence of HIV in old age¹¹. Research suggests that elderly people living with HIV/AIDS have a sexually active life and engage in risky behavior^{11,12}.

Risk perception is different between groups of people, and is strongly associated with age and sex. Elderly males are more involved in risky sexual behaviors, as they tend to have multiple partners and show resistance to using condoms¹³.

Due to these factors, there is great importance of social and health support for the elderly, with emphasis on those living with HIV/AIDS. This support can contribute in different ways to quality and life expectancy¹⁴. There is a need for more professionals to adopt educational practices aimed at preventing HIV/AIDS in the elderly population, since this public is often forgotten when it comes to sex education. This fact is also observed in advertising campaigns, due to the lack of concern about sexuality in old age^{12,14}.

In the study, a high percentage of women can be observed, corroborating the evidence of the feminization of Brazilian aging¹⁵.

In regards of the marital situation, the analysis shows that 60.6% of the elderly had a steady partner. A similar study found more significant numbers of elderly people living with steady partners¹⁶.

From an epidemiological point of view, people who have multiple sexual partners are more susceptible to HIV infection¹⁷. In addition, a study identified that men tend use contraceptives more when engaging in casual sex, however, in marital relationships, they tend abandon the use of condoms, increasing the risk of contracting an STI, especially HIV/AIDS¹⁸.

The data obtained in the “Concept” domain showed that most of the elderly participants (66.8%) know that the AIDS infection is caused by the HIV virus. Similar to research carried out in Northern Brazil, in which most of the elderly participants in the research were able to associate the HIV virus as the cause of AIDS³. It is known that, in 1983, the HIV virus was identified as the etiological agent causing AIDS and, since then, this information has been widely disseminated by the media¹⁹.

Considering the signs and symptoms of HIV/AIDS, 77.4% are unaware of the asymptomatic phase of the infection, and believe that the infected person will always show signs and symptoms. A similarity was found in research carried out in the municipality of Picos, in the state of Piauí, Brazil, in which more than half of the participants believe that HIV/AIDS infection will always show signs and symptoms²⁰. It is important to mention that the clinical manifestations of HIV are diverse and can easily be confused with other viral infections, facilitating the dissemination of the virus²¹.

Lack of knowledge can result in negative attitudes towards sexuality in the aging process, which contributes to the vulnerability of the elderly to HIV/AIDS¹¹.

The first reported cases of HIV/AIDS infection were in young homosexual men, but soon the infection spread to different groups in the United States¹⁹. In the “Vulnerability” domain, 57.3% answered that the infection does not only occur in male homosexuals, prostitutes and drug users. However, 42.8% still associate that HIV/AIDS infection is restricted to these groups. It is also observed that 66.8% are concerned about HIV/AIDS, as it is an infection that is not restricted to younger people. A better result was found in São Paulo, where 96% of the elderly participants had this information¹².

It is suggested that the association of HIV/AIDS to specific groups is due to the lack of public policies and health services aimed at sexuality in old age, causing the elderly to have an erroneous knowledge of diseases for specific groups of the population^{11,22}.

When seeking to understand the knowledge of the elderly in relation to the transmissibility of HIV, different responses were observed. Some know the correct ways of transmitting the virus, while others believe that contagion can occur through saliva, skin-to-skin contact or even by sharing objects. Among the participants, 50.5% believe that transmission can occur through the use of soaps, towels and toilet seats. In addition, 51.9% suggest that transmission can occur through hugging, kissing and/or sharing cups.

Furthermore, the vast majority of those surveyed (89.9%) know that sharing sharp objects is a means of transmitting HIV/AIDS. In a similar study, a gap in knowledge was also observed regarding the forms of transmission of HIV/AIDS, but the specific form of

transmission by sharing syringes is shown to be widespread among the elderly²⁰. This fact is based on the association between infection of HIV/AIDS (since its inception) and users of injecting drugs, and because there is extensive coverage of the stereotype of vulnerability of this public in the face of contamination²³.

Knowledge about the disease is a determining factor for prevention and lack of knowledge can result in negative attitudes towards sexuality in the aging process, which may contribute to the vulnerability of the elderly to HIV/AIDS. People with lower educational levels tend to have difficulty assimilating new concepts and have less autonomy in adopting self-care measures^{13,16}. It is worth highlighting a study carried out in the state of Mato Grosso do Sul, Brazil, in which individuals with low education living with HIV/AIDS are 57% more likely to die²⁴.

Significant data observed was the considerable number of elderly people with three years of study or less (42.3%) and a similar investigation carried out in the interior of the state of Piauí found many illiterates (48.7%)²⁰.

Health knowledge, especially in the elderly, is crucial for the perception of risk factors for diseases and in this sense the research presents important results.

The associations found indicate the need for greater care for elderly people with low levels of education. In this way, there is a need for the creation of strategies to communicate with this group.

In addition, the importance of disseminating knowledge about the subject is perceived, not only by the health team at all levels of care, but also through the means of communication and public health policies that associate this theme for this group, with the aim of increasing the quality of life of the population.

CONCLUSION

Although the study has limitations, such as the elderly surveyed being restricted to a specific territory, and cross sectional studies, it was possible to identify the deficit in knowledge about HIV/AIDS. It demonstrates the need for more research on the subject, with larger groups.

The elderly population was vulnerable to contamination by the HIV/AIDS virus, due to gaps in knowledge, especially in the "Concept" and "Transmission" domains. In the gerontological context, health knowledge is crucial for the perception of risk, and more than four years of education proved to be a protective factor for the prevention of contamination by HIV/AIDS.

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