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# Knowledge about sexually transmitted infections and sexual activity in elderly people

Conhecimento sobre infecções sexualmente transmissíveis e atividade sexual de pessoas idosas Conocimiento sobre infecciones de transmisión sexual y actividad sexual de personas mayores

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#### Abstract:

**Objective:** to assess knowledge about sexually transmitted infections and sexual activity among elderly people. **Methods:** a cross-sectional, descriptive study was conducted at a Basic Health Unit in the Triângulo Sul region of the state of Minas Gerais, Brazil. A non-probabilistic sample was used with older adults from August 2024 to January 2025. The Mini-Mental State Examination, a questionnaire for sociodemographic and clinical characterization, and another to assess knowledge about sexually transmitted infections and sexual activity were used. **Results:** fifty older adults participated, with a mean age of 73.3 years (SD=8.51). The majority were female (82%), self-identified as white (56%), married/in a stable relationship (52%), Catholic (60%), with up to eight years of education (46%), retired/pensioner (80%), with a family income equivalent to three minimum wages or less (80%), and physically active (58%). All reported knowledge of HIV/AIDS, and most knew about hepatitis B (96%), syphilis (90%), and HPV (72%), and correctly identified the signs and symptoms of the infections investigated. Only 20% of respondents were sexually active. Most recognized the importance of condom use to prevent both these infections and pregnancy (96%), and believed that anyone could contract one of these infections (98%). However, among those who were sexually active, only 18% used condoms, and only occasionally. **Conclusion:** most older adults had adequate knowledge about the sexually transmitted infections investigated; however, a small portion still reported inaccurate knowledge about some aspects, such as transmission, prevention, and signs and symptoms, making them vulnerable to them and compromising healthy aging.

Keywords: Sexually transmitted diseases; Sexual behavior; Aged; Primary health care.

#### Resumo

**Objetivo:** avaliar o conhecimento sobre infecções sexualmente transmissíveis e a atividade sexual de pessoas idosas. **Método:** estudo transversal e descritivo, desenvolvido em uma Unidade Básica de Saúde no Triângulo Sul de Minas Gerais. Foi realizado amostragem não probabilística, com pessoas idosas, no período de agosto de 2024 a janeiro de 2025. Utilizou-se o Miniexame do Estado Mental, um questionário para caracterização sociodemográfica e clínica e outro para avaliar o conhecimento sobre infecções sexualmente transmissíveis e sobre a atividade sexual. **Resultados:** participaram 50 pessoas idosas, com média de idade 73,3 anos (DP=8,51). A maioria era do sexo feminino (82%), autodeclarado branco (56%), casado/união estável (52%), católico (60%), com até oito anos de estudo (46%), aposentado/pensionista (80%), com renda familiar de até três salários-mínimos (80%) e que praticavam atividade física (58%). Todos relataram conhecer o HIV/AIDS e a maioria sabe sobre hepatite B (96%), sífilis (90%), HPV (72%) e identificaram corretamente os sinais e sintomas das infecções investigadas. Apenas 20% dos entrevistados são sexualmente ativos. A maioria reconheceu a importância do uso de preservativo para prevenção tanto destas infecções quanto de gravidez (96%), e acredita que qualquer pessoa possa contrair uma destas infecções (98%). No entanto, entre os que praticam atividade sexual, apenas 18% utilizam o preservativo e de forma ocasional. **Conclusão:** a maioria dos idosos possui conhecimento adequado sobre as infecções sexualmente transmissíveis investigadas, contudo uma pequena parcela ainda relata conhecimento errôneo sobre alguns aspectos, como meios de transmissão, prevenção e sinais e sintomas, tornando-os vulneráveis a elas e comprometendo o envelhecimento saudável.

Palavras-chave: Infecções sexualmente transmissíveis; Comportamento sexual; Idoso; Atenção Primária à Saúde.

## Resumen:

**Objetivo:** evaluar el conocimiento sobre infecciones de transmisión sexual y la actividad sexual de personas mayores. **Método:** estudio transversal y descriptivo, desarrollado en una Unidad Básica de Salud en el Triângulo Sul de Minas Gerais. Se realizó un muestreo no probabilístico, con personas mayores, en el período de agosto de 2024 a enero de 2025. Se utilizó el Miniexamen del Estado Mental, un cuestionario para caracterización sociodemográfica y clínica y otro para evaluar el conocimiento sobre infecciones de transmisión sexual y sobre la actividad sexual. **Resultados:** participaron 50 personas mayores, con una edad promedio de 73,3 años (DE=8,51). La mayoría era de sexo femenino (82%), autodeclarada blanca (56%), casada/unión estable (52%), católica (60%), con hasta ocho años de estudio (46%), jubilada/pensionista (80%), con un ingreso familiar de hasta tres salarios mínimos (80%) y que practicaba actividad física (58%). Todos informaron conocer el VIH/SIDA y la mayoría sabe sobre hepatitis B (96%), sífilis (90%) y VPH (72%) e identificaron correctamente las señales y síntomas de las infecciones investigadas. Solo el 20% de los entrevistados son sexualmente activos. La mayoría reconoció la importancia del uso de preservativo para la prevención tanto de estas infecciones como del embarazo (96%), y cree que cualquier persona puede contraer una de estas infecciones (98%). Sin embargo, entre los que practican actividad sexual, solo el 18% utiliza el preservativo y de forma ocasional. **Conclusión**: la mayoría de las personas mayores posee un conocimiento adecuado sobre las infecciones de transmisión sexual investigadas, sin embargo, una pequeña parte todavía reporta un conocimiento erróneo sobre algunos aspectos, como medios de transmisión, prevención y señales y síntomas, lo que los hace vulnerables a ellas y compromete un envejecimiento saludable.

Palabras-clave: Enfermedades de transmisión sexual; Conducta sexual; Anciano; Atención primaria de salud.

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# INTRODUCÃO

opulation aging is a current reality. It is estimated that by 2050, Brazil will have the sixth-largest population in the world, with a total of approximately 32 million elderly people<sup>1</sup>.

Sexuality in old age has been extensively studied, and research indicates that many elderly people remain sexually active, albeit with reduced frequency, due to the physiological changes that come with aging. However, this sexual activity often occurs unprotected, as many do not perceive themselves as vulnerable to sexually transmitted infections (STIs), which increases health risks at this stage of life<sup>2</sup>.

Sexual activity is part of a set of basic needs inherent to every human being, defined as a multidimensional element encompassing feelings, thoughts, and cognition, involving forms of expression of affection, love, care, companionship, and sexual activity<sup>3</sup>.

Sexuality is considered a natural and fundamental element of human beings, which varies at each stage of life, even during the aging process. However, society has a culture of understanting elderly people as with no active sex life, generating taboos and treating them as something shameful, forbidden, and rarely discussed. This contributes to this group repressing their desires, affecting their quality of life<sup>4</sup>.

Regarding the epidemiology of STIs in the elderly population in Brazil, between 2017 and 2021, a significant increase in the number of reported cases was observed. Of the 275,353 cases, 119,559 were among men and 155,794 among women. In 2017, 48,769 STI cases were reported in this age group, increasing to 65,512 in 2018. In the following years, there was a slight reduction, with 63,902 cases in 2019, 42,616 in 2020, and 57,154 in 2021<sup>5</sup>.

The emergence of sexually transmitted infections as a public health problem in the Brazilian elderly population demands attention. Data from the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* - IBGE) indicate an incidence of approximately 2.1% of Acquired Immunodeficiency Syndrome (AIDS) in this age group, with sexual intercourse identified as the main route of transmission of the Human Immunodeficiency Virus (HIV). Additionally, a significant increase in the prevalence of other STIs has been observed.

The United Nations (UN), in its 2030 Agenda for Sustainable Development Goals, has in its third objective: "Ensure healthy lives and promote well-being for all at all ages," and specifically in Item 3.3, that by the year 2030, the AIDS epidemics, among other communicable diseases, be ended, as well as combating hepatitis,<sup>7</sup>. Considering the epidemiological data presented, the need was identified to investigate this topic among the elderly population treated at a Basic Health Unit.

Therefore, this study aims to assess knowledge about sexually transmitted infections and sexual activity among older adults.

#### **METHODS**

This is a cross-sectional, descriptive study with a quantitative approach, conducted at a Basic Health Unit (UBS) in a municipality in the Triângulo Sul region of the state of Minas Gerais, Brazil. The survey and data collection took place directly at the health unit, ensuring confidentiality and privacy for the participants.

This health unit had 3,348 registered elderly individuals, with an average monthly attendance of 468 elderly individuals in 2024. A non-probabilistic convenience sample was used, including elderly individuals aged 60 or older, with preserved cognitive capacity, who attended the health unit.

Initially, the Mini-Mental State Examination (MMSE) was used to determine the cognitive capacity of the participants so they could participate in the study. Being simple to administer, the instrument is divided into two sections. The first contains items that assess memory, orientation, and attention; the second contains items that assess the ability to name, respond to a verbal and written command, and copy a complex drawing<sup>8</sup>.

Next, a questionnaire was administered to assess sociodemographic and clinical characteristics, including the following variables: age, sex, marital status, self-reported race, education, occupation, family income, religion, physical activity, and comorbidities.

To assess knowledge about STIs and sexual activity among older adults, a questionnaire developed based on the theoretical framework of the Brazilian Ministry of Health, developed and used by the Centro Universitário UNA in partnership with the Universidade Federal de Minas Gerais (UFMG), was administered. The instrument is divided into three parts: the first consists of sociodemographic variables; the second, questions about knowledge of STIs; and the third, questions about sexual behavior. The form addresses pathologies such as hepatitis B, Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS), Human Papillomavirus (HPV), and syphilis<sup>9</sup>.

The questions in this instrument are multiple-choice, and participants could select more than one answer. During the questionnaire, it was emphasized that the purpose was to assess knowledge, and that the more correct answers indicated, the higher the level of knowledge about STIs.

Data collection was conducted through in-person interviews on days when the elderly individuals attended the health unit for a previously scheduled appointment, between August

2024 and January 2025. The interviews were conducted by nursing residents, who, after providing information and obtaining consent, directed the participants to a private area to ensure confidentiality and privacy.

The data were entered into an Excel® spreadsheet, using the double-entry validation technique to detect inconsistencies. Subsequently, descriptive statistical analysis was performed, calculating the mean and standard deviation for age and absolute and relative frequencies for the other sociodemographic, clinical, and STI variables, using PSPP software version 1.2.0.

The study was approved by the Department of Work Management and Health Education of the Municipal Health Department of the Municipality and approved by the Research Ethics Committee (CEP), opinion no. 6,809,098, respecting the guidelines and standards for research involving human beings, Resolution 466/2012 of the National Health Council.

# **RESULTS**

Fifty older adults participated, ranging in age from 60 to 91 years, with a mean age of 73.3 years (SD=8.51). The majority were female, self-identified as white, married/civil relationship, Catholic, with up to eight years of education, retired/pensioner, with a family income of up to three minimum wages, and who engaged in physical activity, as shown in Table 1.

Regarding comorbidities, only one older adult reported no comorbidities. The prevalence of hypertension (82.0%), followed by diabetes mellitus (44.0%), dyslipidemia (32.0%), degenerative disease (4.0%), and others (22.0%).

When asked about STIs, all interviewees reported knowledge of HIV/AIDS, and most reported knowledge of hepatitis B, syphilis, and HPV. Most considered condom use essential to prevent disease and pregnancy and believe that anyone can contract an STI. All participants acknowledged that the main mode of transmission is through unprotected sex, although some still believe that sharing utensils can transmit STIs. Regarding symptoms, most correctly identified the signs and symptoms of the infections investigated (Table 2).

**Table 1**. Characterization of elderly people according to sociodemographic variables. Uberaba, Minas Gerais, Brazil, 2025.

Variables	n	%
Sex		
Female	41	82.0
Male	9	18.0
Sel declared race		
White	28	56.0
Mixed	12	24.0
Black	8	16.0
Asian	2	4.0
Marital status		
Married/civil union	26	52.0
Widowed	9	18.0
Divorced	8	16.0
Single	7	14.0
Religion		
Catholic	30	60.0
Spiritist	12	24.0
Evangelical Protestant	6	12.0
No defined religion	2	4.0
Educational level		
No formal education	5	10.0
Between 1 to 8 years of education	23	46.0
Between 9 and 11 years of education	15	30.0
12 years or more	7	14.0
Occupation		
Retired/pensioner	40	80.0
Homemaker	7	14.0
Formal job/registered employment	2	4.0
Informal job/unregistered employment	1	2.0
Family income		
Up to 1 minimum wage	15	30.0
Between 1 to 3 minimum wage	25	50.0
Between 3 to 5 minimum wage	8	16.0
Above 5 minimum wage	2	4.0
Practices physical activity		
Yes	29	58.0
No	21	42.0

**Table 2**. Characterization of elderly people according to knowledge of Sexually Transmitted Infections. Uberaba, Minas Gerais, Brazil, 2025.

Which of these STIs do you know?	n	%
HIV/AIDS	50	100.0
HPV	36	72.0
Syphilis	45	90.0
Hepatitis B	48	96.0
The importance of using condoms		
Only prevent STIs	7	14.0
Only prevent pregnancy	5	10.0
Prevent STIs and pregnancy	48	96.0
No use necessary	4	8.0
Who can get an STI?		
Sex workers only	2	4.0
Drug users only	2	4.0
Homosexuals only	1	2.0
Anyone	49	98.0
Which STI has no cure?	20	70.0
HIV/AIDS	39	78.0
HPV	26	52.0
Hepatitis B	14	28.0
Syphilis Which STI has a vaccine for the elderly?	15	30.0
<u> </u>	1.6	22.0
HIV/AIDS	16	32.0
Hepatitis B	40 22	80.0 44.0
Syphilis HPV	26	52.0
HPV sign/symptom	20	32.0
Genital warts	32	64.0
Fever	23	46.0
Cough	12	24.0
Muscle pain	20	40.0
STI transmission		
During unprotected sex	50	100.0
Through saliva through kissing	21	42.0
Through sharing cutlery and glasses	22	44.0
Through hugging	2	4.0
Sign/symptom of early stage syphilis		
Malaise	20	40.0
Headache	14	28.0
Pain during intercourse	21	42.0
A painless, hardened sore in the genital area	25	50.0
Sign/symptom of hepatitis B		
Jaundice (yellowing of the skin), abdominal pain, and dark urine	42	84.0
Pain behind the eyes and blurred vision	29	58.0
Chest pain and shortness of breath	19	38.0
Painful urination Sign/symptom of HIV/AIDS in the late stage	19	38.0
	47	04.0
Onset of opportunistic diseases	47	94.0 10.0
No longer transmissible through sexual intercourse	5 19	38.0
Causes pain when urinating Causes discomfort during sexual intercourse	19 27	58.0 54.0
<b>Note:</b> it was possible to mark more than one alternative per question.	۷.	J4.U

**Note:** it was possible to mark more than one alternative per question.

The survey revealed that a small proportion of the elderly interviewed had had sexual intercourse recently, but condom use was low. Many reported never using them, while others used them occasionally. Among the reasons for not using condoms, most reported having a steady partner, while others did not consider it necessary. Regarding the search for information about STIs, less than half of the elderly sought information, and reported searching primarily on the internet and television. Most do not see themselves as vulnerable to these infections and feel comfortable talking about sex, while a small proportion do not feel comfortable, citing embarrassment, lack of interest in the topic, or the perception that sex is something reserved for younger people, as shown in Table 3.

**Table 3**. Characterization of older adults according to sexual activity and search for information about STIs. Uberaba, Minas Gerais, Brazil, 2025.

Have you had sexual intercourse in the last 6 months?	n	%
Yes	10	20.0
No	40	80.0
Do you use condoms during sexual intercourse?		
Always	5	10.0
Sometimes	9	18.0
Never	36	72.0
If you never use it or sometimes use it, why?		
Did not answer	9	18.0
Has a steady partner	28	56.0
No risk of pregnancy	1	2.0
Does not think it is necessary	12	24.0
If you consider yourself vulnerable to acquiring an STI		
Yes	5	10.0
No	45	90.0
If yes, why?		
Had unprotected sex	3	6.0
Does not seek information about STIs	2	4.0
Search for information about STIs		
Yes	23	46.0
No	27	54.0
If yes, where do you search for it?		
Television	10	20.0
Friends	2	4.0
Internet	14	28.0
Health professionals	9	18.0
Others	1	2.0
Are you comfortable talking about sex?		
Yes	42	84.0
No	8	16.0
If not, why?		
Is ashamed	1	2.0
Doesn't like to talk about sex	6	12.0
Is ashamed and thinks sex is for younger people	1	2.0

#### **DISCUSSION**

In this study, most participants were female. This data demonstrates that women have broader access to both care at primary care centers and health information, as they culturally demonstrate greater concern for their own well-being. Consequently, they engage more actively in groups geared toward seniors, where they seek both social support and preventive strategies to ensure a better quality of life<sup>9</sup>.

The analysis of the elderly individuals served at the center in question revealed that the majority were retired, with a monthly income of up to three minimum wages. This data highlights the economic vulnerability of this segment of the population, which can directly impact their access to health services and other essential resources<sup>10</sup>.

Furthermore, the results presented, in themselves, suggest a scarcity of educational initiatives specifically aimed at this age group, further exacerbating their vulnerability. This scenario contributes to an increased risk of exposure to STIs, making it essential to implement preventive and educational strategies aimed at this population<sup>10</sup>.

Regarding knowledge about STIs, it was observed that taboos still exist among this population. In addition to the natural changes inherent in the aging process, including the senescence of the immune system, which can increase the predisposition to STIs, the elderly population faces significant sociocultural barriers. Among these, the persistent perception that they are not at risk for these infections stands out<sup>11</sup>.

All interviewees stated they were aware of HIV; however, there is a significant gap in understanding its symptoms and transmission. A study revealed that elderly women believe that HIV can be transmitted by sharing soap, towels, toilet seats, kissing on the cheek, hugging, sharing cups, and mosquito bites. This population's beliefs about these issues can fuel stigma surrounding the disease<sup>12</sup>. Another study, aimed at understanding older adults' knowledge about STIs, found that, regarding prevention, 40% of respondents correctly mentioned condoms, while 29.2% indicated incorrect preventive methods, such as avoiding sex workers, not kissing people with STIs, or avoiding sharing toilet seats. 20% did not respond<sup>11</sup>.

Regarding hepatitis B, the majority demonstrated knowledge on the subject, both regarding the vaccination available to this population and the main symptoms. Vaccination adherence among older adults is linked both to guidance from health professionals and to ease of access to services. Those who maintain more frequent contact and connection with health services tend to receive more information and encouragement to adopt self-care measures<sup>13</sup>. According to previous studies, the Brazilian scenario shows a close correlation between high rates of confirmed hepatitis B cases and low socioeconomic status, resulting in greater

vulnerability and contamination among the socially disadvantaged population. This vulnerability is aggravated by reduced access to information about forms of contagion, lifestyles that can increase susceptibility to infection, and the lower vaccination rate in this group<sup>14</sup>.

Regarding syphilis, there is a significant lack of knowledge about the symptoms of this disease, as evidenced in the interviews. Between 2010 and 2021, an increase in the number of syphilis cases was observed in people over 50 in Brazil<sup>15</sup>. According to a study conducted in the interior of the state of São Paulo, in which 99 elderly individuals were interviewed, a significant proportion of these participants revealed a lack of knowledge about syphilis: 92.93% demonstrated no knowledge about its manifestations, and 84.85% demonstrated no understanding of disease prevention strategies<sup>16</sup>.

Although older women are susceptible to developing cervical cancerous lesions, there is a significant lack of knowledge about HPV infection. It is also clear that there is still a lack of studies focused specifically on this population. A study conducted in China analyzed the incidence and clinical duration of HPV in men, including the elderly, and found that the number of lifetime sexual partners was consistently associated with a higher risk of infection, prevalence, and incidence of HPV. Therefore, the findings of this study suggest that the risk of HPV may be relatively lower in the elderly population, possibly related to a lower average number of lifetime sexual partners in this group<sup>17</sup>. Therefore, the importance and need for further research and expanded studies are highlighted<sup>18</sup>.

A large proportion of the elderly participants in the study are not sexually active. One study found that aging causes hormonal changes that affect sexual pleasure, such as reduced testosterone in men, which leads to erectile dysfunction, and decreased estrogen levels in women, leading to vaginal changes and decreased orgasm<sup>19</sup>.

A study compared sexual activity between physically active and sedentary older adults and found that older adults who engaged in regular physical activity admitted to being sexually active today, while sedentary older adults reported that sex was more important in their youth and that sexual activity and frequency are not as important to them at this stage of life. However, they reiterated companionship, acts of affection, and care as part of this sexuality<sup>4</sup>.

A study conducted with elderly women at a primary care unit in the state of Rio Grande do Sul showed that these women were familiar with STIs, particularly HIV, syphilis, and gonorrhea. However, they detected a lack of knowledge about the difference between HIV infection and AIDS. The elderly women interviewed believe that STI prevention occurs through screening and condom use<sup>20</sup>.

Regarding STI transmission, the results of this study are consistent with those found in Rio Grande do Sul, where most respondents reported acquiring STIs during unprotected sex. However, these women did not always use condoms because they yielded to their partner's wishes not to use them and because of their confidence in having a steady sexual partner<sup>20</sup>. Condom use was also infrequent among the sexually active elderly individuals in this study, which increases the risk of STIs in this population. Therefore, it can hinder healthy aging and compromise the quality of life of these elderly individuals<sup>21</sup>.

Similar results were also found in some erroneous reports about transmission methods, where older adults cited contact with saliva, hugging, and sharing utensils (such as cups and cutlery) in this study, and through kissing/saliva, physical contact with contaminated people, and environments (such as public toilets) in the other<sup>20</sup>.

Most older adults reported not seeking information about STIs. This lack of knowledge, lack of information seeking, and embarrassment in discussing the topic among older adults may be a consequence of barriers faced since childhood, when there was no dialogue with parents about sex and condom use, nor discussions about sex education within the family or at school. Furthermore, talking about sex is still taboo for many older women, as it generates feelings of prejudice, fear, and embarrassment<sup>20</sup>.

## **CONCLUSION**

The study revealed that most older adults have adequate knowledge about the STIs investigated, but a small portion still reports inaccurate knowledge about some aspects such as transmission, prevention, and signs and symptoms. It was also found that a minority is sexually active, and despite knowing that condoms are a means of prevention, most reported not using them frequently.

Limitations include the small convenience sample and the fact that the study was conducted in a single primary care unit. Therefore, the data should be interpreted with caution, preventing generalization. Therefore, further studies are needed to explore the knowledge of this population, in addition to the planning of educational actions/interventions by health professionals, aiming at health promotion, STI prevention, and, consequently, a better quality of life for older adults.

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