

# PERCEPTIONS ABOUT AIDS AND SEXUAL BEHAVIOR AMONG ELDERLY PEOPLE IN THE CITY OF TUBARÃO, STATE OF SANTA CATARINA, BRAZIL

*PERCEPÇÕES SOBRE AIDS E COMPORTAMENTO SEXUAL EM IDOSOS DA CIDADE DE TUBARÃO, SANTA CATARINA*

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## ABSTRACT

**Background:** With the increase in life expectancy, coupled with the development of new technologies, such as hormone replacement therapy and medications, which help in treating impotence, there have been changes in sexual behavior among the elderly people. **Objective:** To assess the knowledge about AIDS and prevention and to determine sexual behavior and practices among elderly adults living in the city of Tubarão, state of Santa Catarina. **Methods:** A cross-sectional study was conducted on elderly residents in Tubarão, state of Santa Catarina. They received senior care at the municipal Basic Health Units in 2014. The research instrument was a questionnaire adapted from the national “Survey on Knowledge, Attitudes and Practices of the Brazilian Population,” used by the Ministry of Health. **Results:** A total of 206 elderly people were surveyed (mean age, 69±6 years). Men showed a less prevalence of stable marital relationship ( $p<0.001$ ) and earlier age at first intercourse compared with women ( $p<0.001$ ). The demand for anti-HIV testing was higher among women than men ( $p=0.028$ ). Of the total sample, 14.1% reported the occurrence of previous STDs, which was associated with early age at first intercourse ( $p<0.001$ ). Regarding knowledge about AIDS and prevention methods, the average score was 15±4 from a total of 25 points. **Conclusion:** There was a greater knowledge about AIDS and prevention methods among persons in stable relationships, among those who experienced their first intercourse with casual partners, and those who underwent HIV testing. However, the average scores for AIDS prevention were low among the surveyed elderly people.

**Keywords:** aged; acquired immunodeficiency syndrome; HIV; sexually transmitted diseases; knowledge.

## RESUMO

**Introdução:** Com o aumento da expectativa de vida da população aliado ao desenvolvimento de novas tecnologias, como a terapia de reposição hormonal e medicações que auxiliam no tratamento da impotência sexual, houve mudança comportamental da sexualidade entre os idosos. **Objetivo:** Verificar o conhecimento sobre síndrome da imunodeficiência adquirida (AIDS) e prevenção e determinar o comportamento e as práticas sexuais entre idosos residentes em Tubarão, Santa Catarina. **Métodos:** Foi realizado estudo transversal em idosos residentes em Tubarão, Santa Catarina, Brasil, que frequentavam grupos para esta faixa etária em unidades básicas de saúde (UBSs) do referido município no ano de 2014. O instrumento utilizado foi adaptado do questionário utilizado pelo Ministério da Saúde da pesquisa nacional intitulada “Conhecimentos, Atitudes e Práticas da População Brasileira” (PCAP). **Resultados:** Foram estudados 206 idosos com média de idade de 69±6 anos. Os homens apresentaram maior ausência de relacionamento estável ( $p<0,001$ ) e sexarca precoce ( $p<0,001$ ). As mulheres apresentaram maior procura pelo teste anti-HIV ( $p=0,028$ ). Do total, 14,1% relataram ocorrência de doença sexualmente transmissível (DST) progressiva, sendo associada à sexarca precoce ( $p<0,001$ ). Quanto ao conhecimento acerca de AIDS e prevenção, a média de acerto foi de 15±4 de um total de 25 pontos. **Conclusão:** Verificou-se um maior conhecimento sobre AIDS e prevenção em pessoas em relacionamentos estáveis, sexarca com parceiro casual, e naqueles que realizaram o teste anti-HIV. Contudo, a média de acertos relativos à prevenção a AIDS foi baixa entre os idosos.

**Palavras-chave:** idoso; síndrome de imunodeficiência adquirida; HIV; doenças sexualmente transmissíveis; conhecimento.

## INTRODUCTION

According to the 2010 Population Census, the Brazilian population was 190,755,199 million persons, and 10.8% of the total population consisted of seniors (55.5% women and 44.5% men), where seniors are considered as any person aged 60 years or older, according to the National Policy for the Elderly and the Statute of the Elderly<sup>(1-3)</sup>.

The global aging of the population is owing to the decrease in the mortality rates and in the fertility and birth rates, better sanitary conditions, increase in the level of education, nutritional factors, and advances in medicine, which is a fact nowadays<sup>(2,4)</sup>. This demographic transition causes major changes in the quality of life of this population,

given that longevity can be accompanied by increased incidence of noncommunicable and communicable diseases, functional reduction, greater dependence, loss of autonomy, and social isolation<sup>(2,4)</sup>.

Increased longevity, coupled with improved quality of life and health care, with the development of new technologies, such as hormone replacement therapy and other drugs that help in treating sexual impotence, allowed changes in sexual behavior among the elderly people<sup>(5,6)</sup>. However, this age group showed no sex education on preventive measures for safe sex, as the condom was used only as a contraceptive method. Another factor related to the vulnerability of the elderly people to sexually transmitted diseases (STD) is the myth of the elderly people being seen as asexual, by both the society and the health professionals. This can be attributed to the lack of information, to shame that individuals in this age group may have to seek information, to difficulties in safe sex negotiation, to excess confidence on the sexual partner, to the low level of education, and to the occurrence of extramarital affairs or promiscuity. The elderly people are not considered vulnerable to infection; the use or abuse of

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substances such as alcohol, drugs, and medicines can also occur<sup>(5,7-9)</sup>. Another associated factor is the postmenopausal period in elderly woman, when they stop using condoms as they no longer present the risk of pregnancy. However, after menopause, they become more vulnerable to infections, dryness of the vaginal walls (with the increase in complaints and the likelihood of wounds), which act as gateways to causative agents of STDs<sup>(7,10,11)</sup>.

STDs make up a group of conditions related to any infectious diseases caused by microorganisms transmitted by sexual contact. Among the most common are syphilis, gonorrhea, chlamydia, human papillomavirus (HPV), and human immunodeficiency virus (HIV). The main way of HIV transmission is through sexual intercourse without condoms. HIV attacks the immune system, especially the TCD<sup>4+</sup> lymphocyte, destroying them and causing deficiency in the body's immune system, leaving individuals more susceptible to other infections and cancers, which characterizes the acquired immunodeficiency syndrome (AIDS)<sup>(12)</sup>. According to the Epidemiological Bulletin of the Ministry of Health, in 2012, a total of 39,185 cases of were reported, and the AIDS incidence rate in Brazil was of 20.2 cases per 100,000 inhabitants. There has been a trend of increase in detection rates among individuals in the 15–24 years age group and among adults aged 50 or more, with a detection rate of approximately 20 cases per 100,000 inhabitants<sup>(13)</sup>.

## OBJECTIVE

To assess the sexual behavior and the factors associated with the risk of STD infection among persons aged 60 years or older, living in the city of Tubarão (SC). There are few studies involving sexual behavior in this age group, and there are no data in the literature on the sexuality of the elderly people in Tubarão and region.

## METHODS

This study was approved by the Research Ethics Committee of Universidade do Sul de Santa Catarina under protocol no. 474.1158, compliant to Resolution 466, of 2012, by the National Health Council. All participants signed an informed consent.

A cross-sectional study was conducted with elderly residents in the city of Tubarão (SC), Brazil, who received senior care in groups for this age group in Basic Health Units (BHU) of the said municipality. According to data from the Department of Health of the Municipality of Tubarão, there were 430 seniors who routinely gathered in 30 BHUs. On the basis of this information, the sample size calculation was done considering the frequency of the outcome of 50% and a margin of error of 1%; the minimum sample required for the study was 204 elderly people, for a 95% confidence level.

We included individuals aged 60 years or older, of both the sexes, residents of Tubarão (SC), who received senior care in groups in BHUs in 2014. An intentional sampling was made among those present in the senior group meetings, and after giving their consent, they were submitted to individual interviews to collect data. The instrument used was adapted from the questionnaire used by the Ministry of Health in a national survey titled "Survey on Knowledge, Attitudes and Practices of the Brazilian Population" (PCAP)<sup>(14)</sup>. Data were collected between March and August 2014.

The variables of interest were the sociodemographic data (age, gender, race, education, marital status, and religion), knowledge about prevention and AIDS, sexual experiences and sexual initiation, sexual behaviors and practices, HIV testing, and vulnerability. The creation of the variable STD was based on the reports from the participants on the previous occurrence of any of the listed diseases: gonorrhea, trichomoniasis, syphilis, hepatitis, herpes, or some other STD, except candidiasis. With regard to knowledge about AIDS, questions were taken from the questionnaire and assigned a point for each correct answer, and a score of 0 to 25 points was attributed. For the use of the dichotomous variable, the average of correct answers was used.

The sample size was calculated using the OpenEpi software, version 2.3.1. The collected data were registered in a database created with the help of the Epidata software, version 3.1 (EpiData Association, Odense, Denmark), which is public domain, and statistical analysis was performed with the help of Statistical Product for Service Solutions (SPSS for Windows, version 20, Chicago, IL). We used the descriptive epidemiology for the presentation of data; the qualitative variables were expressed as proportions and the quantitative variables as central tendency and dispersion measures. To determine the association between the variables of interest, Pearson's  $\chi^2$ -test was used for the categorical variables and Student's *t* test for comparison of the averages. The significance level was 5%.

## RESULTS

A total of 206 seniors were studied, with a response rate of 100%. However, two seniors reported being virgins and, therefore, were excluded from the analysis concerning questions on sexual behavior. Of the total, 140 (68%) were women and 186 (90.3%) identified as white. The average age obtained was 69 years (SD±6 years), ranging between 60 and 87 years. The Catholic religion was predominant (99%). With regard to education, the median of years of study was 5 years, ranging between 0 and 22 years.

**Table 1** shows factors related to marital status, first sexual intercourse, HIV testing, and current consumption of alcohol with distribution according to gender (male or female).

**Table 1** – Influence of gender on marital status, first sexual intercourse, HIV testing, and current alcohol intake in elderly respondents (n=204).

	Total n (%)	Men n (%)	Women n (%)	p-Value
<b>Marital status</b>				
No stable partner	38 (18.6)	35 (92.1)	3 (7.9)	<0.001
Stable partner	166 (81.4)	31 (18.7)	135 (81.3)	
<b>First sexual intercourse</b>				
≤15 years old	29 (14.2)	22(75.9)	7 (24.1)	<0.001
>15 years old	175 (85.8)	44(25.1)	131(74.5)	
<b>HIV testing</b>				
Yes	41 (19.1)	19 (46.3)	22 (53.7)	0.028
No	165 (80.9)	47 (28.5)	118 (71.5)	
<b>Alcohol consumption (n=167)</b>				
Yes	84 (50.3)	31 (36.9)	53 (63.1)	0.953
No	83 (49.7)	31 (37.3)	52 (62.7)	

HIV: human immunodeficiency virus.

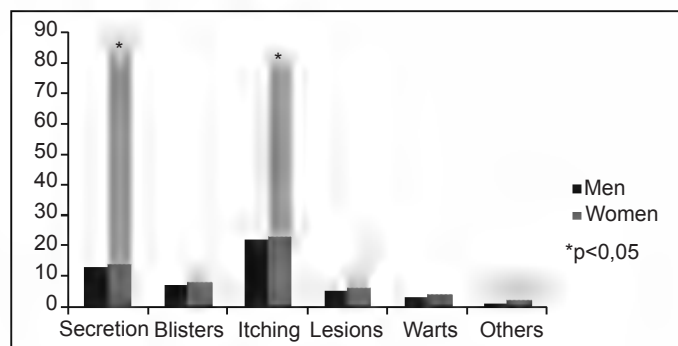
Regarding the number of sexual partners during their lifetime, the median was 1, varying between 1 and 80 sexual partners. Considering the last month, the number of sexual partners ranged between 0 and 1, with a mean of 0 and sexual frequency of 0, ranging from 0 to 20 sexual relationships per month.

**Figure 1** shows information related to the genital signs and symptoms among the elderly people according to gender.

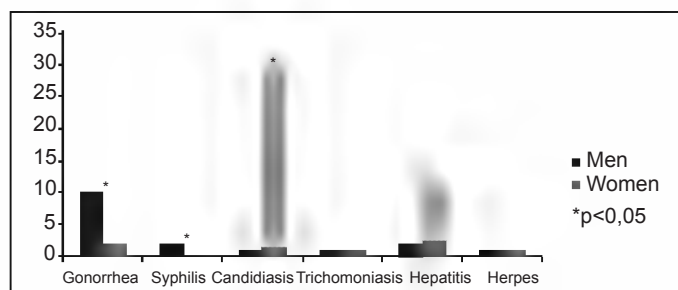
**Figure 2** shows the frequency of the reported previous STDs according to gender.

**Table 2** describes the STD rate (excluding candidiasis) in relation to demographic and sexual data. There was no statistically significant difference between age ( $p=0.057$ ) and education ( $p=0.935$ ) compared with the previous occurrence of STDs.

Regarding the knowledge about AIDS and prevention, of the 25 questions contained in the data collection instrument, there was an average of 15 correct responses ( $SD\pm 4$ ), varying between 1 and 23 correct answers. Considering the dichotomous variable by its average, there was an association between increased knowledge about prevention and AIDS among people in stable relationships ( $p=0.012$ ), among those experienced had their first sexual intercourse with a casual partner ( $p=0.030$ ), and those who were already tested for HIV ( $p=0.009$ ). In addition, there was a higher number of correct answers by the elderly people in a lower average age, 68 years ( $SD\pm 6$  years), than in those with a smaller number of correct answers on prevention and AIDS, 71 years ( $SD\pm 7$  years) ( $p=0.008$ ). There was no difference between knowledge about prevention and AIDS in terms of education ( $p=0.655$ ).



**Figure 1** – Signs and symptoms related to the previous genital manifestations among the elderly interviewed people in the study ( $n=204$ ).



**Figure 2** – History of sexually transmitted diseases reported by the elderly people interviewed in the study ( $n=204$ ).

## DISCUSSION

Of the 206 elderly people studied, 68% were women, and this can be explained by some reasons. Men have a higher consumption of alcohol and tobacco, being predisposed to neoplastic and cardiovascular diseases more often, increasing the mortality rate in this gender and causing greater survival among women. In addition, men have a higher exposure to industrial accidents, traffic, homicide, and suicide, and such causes are four times more common in men than in women. Women also have a different attitude toward disease, as they have greater adherence to the proposed treatments and increased demand for health services<sup>(15)</sup>. However, it is noteworthy that this study sample comes from senior groups whose women often have greater participation, and the external validity of these findings cannot be guaranteed.

Regarding race, 90.3% are self-reported as white and 9.7%, not white. These figures coincide with the National Survey by Household Sampling (PNAD), 2013, which found that the population in the south region comprised 77.8% Caucasian, 17.4% brown, 4.0% blacks, and 0.8% other races<sup>(16)</sup>.

Regarding the level of education in years, the median was 5 years, characterizing a low level of education among the elderly people. Consequently, there may be difficulty in understanding the campaigns related to STDs. In this case, the information for this population should be easily understood and associated with simple vocabulary<sup>(17)</sup>. According to Souza, the level of education was established as a good indicator of socioeconomic status of individuals and of its impact on health. Throughout life, education shows to be a more stable indicator, being subject to little interference owing to changes experienced by the population or to occasional consequences resulting from sickness<sup>(18)</sup>. According to Rocha et al., seniors with lower education are more exposed to AIDS, which reinforces the importance of education as a form of preventive measure in

**Table 2** – Comparison of demographic and lifestyle factors regarding the reporting of previous sexually transmitted diseases ( $n=204$ ).

	Yes (%)	No (%)	p-Value
Gender			0.111
Male	13 (19.7)	53 (80.3)	
Female	16 (11.4)	124 (88.6)	
Race			0.901
White	26 (14.0)	160 (86.0)	
Non-white	3 (15.0)	17 (85.0)	
Material status			0.257
No partner	10 (11.0)	81 (89.0)	
Partner	19 (16.5)	96 (83.5)	
First sexual intercourse			<0.001
≤15 years old	12 (41.4)	17 (58.6)	
>15 years old	17 (9.7)	158 (90.3)	
Use of condom			0.532
Yes	1 (20.0)	4 (80.0)	
No	27 (13.8)	169 (86.2)	
Religion			0.262
Catholic	28 (13.7)	176 (86.3)	
Non-catholic	1 (50.0)	1 (50.0)	

combating the disease<sup>(19)</sup>. However, there was no significance in this study between the knowledge about prevention and AIDS and education level. The same was found in the PCAP survey<sup>(14)</sup> in which there was no significant statistical differences in level of education of the population aged 15–54 years. This can be explained by Oliveira *et al.*<sup>(20)</sup>, since in 2009, there was a move toward awareness of the elderly population and a change of the belief of invulnerability, as the AIDS prevention campaigns promoted by the Ministry of Health in Brazil focused on people aged over 50 years.

Analyzing the marital status of the elderly people, it was observed that 18.6% showed no stable relationship, and 92.1% were men. This reveals greater vulnerability of this population to the acquisition of STDs and AIDS, owing to them experiencing casual sex and possibly with multiple partners. In this sense, the epidemiological study by the Ministry of Health<sup>(21)</sup> showed that the multiplicity of partners is a risk factor for the spread of STDs and HIV/AIDS. It should be noted that, however, in this study, 81.4% of participants possessed a stable partner. In this group, there is a lower perception of vulnerability, as they possess only one partner. In these circumstances, it seems that not using condoms is an option for the elderly people, because they have a stable relationship and share the idea that there is no need for any prevention method and the lack of concern for contraception. Lima<sup>(22)</sup> explains that the greater the trust between partners, the lower the awareness of vulnerability to AIDS. The author stresses that passion and love produce a favorable assessment of the loved one, inducing a secure perception about disease. In this regard, it is noteworthy that many women refuse to use condoms to avoid conflict with their partners or owing to religious beliefs, establishing a break in the marital trust. The man, when using a condom in a stable relationships, may be building a situation of mistrust, as this may be perceived as questioning loyalty, the latter being a defining and idealized factor of marriage<sup>(17)</sup>.

Regarding the variable first sexual intercourse, 14.2% reported first sexual intercourse before the age of 15 years, of whom 75.9% were men. This result is similar to data found in PCAP, which showed that, in the 50–64 years age group, 20.5% reported first sexual intercourse at the age of 15 years or more, but the data were not broken down according to gender. However, throughout the population interviewed by PCAP — individuals aged 15–64 years — the percentage found of early first sexual intercourse was 36.9% for men and 17% for women<sup>(14)</sup>. For men, sexual initiation is related to the boy's transition into a man and is considered as a necessary rite of passage for the very confirmation of heterosexual masculinity and to consider oneself as a man<sup>(23)</sup>. In this study, 41.4% of those who reported early first sexual intercourse reported exposures to STD in the past, which can strengthen the issue of vulnerability in the event of early onset of sexual intercourse, multiple sexual partners, and not using condoms.

As for HIV testing, 19.1% of respondents had undergone the screening test, most of them being women. According to Berquó and Koyama, in Brazil, the adult population tested for HIV has increased from 20% in 1998 to 32.9% in 2005, but the proportion of those tested in both the sexes decreased with the increasing age range. During this period, the prevalence of men tested in the 56–65 years age range increased from 3.4 to 21.8% and women in the same age range, from 1.0 to 12.2%<sup>(24)</sup>. The low demand for the HIV test in the

elderly people may show the barriers in access to early diagnosis, because of both the preconception of the elderly people (who consider themselves invulnerable to disease) and the inability of health teams in dealing with the specificities of this group<sup>(17,25)</sup>. The investigation of risk situations, especially unprotected sexual intercourse, has not been the subject of counseling actions in health services, especially in the BHU, places where more often the elderly people sought care through the Unified Health System (SUS). Failure to recognize the elderly people as subjects with sexual rights also increases their vulnerability to STD/AIDS, reducing the supply of tests with proper counseling for HIV and other STDs and, hence, early referral for treatment in specialized services<sup>(25)</sup>. A study conducted in São Paulo observed that the HIV diagnosis time in the elderly people after infection is very high, ranging from 18 months to 17 years, with an average of 8 years<sup>(26)</sup>. Regarding the greater demand for the HIV testing in women, Berquó and Koyama<sup>(24)</sup> showed that most of the tested population comprises women aged 25–39 years, a proportion explained by the incorporation of HIV testing in the prenatal care routine. According to Pinheiro *et al.*<sup>(27)</sup>, a higher percentage of women (62.3%) was observed compared with men (46.7%) in the demand for health services in Brazil. This may often be justified by the woman being responsible for the health of the family, sometimes because of being the main caregiver of a dependent family member, and, therefore, requires greater number of procedures, including laboratory tests<sup>(28)</sup>.

When asked about the signs and symptoms that may be characteristic of STDs, the most cited were genital itching (49%), secretion (46.6%), and blisters/sores/lesions (19%). These data are similar to those of a study conducted in Uberaba (MG), in which the main characteristic signs and symptoms of STDs reported by the elderly people were vaginal itching (65.2%), secretion (57.6%), and ulcers/lesions (21%)<sup>(29)</sup>.

Of the elderly people interviewed, 27.2% reported experiencing an STD in the past, including candidiasis, which was the most frequent, followed by gonorrhea. The Ministry of Health places chlamydia and gonorrhea as STDs with the highest incidence in Brazil, followed by syphilis, HPV, and genital herpes, excluding candidiasis because it is not an exclusive STD<sup>(31)</sup>.

As candidiasis is not always associated with sex, for it can be of endogenous origin, owing to a disruption in the normal balance of the vaginal microbiota or impaired immune system of the host, it was excluded from the analysis when comparing the rates of STDs and demographic and behavioral variables<sup>(31)</sup>. It was observed that the previous occurrence of STD reported was associated with early first sexual intercourse and multiple casual partners, being more prevalent in men. PCAP data found that the prevalence of STDs is associated with individuals who possessed multiple partners, with coinfection with other STDs and with homosexual relationships<sup>(14)</sup>.

Regarding the knowledge about prevention and AIDS, an association was observed between increased knowledge about prevention and AIDS among people with stable relationships, first sexual intercourse with a casual partner, and those who have undergone HIV testing. According to Rocha *et al.*, when the AIDS epidemic surfaced in the 1980s, the disease was labeled as specific to certain groups of people, such as sex workers, drug users, and gay men, which, thus, helped in the stereotyping of the infection and



the disease<sup>(19)</sup>. For this reason, the elderly people did not feel vulnerable, because they considered that HIV was far from their reality and ended up not seeking knowledge about this disease. But, with the advance of the epidemic over the years and greater epidemiological knowledge about the infection, the gradual change of the term “risk group” to “risk behavior” and historical context of society are important improvements to its potential for transformative action of the living conditions and health care of the population. The prevention of STD/AIDS of the elderly people depends on their awareness of the risk<sup>(27)</sup>. With the promotion of knowledge on the disease, mainly those who considered themselves invulnerable to disease are changing their thoughts on it. One example is the increased demand for HIV testing<sup>(25)</sup> and increased use of condoms. According to Berquó et al.<sup>(32)</sup>, people with stable partners increased the proportion of condom use from 19.1% in 1998 to 33.1% in 2005. Regarding the first sexual intercourse with a casual partner, this was associated with greater knowledge about prevention and AIDS owing to increased vulnerability, as described, because individuals who considering themselves more susceptible to disease end up seeking more knowledge about AIDS and its prevention.

## CONCLUSION

On the basis of the data from this study, we conclude that the elderly people in stable relationships, who experienced their first sexual intercourse with a casual partner, and those who have undergone HIV testing showed greater knowledge about AIDS and its prevention. However, the mean score on the prevention of AIDS was low among the elderly people.

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## Conflict of interests

The authors report no conflict of interests.

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