

# SEXUALLY TRANSMITTED DISEASES IN WOMEN WHO ARE 50 OR OLDER: A RETROSPECTIVE ANALYSIS FROM 2000 TO 2017 IN A PUBLIC REFERENCE SERVICE IN NITERÓI CITY, RIO DE JANEIRO STATE

*DOENÇAS SEXUALMENTE TRANSMISSÍVEIS EM MULHERES A PARTIR DE 50 ANOS DE IDADE: ANÁLISE RETROSPECTIVA DE 2000 A 2017 EM SERVIÇO PÚBLICO DE REFERÊNCIA EM NITERÓI, RIO DE JANEIRO*

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## ABSTRACT

**Introduction:** Sexually transmitted diseases (STD) are more common in young people. There are few studies on STD in the older population, particularly women. **Objective:** To evaluate and characterize, with epidemiological variables, the prevalence of STD in the female population over 50 years old, in a public reference service in Niterói city, Rio de Janeiro State, Brazil. **Methods:** The study was carried out at the STD Sector of Universidade Federal Fluminense. It was a descriptive retrospective study of quantitative character, carried out with women aged 50 or older, attended at the aforementioned teaching, research, and extension unit, from 2000 to 2017. Data collection was performed with documentary research from the records of Sexually Transmitted Diseases Sector of Universidade Federal Fluminense. A total of 6,822 records were analyzed, of which 2,363 were of women. Of these, 50 medical records of women over 50 years old. The variables used were age, education, marital status, use of condom, diagnosis, sexual and behavior characteristics (extramarital relationships and history of homosexuality), skin color, history of STD, sex education, numbers of sexual partners, family income. **Results:** There was a higher prevalence of human papillomavirus (HPV) infection in the form of condyloma acuminata in 48% of cases and cervical intraepithelial neoplasia (CIN) I, II, or III in 20%. Syphilis occurred in 14%; genital herpes and trichomoniasis, in 6% each; HIV, in 4%, and gonorrhea, in 2% of cases. 64% of women had no previous pathological history of STD, 6% had a previous diagnosis of syphilis, and 6%, of HPV. The predominant age group was 50 to 59 (78%), with a higher prevalence in white women (54%). Most patients (66%) reported having one fixed partner, were married (54%), and had no history of extramarital relationships (64%). In addition, 64% of patients had no degree of sex education and 56% lived on less than two minimum wages. Most patients (78%) reported not using condoms. In 50% of cases, the level of education was incomplete primary education and only 8% had concluded higher education. **Conclusion:** STD were more frequent in white women who did not use condoms. The most prevalent STD was HPV infection, as condyloma acuminata in *pardo* women. HPV infection as an cervical intraepithelial neoplasia (CIN) was the second most common STD in white and *pardo* women, and slightly lower in black women. Acuminated condyloma and NICs appear in all schooling groups analyzed, except in patients with a college degree and in women with higher family income. There was a predominance of STD in women without or with little sex education, and in those with low family income and education. Syphilis was observed in all age groups, predominantly in the group of good sex education, with higher family income and higher education. Syphilis and genital herpes were more prevalent in black women. Most women had a fixed sexual partnership, were married, and had no history of extramarital relationships.

**Keywords:** sexually transmitted diseases; women; older adults.

## RESUMO

**Introdução:** As doenças sexualmente transmissíveis (DST) são mais comuns em jovens. Existem poucos estudos sobre DST na população de idosos, em particular em mulheres. **Objetivo:** Avaliar e caracterizar, por meio de variáveis epidemiológicas, a prevalência das DST na população feminina com mais de 50 anos, em serviço público de referência no município de Niterói, Rio de Janeiro, Brasil. **Métodos:** O estudo foi realizado no Setor de DST da Universidade Federal Fluminense. Foi um estudo descritivo retrospectivo de caráter quantitativo, realizado com mulheres a partir de 50 anos de idade atendidas no referido serviço de ensino, pesquisa e extensão, no período de 2000 a 2017. A coleta de dados foi realizada por meio de pesquisa documental, a partir de consultas aos prontuários do Setor de Doenças Sexualmente Transmissíveis da Universidade Federal Fluminense. Foi analisado um total de 6.822 prontuários, sendo 2.363 do sexo feminino. Destes, 50 prontuários de mulheres a partir de 50 anos. As variáveis utilizadas foram: idade, escolaridade, estado civil, uso de preservativos, diagnóstico, características e comportamento sexuais (relações extraconjugais e passado de homossexualidade), cor, passado de DST, educação sexual, números de parcerias sexuais, renda familiar. **Resultados:** Houve maior prevalência de infecção por papilomavírus humano (HPV) sob a forma de condiloma acuminado em 48% dos casos e de neoplasia intraepitelial cervical (NIC) I, II ou III em 20%. Sífilis ocorreu em 14%, herpes genital e tricomoníase em 6% cada, HIV em 4% e gonorreia em 2% dos casos. 64% das mulheres não tinham história patológica progressiva de DST, e 6% tiveram diagnóstico prévio de sífilis e 6% de HPV. A faixa etária predominante foi de 50 a 59 anos (78%), com maior prevalência em mulheres brancas (54%). A maioria das pacientes (66%) reportou ter parceria fixa, era casada (54%) e sem histórico de relações extraconjugais (64%). Além disso, foi observado que 64% das pacientes não tinham qualquer grau de orientação sexual e 56% viviam com menos de dois salários mínimos. A maioria das pacientes (78%) relatou não fazer uso de preservativos. Em 50% dos casos, o nível de escolaridade foi o ensino fundamental incompleto e apenas 8% tinham nível superior. **Conclusão:** As DST foram mais frequentes em mulheres brancas que não faziam uso de preservativos. A DST mais prevalente foi a infecção por HPV como condiloma acuminado em mulheres pardas. A infecção por HPV como neoplasia intraepitelial de colo uterino (NIC) foi a segunda DST mais frequente em brancas e pardas e ligeiramente mais baixa em negras. O condiloma acuminado e as NICs aparecem em todos os grupos de escolaridade analisados, exceto nos portadores de curso superior completo e em mulheres com maior renda familiar. Houve predominância das DST em mulheres sem ou com pouca educação sexual e naquelas com renda familiar e escolaridade baixas. A sífilis apareceu em todas as faixas etárias, de forma predominante no grupo com boa educação sexual, com maior renda familiar e com maior escolaridade. A sífilis e o herpes genital foram mais prevalentes em mulheres negras. A maioria das mulheres tinha parceria sexual fixa, era casada e sem histórico de relações extraconjugais.

**Palavras-chave:** doenças sexualmente transmissíveis; mulheres; idosos.

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## INTRODUCTION

The longevity of the global population is increasing and, as a result, more people live healthier lives, including longer sexually active lives<sup>(1-4)</sup>.

In recent years, healthy sexual activity has been recognized as of great importance in the lives of older people<sup>(2,5,6)</sup>. Studies with middle-aged and older women reported that sexual intercourse is important for both groups<sup>(5,6)</sup>. Data from the World Health Organization (WHO) demonstrated that more than one million sexually transmitted diseases (STD) occur daily. Roughly 376 million cases of chlamydia, gonorrhea, syphilis, and trichomoniasis infections are estimated to occur annually. More than 500 million people have genital herpes simplex infections and approximately 300 million women have human papillomavirus (HPV) infection, number which is similar in men<sup>(7,8)</sup>.

A study carried out by Minichiello<sup>(9)</sup> on the epidemiology of STD in people aged 50 and older, of both sexes, showed an increase in cases in countries such as the United States, Canada, the United Kingdom, Australia, South Korea, China, and African countries.

As to factors specific to women over 50, consistent data from the literature shows that they are more susceptible to STD, considering, in addition to cultural and behavioral issues, that there is a series of physiological changes that provide greater potential for developing infectious diseases, including STD<sup>(10,11)</sup>. Nonetheless, women in this age group have the false impression that condoms are useless, given that, in general, they cannot get pregnant. In addition, these people do not identify themselves in campaigns to prevent such diseases, which almost always focus on the younger population<sup>(12,13)</sup>. Therefore, older women do not consider themselves as potential patients<sup>(14)</sup>.

In Brazil, few studies on STD in people over 50 were found; most included patients of both sexes, characterized as older adults (over 60 and/or 65 years old)<sup>(1,2,14)</sup>.

## OBJECTIVE

To assess and characterize, according to epidemiological variables, the prevalence of STD in the female population over 50 years old, in a public reference service in Niterói City, Rio de Janeiro State, Brazil.

## METHODS

Research was carried out at the Sexually Transmitted Diseases Sector of the Department of Microbiology and Parasitology at Universidade Federal Fluminense (UFF), Campus do Valonguinho, Centro, Niterói City, Rio de Janeiro State, Brazil.

A retrospective, descriptive study was conducted, in which the female population, 50 years old and older, attended and diagnosed in the STD Sector of UFF (reference in STD in Niterói City and Rio de Janeiro State) was characterized, in the period from 2000 to 2017. Data collection occurred with documentary research from a total of 6,822 medical records from the STD Sector of UFF, in which female patients were chosen, whose total was 2,363 records. Subsequently, after a new search, medical records of 50 women, 50 years old or older, were selected, which is the main object of this study.

The variables used in research were age, education, marital status, use of condom, diagnosis, sexual and behavior characteristics (extra-marital relationships and history of homosexuality), skin color, history of STD, sex education, number of partners, and family income. Given this is a retrospective study, the Informed Consent Term (ICT) was waived, and research was approved by the UFF Research Ethics Committee (*Comitê de Ética em Pesquisa - CEP*). However, the Data Usage Commitment Term (*Termo de Compromisso de Utilização de Dados - TCU*) was used, in which authors commit themselves to maintain the confidentiality of the data collected in the medical records, as well as the privacy of their content.

## RESULTS

Patients' age ranged from 50 to 75 years old. The distribution by age group was as follows: 50 to 59, with 78% of cases; 60 to 69, with 18% of cases; and over 70, with 4% of cases. Regarding the prevalence of STD found, there was a predominance of HPV infection as condyloma acuminata, corresponding, on average, to 48% of cases in patients between 50 and 59 years old; and as cervical intraepithelial neoplasia (CIN) I, II, or III, with 20% of cases and a higher prevalence in the 60- to 69-year-old population. Only two patients were over 70 years old, and one of them was diagnosed with CIN. Syphilis occurred in 14%; genital herpes, in 6%; trichomoniasis, in 6%; HIV, in 4%; and gonorrhea, in 2% of cases (**Graph 1**).

In assessing the number of partners, data showed that 66% had a fixed and exclusive partner, and that only 4% did not have only one partner.

As to skin color, there was a higher general prevalence of all STD in white women, which corresponded to 54% of cases; in *pardo* and black women, they occurred in 32 and 12% of cases, respectively. When assessing the frequency of each STD found as a function of the variable mentioned above, condyloma acuminata was more frequent in *pardo* women (58%). CIN showed similar occurrences in white and *pardo* women (21%), and was slightly lower in black women (17%). Syphilis was more prevalent in black women (33%), as well as genital herpes (17%). Both cases of HIV occurred in white women, and in one of these cases the presence of condyloma acuminata was later diagnosed. This was the only patient in the series studied who had an associated infection. Trichomoniasis was more common in *pardo* women. Only one case of gonorrhea was found in the study, however, without information on the patients' skin color.

Regarding sexual and behavior characteristics, the study showed that 64% of patients had no history of extramarital relationships and 86% did not report history of homosexual relationships. As for marital status, 54% were married; 18%, separated/divorced; 16%, single; and 12%, widows.

Of the studied patients, 64% did not receive any degree of sex education, 24% received some, 8% reported having received good orientation, and 4% did not inform. There was a higher prevalence of HPV infections (condyloma acuminata and CIN) in patients without or with only some information on sex education. Information related to the monthly family income of the studied sample showed that 56% of patients received less than two minimum wages, 24%, three to five minimum wages, and 14% did not report it. Data on educational level showed that 50% had incomplete primary education, 16%, complete primary education, 8%, complete higher education, and 14% were illiterate.

Condyloma acuminata and cervical intraepithelial neoplasms (CIN) appear in all educational groups analyzed, except for those with complete higher education. As to family income, HPV infections were found to occur more frequently in patients whose family income was up to two minimum wages and those with income between three and five minimum wages. In women with a higher family income, no case of these STD was found. Syphilis appeared in all age groups, predominantly in the group with good sex education, higher family income, and higher education. From the analysis of their pathological history, 64% had no previous reports of STD; 24% did not inform; 6% confirmed previous diagnosis of syphilis; and 6%, of HPV. Regarding condoms, 78% said they did not use it.

## DISCUSSION

Despite the growing discussion on the recognition of sexuality and sexual activity in advanced age, there is little research available about rates and the patterns of sexual practices and STD in this demographic group, particularly among women over 45<sup>(1,6,10,12)</sup>.

Literature review on the epidemiology of STD with a particular focus on older people showed evidence of increased rates of these infections in the population aged 50 or older<sup>(6,10,12)</sup>. In Brazil, there are no data of national scope, especially on older people, since many of them are not compulsory to report<sup>(1,2)</sup>.

The first epidemiological data that called the attention in the present study relates to the age of patients. The highest prevalence of STD occurred in women between 50 and 59 years old (78% of cases). These findings differ from the study by Andrade et al.<sup>(1)</sup>, who reported the highest prevalence in the age group between 60 and 74 years old. These authors, however, included patients of both sexes and did not consider patients aged between 50 and 59. The highest prevalence found for this age group can be associated, as proposed by Lindau et al.<sup>(5)</sup>, with the fact that sexual activity prevalence decreases over life.

STD were predominant in white women (54%) and in those who had one fixed partner represented (66%). Such data coincide with

information from the national literature<sup>(11)</sup>, but differ from the study by Schick et al.<sup>(15)</sup>, in which higher percentage of women with no fixed partners (9%) was found, in relation to our study (4%).

Regarding the diagnosis of STD, there was a higher prevalence of HPV infection in the forms of condyloma acuminata and CIN.

Literature data show that, at age 50, 80% of women present immunological evidence of previous HPV infection at some point in their lives. Most transmissions are estimated to occur due to men who do not know they are infected and/or do not have symptoms<sup>(16)</sup>.

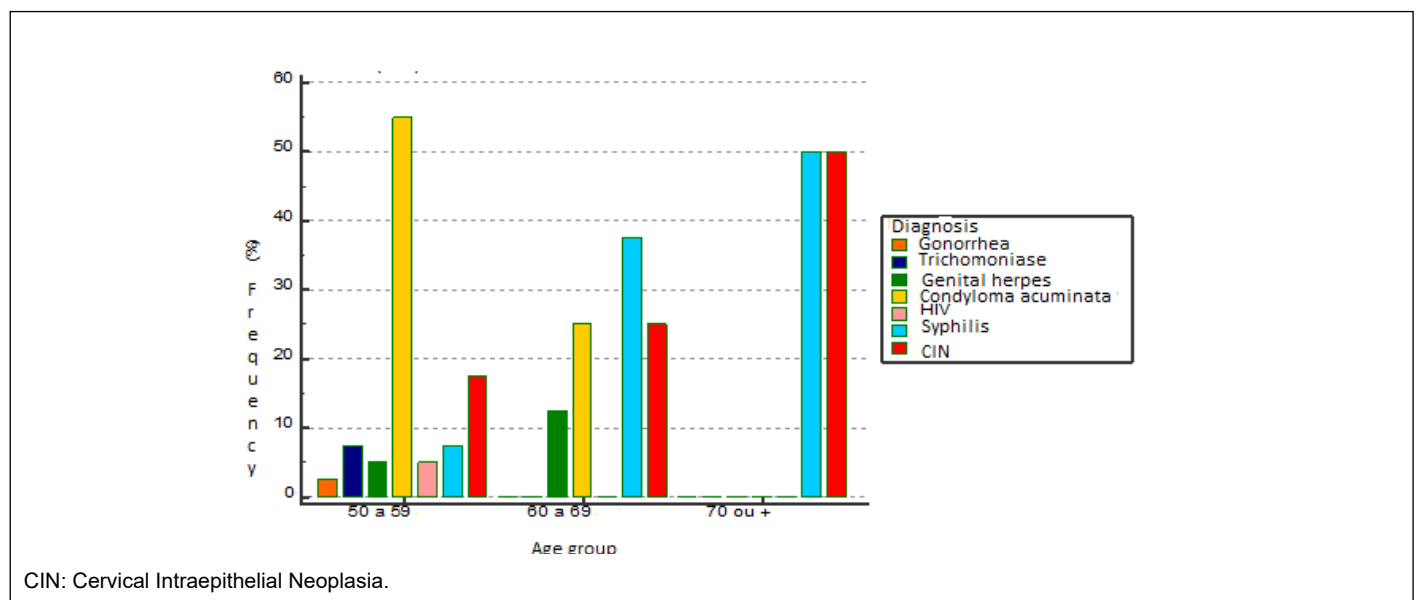
HPV infection presenting as condyloma acuminata occurred in 48% of cases. STD have their mainly related pathogenesis with HPV types 6 and 11, which have low oncogenic risk and are responsible for most cases of genital herpes<sup>(17)</sup>. A study by Giraldo et al.<sup>(16)</sup>, estimated that 32 million new cases of genital herpes are diagnosed worldwide, every year, associated with HPV types 6 and 11; in Brazil, roughly 1,900 cases are identified.

Condyloma acuminata appeared in the three groups of different sex education. The age group with the greatest number of cases was between 50 and 59 years old.

CINs accounted for 20% of cases. Epidemiological studies have shown that genital HPV is the main etiological factor of the disease<sup>(17)</sup>. However, unlike what happens in condyloma acuminata, the HPVs involved in the pathogenesis of this disease are mainly types 16, 18, and 45<sup>(17)</sup>. Invasive neoplasms of cervical squamous cells are preceded by a long phase of pre-invasive disease. In the present study, most cases occurred in the age group 60 or older.

Condyloma acuminata and CINs appeared in all educational groups analyzed, except for those with complete higher education. As to family income, HPV infections occurred more frequently in patients whose family income was up to two minimum wages and those with income between three and five minimum wages. In women with a higher family income, no case of these STD was found.

As to syphilis and gonorrhea, the study demonstrated that they occurred in 14 and 2% of cases, respectively. These rates are considered very high when compared to the literature, which shows syphilis data rates ranging from 0.2 to 4.1%, and 0 to 0.3% cases of gonorrhea<sup>(4,6,10,12)</sup>.



Graph 1. Age group versus frequency of sexually transmitted disease.

But our findings are in line with data from the Brazilian Ministry of Health, which identified, in the general population, 158,051 new cases of syphilis in 2018 and an increase in the rate of detection of the disease acquired per 100,000 inhabitants from 25, in 2014, to 75.8, in 2018<sup>(13)</sup>. The increased prevalence of syphilis and gonorrhoea has also been demonstrated in other studies, although with lower incidence rates<sup>(4,6,13)</sup>.

In the present study, syphilis appeared in all age groups, predominantly in the group of good sex education, higher family income, and higher education. It occurred more frequently in black women. From the analysis of their pathological history, the vast majority had no previous STD reports and 6% of patients confirmed a history of the disease. No case of associated infection was found in these women.

Both cases of HIV occurred in white women, and in one of these cases the presence of condyloma acuminata was later diagnosed. Johnson<sup>(10)</sup> stated that the presence of previous STD increased the risk of HIV infection. This author, by citing the data from the Centers for Disease Control and Prevention (CDC)<sup>(19)</sup>, showed that 15% of new cases of AIDS were diagnosed in 2005 among individuals aged 50 or older, and that the percentage of these patients living with HIV/AIDS increased from 17%, in 2001, to 24%, in 2005. Besides that, the author reported an even higher incidence in black individuals.

As to trichomoniasis, the study showed a prevalence of 6% of cases in women aged between 50 and 59, rate which is quite below that reported in the study by Cardoso et al.<sup>(20)</sup>, who identified a prevalence of 12.6% of this STD in women in the same age group. According to Zorati et al.<sup>(21)</sup>, the drop in incidence of trichomoniasis in women over 50 may result from the absence of the hormone estrogen as inhibitor of parasite proliferation, a disease that can present high incidence among groups of low socioeconomic level. However, in the present study, such data could not be observed, because it occurred both to women of low income and those of higher income. An important highlight is that the search for *Trichomonas vaginalis* is performed by fresh examination of vaginal content and/or by conventional oncotic colpocytology with Pap smear in the STD Sector. When trichomoniasis search is performed with molecular biology (PCR), the rates increase substantially<sup>(20-22)</sup>.

As to information on sex education, 88% of women did not have any and/or just some information about STD, which is important data, especially regarding prevalence of HPV infections, which was higher in these patients. Such data clearly show the need for public policies that aim at better guidance on STD in these layers of the population, since government advertising campaigns, in most cases, are aimed at young people. These observations are also supported by international literature. Smith et al<sup>(23)</sup>, performed a study in which, among other characteristics, sought to identify the level of education related to STD among older adults and suggested that low education highlights the need for educational interventions in this population.

Regarding condoms, most women (78%) did not use them during their sexual practices. This percentage is lower than what was reported in the study by Galarça<sup>(24)</sup>, 88%, but it is higher than what Fish found<sup>(25)</sup>, describing a study with 120 women over 46, active sexual life, in which it was found that 59% of women did not use condoms.

Postmenopausal women who are no longer concerned with contraception are little encouraged to adhere to using condoms, although most remain sexually active. There are several factors that hinder the use of condoms by couples whose the woman is in her post-reproductive period, such as the difficulty of negotiation between partners

to adopt safer sexual practices, thus revealing the need for education on the risks and prevention of STD aimed at this population<sup>(3,5,19,26)</sup>. Johnson<sup>(10)</sup> states that, when used in a permanent and correct way, condoms are highly effective in preventing sexual transmission of HIV, in reducing the risk of STD, such as gonorrhoea, chlamydia, trichomoniasis, genital herpes, syphilis, and soft tissue sarcoma, when the infection site in the latter is covered.

Our clinical investigation has shown that STD affect women aged 50 and over. The literature has shown a clear increase in the prevalence of these conditions in these age groups in all genders<sup>(6,9,26)</sup>. Although STD prevention efforts are more targeted at younger people, STD counseling for safe sex and risk reduction needs to be considered for people of all age groups. Studies on STD in middle-aged and older people are difficult to find. These individuals may be reluctant to discuss information related to sexual practices and be more vulnerable to the social stigma associated with STD, making it difficult to know their sexual history<sup>(2,27)</sup>. More information on the risk of these conditions in individuals from the fifth decade of life onwards should be provided through various channels, aiming at raising awareness of the risk and promoting information on safe sex for this population<sup>(4)</sup>. As there are few studies in the Brazilian national literature specifically analyzing the topic addressed herein, further research is needed to define the paths for a more effective prevention of patients, especially women in their fifth decade of life onwards.

The present study characterized epidemiological variables in a specific group of patients (women aged 50 or older), which may be useful in developing practices for diagnosis and prevention of STD for these age groups. The relevance of research relies in the fact that most literature data on this topic comes from studies with patients aged 60 or older, and, in general, with mixed casuistry and a predominance of males. Nonetheless, a limitation of this study is that it did not address, in isolation, male patients with the same methodology for comparison purposes.

## CONCLUSION

The most prevalent STD was HPV infection, as condyloma acuminata, in *pardo* women.

HPV infection as CIN is the second most common STD in women of white and *pardo* skin color, and slightly lower in black women. NICs appeared in all education level groups analyzed. Condyloma acuminata was not identified in patients with a complete higher education degree. Both were not present in women with higher family income.

STD occurred more frequently in white women that, for the most part, did not use condoms. There was a predominance of STD in women with little or no sex education, as well as in those of low family income and education level. Syphilis, however, was observed in all age groups, predominantly in the group with good sex education, higher family income, and higher education. Syphilis and genital herpes were more prevalent in black women.

Most women had one fixed sexual partner, were married, and had no history of extramarital relationships.

## Authors' contributions

MCM: project idealization, data collection, writing of the base and final text. VP: data collection, data review and base text. RSS:

review and analysis of the base and final text. MRLP: project ideation, review of initial data, review of the basic and final text.

## Funding

None

## Conflict of interests

There is no conflict of interests to be reported.

## Approval by the Human Research Ethics

Approved by CEP/UFF on December 18, 2018. Research protocol nº 01380418.6.0000.5243.

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