

# Factors associated with condom use in people living with HIV/AIDS

Fatores associados ao uso de preservativo em pessoas vivendo com HIV/AIDS

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Condom; HIV seropositivity; Sexual behavior; Sexual partners; Unsafe sex; Safe sex

## Descritores

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## Abstract

**Objective:** Identify condom use in people living with HIV/AIDS attended at a Specialized Care Service in STD/HIV/AIDS and associate it with sociodemographic and behavioral variables.

**Methods:** Cross-sectional study, involving 300 people living with HIV/AIDS between 18 and 66 years of age. Student's t-test was used for intergroup comparison. The association between condom use and the sociodemographic and behavioral factors was verified using Pearson's correlation tests and its effect was measured through the odds ratio.

**Results:** It was observed that 79.3% of the participants reported using condoms in sexual relations. Single people had less chance of using condoms than married women. And not revealing the HIV positive status to the partner increases the chances of using the condom.

**Conclusion:** Condom use is frequent among people living with HIV/AIDS, even when they do not reveal the positive serum status to their partners, but a significant part of the single people have unprotected sexual practices.

## Resumo

**Objetivo:** Identificar o uso de preservativo em pessoas que vivem com HIV/AIDS atendidas em um Serviço de Assistência Especializado em DST/HIV/AIDS e associá-los a variáveis sociodemográficas e comportamentais.

**Métodos:** Estudo transversal, realizado com 300 pessoas vivendo com HIV/AIDS com idade entre 18 e 66 anos. O teste *t Student* foi utilizado para comparação entre os grupos. A associação entre o uso de preservativo e os fatores sociodemográficos e comportamentais foi verificada por meio dos testes de correlação de *Pearson* e medida seu efeito por meio da razão de chance.

**Resultados:** Observou-se que 79,3% dos participantes relataram o uso do preservativo nas relações sexuais. Os solteiros tinham menor chance de usarem o preservativo que os casados. E não revelar a sorologia HIV positiva para o parceiro, aumenta as chances de usar o preservativo.

**Conclusão:** O uso do preservativo é uma prática frequente entre as pessoas que vivem com HIV/AIDS, mesmo quando não revelam a sorologia positiva aos parceiros, porém uma parcela significativa de pessoas solteiras têm práticas sexuais desprotegidas.

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Conflicts of interest: none to declare.

## Introduction

It is estimated that, today, about 34 million people around the world are infected by the acquired immunodeficiency virus (HIV), which is responsible for the development of the acquired immunodeficiency syndrome (AIDS), a pandemic condition that is considered a severe public health problem.<sup>(1)</sup>

Condom use in people living with HIV/AIDS reduces the risk of transmitting the virus and also of contracting other sexually transmissible diseases, besides reducing the superinfection with different viral specimens, contributing to prevent more severe and resistant forms of the disease.<sup>(2,3)</sup>

The people living with HIV/AIDS have presented a healthy improvement in the quality of life and life expectancy, as a result of the advent of antiretroviral therapy and treatment access,<sup>(4)</sup> as opposed to some studies that show that the risk of practicing unsafe sex has increased in patients who are using antiretroviral drugs, due to the control of the viral loading and increased immunity, which lead to the absence of symptoms and improvement of these patients' quality of life, discouraging safe sexual practices.<sup>(4,5)</sup>

Different sociodemographic and behavioral factors are involving in unsafe sex in HIV/AIDS patients and vary around the world, including sex, age, education, marital status, lack of perception of the severity of the disease due to the absence of symptoms, partner's serum status, difficulty to negotiate on the condom use and fixed or casual partners.<sup>(6,7)</sup> This highlights the responsibility of health services to comprehensively and effectively monitor these clients, with a focus on the prevention of transmission and complications deriving from AIDS.

Therefore, understanding the factors that stimulate safe sexual practices, such as condom use in people living with HIV/AIDS, will permit developing concrete and contextualized actions with these clients, with strong implications in the execution of preventive measures and appropriate conducts in the control of this infection.

Hence, this study aimed to identify condom use in people living with HIV/AIDS attended at a Specialized Care Service in STD/HIV/AIDS and associate them with sociodemographic and behavioral variables.

## Methods

A cross-sectional study was undertaken at a Specialized Care Service for HIV/AIDS patients, which at the time of the study monitored 1020 people living with HIV/AIDS, located in the Brazilian Northeast. The sample was calculated using a formula for infinite populations. A prevalence ratio of 50% was adopted because it offers a maximum sample size, a significance level of  $\alpha=0.05$  and an absolute sampling error of 4%. To mitigate possible losses, 10% was added to the sample size ( $n=300$  people living with HIV/AIDS).

The participants were randomly selected in accordance with the established eligibility criteria. The inclusion criteria were: patients aged 18 years or older, carriers of the HIV virus and registered at the Specialized Care Service in STD/HIV/AIDS. The exclusion criteria were: patients with cognitive deficit, communication deficit or severely ill.

The tool used to collect the data was a semi-structured questionnaire involving sociodemographic characteristics (sex, ethnic origin, age, education, income, occupation, marital status, religion) and behavioral characteristics related to the sexual practices (sexual relation in the last three months, condom use in the last three months, difficulty to negotiate on condom use with the partner, revelation of HIV serum status to the partner, change in sexual desire after the serum status test, use of antiretroviral therapy, knowledge on reinfection). Before the actual data collection, the questionnaire was pretested in 10 participants. After the pretest, some questions were reconsidered and, then, the data were collected.

To collect the data, a 30-hour training was held with the field researchers. The data were collected

between November 2013 and February 2014 in private rooms at the Municipal Referral Center in STD/HIV/AIDS. The patients were recruited at the waiting rooms of the medical and nursing appointments, after clarifications on the research objectives and methods.

The following outcome variable was selected: condom use (condom use in all sexual relations, whether vaginal, anal, oral in the last three months), while the sociodemographic and behavioral factors of sexual practice were the independent variable.

The processing of the data and the statistical analysis were undertaken in the software *Statistical Package for the Social Sciences*®, version 22.0. The quantitative variables were presented using descriptive statistics (mean and standard deviation), and the qualitative variables using proportions and 95% confidence intervals. First, the Kolmogorov-Smirnov test was applied to assess the normality of the quantitative variables. To analyze the difference of means, Student's t-test was used for independent samples and, to check for associations among the variables, Pearson's chi-square test was applied and its effect was measured using the odds ratio, with significance being set at  $p < 0.05$ .

The study development complied with the Brazilian and international ethical standards of research involving human beings.

## Results

In total, 300 people living with HIV/AIDS were assessed, with a predominance of the female gender (53.3%), the age ranged between 18 and 66 years, with a mean age of 37.1% (standard deviation 8.78), 80.3% were mulatto or black, 65% had studied less than ten years, 75.3% gained a monthly income of less than one minimum wage (\$ 1851.41), 92.3% had an occupation, 52% were single, 93% had a religion.

In this study, most women had a paid job ( $p = 0.02$ ), were married ( $p = 0.03$ ) and reported having difficulties to negotiate on condom use with their

partners ( $p = 0.002$ ). No association was found between sex and age and condom use, as observed in table 1.

**Table 1.** Distribution of sociodemographic and behavioral variables of sexual practice in people living with HIV/AIDS

Variables	Sex		p-value
	Male n= 140 n(%)	Female n= 160 n(%)	
Age			
< 30 years	31(22.1)	41(25.6)	0.48
> 30 years	103(77.9)	119(74.4)	
Education			
<10 years	95(67.8)	100(62.5)	0.33
>10 years	45(32.2)	60(37.5)	
Income			
<= 1 salary	103(73.5)	123(76.8)	0.50
> 1 salary	37(26.5)	37(23.2)	
Occupation			
Yes	124(88.5)	153(95.6)	0.02
No	16(11.5)	07(4.4)	
Marital status			
Single	82(58.5)	74(46.2)	0.03
Married	58(41.5)	86(53.8)	
Religion			
Yes	128(91.4)	151(94.3)	0.31
No	12(8.6)	09(5.7)	
Ethnic origin			
White	22(15.7)	37(23.1)	0.10
Non white	118(84.3)	123(76.9)	
Current sexual practice			
Yes	131(93.5)	148(92.5)	0.71
No	9(6.5)	12(7.5)	
Condom use			
Yes	116(82.8)	112(76.2)	0.15
No	24(17.2)	38(23.8)	
Difficulty to negotiate			
Yes	13(3.2)	36(22.5)	0.002
No	127(90.8)	124(77.5)	
Reveals the serum status to the casual partner			
Yes	34(24.2)	48(30)	0.26
No	106(75.8)	112(70)	
Reveals the serum status to the fixed partner			
Yes	113(80.7)	133(83.1)	0.58
No	27(19.3)	27(16.9)	
If does not reveal uses condom			
Yes	137(97.8)	160(100)	0.06
No	03(2.2)	0	
Knowledge on reinfection			
Yes	116(82.8)	125(78.1)	0.30
No	24(17.2)	35(21.9)	
Use ARVT			
Yes	123(87.8)	130(81.2)	0.14
No	17(12.2)	29(18.8)	
Change in sexual desire			
Yes	43(30.7)	61(38.1)	0.17
No	97(69.3)	99(61.9)	

It was observed that 79.3% of the people living with HIV/AIDS reported having used condoms in sexual relations in the last three months. This practice was predominant among women (51.3%), over thirty years of age (75.3%), mulatto or black (78.9%), studied less than ten years (64.2%), had a paid job (91.5%), gained a monthly income of less than one minimum wage (75.6%), married (50.9%), religious (92.4%).

As regards safe sex using condoms and socio-demographic factors, the chance of using condoms was lesser among single than among married participants ( $p=0.05$ ; odds ratio=0.89), a statistically significant association (Table 2).

**Table 2.** Association between sociodemographic factors and condom use in people living with HIV/AIDS

Variables	Condom use		p-value	CR	95%CI
	Yes n=238 n(%)	No n=62 n(%)			
Sex					
Male	116(48.7)	24(38.7)	0.15	1.08	0.96-1.12
Female	112(51.3)	38(61.3)			
Age					
< 30 years	59(24.7)	13(20.9)	0.53	1.04	0.91-1.18
> 30 years	179(75.3)	49(79.1)			
Education					
<10 years	153(64.2)	46(74.1)	0.16	0.91	0.81-1.02
> 10 years	83(35.8)	16(25.9)			
Income					
≤ 1 salary	180(75.6)	46(74.1)	0.81	0.98	0.85-1.12
> 1 salary	58(24.4)	16(25.9)			
Occupation					
Yes	218(91.5)	59(95.1)	0.34	1.10	0.93-1.30
No	20(8.5)	03(4.9)			
Marital status					
Single	117(49.1)	39(62.9)	0.05	0.89	0.79-1.00
Married	121(50.9)	23(37.1)			
Religion					
Yes	220(92.4)	59(95.1)	0.45	1.08	0.90-1.30
No	18(7.6)	3(4.9)			
Ethnic origin					
White	50(21.1)	09(14.5)	0.25	1.08	0.95-1.23
Non white	188(78.9)	53(85.5)			

Among 79.3% of the people living with HIV/AIDS who reported safe sexual practices with condom use, 33.9% had not used the condom because they had not had sexual practice in the last three months, 84.1% reported no difficulties to negotiate on the condom use, 72.3% did not reveal the HIV

serum status to the casual partners, 82.3% reveal the positive HIV serum status to the fixed partners, 99.5% do not reveal the serum status but use condoms, 82.3% know about reinfection, 67.3% had no change in their sexual desire after the HIV positive diagnosis and 85.2% are taking antiretroviral drugs.

As regards the behavioral factors of sexual practice, it was observed that sexual practice in the last three months had a six times higher chance of taking place with condom use ( $p<0.0001$ ; odds ratio = 6.80) and that not revealing the HIV positive serum status to the partner increases the chance of using condoms two times more ( $p= 0.04$ ; odds ratio = 2.39) (Table 3).

**Table 3.** Association of behavioral factors of sexual practice with condom use in people living with HIV/AIDS

Variables	Condom use		p-value	CR	95%CI
	Yes n=238 n(%)	No n=62 n(%)			
Current sexual practice					
Yes	238(100)	41(66.1)	<0.0001	6.80	5.12-9.02
No	0	21(33.3)			
Difficulty to negotiate					
Yes	38(15.9)	11(17.7)	0.73	0.97	0.82-1.14
No	200(84.1)	51(82.3)			
Reveals serum status to casual partner					
Yes	66(27.7)	16(25.8)	0.76	1.02	0.89-1.15
No	172(72.3)	46(74.2)			
Reveals serum status to fixed partner					
Yes	196(82.3)	50(80.6)	0.75	1.02	0.87-1.19
No	42(17.7)	12(19.4)			
If does not reveal uses condom					
Yes	237(99.5)	60(96.7)	0.04	2.39	0.48-11.8
No	01(0.5)	2(3.3)			
Knowledge on reinfection					
Yes	196(82.3)	45(72.5)	0.08	1.14	0.96-1.35
No	42(17.7)	17(27.5)			
Use ARVT					
Yes	203(85.2)	50(80.6)	0.33	1.08	0.90-1.30
No	34(14.8)	12(19.4)			
Change in sexual desire					
Yes	78(32.7)	26(41.9)	0.17	0.91	0.80-1.04
No	160(67.3)	36(58.1)			

## Discussion

In this study, the goal was to identify the main factors related to safe sexual practice through condom use in patients living with HIV/AIDS. It was evidenced that condom use was a frequent practice

in most study participants, but 20.7% still report sexual practices without condom use.

These study findings are almost the same as another cross-sectional study undertaken in the South of Brazil, where the prevalence of unsafe sexual practice corresponded to 25.3%,<sup>(8)</sup> similar to the findings in most studies involving people living with HIV/AIDS in cities in Italy,<sup>(9)</sup> Southern China,<sup>(10)</sup> African countries<sup>(11,12)</sup> and lower than findings in Argentina<sup>(13)</sup> and the United States.<sup>(14)</sup>

Among the people living with HIV/AIDS under study, it was observed that the female sex was associated with having a paid job, being married and reporting difficulties to negotiate on condom use with the partners. These data evidence women's increasing participation in the job market, which guarantees their permanent inclusion in the public sphere in recent decades. Despite their professional emancipation, women's family and sexual issues are still based on the submission to the male sex.<sup>(15)</sup>

A Brazilian study involving 2780 women showed that they are more vulnerable to unprotected sexual practices, due to difficulties to negotiate on condom use with the partner, as they are linked to macho cultural factors and out of fear of male violence by their intimate partners.<sup>(16)</sup> Therefore, comprehensive care to these women, understanding all of their vulnerabilities and inviting sexual partners to participate in the health service, are necessary for the couple to understand the dimension of their sexuality and the HIV infection, turning them into protagonists of self-care, so as to promote pleasant and protected sexual practices and promote a better quality of life for these clients.

In this study, it was evidenced that single participants had a lesser chance of using condoms than married participants, similar to a study developed in Ethiopia involving people living with HIV/AIDS, where single people had a four times higher chance of engaging in unsafe sexual practices than married people<sup>(12)</sup> and differently from the study by Anand et al.,<sup>(17)</sup> where married people, due to the greater confidence between the partners, engage in sexual practices without condom use.

Therefore, the relevant contribution of the multidisciplinary team is highlighted, which works

in the orientation and care for people living with HIV/AIDS, as most participants in this study reported on condom use and knowledge on reinfection. Nevertheless, preventive actions need to be reinforced for the single people, who still engage in risky sexual practices (without condom use), with a view to avoiding reinfection and reducing potential risks for transmission of the HIV virus.

The study showed that sexual practice in the last three months had more chance of happening with condom use, even when the HIV-positive serum status is not revealed to the partners, a fact that suggests the stigmatization and excluding potential the HIV/AIDS infection still produces in society. And it contrasts with the study by Engedashet et al.,<sup>(12)</sup> in which people who did not reveal their serum status had a greater chance of not using condoms.

In the course of this research, some limitations were faced, such as the sample from a single service, hampering the generalization of the results in relation to the general population.

As this was a cross-sectional study, the study participants could not be monitored with regard to their sexual practices. The assessment was only based on self-reporting and not other reliability measure of the report was obtained. Finally, there is the memory bias, as sexual practices in the last three months were investigated.

Therefore, despite the above limitations, the results of this study are relevant, contributing to the quality of care delivery to people living with HIV/AIDS and to the elaboration of appropriate prevention programs for these clients' needs.

Thus, the development of similar studies in different geographical regions, with different methodological approaches, is important to support the health professionals' work in the detection of possible risk behaviors and in planning appropriate prevention and control strategies for these clients.

## Conclusion

The study shows that most people living with HIV/AIDS use a condom, even when they do not reveal their HIV positive serum status to their partners.

Nevertheless, a significant part of single people still maintains unprotected sexual practices. Despite being professionally emancipated and mostly married, women still face difficulties to negotiate on condom use with their sexual partners.

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### Collaborations

Silva WS, Oliveira FJF, Serra MAAO, Rosa CRAA and Ferreira AGN declare that they contributed to the conception, research development and interpretation of the data, writing, relevant critical review of the intellectual content and final approval of the version for publication.

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