

ARTÍCULOS ORIGINALES

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# Infidelity, consensual infidelity, and intergenerational sex as risk factors for the transmission of HIV/AIDS in men of a municipality in Cuba

La infidelidad, la infidelidad consentida y el sexo intergeneracional como factores de riesgo para la transmisión del VIH/SIDA en hombres de un municipio de Cuba

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## ABSTRACT

**Background:** The use of condoms provides substantial protection against HIV. Sexual concurrency, infidelity, sexual relationships with younger partners could be considered as risky practices for sexually transmitted infections (STIs). **Methods:** The objective was to describe some risky behaviors among men of the municipality of Havana, Cuba. A cross-sectional study was conducted where 500 men aged 40-49 years were included. **Results:** The 75.2% of the participants did not use a condom and 30.4% of those without a stable partner have been unfaithful, while 12.6% was engaged in consensual infidelity and 18.2% had sexual relations with younger partners. Significant statistical associations were found between condom use, infidelity, consensual infidelity, and intergenerational sex and having or not a stable partner. **Conclusions:** There is an association between the studied variables and the presence or not of a stable partner.

**Keywords:** Condom; Sexual orientation; Sexually transmitted disease; HIV prevention; Infidelity; Consensual infidelity; Intergenerational sex.

## RESUMEN

**Antecedentes:** El uso de condones proporciona una protección sustancial contra el VIH. La concurrencia sexual, la infidelidad, las relaciones sexuales con parejas más jóvenes podrían ser consideradas como prácticas de riesgo para las infecciones de transmisión sexual (ITS). **Métodos:** El objetivo fue describir algunas conductas de riesgo entre hombres del municipio de La Habana, Cuba. Se realizó un estudio transversal donde se incluyeron 500 hombres de 40-49 años. **Resultados:** El 75,2% de los participantes no utiliza preservativo y el 30,4% de los que no tienen pareja estable han sido infieles, mientras que el 12,6% practica la infidelidad consentida y el 18,2% mantiene relaciones sexuales con parejas más jóvenes. Se encontraron asociaciones estadísticas significativas entre el uso del preservativo, la infidelidad, la infidelidad consentida y el sexo intergeneracional y tener o no pareja estable. **Conclusiones:** Existe asociación entre las variables estudiadas y la presencia o no de pareja estable.

**Palabras clave:** Condón; orientación sexual; enfermedad de transmisión sexual; prevención del VIH; Infidelidad; Infidelidad consentida; Sexo intergeneracional.

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## Keypoints

### What is already known on this topic

Risky sexual behaviors, multiple sexual partners, unprotected sexual relationships, consensual infidelity and intergenerational sex relationships are related to sexually transmitted infections.

### What this study adds

In the group of age that was studied, the use of condoms is not frequent and it is associated with infidelity, consensual infidelity, and intergenerational sex.

### How this study might affect research, practice or policy

Unprotected intercourses, infidelity, consensual infidelity, and intergenerational sex are the main components of risky behavior in this municipality of Havana despite all the campaigns and strategies developed by the Cuban Public Health to diminish sexually transmitted infections.

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## INTRODUCTION

With scientific advances and the development of new drugs, the mortality rate of infectious diseases decreased notably, however, the morbidity did not show the same behavior. It is not until the 1980s with the discovery of the first Acquired Immune Deficiency Syndrome (AIDS) case in the United States that deaths from contagious diseases begin to appear again<sup>1</sup>.

It is estimated that 102,500 new Human Immunodeficiency Virus (HIV) infections (between 86,000 and 121,000) in Latin America and the Caribbean (LAC) in 2015 and approximately 50,000 people died as a result of it<sup>2</sup>. Men who have sex with other men have an increased risk of 27.23 times higher for those who inject drugs and 13 times for transgender people and sex workers<sup>3</sup>.

Blood and vertical transmission have an increased risk of 9250 and 2255 times per 10000 exposures, while receptive, anal, insertive anal, receptive vaginal, and insertive vaginal sexual transmission show increased risk for the same number of exposures, being the sexual transmission route and the most frequent route of contagion<sup>4</sup>.

The Cuban HIV / AIDS epidemic shows a slow rise and is characterized by its low prevalence in the general population (0.27%), and the most important form of transmission is unprotected sex. Male sex is the most vulnerable, representing more than three-quar-

ters of the entire epidemic (80.8%), while women represent 19%<sup>5</sup>.

In this study, we describe possible risky sexual behaviors according to the presence or not of stable and recognized partners among men from 40 to 49 years old living in Regla, a municipality of Havana, Cuba.

## METHODS

### Study design and participants

A descriptive, observational cross-sectional study was carried out to describe and identify sexual behaviors at risk for the transmission of HIV/AIDS. Five hundred men from 40-49 years old completed the survey prior to obtaining informed consent.

### Sample size

To determine the number of participants that were needed for the current study, it was assumed values of 0.05 of significance level ( $Z^2\alpha=1.96$ ), precision of 0.04 (d), expected prevalence (p) of infidelity of 25% and finite population, including 5% of possible losses, a minimum sample size of 500 was required. The following formula was used:  $n = Z^2\alpha \times p \times q / d^2$ .

### Data collection

The survey was applied by primary health-care qualified professionals and was randomly performed from January to August 2019. Surveys with missing data were exclu-

ded. The survey was anonymous, to keep the confidentiality of the personal data respondents.

### Variables

The participants were divided into two groups according to partner status: a person with a partner with a relationship greater than one year and living together and without a partner rest. The variables under study (risk behaviors related to HIV transmission) were sexual orientation, infidelity (had been unfaithful at least once in one year), consensual infidelity (if their sexual partner knew about their infidelity and still maintained the relationship), condom use (if the condom was permanently used), intergenerational sex (if after the age of 40 they had had sexual relations with people who were 10 years of age or younger) and frequency of sexual intercourse (number of intercourses on average in a week).

### Statistical analysis

Mean and standard deviation were used for continuous variables and absolute and re-

lative for categorical variables. Chi-square test for categorical variables was used. All tests were two-sided, and  $p < 0.05$  was considered statistically significant. All statistical analysis was performed using SPSS version 24 (IBM Corp, Armonk, NY, USA).

## RESULTS

From the 500 subjects, 83% affirmed to have a heterosexual orientation, 7.6% homosexual, and the rest were bisexual (9.5%). In all, 75.2% did not use a condom as a regular practice and 19.2% have been unfaithful. Of those without a stable partner, 30.4% declared unfaithful. and 12.6% of subjects have found themselves in a relationship in which their partner knows of their infidelity and tolerates it. Eighteen percent reported having sexual relations with people 10 or more years younger than them. The average number of sexual relationships per week in the group without a partner was two while for the other group was four at a rate of 1/2. There is a dependence between the couple status categories and all aspects explored ( $p < 0.0001$ ). (**Table 1**)

**Tabla 1.** Condom use, infidelity, consensual infidelity and intergenerational sex according to the presence of a stable and recognized partner.

Couple status	Without a partner n=217		With a partner n= 283		p value*
	Yes (%)	No (%)	Yes (%)	No (%)	
Condom use	112(51.6)	105(48.4)	12(4.2)	271(95.8)	0.0000
Infidelity	66 (30.4)	151(69.6)	30(10.6)	253(89.4)	0.0000
Consensual infidelity	42(19.4)	175(80.6)	21(7.4)	262(92.6)	0.0001
Intergenerational sex	59(27.2)	158(72.8)	32(11.3)	251(88.7)	0.0000

## DISCUSSION

Our results show that sexual risk behaviors in men exist in this community. Understanding the characteristics of this population will contribute to future efforts to curb the AIDS epidemic in this municipality of Cuba.

We are reporting a high prevalence of homosexuality. A study in Mexico performed in 2011 with a sample size of 25,630 adolescents showed an estimate of homosexual behavior of 3.4 percent (3.18 - 3.62)CI 95%. Likewise, an estimate of 11.5 percent of homosexual or lesbian infatuation was de-

terminated (11.11 - 11.89) CI 95%<sup>7</sup>. Data reported in the current study reflected similar results to the referred study, showing that the diversity of sexual orientation is a universal constant.

The use of condoms is a rare practice in this age group, 75.2% do not use the condom consistently; in the group with a stable or recognized partner and living together, the condom is not used in 95.7% of people versus 48.3 % in those who do not have a stable partner. In a meta-analysis performed to estimate rates of condom use among MSM reported a modest increase in the use of condoms in the last sexual intercourse from 56.1% in 2003-2005 to 61.6 % in 2006-2008. Consistent condom use has also increased from 32.5% to 36.3%. Its use was higher and increased among commercial sexual partners, from 49<sup>8</sup> to 75.2% in the last anal intercourse. The study concluded that, despite the intervention strategies, the results found still pose a risk of contagion<sup>8</sup>. In Nepal, after surveying 3,017 men from 15-49 years, it was reported that 16.3% had used a condom in their last sexual relationship, associating the use of a condom more with sociodemographic factors than with sexual behavior and knowledge of HIV<sup>9</sup>.

The use of condoms declared in the last relationship with an unusual partner ranged from 80% in men in Namibia and Cambodia to less than 40% in men and women from other countries, including some heavily affected by HIV<sup>10</sup>. Among subjects from 15-24 years, condom use in the last sexual intercourse ranges from more than 80% in some Latin American and European countries to less than 30% in some West African countries.

Argentina reported that approximately 40% of the subjects admitted to having been unfaithful. In our study, it was evidenced that 19.4% have been unfaithful and 16.2% admitted that their partners have been aware

of their infidelity and apparently it has not been evidence of a breach of contract, inferring as a hypothesis the existence of negotiation of terms and/or acceptance without confrontation<sup>11</sup>. After which it would be feasible to question whether in the acceptance without confrontation the use of a condom is negotiated as a mandatory condition. We are reporting that 18.2% of our respondents had relationships with people 10 years younger, and of them, 11.2% maintain a stable relationship.

In 2011, Zimbabwe published a study conducted in 1,313 men, reporting that 2.5% met the definition of "sugar daddy": men with a nonmarital partner at least 10 years younger and younger than 20 years, and exchanged cash or goods for sex. Men who had intergenerational sex with an adolescent woman had HIV-like prevalence, income, and condom use than men in other couples. Most of the men had partners 5 or more years younger, with greater age differences in long-term relationships. Condom use was less common in married and stable couples compared to occasional use and more common in younger women. The most common form of intergenerational sex, with the greatest age difference and the least use of condoms, occurs within long-term marriages and partners<sup>12</sup>.

Our study reported a higher frequency, proposing as a hypothesis that it was performed on men and not all were married. The inclusion of this variable in the study was carried out to demonstrate the presence of a sexually active age group.

We suggest that there is dependence between the partner status categories and all variables studied. Through standardized and adjusted residuals, it was detected that this dependence is based on the fact that there is a significant increase in using a condom in people without a stable partner and a decrease in not using a condom in people

who are in a stable relationship. Which suggests that the practice of condom use in partner relationships decreases versus those who are without a stable partner.

The study is based on a large sample considering the population of this age range in the municipality we studied. The survey was conducted using a standard questionnaire and was applied by qualified staff.

### Limitations

Among the limitations, we have that subjects may be reticent or embarrassed to express their real sexual behavior. The cross-sectional nature of the survey, cause and effect relationships could not be established, and they are also limitations of this study.

## CONCLUSIONS

The use of condoms as a preventive method in the transmission of infectious diseases constitutes a rare practice in this sexually active age group, which is associated with behaviors such as infidelity, consensual infidelity, and intergenerational sex. These attitudes could increase the risk of contagion of these diseases. We confirm a higher percentage in the use of a condom in people without a stable partner. Further research is needed to determine the generalizability of the results to other age ranges.

### Ethics approval and consent to participate

The study was approved by the Ethics Committee of the Policlinico Lidia y Clodomira. The authors declare they had no access to identifying patient information when analyzing the data. We followed STROBE guidelines for the report of this study.

### Patient and Public Involvement statement

Patients or the public WERE NOT involved in the design, or conduct, or reporting, or dissemination plans of our research.

### Conflict of Interest

The authors report no conflicts of interest.

### Funding

No funds were received.

### Authors' contributions

The authors contributed equally in conducting the study; OP and AT collected and analyzed the data, conducted the literature search and review, AT and MF wrote the initial manuscript. AT, MF assisted in the study design and review of the manuscript and did all the required corrections suggested by the reviewers. All authors read and approved the final paper.

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