

# Sexually transmitted disease/HIV risk behaviour among women who have sex with women

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**Objective:** To analyse the epidemiological aspects of sexually transmitted diseases (STD) among women who have sex with women (WSW) in São Paulo, Brazil.

**Method:** A cross-sectional study with interviews and analysis of clinical and gynaecological tests in women, by means of a convenience sample. Characteristics were gathered according to age, sociobehavioural profile, reproductive life and sexuality.

**Results:** The study included 145 women. They started sexual activity at an average age of 16.9 years, and 23.4% of them had had heterosexual relations during the preceding year, with a relatively low frequency of condom use. In sexual relations with women, 54.5% used condoms when they shared sex toys. A previous STD was reported by 38% of them. The following STD were diagnosed: trichomonas (3.8%), bacterial vaginosis (33.8%), fungi (25.6%), *Chlamydia* (1.8%), hepatitis B (7%), hepatitis C (2.1%), abnormal Pap smear (7.7%), human papillomavirus (6.2%) and HIV (2.9%).

**Conclusion:** In this study, many WSW did not report a single risk behaviour, but often reported a combination of several potential risk factors. Therefore, one cannot speak of high or low-risk behaviour for STD/HIV, but rather of multiple-risk behaviour. It is evident that there is a need for healthcare professionals to be correctly informed and sensitive towards the healthcare of WSW. © 2005 Lippincott Williams & Wilkins

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## Introduction

The frequencies of different sexually transmitted diseases (STD) and risk factors related to gynaecological cancer among women who have sex with women (WSW) in Brazil are little known.

Even though several studies have suggested that the risk of transmitting HIV between women is low [1–3], this impression may be a result of stereotyping WSW as a 'group', and may be the result of the scarcity of studies that deal with at-risk behaviour among lesbians [4,5]. Several studies have shown that women who have sex with men and women present a greater risk behaviour of acquiring STD and HIV than do women who only have

sex with men [5–12]. Other studies have identified STD/HIV acquired from sexual partners among lesbians [8,9,13–18].

Not only some health professionals, but also many lesbians believe that lesbians are not at risk of developing neoplasia, and thus do not require regular Pap smears. Nonetheless, findings of abnormal Pap smear tests have been described among WSW, even among those who have never had sexual contact with men [14,19]. Moreover, because of the fear of prejudice among healthcare givers or having gone through previous unpleasant experiences, some women fail to seek healthcare services and thus make this population almost invisible to caregivers [20–27].

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The present study had the objectives of ascertaining the epidemiological characteristics of STD among WSW, estimating the individual prevalence of each STD, determining associations between HIV infection and other STD, and identifying behavioural factors that are associated with the presence of STD/HIV in this population.

## Methods

This was a cross-sectional study in 145 WSW over 18 years old. They were recruited by means of a convenience sample, from March 2002 to April 2003. Recruitment publicity was put out on the Internet by lesbian activist groups, and there was also a leaflet distribution inviting participation in the study, at the Gay, Lesbian, Bisexual and Transgender Pride Parade in São Paulo. Entry into the study was achieved by means of reading and signing a free and informed consent statement. Volunteers answered a questionnaire to identify data relating to possible risk factors for STD/HIV: demographic data and sexual background and practices. Clinical examination and laboratory tests followed.

During the gynaecological examination, cervical smears were collected for oncotoc cytology, Gram stains, culture for *Neisseria gonorrhoeae*, and *Chlamydia trachomatis* enzyme-linked immunosorbent assay (ELISA) testing. Vaginal secretions were examined for fungi with wet mount, Gram stains and culture. Bacterial vaginosis was diagnosed using Amsel's criteria. The Venereal Disease Research Laboratory and *Treponema pallidum* haemoagglutination tests were utilized for syphilis. HIV was diagnosed by ELISA and Western blot tests (Genelabs diagnostics HIV Blot 2.2, Abbott, St. Ingbert, Germany). Hepatitis B exposure was assessed using hepatitis B surface antigen, anti-HBs, anti-HBc and anti-HBe (ELISA using Elecsys 2010 equipment; Roche). Anti-hepatitis C virus (ELISA using Core II equipment; Roche, Penzberg, Germany) was utilized for hepatitis C virus. Genital warts were diagnosed clinically and via histology.

All volunteers diagnosed with an STD were treated.

This study described and analysed cases of the diagnosis of one or more STD (excluding *Candida* and bacterial vaginosis), in relation to social and demographic characteristics, risky behaviour of WSW, and factors associated with the acquisition of HIV. The utilization of crack cocaine, injection drug use, amphetamines, and ecstasy were among the behavioural variables surveyed. Interviewees were asked if they had told physicians they were WSW, what was the professionals' reaction and if there was a change in care. Univariate analysis and odds ratios calculations were performed, although we did not obtain statistical significance because of the small size of

the sample. EPI-INFO 6.4d (CDC-Centers for Diseases Control and Prevention, Atlanta, Georgia) and STATA 6.0 (STATA Corp., College Station, Texas, USA) were utilized for data analysis.

## Results

Out of the total of 145 women, most were white (64%) and economically active (85%), and had high levels of schooling (more than 8 years). Their average age was 31.9 years (standard deviation of 7.90) (Table 1).

The average age of sexual initiation was 16.9 years: 66.2% of participants reported that their first sexual experience was with the opposite sex, at an average age of 16.7 years, whereas 33.8% had had the experience with the same sex,

**Table 1. Numbers and percentages of women who have sex with women, according to sociodemographic characteristics, São Paulo, 2003.**

| Variables/categories                         | Number | %     |
|--|--------|-------|
| Age (years)                                  |        |       |
| 18–19  | 6      | 4.1   |
| 20–29  | 54     | 37.2  |
| 30–39  | 58     | 40.0  |
| 40–49  | 25     | 17.2  |
| 50 and over                                  | 2      | 1.4   |
| Colour/race                                  |        |       |
| White  | 93     | 64.1  |
| Black  | 21     | 14.5  |
| Mulatto                                      | 31     | 21.4  |
| Marital status                               |        |       |
| Single                                       | 133    | 91.7  |
| Married                                      | 2      | 1.4   |
| Divorced/widowed                             | 10     | 6.9   |
| Conjugal situation                           |        |       |
| Single                                       | 74     | 51.0  |
| Living with partner                          | 71     | 49.0  |
| Employment situation                         |        |       |
| Active                                       | 124    | 85.5  |
| Inactive                                     | 21     | 14.5  |
| Income (US\$/month) <sup>a</sup>             |        |       |
| None   | 21     | 14.5  |
| Up to 62.87                                  | 2      | 1.4   |
| > 62.87–251.49                               | 56     | 38.6  |
| > 251.49–440.11                              | 22     | 15.2  |
| > 440.11–628.73                              | 22     | 15.2  |
| > 628.73–817.35                              | 9      | 6.2   |
| > 817.35–1005.97                             | 4      | 2.8   |
| > 1005.97                                    | 9      | 6.2   |
| Schooling                                    |        |       |
| Elementary education incomplete              | 9      | 6.2   |
| Elementary education completed               | 6      | 4.1   |
| High school incomplete                       | 13     | 9.0   |
| High school completed                        | 50     | 34.5  |
| College incomplete                           | 22     | 15.2  |
| College completed                            | 45     | 31.0  |
| Frequenting of gay, lesbian, bisexual places |        |       |
| Yes  | 128    | 88.3  |
| No   | 17     | 11.7  |
| Total  | 145    | 100.0 |

<sup>a</sup>Income was calculated on the basis of Brazilian minimum salary (R\$200.00) and official exchange rate between the Real and American dollar at each month of the study.

at an average age of 17.4 years. It was found that 23.4% had never had sexual relations with men.

During the preceding month, 17.9% (26/145) had had more than one sexual partner, and over the past year, 62% (90/145) had done so. Sexual relations with men during the past 3 years were mentioned by 36.6% (53/145) of volunteers and 32% (17/53) of them said that the men were either homosexual or bisexual. Condom use in relations with men, during the past 3 months, was reported by 45.5% (10/22) of women, and only one woman reported not having used a condom because she wished to get pregnant. The consistent use of condoms was reported by 2.1% (3/143) in relations with women during the past 3 months. The reasoning for this was that they 'didn't see a need for it' (42.2%), 'trusted the partner' (17.3%) and 'didn't know they should' (16.5%). Previous histories of STD were reported by 38.6% (56/145).

The exchange of sex for money or goods was reported by 7.6% (11/145) of women. With regard to drug consumption over the preceding year, from those 112 women who said yes to this question, 40.2% mentioned marijuana and 16.1% cocaine. No woman reported the use of injecting drugs. An association between two or more drugs was frequently mentioned. Sexual relations with individuals that they knew to be HIV positive were reported by 12.4% (18/145) of women.

Almost half (44.1%) said that they had sex even when the partner was menstruating. The use of sex toys was mentioned by 33.1% (48/145) of them, and of these, 45.8% (22/48) shared accessories and 54.5% (12/22) changed the condom for shared use.

More than half of the participants were not following a routine of annual appointments with a gynaecologist. Attention was drawn to the fact that 3.3% (5/145) had never visited a gynaecologist; 17.9% (26/145) said they had never undergone a Pap smear; and more than half of the interviewees had already had at least one anti-HIV test (Table 2).

Forty-nine per cent (71/145) said that they had told their present doctor that they had sexual relations with women, and 39.3% (57/145) said they had told previous doctors about this. A feeling of discomfort in the doctor-patient relationship was the reason given by 91.3% (63/69) of the women for omitting this information when consulting with doctors.

Women perceived that their doctor's reaction towards being informed of their homosexual practices was to regard it as 'natural', in the case of 43.7% (31/71) of present doctors and 21.1% (12/57) of previous doctors. On the other hand, women perceived a 'negative' reaction among 21.1% (15/71) of present doctors and 42.1% (24/57) of previous doctors.

**Table 2. Numbers and percentages of women, according to their own healthcare, São Paulo, 2003.**

| Variables/categories              | Number | %     |
|-----------------------------------|--------|-------|
| Annual gynaecological appointment |        |       |
| Yes                               | 68     | 46.9  |
| No                                | 77     | 53.1  |
| Time of last appointment          |        |       |
| Up to 1 year ago                  | 55     | 37.9  |
| 1-3 years ago                     | 59     | 40.7  |
| More than 3 years ago             | 26     | 17.9  |
| Never visited a gynaecologist     | 5      | 3.3   |
| Time of last Pap smear            |        |       |
| Never had one                     | 26     | 17.9  |
| Up to 1 year ago                  | 46     | 31.7  |
| 1-3 years ago                     | 51     | 35.2  |
| More than 3 years ago             | 22     | 15.2  |
| Result from the last Pap smear    |        |       |
| Never had one                     | 26     | 17.9  |
| Negative                          | 38     | 26.2  |
| Class II                          | 32     | 22.1  |
| CIN I + HPV                       | 4      | 2.8   |
| Unable to remember                | 45     | 31.0  |
| Anti-HIV test done                |        |       |
| Yes                               | 91     | 62.8  |
| No                                | 54     | 37.2  |
| Total                             | 145    | 100.0 |

CIN, Cervical intraepithelial neoplasia; HPV, human papillomavirus.

Among interviewees, 28% (24/85) said that after the doctors acknowledged their homosexual practices, they started to attend to them more rapidly or without looking at them, and 16.5% (14/85) said that the professional failed to examine them or to request tests that, according to the women, appeared to be necessary. Among the laboratory diagnoses, bacterial vaginosis was demonstrated in 33.8% (48/142) of women. Cultures for fungi were positive in 25.6% (31/121) of samples. There was a diagnosis of trichomoniasis in 3.5% (5/142) of the women and *Chlamydia* infection was detected in 1.5% (2/134).

Pap smear was shown to be abnormal in 7.7% (11/142) of women and human papillomavirus (HPV) infection confirmed by histology was diagnosed in 6.3% (9/142).

Positive serology for hepatitis B and C was found in 7.0% (10/143) and 2.1%, (3/143), respectively. HIV infection was demonstrated in 2.9% (4/136), and all the infected patients already knew about their serological condition (Table 3). It is worth mentioning that only one woman was diagnosed with HIV and hepatitis C co-infection.

The four HIV-positive women reported that they had initiated their sex life at the age of 17 years or less. They had a history of sexual relations with men at some time in their lives, had had several partners, and had a history of STD. Two of them had had less than 8 years of schooling, three had had sexual contact with men during the preceding 3 years, and two said they had exchanged sex for money or goods. Three of them presented with

**Table 3. Numbers and percentages of women, according to observed frequency of sexually transmitted diseases, São Paulo, 2003.**

| Variables/categories                           | Number | %    |
|--|--------|------|
| Culture for fungi ( <i>n</i> = 121)            |        |      |
| Negative                                       | 90     | 74.4 |
| Positive                                       | 31     | 25.6 |
| <i>Trichomonas vaginalis</i> ( <i>n</i> = 142) |        |      |
| Positive                                       | 5      | 3.5  |
| Negative                                       | 137    | 96.5 |
| Bacterial vaginosis ( <i>n</i> = 142)          |        |      |
| Positive                                       | 48     | 33.8 |
| Negative                                       | 94     | 66.2 |
| <i>Chlamydia trachomatis</i> ( <i>n</i> = 134) |        |      |
| Reactive                                       | 2      | 1.5  |
| Non-reactive                                   | 132    | 98.5 |
| Pap smear ( <i>n</i> = 142)                    |        |      |
| Negative                                       | 2      | 1.4  |
| Benign cellular alterations                    | 129    | 90.5 |
| ASCUS  | 4      | 2.8  |
| CIN I, II, III                                 | 7      | 4.9  |
| VDRL ( <i>n</i> = 143)                         |        |      |
| Reactive                                       | 1      | 0.7  |
| Non-reactive                                   | 142    | 99.3 |
| HIV ( <i>n</i> = 136)                          |        |      |
| Reactive                                       | 4      | 2.9  |
| Non-reactive                                   | 132    | 97.1 |
| Hepatitis B ( <i>n</i> = 143)                  |        |      |
| Reactive                                       | 10     | 7.0  |
| Non-reactive                                   | 133    | 93.0 |
| Hepatitis C ( <i>n</i> = 143)                  |        |      |
| Reactive                                       | 3      | 2.1  |
| Non-reactive                                   | 138    | 96.5 |
| Indeterminate                                  | 2      | 1.4  |

ASCUS, Atypical Squamous cells of uncertain significance; CIN, cervical intraepithelial neoplasia; VDRL, Venereal Disease Research Laboratory.

an abnormal Pap smear. The sample size is too small to allow for any statistical analysis.

Among women who mentioned the use of sex toys, 31.2% (15/48) presented with STD, whereas only 14.4% (14/97) of women not using sex toys had an STD. There was evidence of an association between STD and the use of sex toys: odds ratio 2.7 (95% confidence interval 1.15–6.31)  $P = 0.01$ . Other practices such as penetration using hands and fingers or the manipulation of the partner's genitalia in relations in which both were penetrated were reported, and may present a risk of STD transmission, although the instrument utilized for data collection did not allow such an association to be evaluated. No association between STD and any other risk factor was found.

## Discussion

This was the first study in Brazil to approach behavioural factors in WSW, the diagnosis of STD/HIV and the relationship of these women with health professionals.

The study helps to expand knowledge on the needs of WSW, the difficulties they have in obtaining healthcare,

and contributes to reducing the stigma felt by these women, by suggesting changes in the academic education of health professionals.

The fact that the study was publicized by means of the Internet may have induced a selection bias as the population that has access to it probably has a higher income and schooling and belongs to socio-economic strata that are not representative of the general population.

The Gay, Lesbian, Bisexual and Transgender Pride Parade was the opportunity for publicizing it widely and for having more representative volunteers of the general population.

The women in the study had a lower unemployment rate and higher income than the averages for the metropolitan region of São Paulo [28]. These characteristics may suggest that the population studied would have a lower risk of acquiring HIV and other STD, because of greater access to information, but this was not observed.

This study reinforces the need for a medical appointment without value judgements. The fact that 36.6% of the population studied maintained sexual relations with the opposite sex during the preceding 3 years indicates that these women were not exclusively homosexual. The fact that a woman is a practising homosexual at present does not indicate that she is exclusively homosexual. The possible denial of counselling for contraception and prevention of infection by HIV and other STD, for these women, is a matter for concern, given that 32% of them reported that they had had male homosexual or bisexual partners.

With regard to the use of sex toys, one-third of the women studied mentioned the practice, and almost half of them did so in a shared manner, whereas only 54.5% changed the condom when sharing sex toys. Such practices could increase the chances of transmitting STD/HIV because, as well as the exchange of secretions, there could be contact with the partner's blood, a risk that was little perceived by these women.

Among the women studied, 44.1% mentioned that they had oral sex or penetration (using fingers or sex toys) while the partner was in the menstrual period. This percentage was much greater than the 18% found by Rosário *et al.* [11], although their study was limited to a population aged between 14 and 21 years.

Sexual practices in the presence of menstrual blood may increase the risk of infection, especially by HIV. Some women justified this risk, showing that they do not know about or really do not believe in the transmission risk. The risks of such practices should be publicized more widely.

Although none of the woman reported the use of injecting drugs, which, according to Young *et al.* [29] is an important risk factor for those women in acquiring STD/HIV, 74.2% (112/145) were using drugs, including 46.9% (68/145) of tabagism (cigarette smoking), 62.1% (90/145) of alcohol and 51.7% (75/145) of other non-injecting drugs. Those characteristics may also be considered risk-related behaviours.

In addition to these data, there is the information that 12.4% of the women in this study had sexual relations with male and female partners who they knew to be HIV positive. This percentage differs from what was found by Marrazzo *et al.* [30], whose figures were 4.4% for women with sexual relations exclusively with women or bisexuals and 1.2% for women with heterosexual relations, thus indicating a greater risk among WSW.

Less than half of these women (46.9%) routinely underwent annual gynaecological evaluation. In addition to this, 17.9% of women reported that they had never undergone a cervical cytology examination, which is similar to the 17% found in the study by Bailey *et al.* [19] analysing data from 606 WSW in two sexual clinics for lesbians in London.

All women with abnormal Pap smear results had had heterosexual relations at some time in their lives.

Infection by HPV was diagnosed in 6.2% of women, which was similar to the 8% found by Fethers *et al.* [31]. In that study, no difference in the prevalence of abnormal Pap smear was found between WSW on their first appointment ( $n = 1408$ ; average age 27 years) and women who had never had sex with other women ( $n = 1423$ ; average age 26 years). Moreover, two case reports have described HPV infection among WSW who had never had sexual relations with men [13,14].

The prevalence of HIV among these women was 2.9%. This is higher than the rate demonstrated by Fethers *et al.* [31] of almost 1%, but similar to the sentinel study performed by the Centers for Disease Control and Prevention, cited by Gonzales *et al.* [10], in which a 2.8% rate was found among 470 HIV-positive bisexual women.

Almost half of the women in the present study did not reveal to their doctors that they had sex with other women. Of this group, almost all of them said that they omitted the information because they felt some discomfort caused by the healthcare professional during the visit. One of the attitudes mentioned was the use of terms that presupposed heterosexuality, such as 'your partner' (male declination in Portuguese), 'use of condoms', 'contraception', thus inhibiting any possible initiative by the client towards revealing her sexual orientation.

The majority of interviewees who considered that the professional's attitude was 'natural' subsequently revealed that the professional did not provide guidance on the topic, explaining that the way in which the medical appointment was conducted merely continued unaltered. This may result in a lack of specific information regarding disease prevention.

Attention is drawn to the fact that more than a quarter of the women reported that the professionals started to attend to them more rapidly after the revelation of their sexual orientation, and that the professionals failed to examine them or to request tests that appeared necessary to the women. These findings suggest unprepared professionals, or even stigmatizing among some in attending to WSW.

Almost all the women interviewed indicated that they would feel more comfortable during the visit if the professional 'were not prejudiced'.

Within this context, healthcare professionals should not presume that WSW never have sex with men, or that they are less exposed to the risk of becoming infected by some STD. They should therefore always stress the importance of safe sex regardless of sexual practices.

The present study showed that there was rarely any use of condoms or other protective barrier methods for the practice of oral sex between women. The reasons mentioned were that these women did not see any need for it, did not know they should, or had excessive confidence in sexual partners.

There is a need for more information for healthcare professionals and patients regarding the importance of preventing cervical cancer in WSW. The gynaecological attendance and routine for WSW should not differ from what is recommended for heterosexual women, including guidance and making prevention methods available.

A large proportion of medical schools do not deal with the topic of homosexuality and its implications for healthcare in an integrated manner. For this reason, healthcare professionals need to review how they conduct the appointment and how they steer the conversation regarding the patient's sex life. They need to leave space in this dialogue for their clients to feel secure about admitting their sexual orientation.

The data from this study point towards a need to introduce and improve measures for preventing and fighting prejudice, aimed at obtaining better knowledge of the sex life of WSW, providing guidance regarding risky and vulnerable behaviour, and tracing out strategies for interventions, monitoring and evaluations.

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This study is dedicated to patient R.D., 45 years old, who as a result of an invasive uterine cervix carcinoma diagnosed during the study, passed away in March 2003.

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