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Factors associated with HIV risk perception among hospital postpartum women

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ABSTRACT

Objective

To assess factors associated with HIV risk perception among postpartum women admitted to philanthropic maternity hospitals.

Methods

The study sample comprised 384 postpartum women admitted to two philanthropic maternity hospitals in the city of São Paulo, Brazil. Data collection was carried out from January to March 2000. All women were interviewed 12 hours after delivery and data was collected on sociodemographics, STD/AIDS knowledge and attitudes (independent variables) and cultural issues (dependent variables), and "whether she considered herself at risk for HIV infection" (dependent variable). Statistical analysis was performed using Chi-square test and multiple logistic regression.

Results

Nearly 29% of postpartum women considered themselves at risk for HIV infection. They were single, had prior STD and believed "married men enjoy himself in the same way as single men do". Prevention and health maintenance behaviors were also identified.

Conclusions

Women's knowledge on AIDS seems to affect their individual risk perception. Future HIV/AIDS prevention campaigns should be focused on increasing couples and adolescents' involvement.

Keywords

HIV infections, transmission. Acquired immunodeficiency syndrome. Knowledge, attitudes, practice. Women's health. Perception. Risk factors. Puerperium. HIV infections, prevention and control. HIV. Socioeconomic factors. Sexually transmitted diseases.

INTRODUCTION

Epidemiological studies in Brazil have showed increasing cases of HIV infection among women at childbearing age.

Data from the Brazilian Ministry of Health for the period between 1980 and March 2002⁴ show that perinatal transmission comprised 3.0% of total HIV/AIDS cases reported for both sexes. The highest rate of HIV/AIDS women was seen among those who had heterosexual exposure (85.5%), followed by IV drug users (13%). The current trend of growing heterosexual HIV infection in Brazil has brought women into the sexual and perinatal continual progressing chain of transmission.

HIV prevention among heterosexuals is hampered by beliefs and cultural practices that impair individual risk perception in a population. After interviewing 2,681 women in the National Survey on Demography and Health (PNDS) of the state of São Paulo it was found that 45.3% did not perceive themselves at risk of HIV infection, 37.9% perceived themselves at low risk, 6.9% at moderate risk, and 4.5% at high risk.¹

Another study revealed that women with a steady family living in a slum in the city of São Paulo demonstrated some knowledge on HIV routes of transmission and sexual prevention but they did not apply their knowledge because they relied on their partner being faithful to them and did not perceive themselves at risk of HIV infection.¹⁰

Barbosa² claims HIV infection risk determination should include each country's peculiarities, its population's sexual practices, health conditions and prevalence of sexually transmitted diseases. Since women are most likely to use health care services during pregnancy and puerperium, the present study was conducted with the purpose of ascertaining factors associated with HIV risk perception among postpartum women admitted to maternity hospitals.

METHODS

The study sample comprised 384 postpartum women of two charitable maternity hospitals in the city of São Paulo. The sample size was defined as percentage of women who perceived themselves at risk of HIV infection based on Badiani et al¹ estimation's of 55%. It were used 10 confidence intervals and 5% p-value and the sample size was calculated according to Hulley and Cumming.⁹ Postpartum women who did not have any chronic diseases and had live newborns were interviewed at least 12 hours after delivery, regardless delivery route.

All postpartum women who had delivered in the previous 24-hour period were recorded on a daily basis in the postpartum unit's hospital admission registry. After confirming all inclusion criteria were met, the interviewer would look for each patient. She would introduce herself and after getting patient's consent for enrolling in the study, she would conduct an interview in a separate room. Except for two women who refused to participate, all others agreed to be included in the study.

Each charitable maternity hospital provided 50% of participants in the study sample. The characteristics of the maternity hospitals were as follows: one is a general hospital located in the city's eastern area, and its maternity unit admits patients from the Unified National System (SUS) and private HMOs with a monthly average of 800 deliveries. The second one is a maternity hospital located in the city's southern area with an average of 700 deliveries a month and admits exclusively SUS patients from various municipalities in the Greater São Paulo.

Data collection was carried out at the same time in both maternity hospitals by two nursing students trained for this purpose. A questionnaire consisting of 80 questions on sociodemographics, sexual and reproductive health practices, HIV/AIDS knowledge, attitudes, and HIV risk perception was applied to participant women.

The questionnaire was structured based on Praça and Gualda's¹⁰ results of a qualitative ethnographic study conducted in an urban slum community in the city of São Paulo in 1998. The authors' purpose was to ascertain HIV risk perception among slum women who had a steady family. Women's risk perception was assessed confronting their knowledge, beliefs and attitudes concerning HIV prevention with recommended actions to fight the HIV/AIDS epidemic. Their HIV susceptibility was also discussed. A pilot study was carried out in 10 postpartum women admitted to a university maternity hospital in the city of São Paulo, which mostly assists women with a similar profile than those assisted by the two study maternity hospitals.

HIV risk perception was defined as the dependent variable (yes=1 and no=0) and independent variables were sociodemographics (age, occupation, schooling, marital status, and family income), STD and HIV/AIDS knowledge (information sources, routes of HIV transmission, prevention measures), and gender-related attitudes and behavior.

Statistical analysis was performed using Chi-square test corrected by Yates for the association between risk perception and the independent variables and a multiple logistic regression model, stepwise forward regression, was used in the combined analysis as variable selection strategy. All variables with $p < 0.200$ in the association analysis were analyzed in the multiple regression model. All statistically significant variables ($p < 0.050$) remained in the multiple regression model. The variable schooling was used as control in the multiple regression model.

The study was approved by the two participating hospitals' Ethical Committees and board of directors. All participants signed a voluntary informed consent for scientific research after being informed of the study's rationale, purposes and procedures and the principal investigator was introduced. All

participants were assured their right to anonymous participation as well as refusal of participating in the study without any compromises to their care in the institution.

RESULTS

There were interviewed 384 postpartum women in the period between January and March 2000. Of these, 273 women (71%) showed no HIV risk perception. Mean age was 23.5 years (standard deviation = 5.9 years), 28% were teenagers (aged 12 to 19 years). Nearly 50% have not completed elementary school and only 1% had attended university. Of all, 60% had a monthly income less than R\$ 750.00*, corresponding to less than 5 minimum wages at the study time (R\$ 151.00 monthly). Most (67%) did not have an occupation and 3% were unemployed and financially dependent on their partner or family. The most common occupations were those not requiring specific training such as household maids, aids, sales clerk and others. Of all women, 78% lived with their partner or husband and 71% were Catholic. Only two women (0.5%) reported current drug use and 22 (6%) reported having used drugs in the past, while 10 (3%) said their current partner has been currently using drugs in contrast to 27 (7%) of their former partners. Most (84%) had never had an abortion and 70% were had one or two prior pregnancies. Only 15% reported having their first sexual relationship after the age 20, 46% said they had had more than one partner in their lifetime, and 88% had only one partner in the last two years.

*The dollar currency rate was R\$ 1.73 (April 3, 2000).

Table 1 shows HIV risk perception related to sociodemographics. There was a statistically significant association between HIV risk perception and age ($p=0.023$) and marital status ($p=0.020$). Women aged less than 20 had higher risk perception than women aged 20 and over. The same is true for marital status. HIV risk perception was similar concerning schooling, income, and religion ($p=0.384$, $p=0.121$, and $p=0.937$ respectively).

Table 1 – Sociodemographics and risk perception of studied women. São Paulo, 2000.

| Variable | Risk perception | | | | p* |
|--------------------------|-----------------|---|-----|---|-----|
| | No | | Yes | | |
| Category | N | % | N | % | |
| Age (years) | | | | | |
| 12 – 19 | 66 | 6 | 41 | 3 | 0.0 |
| | | 2 | | 8 | 23 |
| 20 – 25 | 12 | 7 | 37 | 2 | |
| | 5 | 7 | | 3 | |
| 26 – 42 | 82 | 7 | 33 | 2 | |
| | | 1 | | 9 | |
| Schooling | | | | | |
| Illiterate + Inc. | 13 | 7 | 48 | 2 | 0.3 |
| elem./middle | 9 | 4 | | 6 | 84 |
| Comp elem./middle + Inc. | 85 | 6 | 41 | 3 | |
| high school | | 8 | | 2 | |
| Comp high school + univ. | 49 | 6 | 22 | 3 | |
| | | 9 | | 1 | |
| Income (R\$)** | | | | | |
| 25.00 – 300.99 | 47 | 7 | 20 | 3 | 0.1 |
| | | 0 | | 0 | 75 |
| 301.00 – 750.99 | 12 | 7 | 39 | 2 | |

| | | | | | |
|----------------|----|---|----|---|-----|
| | 7 | 7 | 3 | | |
| 751.0 and over | 67 | 6 | 31 | 3 | |
| | | 8 | | 2 | |
| Marital status | | | | | |
| Yes | 22 | 7 | 77 | 2 | 0.0 |
| | 1 | 4 | | 6 | 20 |
| No | 52 | 6 | 34 | 3 | |
| | | 1 | | 9 | |
| Religion | | | | | |
| Catholic | 19 | 7 | 77 | 2 | 0.9 |
| | 4 | 2 | | 8 | 37 |
| Evangelic | 50 | 6 | 22 | 3 | |
| | | 9 | | 1 | |
| Other | 29 | 7 | 12 | 2 | |
| | | 1 | | 9 | |
| Total | 27 | 7 | 11 | 2 | |
| | 3 | 1 | 1 | 9 | |

*p: descriptive level of no association hypothesis testing

**Excluded women with unknown data.

Dollar currency rate was R\$ 1.73 and the minimum wage was R\$ 151.00 at April 3, 2000.

Table 2 shows individual vulnerability as per women's assessment of her HIV knowledge and prevention. A statistically significant association was found only with STDs ($p=0.016$). Women who had had prior STD had higher risk perception. Risk perception related to other variables was similar.

Table 2 – Characteristics related to individual vulnerability and risk perception of studied women. São Paulo, 2000.

| Variable | Category | Risk perception | | | | p* |
|-------------------|----------|-----------------|---|-----|---|-----|
| | | No | | Yes | | |
| | | N | % | N | % | |
| Blood transfusion | | | | | | |
| Yes | | 5 | 6 | 3 | 3 | 0.8 |
| | | | 3 | | 7 | 83 |
| No | | 26 | 7 | 10 | 2 | |
| | | 8 | 1 | 8 | 9 | |
| STDs | | | | | | |
| Yes | | 9 | 4 | 11 | 5 | 0.0 |
| | | | 5 | | 5 | 16 |
| No | | 26 | 7 | 10 | 2 | |
| | | 4 | 3 | 0 | 7 | |
| Current drug use | | | | | | |
| Yes | | 1 | 5 | 1 | 5 | 0.9 |
| | | | 0 | | 0 | 03 |
| No | | 27 | 7 | 11 | 2 | |

| | | | | | |
|--------------------------------|----|---|----|---|-----|
| | 2 | 1 | 0 | 9 | |
| Past drug use | | | | | |
| Yes | 13 | 5 | 9 | 4 | 0.3 |
| | | 9 | | 1 | 00 |
| No | 26 | 7 | 10 | 2 | |
| | 0 | 2 | 2 | 8 | |
| Partner current drug user | | | | | |
| Yes | 5 | 5 | 5 | 5 | 0.2 |
| | | 0 | | 0 | 52 |
| No | 24 | 7 | 10 | 2 | |
| | 7 | 1 | 0 | 9 | |
| Do not know | 21 | 7 | 6 | 2 | |
| | | 8 | | 2 | |
| Partner former drug user | | | | | |
| Yes | 20 | 6 | 9 | 3 | 0.6 |
| | | 9 | | 1 | 90 |
| No | 10 | 7 | 41 | 2 | |
| | 0 | 1 | | 9 | |
| Do not know | 8 | 8 | 1 | 1 | |
| | | 9 | | 1 | |
| Had only one partner | 14 | 7 | 60 | 2 | |
| | 5 | 1 | | 9 | |
| # partners in the last 2 years | | | | | |
| 1-2 | 26 | 7 | 10 | 2 | 0.2 |
| | 0 | 1 | 9 | 9 | 87 |
| 3 and more | 13 | 8 | 2 | 1 | |
| | | 7 | | 3 | |
| Condom use | | | | | |
| Yes | 11 | 6 | 55 | 3 | 0.1 |
| | 2 | 7 | | 3 | 57 |
| No | 16 | 7 | 56 | 2 | |
| | 1 | 4 | | 6 | |
| Condom use in all intercourses | | | | | |
| Yes | 33 | 7 | 14 | 3 | 0.2 |
| | | 0 | | 0 | 66 |
| No | 79 | 6 | 41 | 3 | |
| | | 6 | | 4 | |
| Do not use condoms | 16 | 7 | 56 | 2 | |
| | 1 | 4 | | 6 | |
| Already tested for HIV? | | | | | |
| Yes | 23 | 7 | 91 | 2 | 0.6 |
| | 0 | 2 | | 8 | 95 |
| No | 43 | 6 | 20 | 3 | |
| | | 8 | | 2 | |
| Total | 27 | 7 | 11 | 2 | |
| | 3 | 1 | 1 | 9 | |

*p: descriptive level of no association hypothesis testing

Table 3 shows couple's behavior characteristics. A statistically significant association was seen between HIV risk perception and women's beliefs her partner could be at risk of HIV infection ($p < 0.001$), married men spend their leisure time in the same way single men do ($p = 0.021$) and married women spend their leisure time the same way single women do ($p = 0.051$). When answers were affirmative, women showed higher risk perception. Risk perception related to other variables was similar.

Table 3 – Couples' behavior characteristics and risk perception, according to studied women. São Paulo, 2000.

| Variable | Category | Risk perception | | | | p* |
|--|--------------------|-----------------|----|-----|---|--------|
| | | No | | Yes | | |
| | | N | % | N | % | |
| Husband have extramarital sex | | | | | | |
| | Yes | 8 | 50 | 8 | 5 | 0.162 |
| | | | | | 0 | |
| | No | 23 | 72 | 90 | 2 | |
| | | | | | 8 | |
| | Do not know | 32 | 71 | 13 | 2 | |
| | | | | | 9 | |
| Husband has/had sex with men | | | | | | |
| | Yes | 1 | 10 | – | – | 0.667 |
| | | | | | 0 | |
| | No | 25 | 71 | 10 | 2 | |
| | | | | | 9 | |
| | Do not know | 15 | 65 | 8 | 3 | |
| | | | | | 5 | |
| Your husband is faithful to you? | | | | | | |
| | Yes | 21 | 73 | 79 | 2 | 0.169 |
| | | | | | 7 | |
| | No | 59 | 65 | 32 | 3 | |
| | | | | | 5 | |
| Your husband would use condoms in extramarital sex | | | | | | |
| | Yes | 17 | 70 | 72 | 3 | 0.605 |
| | | | | | 0 | |
| | No | 29 | 67 | 14 | 3 | |
| | | | | | 3 | |
| | Do not know | 74 | 75 | 25 | 2 | |
| | | | | | 5 | |
| Partner could be at risk of getting HIV infected? | | | | | | |
| | Yes | 46 | 35 | 86 | 6 | <0.001 |
| | | | | | 5 | |
| | No | 12 | 90 | 14 | 1 | |
| | | | | | 0 | |
| | Do not know | 80 | 94 | 5 | 6 | |
| | No current partner | 18 | 75 | 6 | 2 | |
| | | | | | 5 | |
| Woman and husband go out to spend leisure time | | | | | | |
| | Yes | 14 | 72 | 57 | 2 | 0.740 |

| | | | | | |
|--|----|----|----|---|-------|
| | 7 | | | 8 | |
| No | 12 | 70 | 54 | 3 | |
| | 6 | | | 0 | |
| Married men spend leisure time the same way singles do | | | | | |
| Yes | 40 | 59 | 28 | 4 | 0.021 |
| | | | | 1 | |
| No | 23 | 74 | 83 | 2 | |
| | 3 | | | 6 | |
| Married women spend leisure time the same way singles do | | | | | |
| Yes | 13 | 52 | 12 | 4 | 0.051 |
| | | | | 8 | |
| No | 26 | 72 | 99 | 2 | |
| | 0 | | | 8 | |
| Married men go out to have sex with other women? | | | | | |
| Yes | 25 | 71 | 10 | 2 | 0.504 |
| | 4 | | 6 | 9 | |
| No | 19 | 79 | 5 | 2 | |
| | | | | 1 | |
| Is it easy for married men to have extramarital sex? | | | | | |
| Yes | 24 | 70 | 10 | 3 | 0.262 |
| | 4 | | 4 | 0 | |
| No | 29 | 81 | 7 | 1 | |
| | | | | 9 | |
| Is it easy for married women to have extramarital sex? | | | | | |
| Yes | 16 | 69 | 76 | 3 | 0.245 |
| | 8 | | | 1 | |
| No | 10 | 75 | 35 | 2 | |
| | 5 | | | 5 | |
| Couple should live together forever | | | | | |
| Yes | 20 | 72 | 79 | 2 | 0.458 |
| | 6 | | | 8 | |
| No | 67 | 68 | 32 | 3 | |
| | | | | 2 | |
| Total | 27 | 71 | 11 | 2 | |
| | 3 | | 1 | 9 | |

*p: descriptive level of no association hypothesis testing

None of the variables related to HIV/AIDS knowledge/behavior including those related to the condom use was statistically associated with risk perception (Table 4).

Table 4 reveal that 175 women (46%) believed condom use only is not sufficient to prevent HIV infection, 188 (49%) considered condom a means of prevention, and 21 (5%) did not know.

Table 4 – Variables related to HIV/AIDS knowledge/behavior and risk perception, according to interviewed women. São Paulo, 2000.

| Variable Category | Risk perception | | | | p* |
|---|-----------------|----|-----|---|-----|
| | No | | Yes | | |
| | N | % | N | % | |
| How got to know about AIDS | | | | | |
| TV/radio | 15 | 72 | 61 | 2 | 0.4 |
| | 9 | | | 8 | 49 |
| School | 59 | 71 | 24 | 2 | |
| | | | | 9 | |
| Flyers/reading/other | 19 | 79 | 5 | 2 | |
| | | | | 1 | |
| Relatives | 9 | 75 | 3 | 2 | |
| | | | | 5 | |
| Do not recall | 27 | 60 | 18 | 4 | |
| | | | | 0 | |
| Think women can get AIDS? | | | | | |
| Yes | 27 | 71 | 11 | 2 | – |
| | 3 | | 1 | 9 | |
| No | – | – | – | – | |
| Think women protect themselves against AIDS? | | | | | |
| Yes | 12 | 71 | 50 | 2 | 0.5 |
| | 4 | | | 9 | 56 |
| No | 13 | 70 | 58 | 3 | |
| | 5 | | | 0 | |
| Do not know | 14 | 82 | 3 | 1 | |
| | | | | 8 | |
| Think AIDS is sexually transmitted? | | | | | |
| Yes | 26 | 71 | 11 | 2 | 0.4 |
| | 9 | | 1 | 9 | 67 |
| No/Do not know | 4 | 10 | – | – | |
| | | | | 0 | |
| Afraid of getting AIDS? | | | | | |
| Yes | 24 | 70 | 10 | 3 | 0.1 |
| | 1 | | 4 | 0 | 60 |
| No | 32 | 82 | 7 | 1 | |
| | | | | 8 | |
| Changed your life because of AIDS? | | | | | |
| Yes | 10 | 67 | 49 | 3 | 0.2 |
| | 0 | | | 3 | 10 |
| No | 17 | 74 | 62 | 2 | |
| | 3 | | | 6 | |
| Think people should change their life because of AIDS? | | | | | |
| Yes | 19 | 70 | 83 | 3 | 0.6 |
| | 7 | | | 0 | 92 |
| No | 76 | 73 | 28 | 2 | |
| | | | | 7 | |
| Can you know someone is infected by looking at him/her? | | | | | |
| Yes | 31 | 69 | 14 | 3 | 0.6 |

| | | | | | |
|--|----|----|----|---|-----|
| | | | | 1 | 11 |
| No | 23 | 71 | 95 | 2 | |
| | 2 | | | 9 | |
| Do not know | 10 | 83 | 2 | 1 | |
| | | | | 7 | |
| Can you get AIDS by hugging? | | | | | |
| Yes | 2 | 67 | 1 | 3 | 0.7 |
| | | | | 3 | 90 |
| No | 26 | 71 | 10 | 2 | |
| | 6 | | 9 | 9 | |
| Do not know | 5 | 83 | 1 | 1 | |
| | | | | 7 | |
| Mother can infect her child? | | | | | |
| Yes | 24 | 71 | 10 | 2 | 0.5 |
| | 0 | | 0 | 9 | 66 |
| No | 23 | 79 | 6 | 2 | |
| | | | | 1 | |
| Do not know | 10 | 67 | 5 | 3 | |
| | | | | 3 | |
| Can you get AIDS in the doctor's office? | | | | | |
| Yes | 21 | 71 | 87 | 2 | 0.9 |
| | 4 | | | 9 | 06 |
| No | 44 | 70 | 19 | 3 | |
| | | | | 0 | |
| Do not know | 15 | 75 | 5 | 2 | |
| | | | | 5 | |
| Can you get AIDS with condoms? | | | | | |
| Yes | 12 | 70 | 53 | 3 | 0.3 |
| | 2 | | | 0 | 08 |
| No | 13 | 71 | 55 | 2 | |
| | 3 | | | 9 | |
| Have you ever talked with your husband about condom use? | | | | | |
| Yes | 94 | 75 | 32 | 2 | 0.5 |
| | | | | 5 | 34 |
| No | 16 | 73 | 6 | 2 | |
| | | | | 7 | |
| He already uses condoms | 16 | 69 | 73 | 3 | |
| | 3 | | | 1 | |
| Husband would accept to use condoms | | | | | |
| Yes | 12 | 77 | 37 | 2 | 0.1 |
| | 2 | | | 3 | 17 |
| No | 38 | 66 | 20 | 3 | |
| | | | | 4 | |
| He already uses condoms | 11 | 68 | 54 | 3 | |
| | 3 | | | 2 | |
| Husband would use condoms if they were free | | | | | |
| Yes | 50 | 71 | 20 | 2 | 0.2 |
| | | | | 9 | 57 |
| No | 11 | 76 | 36 | 2 | |
| | 1 | | | 4 | |
| He already uses condoms | 11 | 68 | 54 | 3 | |

| | | | | |
|-------------|----|----|----|---|
| | 3 | | | 2 |
| Do not know | 18 | 86 | 3 | 1 |
| | | | | 4 |
| Total | 27 | 71 | 11 | 2 |
| | 3 | | 1 | 9 |

*p: descriptive level of no association hypothesis testing

Table 5 presents a combined analysis of factors associated with HIV risk perception. Independent factors associated with HIV risk perception were as follows: non-marital status (OR=1.75; p=0.056), prior STD (OR=3.33; p=0.026), and having the belief married men spend their leisure time the same way single men do (OR=2.04; p=0.023). Replacing the variable marital status was replaced with age was not statistically significant. But the variables prior STD and having the belief married men spend their leisure time the same way single men do were still statistically significant regarding HIV risk perception. The following variables were tested in the multiple regression analysis but were excluded from the model as they were not statistically significant: income, condom use, husband has sex with other women, whether husband is faithful, belief that her partner could get HIV infected, belief that married women can spend their leisure time the same way single women do, husband would agree to use condom, and being afraid of having HIV/AIDS. The variable schooling was used as control.

Table 5 – Multiple analysis of factors associated to HIV risk perception, São Paulo, 2000.

| Variable Category | OR adjusted | p* |
|---|-------------|-------|
| Model | | |
| Marital status | | |
| Yes | 1.00 | |
| No | 1.75 | 0.056 |
| STD | | |
| Yes | 3.33 | 0.026 |
| No | 1.00 | |
| Married men same leisure as single men | | |
| Yes | 2.04 | 0.023 |
| No | 1.00 | |
| Schooling | | |
| Illiterate + Inc. | 0.73 | 0.346 |
| elem./middle + Inc. | 1.26 | 0.514 |
| Comp elem./middle + Inc. high school + Inc. | 1.00 | |

*p: descriptive level of Wald testing

DISCUSSION

The study findings show younger women have higher HIV risk perception than older ones and they are beginning their sexual lives at an early age. This has an effect on women health services as early sexual life brings about life changes increasing the risk for unwanted pregnancies and STDs among others.

The association between HIV risk perception and age and marital status suggests that younger women with no steady partner are possibly more aware of HIV risk. These findings reflect the impact of HIV/AIDS campaigns and health education programs developed in the last years.

Despite women identified sex as a route of infection, their HIV risk perception was not affected by the number of partners they had in the last two years. Condom use associated to risk perception revealed that a small percentage perceive themselves at HIV infection risk and do use condoms (55 women; 33%). It could be either they do not perceive themselves at risk or they do not perceive themselves at risk just because they use condoms.

The results showed public health services in the city of São Paulo are in compliance with the Ministry of Health's recommendations and meet the population's needs of prenatal care. These services offer HIV testing as it was found 84% were tested in the study sample and two thirds were tested during prenatal care. There was no statistically significant association between HIV testing and HIV risk perception. It is worth exploring the reasons why 63 women did not undergo HIV testing during prenatal care. Regardless the specific reason this fact is important since prenatal care is a time when women are most likely to get attention and have any disease identified. It should also be considered whether women with a negative HIV test result perceived themselves at no risk for HIV infection.

Prior STDs seem to reinforce women's HIV risk perception. This could reflect the effect of public health programs for education on HIV/AIDS etiology, transmission routes, prevention and treatment of HIV/AIDS-related conditions and other STDs. Also it should be taken into account that those who had prior STDs could be aware they are not immune to diseases including HIV/AIDS.

It is also worth pointing out 76% of the study women believed their husbands are faithful to them. Of these, 27% perceive themselves vulnerable to HIV infection. There is lower risk perception regardless whether they believe or not their partner would use condoms in extramarital relationships because women rely on their partner as conscientious regarding their health and family. The same was found in a study conducted on a cultural group in the city of São Paulo¹⁰.

Untrustworthy partners because of previous extramarital relationships was the reason 91 women (24%) gave for not relying on their partners' faithfulness. There seemed to be a consensus among women that "men are not to be trusted," "they are all the same," and "it is hard for men to be faithful".

In contrast, those who relied on their partners' as faithful (293 women; 76%) believed their partners could be trusted because of their day-to-day life together claiming "I know him". Some women even believed that in case their husbands would be unfaithful they would be told so they could protect themselves against HIV infection. On that Bastos et al,³ Martin,⁹ Goldstein⁶ and Guimarães⁷ showed women are not aware of their partners' risk for HIV infection. These authors have assessed women's trust on their partners and found that only when women test positive they get to know about their husbands' risky behavior and it is not uncommon for these women to be already infected. These findings are corroborated in women's referral services.

Women revealed higher HIV risk perception when they believed their partner could get infected or that married men and women spend their leisure time as single people do. In these three situations women's risk perception reflect their awareness that their partner's extramarital behavior puts them at risk of HIV infection and could bring the disease home. In the participants' viewpoints, their partners' main leisure options were: pubs, dance parties, pastime games, women, and dating. Women sustained their men go out to have fun because "men do whatever they want," "women don't prevent them," and "it is hard to keep a man at home". Similar explanations were seen in a qualitative study carried out in a cultural group of slum women in the city of São Paulo.¹⁰ These findings make evident

an aspect of Brazilian culture of accepting men's social behavior even if this means posing women at home at higher HIV infection risk.

Even if women could have free access to condoms, 68% said they would not use them indicating that higher condom availability would not increase their use. There is an actual need of rising couples' awareness on condom use. In the study sample, 38% (148 women) said they have never used condoms, 15% (22) said they have never talked to their husband on condom use and of those who already did, 25% (32 women) perceived themselves at risk of HIV infection. A low percentage of men would not use condoms (58 men; 27%) compared to those who would use them (159 men; 73%).

Women said their partner would use condom when engaging in risky behaviors, such as "having sex with prostitutes", "he would have a disease," "he would either be having an affair or have a disease," and "he would probably have misbehaved".

Women said STD and HIV/AIDS prevention and contraception make couples use condoms. But when it was compared to condom use, it was found that the actual motivation was contraception. Condom-contraception relation helps explaining the low percentage of postpartum women who referred condom use. These findings show there are impediments for condom use as disease prevention method.

All women recognized they are vulnerable to HIV/AIDS and 380 (99%) said there could be sexual infection. However, 193 (51%) said women do not protect themselves against HIV infection even though 58 (30%) perceived themselves at risk.

Women's knowledge was also ascertained when they pointed out other routes of HIV infection. They mentioned drug use, blood, hospital supplies, multiple partners, sex with infected men, no condom use, at birth, dentist's treatment, manicure, and blood transfusion. There were however misconceptions on HIV infection: blood donation, bathrooms, cocaine use, and sex with a stranger. Castro⁵ recognizes public initiatives for disseminating HIV/AIDS knowledge and prevention education are not always successful. Women in the study believed first TV then schools are major sources of information on HIV/AIDS. Nonetheless, prevention campaigns often are broadcast in the media for short periods of time and are intensified on high-risk seasons such as carnival.

The fear of getting HIV/AIDS is related to the disease severity, fatality, and wide distribution. Some women stated the following: "there's no cure", "anyone can get this disease," "this disease kills," "I don't want to die," "I'm afraid of dying and leaving my children behind," "it is a terrible disease that causes too much suffering," "I don't want to have a pointless death," "everybody has it. Once you get it you know you are sentenced," "it is wasting life," "this is a traumatic disease," "you get ugly, lose hair and weight and feel a lot of prejudice," this is a "widespread" disease, "only by mentioning AIDS I get scared of being tested". Similar findings were found in the qualitative ethnographic study carried out in slum women.¹⁰

Women claiming they had changed their behavior because of HIV/AIDS gave the following reasons: I got more "careful about drugs and started to protect myself during sex," "I don't want to be friends with anyone. I avoid having friends," "I don't go out with any person any more," "I'm more afraid of going out with men," "I'm afraid of going to the dentist's, drawing blood and check if they are using disposable items," "I'm less restless. I no longer go to dance parties because they are pointless and I could get a disease," "I'm more concerned because of my husband," "I'm afraid because my husband does not use condoms".

Those who did not change their behaviors explained they were already living with their partners, they rely they are protecting themselves and therefore they are not at risk of virus exposure.

As for prevention measures against HIV infection, women pointed out: having fewer sex partners, use of male condoms or female condoms after negotiating with their partners, advising their husbands to use condoms in extramarital relationships, making sure they themselves and hospital personnel use disposable supplies, mandatory testing for blood transfusion, preventing from illegal drug use, and HIV testing.

Women said they get exposed to HIV virus as follows: husband's unfaithfulness (most frequently mentioned), blood transfusion, infected supplies, and dentist's office and hospital.

Multiple regression analysis showed HIV risk perception is strongly associated with women who do not have a steady relationship with their partner, had prior STDs, and believe married men spend their leisure time the same way single men do. These variables association indicate the risks women perceive in their partners' social behavior when they have relationships with other women. Participants perceived this situation as risky since men are unaware of their new partner(s)' HIV status posing their women at home at risk.

Having prior STDs is an opportunity for women to get to know prevention measures and disease treatment including HIV/AIDS. This knowledge helps building up women's awareness and enables them to identify risky situation they are exposed to.

In contrast, women's non-marital status makes them more likely to have more partners increasing their risk. This allied to HIV/AIDS knowledge on infection and prevention proved to increase women's awareness of their HIV vulnerability.

The study findings indicate the need for improving health education programs in the community, outpatient clinics and hospitals for developing women's sexual conscientiousness. These programs should encourage couples to attend workshops for safe sex promotion. There is also a need of information distribution on HIV/AIDS epidemic with community involvement in disease prevention.

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REFERENCES

1. Badiani R, Qüental I, Santos EM. DST/Aids e a pesquisa nacional sobre demografia e saúde: uma análise do nível de conhecimento e comportamento de vulnerabilização. Brasília (DF): BEMFAM; 1997. p. 56.
2. Barbosa RM. Feminino e Aids. In: Parker R, Galvão J, organizadores. Quebrando o silêncio: mulheres e Aids no Brasil. Rio de Janeiro: Relume-Dumará/ABIA/IMS/UERJ; 1996. p. 153-68.

3. Bastos C, Galvão J, Pedrosa JS, Parker R. Introdução. In: Parker R, Bastos C, Galvão J, Pedrosa JS. A Aids no Brasil: 1982-1992. Rio de Janeiro: Relume/Dumará/ABIA/IMS/UERJ; 1994. p. 13-56.
4. Boletim Epidemiológico Aids. Ministério da Saúde. Coordenação Nacional de Doenças Sexualmente Transmissíveis e Aids, Brasília (DF) 2002;15:15-8.
5. Castro A. Televisão e Aids: questões para o planejamento. In: Pitta AMR, organizador. Saúde & comunicação: visibilidades e silêncios. São Paulo: Hucitec/ Rio de Janeiro: Abrasco; 1995. p. 166-71.
6. Goldstein D. O lugar da mulher no discurso sobre AIDS no Brasil. In: Parker R, Galvão J, organizadores. Quebrando o silêncio: mulheres e Aids no Brasil. Rio de Janeiro: Relume - Dumará/ABIA/IMS/UERJ; 1996. p.137-52.
7. Guimarães K. Nas raízes do silêncio: a representação cultural da sexualidade feminina e a prevenção do HIV/Aids. In: Parker R, Galvão J, organizadores. Quebrando o silêncio: mulheres e Aids no Brasil. Rio de Janeiro: Relume - Dumará/ABIA/IMS/UERJ; 1996. p. 89-113.
8. Hulley SB, Cumming SR. Designing clinical research: an epidemiologic approach. Baltimore: Williams & Wilkins; 1988.
9. Martin D. Mulheres e Aids: uma abordagem antropológica. Rev USP 1997;33:88-

Praça NS, Gualda DMR. A cuidadora e o (ser)cuidado: uma relação de dependência no enfrentamento da Aids. Rev Paul Enferm 2000;19:43-52.

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