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# HIV Knowledge and Beliefs among men who have sex with men (MSM) in Buenos Aires, Argentina

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## Abstract

Five hundred men who have sex with men (MSM), recruited through Respondent Driven Sampling in Buenos Aires, Argentina, were interviewed in order to assess knowledge and beliefs about HIV infection. The mean proportion of HIV correct knowledge answers was 62%; however participants whose sexual partners in the prior year included women (MSM&W) had lower frequencies of correct answers than participants with no women partners. Men with previous HIV testing experience and those who were HIV positive had higher HIV knowledge. In relation to HIV beliefs, less than half of participants responded correctly to each of the scenarios presented. Accurate answers for all items were more likely among those who only have sex with men. Men have basic HIV knowledge but also many misconceptions about transmission and prevention. Furthermore, MSM&W have less information than those who are exclusively MSM, probably related to the fact that information campaigns specifically targeted gay identified men.

### Keywords

men who have sex with men; Respondent Driven Sampling; HIV Knowledge Questionnaire

## INTRODUCTION

In Argentina, as it has been recorded worldwide, men who have sex with men (MSM) are at high risk for HIV infection. This was first demonstrated in a study conducted in Buenos Aires during 2000–2001 that showed an HIV prevalence of 13.8% in a sample of 694 MSM (1). Furthermore, subsequent studies showed high HIV incidence among MSM with values oscillating between 3.9% (2) and 6.7% (3). The last cross-sectional study estimated HIV prevalence at 17.3% and HIV incidence at 4.53 per 100 persons-year (4). These studies revealed that MSM engaged in high-risk sexual behaviors, including having a high number of occasional sexual partners and/or irregular use of condoms, even when the individuals had high formal education level and economical possibilities to buy condoms.

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Since early in the epidemic, programs and campaigns have been designed to reduce the risk for HIV infection including information about HIV transmission and specific methods of prevention as principal components of the intervention (5). Information may be sufficient for prevention when risk reduction behavior requires a relatively uncomplicated change. Even when a number of studies have revealed that information alone is not sufficient for HIV risk reduction, it is nevertheless necessary (6). Previous research studies allude to the need for HIV risk reduction interventions that focus on informational, motivational and behavioral skill that facilitate prevention (7). A previous study conducted in low and middle-income countries, including some other Latin-American countries, revealed that approximately only half of MSM held correct HIV knowledge (8). No previous studies evaluated the level of knowledge that Argentine MSM have about HIV transmission and prevention.

Given the lack of information, the objective of this study was to conduct an exploratory study in order to assess the knowledge and beliefs about HIV transmission and prevention among men who have sex with men in Buenos Aires, Argentina. This study also explored whether HIV knowledge and beliefs varied according to HIV status of the respondent and the type of partnerships respondents had, specifically, whether or not participants had women sex partners.

## METHODS

During 2006–2008 we conducted a new HIV prevalence study among MSM in Buenos Aires (LINKS study) (4–9). This study consisted of two phases, a formative phase for which qualitative research methods were used, and a survey phase, for which a sampling of 500 MSM was recruited through Respondent Driven Sampling (RDS) (10), a method that had not been used in Argentina until that time. The main objective of the survey phase was to estimate HIV prevalence and incidence among MSM and to explore cognitive, emotional, social, and environmental factors associated with HIV transmission. Level of information about HIV and AIDS beliefs related to risk transmission were assessed as part of this study.

### Participant recruitment and data collection

Participant recruitment methodology and data collection procedures have been previously described (4–9). Briefly, RDS combines “snowball sampling” with a mathematical model to compensate for non-randomness of participant selection (for detailed information see http://www.respondentdrivensampling.org). A total of 16 MSM were selected as seeds for the RDS, completed all study procedures and then received three coupons each to give to members of their networks who could also recruit up to three other participants until the target number of 500 MSM was reached. Recruitment took place between November 2007 and July 2009. To be eligible to participate, the study candidate had to identify as a man, be 18 years or older, have had sex with another man or a trans person in the previous six months, have had sex with another man or trans at least 10 times in his lifetime, reside in the Buenos Aires metropolitan area, agree to provide a blood sample for HIV and STI testing, and come to the interview with a coupon given to him by a prior participant. Participants who qualified underwent a consent process and responded to a Web-based survey that included, among other things, demographic information, history of HIV testing, HIV knowledge, and recent sexual behavior. Once the questionnaire was completed, participants received pre-HIV counseling and provided a blood sample for HIV testing. About two weeks later, participants came back to pick up the HIV testing results and to receive post-test counseling (4–9).

## Instruments

To assess HIV-related knowledge, we used the HIV Knowledge Questionnaire (HIV-KQ) (11). This is a self-administered instrument that was developed using formative work, item and factor analyses to assess knowledge needed for HIV prevention. The score is obtained by adding the number of items correctly answered, higher scores indicate greater knowledge. While the original version of the HIV-KQ consists on 45 items, a brief version with only 18 items was developed with the idea of reducing participant's burden and focus on sexual transmission of HIV (12). This 18-item version (HIV-KQ-18) was evaluated and showed strong and stable item association (internal consistencies alpha .81). It also showed a sound association with the original HIV-KQ, capturing an approximately equal amount of knowledge variance.

The HIV-KQ-18 was self-administered to MSM recruited through RDS. Participants answered items as "true," "false," or "don't know". A single knowledge score was obtained by summing the items answered correctly ("don't know" responses are scored incorrect). Question 18, "a natural skin condom works better against HIV than does a latex condom" was removed from the original questioner because natural skin condoms are not available in Argentina, so scores ranged from 0 to 17. Higher scores indicated greater knowledge. Items are described in Table 1.

In order to explore beliefs that a respondent may have about different circumstances that make condom use unnecessary, we used a questionnaire previously developed by our team based on qualitative responses from study participants explaining the three main reasons why they had not used a condom the last time that had unprotected oral or anal sex (13). The questionnaire consists of 12 items to which the respondent indicates his level of agreement (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree) (Table 4). A score is calculated based on the overall level of endorsement to the different items. A higher score means that they have a stronger endorsement of reasons not to use condoms. The beliefs score was obtained with the mean values of the 12 items, after making "Refuse to answer" a missing value. If participants answered all the items as "Refuse to answer", no score was calculated. Alpha for this 12-item scale was .870.

## Data Analysis

Various two-group comparisons were conducted using Chi-square tests for dichotomous variables (e.g., if individual questions were correct or incorrect) and independent samples t-tests for continuous variables (e.g., total HIV Knowledge scores).

Unlike a conventional probability sampling design in which each unit has a known and constant probability of selection, in RDS each person sampled does not have the same probability of being included in the sample: rather, persons with larger personal networks have a greater likelihood of being sampled than those with smaller personal networks. RDS takes this into consideration by weighting data based on reported network size. Therefore, for all analyses, data were weighted prior to analyses using SPSS. The weighting estimator we used is based on the RDS II estimator (14). Weights were calculated as the inverse of the participant's personal network size (PNS). This value was then multiplied by the sample size (N) divided by the sum of weights ($\Sigma w$). The weighting formula was then:

$$(1/\mathrm{PNS}) * (\mathrm{N}/\sum \mathrm{w}).$$

This produced results that reflect the original sample size of 500.

# RESULTS

## Study population characteristics

A total of 500 MSM were enrolled in the study. After weighting the data and eliminating men whose data was missing for all of our outcomes, analyses were performed based on a final N of 498 men. Mean age was 30.5 years old (SD = 11.5). Low formal education level was reported, involving 66% of participants who had not completed high school. Thirty percent of participants reported being unemployed and 32% having a temporary job. Most participants were single (78%) and 79% of participants had no health insurance. For a more detailed description of the population, please see Carballo-Dieguez et al. (9). HIV prevalence in the group was previously reported as 17.3% (4).

At the time of the assessment, 88% of participants reported having had sex with men for the last two months, 66% with women, and 47% with male to female trans (MTF) (partnership preference may overlap). In terms of the number of partners, 88% of participants had had more than one sexual partner in the last two months. For the purpose of this analysis, we distinguished those participants whose sexual partners in the last year had included women (MSM&W; 68.5%) from those who had not (exclusively MSM; 31.5%). Exclusively MSM had significantly higher frequency of HIV than MSM&W (28.0% vs. 11.9%, $X^2 = 19.54$, df = 1, $p<0.001$) (4).

## Knowledge and beliefs about HIV/AIDS

A total of 498 men completed the self-administered HIV-KQ-18. Respondents' mean proportion of correct answers was 62% (SD = 23.7). Questions and proportion of correct answers for each item are described in Table 1. The lowest percents of correct answers (below 50%) were detected in three items ("Coughing and sneezing DO NOT spread HIV," "All pregnant women infected with HIV will have babies born with AIDS," and "There is a female condom that can help decrease a woman's chance of getting HIV."). The highest correct answer was for the item number 15 for which 77.2% of respondents declared the item as false ("A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV"). Only 13 (2.6%) participants answered all the items correctly and 9 (1.7%) answered all the items incorrectly. All the items exceeded the percentage that would be achieved by chance (~33%). By adding one point for each single item correctly answered, a single score was obtained for each participant showing a median test score of 11 (mean=10.6, SD=4.0, $25^{th}$ percentile=8, $75^{th}$ percentile=14).

Higher Knowledge scores were significantly associated with 1) older age ($r=0.28$, $p<0.001$), 2) higher education ($r=0.357$, $p<0.001$), 3) higher income ($r=0.310$, $p<0.001$), 4) larger social network size ($r=0.101$, $p=0.024$), 5) being employed ($t=-4.55$, $df=496$, $p<0.001$), and 6) currently being a student ($t=-2.48$, $df=489$, $p=0.014$).

When men were stratified according to sexual partner, those who were exclusively MSM were more likely to answer questions correctly than MSM&W (Table 1). The total knowledge score was also significantly higher for exclusively MSM as compare with MSM&W (11.9 vs. 10.6, $p<0.001$). MSM were older (mean age 34.0 vs. 30.5 years old, $p<0.001$) and had higher formal education level (high school or more, 60.3% vs. 34.3%, $p<0.001$) than MSM&W, respectively.

HIV-positive men had higher HIV knowledge scores than HIV-negative men (13.0 vs. 10.1), even when participants who were aware of their HIV-positive status prior to study participation were excluded from the analyses (12.1 vs. 10.2, respectively). HIV knowledge score was also higher among men who had been previously tested for HIV (11.6 vs. 9.9), and among those men who had an HIV-positive result (12.8 vs. 10.4). Those who tested

positive prior to study entry did not differ in HIV knowledge from men who tested positive for the first time in this study (12.8 vs. 12.2) (Table 2).

As shown in Table 3, those who reported some unprotected sexual behavior with a man (receptive anal intercourse, giving and receiving oral sex) had higher HIV knowledge scores. When these analyses were conducted separately for exclusively MSM and MSM&W (not shown) only 2 associations were significant: among MSM&W, those who had received unprotected oral sex from a man had higher knowledge scores than those who had not; and among MSM, those who gave unprotected oral sex to a man had higher knowledge scores. No statistically significant differences were observed on other unprotected sexual practices.

Table 4 describes the level of agreement with statements related to beliefs about the need of using condoms in different situations. Participants' refusal to answer ranged from 6.3 to 16.8%. Less than half of all participants strongly disagreed with each of the 12 scenarios presented, thus indicating that the majority considered that under some circumstances condom use was not necessary. A correlation analysis revealed that participants with higher knowledge about HIV had lower "beliefs" scores, i.e., they were less likely to endorse multiple circumstances under which condom use was not necessary ($r = -.264$, $p < .001$).

The frequency of correct answers was lower in some controversial items like: "If I have a monogamous relationship, I do not need to use condoms" and "If two guys are HIV-negative, they don't need to use condoms". For all the twelve items, exclusively MSM selected "Strongly Disagree" significantly more often than MSM&W and on the other hand, MSM&W selected "Strongly Agree" significantly more often than those only having sex with men.

## DISCUSSION AND CONCLUSIONS

This is the first study to explore HIV/AIDS knowledge and related beliefs among men who have sex with men in Buenos Aires, Argentina, a group with high HIV prevalence and incidence (17.3% and 4.53 per 100 persons-year, respectively) (4). Results revealed that men continue to have many misconceptions about HIV, with approximately 60% of items answered correctly and less than 3% of participants answering all the items correctly. These proportions of knowledge are in agreement with previous studies in low and middle-income countries, including some other Latin American countries (8), where 57% of men had correct HIV knowledge. In relation to beliefs, the majority endorsed misconceptions and considered that under some circumstances condom use was not necessary.

Although it has been demonstrated that correct knowledge is not enough to cause behavior changes, it is a necessary precursor to employing effective HIV risk reduction behaviors (7). Misconceptions may lead to the use of ineffective HIV risk reduction strategies. In this study we observed that a high percentage of men believed that washing genitals, taking antibiotics, pulling out the penis before a man's climax, having sex during a woman's menstrual cycle, having oral sex (with men or women), or having anal sex with a woman decrease the risk of HIV transmission. Surprisingly, 28% of men believed that there is a preventive vaccine against HIV. In such cases, men who have erroneous information can choose to use these strategies instead of condoms to prevent HIV infection. Another important misconception is related to HIV symptoms: approximately 40% of men believed that "HIV infected individuals quickly show signs of being infected". This mistaken belief may lead men not to use preventive methods because they assume that if the partner looks healthy they are not infected with HIV. This misconception could be an allusion to the beginning of the HIV/AIDS epidemic, when infected individuals quickly progressed to AIDS and had visible signs of declining health due to the lack of appropriate treatment.

Some other misconceptions do not refer to behaviors that put individuals at risk for HIV transmission but revealed that men have false beliefs that are related to fears and apprehension about the disease. Thus, 60% of men believed that HIV can be transmitted by "coughing or sneezing" and 24% thought that they can get HIV by "sharing a glass or a swimming pool". Even when this kind of information is not relevant for risk reduction, correcting this misinformation could help to diminish stigma, discrimination and fear of HIV. It is also important to highlight that among the three items with lower correct answers (lower than 50%) two include information about female issues (mother to child transmission and female condom), even when a high percent of the group have also sex with women. In fact, when stratification according to sex partner was done, those men who exclusively have sex with men have higher knowledge on mother to child transmission than those that also have sex with women. This result suggests that the knowledge about HIV transmission is not necessarily restricted to the risk the individuals are exposed to. The low frequency of knowledge about female condom may be due to the fact that it is not extensively used in Argentina.

Stratification based on HIV status showed that HIV-positive men had higher HIV knowledge scores than HIV-negative individuals (13.0 vs. 10.1). This association may indicate that the former may become more familiarized with information on HIV infection in the course of diagnosis and eventual treatment. In relation to the association between HIV knowledge score and having previously been tested for HIV (regardless of the result), the score was higher among those who had a previous test, thus suggesting that HIV counseling may have an effect on HIV knowledge. These results highlight that the HIV test is an opportunity to provide information on HIV transmission and prevention. The promotion of HIV testing may contribute to the expansion of HIV knowledge. In fact, during focus groups developed during the first phase of Links Study, participants mentioned that the HIV testing experience was educational for them (data not shown). However, further analysis should explore factors that influence access to and utilization of health-care services given that previous studies have shown strong associations between stigma, discrimination and fear of using health-care services (15). Concerns about discrimination in the health-care system have also been expressed among MSM in Argentina (16).

Stratification of the study group according to sexual partner showed that the levels of knowledge among MSM&W were significantly lower than among those men who do not have sex with women. The same trend was observed in relation with HIV beliefs, where rejection of erroneous beliefs was lower for all the items among MSM&W as compared with the other MSM. These findings could be explained by the fact that campaigns and intervention in Argentina have targeted at-risk groups (i.e. drug users, gay identified men, sex workers, etc); therefore, if individuals did not self-identify with these groups, they probably were not reached by focused campaigns. In fact, in this study 96% of MSM&W did not identify as gay (data not shown). These results highlight the need for campaigns that target non gay-identified men in order to facilitate their access to information on HIV without disclosing their sexual orientation.

When the association of HIV knowledge and HIV risk behaviors was analyzed, no significant results were obtained, regarding anal or vaginal sex, showing that individuals who had high-risk behaviors (unprotected anal and/or vaginal sex with men/women/trans) had the same level of knowledge than those who do not have these practices. Interestingly, significant associations between unprotected sex and higher knowledge scores were observed for oral practices. Based on these results, we can hypothesize that men with higher knowledge scores know that oral practices (either receptive or insertive) are the ones with the lower risk for HIV transmission. This knowledge can encourage them to have this unprotected practice instead of others.

Results from this study support the model above mentioned (7), where HIV knowledge showed to be necessary but not enough to motivate individuals to avoid HIV-related risks. A recent study among Estonian populations also evaluated the associations between the level of HIV knowledge and both HIV-related risk behaviors and HIV status among different at-risk groups (6). This study, as well as ours, indicated that HIV knowledge was higher among HIV positive participants and described that higher HIV knowledge was not associated with lower risk behaviors. These studies highlight that HIV prevention programs should be focused on activating behavior changes beyond provision of information.

Even when this study provides interesting information that could be useful to improve prevention campaigns, limitations of the study should be taken into consideration. The most important limitation of the study is that the HIV-KQ-18 emphasizes the sexual transmission of HIV, not focused on other transmission routes. If conclusions about knowledge of other routes of transmission, clinical course of the diseases or treatment want to be assessed, future research should use the longer knowledge questionnaire (HIV-KQ-45).

In summary, this study revealed that men who have sex with men have misconceptions about HIV transmission and prevention, showing that men who are also involved in sex with women have even less information than those who are not (mainly gay identified), probably because most information has been focused on individuals identified in at risk-groups. Even when the MSM&W group has lower prevalence of several STIs (4), it should be considered that this group could be a bridge to heterosexual population through contact with women. These findings served as a reminder that there is a need for reinforcing some concepts, with special attention to those associated with routes of transmission. However, given that this study, as well as others, did not reveal that more knowledge is directly associated with less frequency of sexual risk behaviors, efforts need to be done in order to study other factors that influence risk behavior among men who have sex with men from Buenos Aires. In conclusion, future HIV prevention programs should be not only focused on the provision of accurate information but also on encouraging behavior changes that may lead to STIs risk reduction.

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**Table 1**

Frequency of correct answers to the brief HIV Knowledge Questionnaire (HIV-KQ-18) for 498 MSM recruited through RDS, Buenos Aires, 2007–2009 [*].

| | | Frequency of correct answer | | | | | |
|---|---|---|---|---|---|---|---|
| | **Item** | **Total n=498 n (%)** | **MSM n=157 n (%)** | **MSM&W n=341 n (%)** | **$\chi^2$** | **df** | **p[§]** |
| 1 | Coughing and sneezing DO NOT spread HIV. (T) | 203 (40.8) | 81 (51.6) | 123 (36.1) | 10.7 | 1 | .001 |
| 2 | A person can get HIV by sharing a glass of water with someone who has HIV. (F) | 381 (76.4) | 131 (83.4) | 250 (73.3) | 6.1 | 1 | .013 |
| 3 | Pulling out the penis before a man climaxes/cums keeps a woman from getting HIV during sex. (F) | 272 (54.7) | 101 (64.3) | 171 (50.1) | 8.7 | 1 | .003 |
| 4 | A woman can get HIV if she has anal sex with a man. (T) | 369 (74.0) | 119 (75.8) | 249 (73.0) | 0.4 | 1 | .512 |
| 5 | Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV. (F) | 327 (65.6) | 110 (70.1) | 217 (63.6) | 2.0 | 1 | .160 |
| 6 | All pregnant women infected with HIV will have babies born with AIDS. (F) | 224 (45.0) | 95 (60.5) | 129 (37.8) | 22.3 | 1 | <.001 |
| 7 | People who have been infected with HIV quickly show serious signs of being infected. (F) | 299 (60.1) | 112 (71.3) | 187 (54.8) | 12.2 | 1 | <.001 |
| 8 | There is a vaccine that can stop adults from getting HIV.(F) | 358 (71.8) | 123 (78.3) | 234 (68.6) | 5.0 | 1 | .025 |
| 9 | People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV. (F) | 322 (64.7) | 115 (73.2) | 207 (60.7) | 7.4 | 1 | .007 |
| 10 | A woman cannot get HIV if she has sex during her period. (F) | 252 (50.5) | 90 (57.3) | 162 (47.5) | 4.1 | 1 | .042 |
| 11 | There is a female condom that can help decrease a woman's chance of getting HIV. (T) | 244 (49.0) | 77 (49.0) | 167 (49.0) | 0.0 | 1 | .998 |
| 12 | A person will NOT get HIV if she or he is taking antibiotics. (F) | 352 (70.6) | 124 (79.0) | 228 (66.9) | 7.6 | 1 | .006 |
| 13 | Having sex with more than one partner can increase a person's chance of being infected with HIV. (T) | 366 (73.4) | 122 (77.7) | 243 (71.3) | 2.3 | 1 | .131 |
| 14 | Taking a test for HIV one week after having sex will tell a person if she or he has HIV. (F) | 250 (50.3) | 97 (61.8) | 154 (45.2) | 11.9 | 1 | .001 |
| 15 | A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV. (F) | 385 (77.2) | 133 (84.7) | 252 (73.9) | 7.2 | 1 | .007 |
| 16 | A person can get HIV from oral sex.(T) | 349 (70.0) | 118 (75.2) | 230 (67.4) | 3.0 | 1 | .081 |
| 17 | Using Vaseline or baby oil with condoms lowers the chance of getting HIV.(F) | 326 (65.4) | 114 (72.6) | 212 (62.2) | 5.2 | 1 | .023 |

Notes: correct answers appear in parenthesis (T=true; F=false).

[*] Question 18 was not included (see M&M).

[§] Comparison between those who have sex only with men or MTF trans (MSM) vs. men who also had sex with women (MSM&W) in the past year.

**Table 2**

HIV knowledge score and HIV diagnoses for 498 MSM recruited through RDS, Buenos Aires, 2007–2009.

| | | HIV knowledge Score mean (SD) | t | df | p |
|---|---|---|---|---|---|
| HIV diagnoses at the time of the study | HIV Positive<br>HIV Negative or Indeterminate | 13.0 (2.7)<br>10.1 (4.1) | 6.2 | 496 | <.001 |
| Has a previous HIV test | Yes<br>No | 11.6 (3.7)<br>9.9 (3.9) | 5.0 | 480 | <.001 |
| Has a previous positive HIV test | Yes<br>No | 12.8 (3.3)<br>10.4 (4.0) | 4.1 | 488 | <.001 |
| Moment when participants received the HIV Positive result | In a previous study<br>In this study | 12.8 (3.3)<br>12.2 (3.1) | −0.9 | 90 | .390 |
| HIV diagnoses at the time of the study, excluding previous HIV positives | HIV positive<br>HIV Negative or Indeterminate | 12.1 (3.2)<br>10.2 (4.0) | 3.0 | 440 | .003 |

**Table 3**

HIV knowledge score and HIV risk behavior for 498 MSM recruited through RDS, Buenos Aires, 2007–2009.

| | | HIV knowledge Score | | | |
|---|---|---|---|---|---|
| | | **mean (SD)** | **t** | **df** | **p** |
| Had unprotected anal receptive sex with men in the last two months[1] | Yes<br>No | 11.4 (3.6)<br>10.5 (4.0) | 2.0 | 425 | .050 |
| Had unprotected anal insertive sex with men in the last two months[1] | Yes<br>No | 10.5 (3.9)<br>10.9 (3.9) | −1.2 | 423 | .241 |
| Other men did unprotected oral sex to him[1] | Yes<br>No | 10.9 (3.7)<br>9.9 (4.6) | 2.6 | 436 | .010 |
| Did unprotected oral sex to other men[1] | Yes<br>No | 11.9 (3.7)<br>9.9 (4.0) | 5.0 | 436 | <.001 |
| Did unprotected vaginal sex[2] | Yes<br>No | 10.1 (3.6)<br>10.0 (4.0) | 0.2 | 308 | .871 |
| Did unprotected anal insertive sex with a women[2] | Yes<br>No | 9.9 (3.5)<br>10.2 (3.9) | −0.7 | 305 | .507 |
| Had unprotected anal receptive sex with travesties in the last two months[3] | Yes<br>No | 9.0 (4.0)<br>9.9 (3.8) | −1.0 | 217 | .343 |
| Had unprotected anal insertive sex with travesties in the last two months[3] | Yes<br>No | 10.0 (3.6)<br>9.8 (3.9) | 0.4 | 215 | .726 |

[1] Among those who had sex with men.

[2] Among those who had sex with women.

[3] Among those who had sex with transvestites.

**Table 4**

Level of agreement with HIV beliefs from 498 MSM recruited through RDS, Buenos Aires, 2007–2009.

| | | Frequency answer (%) Total (MSM-MSM&W) | | | | |
|---|---|---|---|---|---|---|
| | **Item** | **Strongly disagree**[1] | **Disagree** | **Agree** | **Strongly agree** | **Refuse to answer**[2] |
| 1 | *I don't have to wear a condom for oral sex as long as there is no ejaculation.* | 33.8 (46.5–27.9) | 27.6 (21.3–30.5) | 13.1 (14.2–12.6) | 16.0 (6.6–20.3) | 9.5 (11.5–8.6) |
| 2 | *I don't need to wear a condom if I won't cum in my partner's ass.* | 40.7 (55.5–33.9) | 29.3 (26.3–30.7) | 9.1 (5.4–10.8) | 13.6 (7.1–16.5) | 7.2 (5.7–7.9) |
| 3 | *As long as my sexual partner doesn't cum inside me, he can fuck me without a condom.* | 41.1 (57.7–33.5) | 25.4 (20.8–27.5) | 8.5 (8.7–8.4) | 8.2 (3.6–10.3) | 16.8 (9.2–20.3) |
| 4 | *I don't need to use a condom if my sexual partner looks healthy.* | 47.7 (57.9–43.1) | 23.6 (22.3–24.2) | 9.5 (7.3–10.5) | 12.9 (9.8–14.3) | 6.3 (2.8–7.9) |
| 5 | *If a guy is HIV-negative and he is the one doing the fucking, he does not need to use a condom.* | 44.0 (50.3–41.1) | 28.9 (27.3–29.6) | 11.1 (8.0–12.6) | 9.5 (6.8–10.8) | 6.4 (7.5–5.9) |
| 6 | *If two guys are HIV-negative, they don't need to use condoms.* | 29.5 (29.8–29.4) | 20.3 (20.1–20.5) | 23.0 (24.4–22.4) | 18.0 (16.3–18.8) | 9.1 (9.4–8.9) |
| 7 | *If two guys are HIV-positive, they don't need to use condoms.* | 40.4 (54.4–33.9) | 22.5 (20.9–23.2) | 13.9 (10.6–15.5) | 12.7 (6.6–15.5) | 10.6 (7.5–12.0) |
| 8 | *If I don't have precum, I can penetrate for a little while without a condom.* | 30.1 (41.8–24.7) | 31.3 (30.3–31.7) | 12.1 (8.3–13.9) | 15.2 (9.5–17.8) | 11.3 (10.1–11.8) |
| 9 | *If I trust my partner, I need not worry about using condoms.* | 33.1 (42.4–28.9) | 27.7 (23.4–29.7) | 15.6 (13.5–16.6) | 16.2 (12.3–18.0) | 7.4 (8.4–6.9) |
| 10 | *If I have a monogamous relationship, I do not need to use condoms.* | 23.1 (27.4–21.1) | 24.5 (20.5–26.4) | 24.9 (27.7–23.7) | 19.0 (15.5–20.6) | 8.4 (9.0–8.2) |
| 11 | *If I need money very badly and someone pays me to have sex without a condom, I do it.* | 44.2 (62.2–36.0) | 22.5 (14.7–26.1) | 7.8 (2.5–10.2) | 18.0 (13.1–20.2) | 7.5 (7.6–7.5) |
| 12 | *If I attempt to use a condom, my partner may think that I am HIV-positive* | 28.7 (43.9–21.6) | 18.2 (14.4–20.0) | 24.4 (15.8–28.4) | 15.6 (11.5–17.5) | 13.0 (14.4–12.4) |

[1] MSM selected Strongly Disagree significantly more frequently than MSM&W.

[2] MSM and MSM&W did not statistically differ on the number of times they selected Refuse to Answer.

Note: Men who have sex only with men or MTF trans (MSM), men who also had sex with women (MSM&W).