Gender Differences in Determinants of Condom Use Among HIV Clients in Uganda

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Abstract

Little research has examined gender differences in reporting of condom use, which is the goal of our analysis. A baseline study was conducted in two urban clinics and we examined data from sexually active clients entering HIV care who enrolled in a prospective longitudinal cohort study. The primary outcome was consistent condom use and determinant variables were demographics, physical health and immune status, economic well-being, relationship characteristics, psychosocial functioning, and self-efficacy. Of 280 participants, 129 were males and 151 females, and 41.7% had at least some secondary education; 60.7% did not always use condoms. Nearly half (48.1%) of men reported always using condoms compared to 31.8% of females. In bivariate analyses, men who consistently use condoms were more likely to be working, have a primary partner who was HIV negative, to have disclosed their HIV status to their primary partner, and to have higher general self-efficacy and condom use self-efficacy compared to men who did not always use condoms. Higher general self-efficacy and condom use self-efficacy were the only variables associated with reported consistent condom use among women. In regression analysis, working in the last 7 days, general self efficacy, and condom use self-efficacy were associated with consistent condom use among men. These findings reveal low rates of consistent condom use among people living with HIV, and a gender difference with men more likely to report consistent condom use. These data suggest the need for gender sensitive prevention programs and strategies, including programs that can provide women with greater control and self-efficacy regarding use of protective methods.

Introduction

HIV PREVENTION PROGRAMS have increasingly targeted persons living with HIV/AIDS (PLHA) and encouraged them to reduce sexual risk behavior in order to limit transmission of the virus.¹ For such programs to be effective, a good understanding is needed of the factors that influence condom use behavior. There is some evidence of a relationship between genders and reporting of condom use in sub-Saharan Africa,² but there has been little examination of whether the factors associated with condom use differs between male and female PLHA. Understanding how the determinants of condom use may differ between men and women will inform how prevention interventions may need to differ by gender.

Surprisingly few studies have examined correlates of condom use among PLHAs in sub-Saharan Africa. A study³ in South Africa found that shorter duration since testing HIV positive, having a regular partner, not knowing a partner's HIV status, and substance abuse were associated with un-

protected sex among PLHA. Another study in South Africa demonstrated that lack of HIV disclosure to partner, and alcohol use at last sex were correlated with unprotected intercourse.² Other variables found to be associated with more condom use in this population include higher education level,⁴ economic stability,⁵ psychological well-being,⁶ and relationship characteristics such as HIV status of partner, length of relationship, and desire for children.⁵ However, there is limited literature on whether or not the determinants of condom use differ between male and female HIV-infected individuals.

We are aware of two studies from sub-Saharan Africa that demonstrated a relationship between gender and condom use among PLHA, with men being more likely to report consistent condom use.^{2,7} A study in Uganda found that rates of protected sex were greater among male (71%) than female (59%) PLHA.⁷ Similarly, another study found that female HIV clients were significantly more likely than males to report inconsistent condom use.⁸ These findings support the rationale for exploring how reports of condom use may vary between

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male and female PLHA and whether the factors that influence condom use may also differ by the gender of HIV-positive individuals. Much has been written about gender inequality and the power differential between men and women in African cultures⁹ and how this translates into women having limited control over whether or not condoms are used or not during sex with male partners.¹⁰ While there is little doubt that such dynamics exist in many relationships, it is unknown how this impacts on the broader psychosocial and economic factors that may determine condom use as reported by HIV-positive men and women in sub-Saharan Africa.

This article reports findings from an analysis of factors associated with reported condom use by male and female HIV clients in Uganda. A better understanding of how the dynamics and factors that influence condom use may differ between men and women will have implications for whether prevention and risk reduction interventions need to be tailored to meet gender-specific needs.

Methods

Study design

Participants were enrolled in a longitudinal prospective cohort study with an 18-month follow-up period. The primary goal of the study was to examine the effects of HIV antiretroviral therapy (ART) on multiple dimensions of health including physical, psychosocial, and economic well-being. Clients who were newly entering HIV care were enrolled and completed interviews at entry into care and months 6, 12, and 18 thereafter; however, this article focused solely on the baseline data.

Study participants

The study was conducted at two urban HIV clinics, Mulago-Mbarara Teaching Hospitals' Joint AIDS Programme ISS Clinic and Reach out Mbuya. Both clinics are based in the city of Kampala and provide free care to mostly poor clientele. The study enrolled 508 clinic patients from both clinics. The client was eligible if he/she was age 18 years or above, new to the clinic and had just completed evaluation for ART eligibility, and had a CD4 count less than 400 cells/mm³ if not eligible for starting ART.

With the help of the clinic staff, eligible respondents were identified and informed of the study. Those who were interested were referred by the clinic staff to the study interviewer who then described the study in more detail and obtained written informed consent. Participants were paid 5000 Uganda Shillings (\$2.50) as transport refund and a refreshment to complete the interview. The study protocol was reviewed and approved by the Institutional Review Board at Makerere University and the Ugandan National Council of Science and Technology.

Measures

The survey assessments were interviewer-administered and translated into Luganda, the most commonly used language by people in and around Kampala, using standard translation and back-translation methods. The interview includes measures of condom use and potential determinants of condom use from among the domains of sociodemographics,

physical health, relationship characteristics, psychosocial functioning.

Condom use. Condom use during sexual intercourse over the past 6 months was measured using a 5-point rating scale from "never" to "always." Separate items were used to assess condom use with the primary partner and with casual partners. A dichotomous variable was then created to represent whether condoms were always used (referred to here as consistent condom use) with all partner types (primary and/or casual) reported; if the respondent reported having both a primary and casual partners, they needed to report always using condoms with both partner types in order to be classified as using condoms consistently.

Sociodemographic characteristics. These included gender of the participant, age, level of formal education (which was categorized as none or primary only versus at least any secondary education), current work status (past 7 days), presence of any monetary savings, number of children parented, and religiosity as indicated by church attendance (using a response scale from 1 'never' to 5 'more than once a week').

Physical health and immune status. CD4 count was abstracted from the client's medical chart. Physical health functioning was measured with the 6-item subscale of the Uganda-adapted Medical Outcomes Study HIV Health Survey,¹¹ which assessed physical limitations to performing activities of daily life; scores are standardized and highest (good health) score is 100.

Relationship characteristics. Participants were asked to self-report their current relationship status with options including: single, married, not married but in a committed relationship, divorced/separated, and widowed; those who were not married or in a committed relationship were then asked if they had a regular sexual partner over the past 6 months. The HIV status of the respondent's primary partner was assessed, and whether the respondent had disclosed their HIV status to their primary partner. In addition, each participant was asked whether they had any casual sex partners in the past 6 months, and if so, how many.

Psychosocial functioning. Internalized HIV stigma was assessed with an 8-item scale developed by Kalichman et al.¹² Participants were asked to rate their level of agreement with statements such as "I am ashamed that I am HIV positive" using a 5-point rating scale; mean item scores were computed and higher scores represent greater stigma. General social support was assessed using a single item adapted from the ACTG assessment battery,¹³ "I can count on my family and friends to give me the support I need", and a 4-point rating scale with higher scores representing greater support. Alcohol use was measured with the 3-item Alcohol Use Disorders Identification Test (AUDIT).¹⁴ Depression was assessed with the 9-item Patient Health Questionnaire (PHQ-9; 29); items corresponds to the symptoms used to diagnose depression according to standard diagnostic criteria, and the total score is the sum of all items with higher scores representing greater depression. To assess self-efficacy, we developed items that asked participants to rate their level of confidence (using a

scale of 0–10 with 10 being high confidence) in being able to perform seven behaviors such as condom use, medical adherence, finding work to support self and family, and interacting well with others in social situations. Mean item score was calculated to represent general self-efficacy. The individual item regarding confidence in using “condoms when having sex with your partner(s)” was used in the analysis to represent condom use self-efficacy.

Data analysis

Descriptive statistics were used to examine the distributions and frequencies of sample characteristics and each of the variables in the analysis. Bivariate statistics (independent two-tailed *t*-tests, χ^2 tests) were used to examine correlates of consistent condom use in the subgroup of participants who reported any sex partners (primary or casual) in the 6 months prior to baseline. Variables that were significant correlates in the bivariate analysis were then entered into logistic regression models as independent variables to predict consistent condom use among the male participants. A similar regression analysis was not performed for the female participants because so few variables were correlated with condom use in the bivariate analysis.

Results

Sample characteristics

The study sample consists of 508 participants, but the analysis for this paper was based on the subgroup of 280 participants (129 males and 151 females) who reported having any sex partners (primary or casual) during the 6 months prior to baseline. Of the 280 participants, 170 (60.7%) did not always use condoms, while 110 reported consistent condom use during sexual intercourse with all sex partners in the past 6 months. When comparing consistent condom use between men and women, 48.1% of men reported always using condoms compare to 31.8% of females ($p=0.005$). Based on this gender difference, we examined gender differences with regard to correlates of consistent condom use, but before engaging in this analysis we first assessed the differences between men and women on our sample characteristics at baseline.

Characteristics of the whole sample of 280 participants as well as by gender are listed in Table 1. Compared to women, men were more likely to have an HIV-positive primary partner and less likely to not know the HIV status of their primary partner, more likely to have disclosed their HIV status to their primary partner, more likely to be working and to be older in age; men also had marginally higher condom use self-efficacy.

We then examined the correlates of consistent condom use among the male and female participants in separate bivariate analyses, the results of which can be found in Table 2. Men who consistently use condoms were more likely to be working, have a primary partner whose HIV status was HIV negative and not unknown, to have disclosed their HIV status to their primary partner, and to have higher general self-efficacy and condom use self-efficacy compared to men who did not always use condoms. Men who reported use of alcohol were less likely to consistently use condoms. Only two variables were associated with consistent condom use among

women, with general self-efficacy and condom use self-efficacy being greater among women who reported always using condoms.

Having identified factors associated with consistent condom use among men in the bivariate analysis, we then sought to use regression analysis to find which variables were most influential in determining consistent condom use. Variables that were significantly associated with consistent condom use in the bivariate analysis were entered into the model as independent variables, with the exception of HIV disclosure and primary partner's HIV status. These two variables were excluded because they had too few cases in at least one category of these discrete variables (only 1 man who was a consistent condom user had not disclosed his HIV status to his partner; only 3 men who did not consistently use condoms had an HIV-negative partner; and only 4 men who did use condoms consistently did not know the HIV status of their partner), which caused statistical instability when they were included in the models.

For the analysis with the male participants, we fit a logistic regression model with the dependent variable being consistent condom use and independent variables being alcohol use, work status, general self-efficacy, and condom use self-efficacy. Results showed that the odds of condoms being used consistently are nearly 5 times greater among men who are working (odds ratio [OR] 95% confidence interval [CI]=4.65 [1.52, 14.21]), each added unit of general self-efficacy reduces the odds of consistent condom use by reduces the odds by 41% ($1-0.59=0.59$ [0.35, 0.99]), and each added unit of condom use self-efficacy nearly doubled the odds of consistent condom use (OR [95% CI]=1.86 [1.46, 2.37]). Alcohol use was not significantly associated with consistent condom use.

Discussion

In this sample of sexually active PLHA, low rates of consistent condom use were observed, particularly among women who reported significantly lower rates of consistent condom use compared to men. Half of the male respondents reported always using condoms, compared to roughly one-third of women. This gender difference in consistent condom use has been found in a few others studies of PLHA in sub-Saharan Africa,^{2,7} but little research has attempted to explore this gender difference in greater depth.

Among the male participants, two variables associated with consistent condom use were HIV disclosure to the respondent's primary partner, and the HIV status of the primary partner. Although we were not able to include these variables in the regression analysis, this was in part due to the strong relationship between these variables and condom use—nearly all men who consistently use condoms had disclosed their status to their partner and knew the HIV status of their partner, and very few men who did not always use condoms had a partner who was HIV negative. These two partnership variables are likely related to each other, as HIV disclosure in the context of a relationship can serve as the impetus for the partner to get HIV tested and discover their status. These findings also highlight the value of promoting HIV disclosure and HIV testing within couples, as disclosure and knowledge of HIV status of self and partner have been shown to contribute to consistent condom use.⁴

TABLE 1. SAMPLE CHARACTERISTICS OF TOTAL SAMPLE AND BY GENDER

Variable	Total sample (n=280)	Male (n=129)	Female (n=151)	p Value
Demographics				
Age (years)	33.3	36.1	30.9	0.001
At least some secondary education	41.7%	46.5%	37.2%	0.129
Any children	91.9%	83.6%	87.5%	0.854
Religiosity	2.36	2.63	2.28	0.259
Physical health				
CD4 count	286	213	342	0.000
Physical health functioning	75.3	71.6	77.7	0.278
Economic variables				
Any savings	34.6%	38.8%	31.1%	0.181
Working	71.4%	78.3%	65.6%	0.019
Relationship variables				
HIV disclosure to partner	74.1%	85.4%	64.6%	0.000
Partner's HIV status				
Positive	54.3%	65.8%	44.7%	0.000
Negative	10.1%	14.5%	6.4%	
Unknown	35.7%	19.7%	48.9%	
Psychosocial variables				
Social support	3.53	3.56	3.51	0.417
Any alcohol use	39.6%	41.1%	38.4%	0.648
General self-efficacy	7.83	7.85	7.81	0.828
HIV stigma	2.32	2.16	2.46	0.002
Depression	3.97	3.99	3.96	0.942
Condom use self-efficacy	6.56	6.96	6.22	0.055
Condom use				
Consistent condom use	39.3%	48.1%	31.8%	0.005

TABLE 2. BIVARIATE CORRELATES OF CONSISTENT CONDOM USE AMONG MEN AND WOMEN

Variable	Condom use among males			Condom use among females		
	Consistent (n=62)	Not consistent (n=67)	p	Consistent (n=48)	Not consistent (n=103)	p
Demographics						
Any secondary education	50.0%	43.1%	0.434	39.6%	36.2%	0.705
Any children	91.9%	83.6%	0.150	87.5%	86.4%	0.854
Religiosity	2.36	2.63	0.259	2.13	2.43	0.123
Mean age (years)	36.6	35.7	0.457	31.6	30.5	0.459
Physical health						
CD4 count	224	203	0.512	347	336	0.834
Physical functioning	75.9	71.3	0.335	80.0	75.4	0.279
Economic variables						
Any savings	43.5%	34.3%	0.283	33.3%	30.1%	0.689
Working	87.1%	70.1%	0.020	64.6%	66.0%	0.020
Relationship variables						
HIV disclosure to partner	98.3%	73.4%	0.000	60.9%	66.3%	0.520
Partner status						
HIV-positive	68.4%	63.3%	0.000	56.8%	39.2%	0.147
HIV-negative	24.6%	5.0%		4.5%	7.2%	
Unknown	7.0%	31.7%		38.6%	53.6%	
Married	87.1%	77.6%	0.160	60.4%	69.9%	0.249
Psychosocial variables						
Any alcohol use	32.3%	49.3%	0.050	31.3%	41.7%	0.217
HIV stigma	2.11	2.21	0.440	2.45	2.47	0.886
Depression	3.98	4.00	0.979	3.83	4.02	0.782
General self-efficacy	8.08	7.63	0.021	8.10	7.68	0.047
Social support	3.29	3.34	0.705	3.15	3.19	0.756
Condom use self-efficacy	8.61	5.43	0.000	8.02	5.39	0.000

Greater self-efficacy, both in general and specific to condom use, were associated with consistent condom use among both men and women. This is consistent with social cognitive theory that posits that confidence in being able to engage in a behavior is a critical factor to health behavior and behavioral change.¹⁵ Several other studies have also found a relationship between self-efficacy and condom use.^{16,17} Education and counseling aimed at building skills for condom use negotiation and communication between partners could be used to enhance condom use self-efficacy. Understanding the dynamics of condom use negotiation between partners and how effective negotiation strategies may differ by gender may be essential to optimizing the effectiveness of such counseling. Personalized risk reduction counseling has been associated with increased condom use.¹⁸ The direction of the relationship between general self-efficacy and consistent condom use among men actually reversed in the regression analysis, with greater self-efficacy reducing the likelihood of using condoms. This suggests a more complex relationship between general self-efficacy and condom use, as opposed to condom use self-efficacy, as controlling for the other variables in the model alters the association. Further research is needed to add clarity to the role of general self-efficacy.

The self-efficacy variables were the only two variables found to be associated with consistent condom use among women. It is perhaps not surprising that self-efficacy, which is related to self-assessment of one's ability to control a behavior or event, is the strongest determinant of reported condom use by women, given the limited control that women have over the use of the male condom. Many have written about the influence of gender disparities in relationship control and decision making within male dominated African cultures.⁹ This lack of female control over condom use could explain the lack of variables found to be associated with condom use among women, compared to men. While skills building around condom use negotiation and couples' communication around condom use could be effective in improving condom use self-efficacy among women, as suggested above, female-specific strategies may be needed to promote condom use and safer sex. For example, strategies that enhance the cultural acceptance of the female condom in sub-Saharan Africa, and the use of microbicides could have significant benefits for HIV prevention, as these provide women with methods that they can have greater control over the usage of during sex with their male partners.¹⁹

Alcohol use was associated with less consistent condom use among men in the bivariate analysis, which is consistent with other studies^{3,20} that have demonstrated a relationship between alcohol use and greater risk taking including less condom use among both HIV-infected and HIV-uninfected men.³ While alcohol use was relatively low in this study sample, rates of alcohol use and abuse are known to be high in Uganda and other parts of sub-Saharan Africa,^{2,3} suggesting that the rate of alcohol use in our sample may be an underestimate or influenced by social desirability.

Working men were more likely to consistently use condoms. A possible explanation of this finding is that work provides income that can be used to improve access to condom whenever needed, whereas those who do not work may struggle to have sufficient access to condoms. Condoms are always distributed for free in HIV clinics in Kampala but only a limited number is given. Therefore work and availability of

money increases the chances of an individual being able to purchase condoms from nearby shops, rather than waiting for the next clinic appointment if one has run out of condoms.

The study has limitations that are worth noting. The cross-sectional design prevents making causal statements about variables related to condom use. The findings are not generalizable to all PLHA, particularly those not in HIV care or those who have been in care or on ART for a considerable amount of time. Furthermore, our sample was urban, and clients in rural areas may have different experiences that influence condom use. Also, we relied on self-reported use of condoms, which is vulnerable to social desirability, whereas measures of sexually transmitted infections would provide more objective data.

In summary, these findings reveal low rates of consistent condom use among people living with HIV, and a gender difference in condom use with men more likely to report consistent condom use. Our data suggest that HIV disclosure and HIV testing in the context of relationships may be key to promoting consistent condom use among men. Among both men and women, condom use self-efficacy was strongly associated with consistent condom use,²¹ suggesting the potential value for interventions aimed at building skills for condom use negotiation and communication among partners, but also more female-specific strategies that empower women to have more control over use of sexual protection, such as the female condom and microbicides. Greater emphasis on gender-specific dynamics and intervention strategies to promote condom use and safer sex are needed to make deeper inroads on HIV prevention and transmission risk reduction.

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