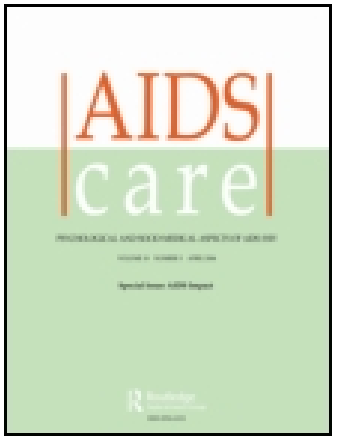

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Condom use among female sex workers in Uganda

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Condom use among female sex workers in Uganda

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Consistent condom use can prevent HIV infection, yet levels of condom use are low in many settings. This paper examines determinants of inconsistent condom use among 905 women enrolled in a high-risk cohort in Kampala, Uganda, who reported sexual intercourse with paying clients in the last month. Among these, 40% participants reported using condoms inconsistently with paying clients in the past month. The most common reason for inconsistent condom use was client preference. Factors independently associated with inconsistent condom use included: sex work not being the sole source of income [adjusted odds ratio (aOR) = 1.54; 95% confidence interval (CI): 1.13–2.09], sexual debut before 14 years (aOR = 1.46; 95% CI: 1.09–1.96), daily consumption of alcohol (aOR = 1.90; 95% CI: 1.26–2.88) and being currently pregnant (aOR = 2.11; 95% CI: 1.25–3.57). Being currently married (aOR = 0.36; 95% CI: 0.18–0.73) and a higher number of sexual partners per month (p-trend = 0.001) were associated with a lower risk of inconsistent condom use. Targeted programmes should be developed to promote consistent condom use in high-risk women, alongside interventions to reduce alcohol use.

Keywords: FSWs; inconsistent condom use; risk factors; Uganda

Introduction

Nearly 68% of all people living with HIV worldwide live in Sub-Saharan Africa among which 59% are women. About 1.9 million new infections were reported in Sub-Saharan Africa in 2010, representing more than two-thirds (70%) of all new infections globally (WHO, 2012). Unprotected heterosexual intercourse, including paid sex is one of the major drivers of the new infections.

HIV/AIDS prevalence in Uganda has stabilised at about 6.4% (Kirungi et al., 2006), but some data suggest an increase in prevalence (Ministry of Health (MoH) [Uganda] and ORC Macro, 2006; Shafer et al., 2008). Female sex workers (FSW) remain a core group for HIV transmission in both early and advanced HIV epidemics (Chen et al., 2007). However, in Uganda, sex work is illegal and there is scanty information on this population, because the current HIV surveillance system does not routinely capture data from this population (UNGASS, 2010).

The role of condoms for HIV prevention is known for over 20 years (Ahmed et al., 2001; Brahme et al., 2006; Steiner & Cates, 2006). Moreover, following widespread campaigns to promote condom use (Foss, Hossain, Vickerman, & Watts, 2007; Hearst & Chen, 2004), one might expect individuals with many sexual partners to use condoms consistently. However, this is not always true. Studies conducted in the general population in Uganda demonstrated that inconsistent condom use was prevalent during transactional sex and in married or regular partnerships, and was associated with low levels of education and perceived risk (Kibombo, Neema, & Ahmed, 2007; Najjumba, Ntonzi, Ahimbisibwe, Odwee, & Ayiga, 2003).

The aim of this paper is to examine the determinants of inconsistent condom use at enrolment visit among women who engage in high-risk sexual behaviour in Kampala, Uganda. These data may help to guide the development and implementation of more effective HIV prevention and treatment services among sex workers in the struggle to control the HIV epidemic in Uganda.

Methods

Study population and procedures

Details of the study procedures have been published previously (Vandepitte et al., 2011). Briefly, between April 2008 and May 2009, women recruited from red light districts of southern Kampala were enrolled in a study cohort. Potential participants were invited to attend a stand-alone clinic, established by the project to offer primary health care and to conduct research. Eligible participants were aged 18 years and above or being a mature or emancipated minor and working as

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an FSW or in an entertainment facility such as bars, guesthouses and nightclubs in Kampala.

Data collection

Structured face-to-face interviews were conducted at the clinic by experienced nurse – counsellors who received supplementary training on the present research. Data were collected on *sociodemographic characteristics, alcohol and drug use* sexual risk behaviour with both paying and non-paying partners. In this paper, we concentrate on condom use with the paying clients because of the expected high rate of sexual partner change.

We asked specifically how often condoms were used when having sexual intercourse in exchange for money, goods or other favours, during the last month and what were the main reasons for not using condoms consistently. *Condom use responses (''always'', ''most of the time'' ''sometimes'' and ''never'') were dichotomised into a new variable with always as consistent use and ''most of the time, sometimes, and never'' merged to inconsistent use. Previous knowledge of HIV status* was measured as having been counselled tested and received results for HIV before enrolment. Data were collected on source of income, place of recruitment and number of clients, cost of sex act and first intercourse experience including age of sexual debut, payment and use of condom during first sexual encounter.

HIV risk perception was assessed among HIV-negative women at enrolment who were asked about the chances of getting HIV. Women were categorised as having low risk if they answered no/small risk and were categorised as high risk if mentioned moderate, high or do not know. The prevailing explanations for the perceived risk were captured through respondents' open-ended remarks when answering the question on chances of contracting HIV.

Women were categorised as having a current sexually transmitted infection (STI) if any of the following curable STIs was detected in the laboratory at enrolment; syphilis if both rapid plasma reagin (RPR) and the treponema pallidum haemaglutination (TPHA) were positive; *Neisseria gonorrhoea* (NG) or *Chlamydia trachomatis* (CT) if PCR was positive for NG or CT, respectively; *Trichomonas vaginalis* (TV) if InPouch was positive, or genital ulcer disease if confirmed positive on PCR for aetiology of *Haemophilus ducreyi*, *Treponema pallidum* and/or lymphogranuloma venereum.

The Uganda Virus Research Institute Science and Ethics Committee and the Uganda National Council for Science and Technology approved the study.

Data analysis

Data were double entered in access and analysed using STATA 11.0 (Stata Inc., TX, USA). Factors associated with inconsistent condom use at enrolment were analysed using logistic regression to estimate odds ratios (OR) and 95% confidence intervals (CIs). *p*-Values were obtained using likelihood ratio tests. The multivariable analysis was conducted using a hierarchical conceptual framework grouping variables in two levels as sociodemographic and behavioural or reproductive health (Victora, Huttly, Fuchs, & Olinto, 1997). Sociodemographic factors with $p \leq 0.10$ were included in a multivariable model and retained in a core model if they remained independently associated with inconsistent condom use. Behavioural and reproductive factors were added to this model one by one and included in a multivariable model if $p \leq 0.10$. Factors remaining significant after adjustment for each other and the sociodemographic factors were retained in the final model. Reasons for failure to use condoms and reasons for perceived level of risk were grouped by theme. Because having a current STI and HIV status at enrolment were more likely to have resulted from inconsistent condom use than being risk factors, were not included in the risk factor analysis.

Results

Characteristics of the study population

Of the 1027 women enrolled in the cohort, 905 (88%) women reported sexual intercourse with paying clients in the last one month, at the baseline survey. For the current study, we only considered these 905 women.

The median age was 26 years [interquartile range (IQR) 22–30 years]. Half the women (50%) had completed primary school and 9% had never attended school. Only 7% were currently married and the majority (71%) were formerly married (divorced, separated or widowed). In addition to sex work, 63% reported other sources of income. The median age at sexual debut was 15 years (IQR 14–17 years). Almost half (42%) of the participants reported having more than 20 paying clients in the past month or could not remember the number. About 58% of the women reported having knowledge of their HIV prior to enrolment. Most women (79%) reported having ever used alcohol. At enrolment, HIV prevalence was 37%, and 43% had at least one curable STI confirmed by laboratory diagnosis.

Overall, 364 (40%) of women reported inconsistent condom use with paying clients in the past month among which 59% were HIV uninfected. The

main reason for not using condoms consistently with paying clients was that partners did not like using condoms (56%). Lack of knowledge and skills to use condoms or to negotiate condom use (12%) and having trust in clients (11%) were other important reasons reported by the women. The reasons for not using condoms consistently did not differ significantly among HIV negatives and HIV infected (Table 1).

Sociodemographic factors associated with inconsistent condom use

Inconsistent condom use with paying client was independently associated with source of income [adjusted odds ratio (aOR) = 1.54 for sex work and/or other job vs sex work only; 95% CI: 1.13–2.09). Currently married women were less likely to report inconsistent condom use with paying clients (aOR = 0.36; 95% CI: 0.18–0.73). There was no evidence that age, level of education, place of recruiting clients and cost of sex were associated with inconsistent condom use.

Behavioural and reproductive health determinants of inconsistent condom use

Inconsistent condom use was independently associated with early age at sexual debut (aOR = 1.46; 95% CI: 1.09–1.96 for age $\leq$14 vs $>$14 years), with having fewer paying clients in the past month (p-trend < 0.001), and with daily alcohol use (aOR = 1.90; 95% CI: 1.26–2.88 compared with non-drinkers). As expected, pregnant women were more likely to use condoms inconsistently than non-pregnant women who did not take any hormonal contraceptives (aOR = 2.11; 95% CI: 1.25–3.57). Inconsistent condom use was significantly higher among HIV-positive participants than HIV-negative participants (aOR = 1.57; 95% CI: 1.17–2.11), and

Table 1. Sociodemographic factors associated with inconsistent condom use with paying clients, reported during enrolment visit ($N = 905$).

Characteristics	Total $N = 905$	Inconsistent condom use N (%) $N = 364$ (40)	Crude OR (95% CI)	Adjusted OR (95% CI)[a]
Age (years)			$p = 0.75$	$p = 0.84$
<25	359	139 (39)	1	1
25–34	452	186 (41)	1.11 (0.83–1.47)	1.09 (0.80–1.48)
35+	94	39 (41)	1.12 (0.71–1.78)	0.99 (0.61–1.61)
Education level			$p = 0.38$	$p = 0.31$
Primary completed	448	170 (38)	1	1
Primary uncompleted	377	160 (42)	1.21 (0.91–1.59)	1.22 (0.92–1.63)
Never went to school	80	34 (43)	1.21 (0.75–1.96)	1.30 (0.79–2.13)
Current marital status			$p = 0.002$	$p = 0.001$
Never married	199	81 (41)	1	1
Currently married	61	12 (20)	0.36 (0.18–0.71)	0.36 (0.18–0.73)
Formerly married	645	271 (42)	1.06 (0.76–1.46)	1.14 (0.82–1.58)
Reported source of income			$p = 0.0004$	$p = 0.005$
Sex work only	336	110 (33)	1	1
Sex work and/or other job	569	254 (45)	1.66 (1.25–2.20)	1.54 (1.13–2.09)
Place of recruiting male clients			$p = 0.003$	$p = 0.12$
Bar, club or restaurant	354	146 (41)	1	1
Street	148	42 (28)	0.56 (0.37–0.86)	0.68 (0.44–1.06)
Home or on phone	54	29 (54)	1.65 (0.92–2.94)	1.75 (0.99–3.14)
Several places	349	147 (42)	1.04 (0.77–1.40)	1.09 (0.80–1.49)
Average amount of money paid per sex act			$p = 0.49$	$p = 0.20$
<5000 UgSh	224	96 (43)	1	1
5000–10,000 UgSh	578	224 (39)	0.84 (0.62–1.15)	0.74 (0.54–1.03)
$>10{,}000$ UgSh	103	44 (43)	0.99 (0.62–1.59)	0.81 (0.49–1.34)
Number of people supported financially			$p = 0.29$	$p = 0.39$
Only myself	77	37 (48)	1	1
≤ 2 other people	422	171 (41)	0.74 (0.45–1.20)	0.78 (0.47–1.29)
>2 other people	406	156 (38)	0.67 (0.41–1.10)	0.70 (0.41–1.18)

[a]Adjusted for marital status and job status.

among women with at least one current laboratory-confirmed STI diagnosis (aOR = 1.63; 95% CI: 1.30–2.28). However, the average amount of money paid per sex act and previous knowledge of HIV status were not associated with inconsistent use of condoms with clients (Table 2).

Among HIV-negative women, 67% (382/571) perceived themselves to be at high risk, and these women were more likely to use condom inconsistently than women who did not perceive themselves at high risk (aOR = 2.34; 95% CI: 1.56–3.50). The main reason given for perceived high risk of HIV was inconsistent condom use (60%). Other reasons included having multiple sexual partners (16%); not knowing the HIV status of the partner (12%); not trusting partners (7%) and condom accidents (5%).

Discussion

This study suggests that 40% of women who engage in high-risk sexual behaviour in Kampala were not using condoms consistently with paying clients over the previous month. Another study showed the number of sex workers reporting 100% condom use was 18.9% in Uganda among a snowball sample of FSW along the Trans Africa highway from Mombasa, Kenya to Kampala, Uganda (Morris, Morris, & Ferguson, 2009). Although our study shows an increase in consistent use of condoms, there is a need to continue to promote safer sexual behaviour among high-risk women. Factors independently associated with inconsistent condom use with paying clients in our study were not having early sexual debut, being currently married, income other than sex work only, fewer paying clients and daily alcohol use. Women, who were HIV negative and reported inconsistent condom use, were more likely to perceive themselves to be at higher risk for HIV than women who use condoms consistently.

In this study, we did not stratify risk sexual behaviour by HIV status, as only 58% of women were aware of their status before enrolling in the study. Importantly, previous knowledge of HIV status among these women was however not significantly associated with consistent condom use with paying clients. This suggests that the counselling provided to women recruited in our high-risk cohort by testing services designed for the general population may not have included effective promotion of condom use with paying clients. Yet, HIV counselling and testing services designed specifically for FSW may reduce risk-taking behaviour. For example, after receiving risk reduction messages, there was increased condom use and abstinence among HIV-positive FSWs in Kenya (McClelland et al., 2006). This reaffirms the importance of targeted interventions such as promoting condom use with multiple partners during HIV post-test counselling in this specific population group (Vuylsteke et al., 2012). In Uganda even though sex work is illegal, these results show the importance of implementing specific HIV risk reduction interventions for FSW.

Married women in our study were more likely to use condoms consistently with paying clients yet condom use with their husbands or persons they are living with as if married was very low (2%). Other studies have documented low rates of condom use by women with regular partners or cohabiting partners because of trust (Adu-Oppong, Grimes, Ross, Risser, & Kessie, 2007; Kayembe et al., 2008; Lowndes et al., 2002; Voeten, Egesah, Varkevisser, & Habbema, 2007; Wang et al., 2007). The Uganda National HIV/AIDS Sero-Behavioural Survey reported high consistent condom use by married women in the general population when having sex with a non-marital or non-cohabiting partner (Ministry of Health (Uganda) and ORC Macro, 2006). When designing public health interventions for married women who engage in sex work, attention should also be directed to the husbands and cohabiting partners who do not consistently use condoms.

Women who reported sex work as the only source of income were more likely to use condoms consistently compared to those who had other sources of income. Similarly, women who had more paying clients reported using condoms more consistently. This could demonstrate high-perceived vulnerability to HIV with increased sexual intensity (Macintyre, Rutenberg, Brown, & Karim, 2004).

Other studies have reported similar findings of high inconsistent condom use among women who had early sexual debut (Ahmed et al., 2001; Anderson, Beutel, & Maughan-Brown, 2007; Pettifor, O'Brien, Macphail, Miller, & Rees, 2009). It is possible that women who started sexual intercourse at older age were exposed to HIV preventive messages and consequently were more likely to take preventive measures. Younger sexual debut and inconsistent condom use both reflect higher risk behaviour.

Daily use of alcohol was strongly associated with inconsistent condom use. These findings support previous studies among FSWs (Atalay, Derege, Getnet, Fikre, & Lemma, 2006; Dintwa, 2010; Fisher, Cook, & Kapiga, 2010; Tegang et al., 2010; Yadav et al., 2005). In addition to sexual risk behaviour reduction, specific alcohol-reduction interventions such as the WHO Screening and Brief Intervention (WHO, 2002) should be adapted and piloted for sex workers. However, in this study daily illicit drug use

Table 2. Behavioural and reproductive health factors associated with inconsistent condom use with paying clients, reported during enrolment visit.

Characteristics	Total	Inconsistent condom use *N* (%)	Crude OR (95% CI)	Adjusted OR (95% CI)[a]
First sexual experience				
Age at sexual debut (years)			$p = 0.03$	$p = 0.02$
> 14	561	212 (38)	1	1
≤ 14	310	142 (46)	1.39 (1.05–1.84)	1.46 (1.09–1.96)
Cannot remember	34	10 (29)	0.69 (0.32–1.46)	0.76 (0.35–1.68)
Age first partner			$p = 0.82$	$p = 0.81$
Younger	144	58 (40)	1	1
Older (<10 years)	577	232 (40)	1.00 (0.69–1.45)	0.94 (0.63–1.40)
Much older (≥ 10 years)	167	69 (41)	1.04 (0.66–1.64)	0.94 (0.58–1.52)
Cannot remember	17	5 (29)	0.62 (0.21–1.85)	0.57 (0.18–1.80)
Sex for money with first partner (three do not remember)			$p = 0.13$	$p = 0.26$
Yes	496	210 (42)	1	1
No	406	152 (37)	0.81 (0.62–1.07)	0.81 (0.61–1.07)
Condom use at first sex			$p = 0.25$	$p = 0.38$
Yes	173	63 (36)	1	1
No	732	301 (41)	1.22 (0.87–1.72)	1.18 (0.82–1.70)
Number of paying clients in last month			$p = 0.0006$	p trend $= 0.001$
< 10	355	169 (48)	1	1
10–19	171	67 (39)	0.71 (0.49–1.03)	0.65 (0.44–0.96)
≥ 20 or cannot remember	379	128 (34)	0.56 (0.42–0.76)	0.53 (0.387–0.75)
HIV counselling and testing				
Ever been tested for HIV?			$p = 0.06$	$p = 0.37$
Yes	566	214 (38)	1	1
No	339	150 (44)	1.31 (1.00–1.72)	0.37 (0.67–2.77)
Previous knowledge of HIV status			$p = 0.08$	0.32
No	379	165 (44)	1	1
Yes	526	199 (38)	0.79 (0.60–1.03)	0.80 (0.65–1.15)
HIV status at enrolment[b]			$p = 0.02$	$p = 0.002$
Negative	571	213 (37)	1	1
Positive	334	151 (45)	1.39 (1.05–1.82)	1.57 (1.17–2.11)
Wishing to get pregnant			$p = 0.18$	$p = 0.43$
No	701	279 (40)	1	1
Yes	166	74 (45)	1.22 (0.86–1.71)	1.12 (0.78–1.62)
Do not know	38	11 (29)	0.62 (0.30–1.26)	0.67 (0.32–1.41)
Current contraceptive use			$p = 0.02$	$p = 0.01$
None	521	197 (38)	1	1
Oral or injectable	314	128 (41)	1.13 (0.85–1.51)	1.23 (0.92–1.67)
Currently pregnant	70	39 (56)	2.07 (1.25–3.42)	2.11 (1.25–3.57)
Alcohol and drug use				
Alcohol use			$p = 0.01$	$p = 0.002$
Not using	189	65 (34)	1	1
Less than once a week	60	16 (27)	0.69 (0.36–1.32)	0.71 (0.36–1.39)
At least once a week	421	170 (40)	1.29 (0.90–1.85)	1.29 (0.89–1.86)
Daily	235	113 (48)	1.77 (1.19–2.62)	1.90 (1.26–2.88)
Illicit drug use			$p = 0.09$	$p = 0.17$
Not using	713	276 (39)	1	1
At least once a month	50	19 (38)	0.97 (0.54–1.75)	0.90 (0.49–1.65)
Daily	142	69 (49)	1.50 (1.04–2.15)	1.42 (0.97–2.09)
Had at least one STI[b]			$p = 0.0001$	$p = 0.0006$
No	516	179 (35)	1	1
Yes	389	185 (48)	1.71 (1.30–2.23)	1.63 (1.30–2.28)
HIV risk perception ($n = 571$)			$p = 0.0000$	$p = 0.0000$
Low	189	47 (25)	1	1
High	382	166 (43)	2.32 (1.58–3.42)	2.34 (1.56–3.50)

[a]Adjusted for marital status and job status age at sexual debut, number of paying clients in the last month, current contraceptive use, alcohol use.
[b]HIV status at enrolment and having at least one STI were not included in the final model.

was not associated with inconsistent condom use. This could be due to small numbers of women who reported daily use of drugs.

We found a strong association among the HIV-negative participants between high-perceived HIV risk and inconsistent condom use with paying clients. This was similar to other findings reported elsewhere in Sub-Saharan Africa (Anderson et al., 2007; Barden-O'Fallon et al., 2004; Maharaj, 2006; Shobo, 2007; Ukwuani, TSui, & Suchindran, 2003). On further questioning, women felt they were at high risk and echoed failure to use condoms all the time and having multiple partners as the main reasons for the perceived high risk. This confirms that these women are aware of the high risk of contracting HIV. From our study, the association between perceived risk and inconsistent condom use may be due to "reverse causation" – that is women may perceive themselves at increased risk because they have not been able to consistently use condoms.

In the past, condoms have widely been distributed in Uganda by the Ministry of Health as a strategy to prevent transmission of HIV so the observed inconsistent condom use is not due to unavailability or inaccessibility of condoms. As mentioned by most of the women, the main reason for the inconsistent condom use was the unwillingness of the clients to use them. This study re-affirms the persistent difficulties women face in using male condoms (Lowndes et al., 2007; MacPhail et al., 2009; Mantell, Stein, & Susser, 2008). The Government of Uganda is revitalising the use of female condoms (Nick, 2009) that had earlier failed due to lack of promotional activities. The re-introduction of the female condom should be expedited, with well-planned promotional activities especially among women at high risk of HIV, considering their potential role in HIV transmission. Including male sexual partners of women who engage in high-risk sexual behaviour into HIV/STI preventive interventions as well as focusing on condom promotion and STI care could be another important strategy.

Limitations of the study

The cross-sectional nature of the data limits our ability to assess temporal relationships between factors associated with inconsistent condom use. Condom use was self-reported and this could be subjected to social desirability and recall bias. We used a period of one month to balance minimal recall bias with a representative period of time. In addition, the validity of this study was supported by the observed association between self-reported inconsistent condom use and having at least one curable STI. In addition, women who were HIV positive reported more inconsistent condom use. The results may not be easily generalised in all areas of Uganda because of the heterogeneity among sex workers.

Conclusion

HIV-negative women assessed themselves as being at high risk because they were not using condoms consistently with paying clients. Preventive programmes should build on this high-perceived HIV risk to develop targeted programmes that encourage consistent condom use among this population. Preventive programmes should target specifically women who engage in high-risk behaviour. Centres providing HIV counselling and testing services should continue to emphasise the importance of consistent condom use among women with multiple partners. Interventions to reduce the prevalence of STIs as well as alcohol use in this vulnerable population group should be considered.

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