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Consistent condom use among men with non-marital partners in four sub-Saharan African countries

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Abstract

Data from the Demographic and Health Surveys (DHS) for Namibia, Swaziland, and Zambia and the AIDS Indicator Survey (AIS) from Tanzania were used to examine the influence of marital status and number of partners on consistent condom use among men with casual sexual partnerships in four generalized HIV epidemic settings. We restrict the sample to the 26% (Zambia), 29% (Tanzania), 35% (Swaziland), and 42% (Namibia) of men, who, in the last 12 months before the survey, had any non-marital/non-cohabiting (i.e., casual) sexual partners. We use “condom always used with any partner in the last 12 months” as a dichotomous dependent measure of consistent condom use. Analyses were stratified by country. Of men with casual partners, 41% (Zambia) to 70% (Namibia) used a condom every time with at least one partner. The majority of men were unmarried/non-cohabiting with one casual partner in the last year. In Swaziland and Zambia, multivariate results suggest that unmarried/non-cohabiting men with one casual partner had significantly lower odds than married/cohabiting men with casual partners to use condoms consistently (Odds ratio [OR] = 0.56, $p=0.01$ and OR = 0.41, $p<0.001$, respectively.). In Namibia, unmarried/non-cohabiting men with two or more casual partners had significantly greater odds than married/cohabiting men with casual partners to use condoms consistently (OR = 2.80, $p<0.01$). With some exceptions by country, higher education, religious group, wealth, having no children, knowing HIV results, having an STI, having one lifetime partner, and positive condom knowledge and beliefs also were significantly associated with using a condom every time with any partner. We conclude that consistent condom use remains an elusive goal even among men with casual sexual relationships. Condom use messages should be refined and targeted to men based on their number and types of relationships and combined with other messages to decrease concurrent relationships.

Keywords

Condoms/utilization; Eastern and Southern Africa; sexual partners; health knowledge, attitudes, practice; health promotion

Introduction

Because condoms are approximately 90% effective at preventing HIV when used consistently and correctly, consistent and correct condom use continues to be an important

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strategy for HIV prevention (Hearst & Chen, 2004; Pinkerton & Abramson, 1997; Weller & Davis-Beaty, 2002). Some countries, particularly in Asia, have been successful in increasing and sustaining condom use, but in countries with more generalized epidemics, such as many of those in sub-Saharan Africa, there is a lack of evidence of the primary role of condoms contributing to declines in HIV prevalence (Hearst & Chen, 2004; Potts et al., 2008). However, a recent study modeling the role of condom use in South Africa estimated that 23-37% of the reduction in HIV incidence between 2000-2008 was due to condom use (Johnson et al., 2012). In other areas of Africa, the lack of evidence of the role of condoms contributing to declines in HIV is attributed to the low levels of condom use in regular and concurrent partnerships, where most HIV transmission occurs (Potts et al., 2008). A recent analysis of 13 Demographic and Health Surveys (DHS) and AIDS Indicator Surveys (AIS) from sub-Saharan African countries found that men's condom use at last intercourse ranged between 4% and 30% (de Walque & Kline, 2011).

Men's condom use varies widely by marital status, type of partner, and condom use measure. Condom use is particularly low within marriage (de Walque & Kline, 2011; Bauni & Jarabi, 2003; Maharaj & Cleland, 2004; Chimbiri, 2007; Biraro et al., 2009; Reynolds, Luseno, & Speizer, 2012). Condom use increases with more sexual or casual partners (i.e., non-marital/non-cohabiting) (de Walque & Kline, 2011; Reynolds, Luseno & Speizer, 2012; Adetunji & Meekers, 2001). De Walque and Kline (2011) found that men's condom use at last sex was much higher when the partner was a non-spouse, from 32% to 68% depending on the country. Finally, measures of condom use at last sex tend to overestimate condom use compared with frequency measures of use (e.g., never, sometimes, always). For example, one study that compared different measures in the same population found that levels of "condom use at last sex" ranged from 20% to 57%, but condom use *every time* with the last partner was between 13%-47% (Reynolds, Luseno, & Speizer, 2012).

The level of condom use among men by type of partner is influenced by men's and their partners' motivations to use condoms and perceptions of the risk for HIV and other sexually transmitted infections (STIs). Low levels of condom use within marriage are tied to a desire for pregnancy, a perceived low risk of STI/HIV infection, actual low risk when both partners are uninfected and monogamous, or a perception that introduction of condoms implies unfaithfulness or lack of trust (Bauni & Jarabi, 2003; Maharaj & Cleland, 2004; Westercamp et al., 2010; Foss, Hossain, Vickerman, & Watts, 2007). Also, research has found that condom use is influenced by the tendency to assess sexual partners informally as "clean" or "unclean," "safe" or "unsafe" (Biddlecom, Hessburg, Singh, Bankole, & Darabi, 2007).

HIV prevention programs need more information about whom to target with condom use interventions. Although research has found evidence that interventions targeting sex workers and their clients resulted in large gains in condom use, there is little evidence about intervention impact on condom use in casual sexual relationships (Foss, Hossain, Vickerman, & Watts, 2007). Increasing condom use by people with casual and multiple sex partners is important because the likelihood of acquiring HIV from one's partners or transmitting HIV to unsuspecting marital partners is high (Ahmed et al., 2001). Moreover, increasing condom use in marital relationships faces more hurdles than within casual relationships (Bauni & Jarabi, 2003; Maharaj & Cleland, 2004). The purpose of this paper is to examine the role of marital status and number of partners, as well as other demographic, sociocultural, socioeconomic, and proximate (e.g., STIs and paid sex) factors associated with risk of HIV infection (based on the proximate determinants framework for HIV infection, as described by Boerma and Weir [2005]) on consistent condom use among men with casual sexual partnerships in four generalized HIV epidemic settings.

Methods

This study uses nationally representative household survey data from the DHS for Namibia, Swaziland, and Zambia and the AIS from Tanzania (Central Statistical Office [CSO] & Macro International Inc., 2008; CSO, Ministry of Health, Tropical Diseases Research Centre, University of Zambia, & Macro International Inc., 2009; Ministry of Health and Social Services & Macro International Inc., 2008; Tanzania Commission for AIDS, Zanzibar AIDS Commission, National Bureau of Statistics, Office of the Chief Government Statistician, & Macro International Inc., 2008). Although, the AIS questionnaire includes fewer sociodemographic variables than the DHS, it included a number sufficient for the analyses presented here. These countries were selected because they used version 5 or 6 of the standard DHS questionnaires (with the expanded set of questions about condom use) and they had relatively high HIV prevalence combined with a large number of respondents to facilitate multivariate analyses.

The DHS and AIS use a two-stage sampling strategy to select a nationally representative sample of households for inclusion. First, a representative sample of geographic units or enumeration areas is sampled within the country, and then a random sample of households is selected from sampled enumeration areas with a known probability. Interviews were conducted with men if they were ages 15-49 and spent the previous night in the household; in Zambia, men ages 15-59 were eligible. Between 3,875 (in Namibia) and 6,959 (in Tanzania) men were included in the DHS surveys. For this study, we restrict the sample to the 26.1% in Zambia (n=1688), 29.4% in Tanzania (n=2045), 34.8% in Swaziland (n=1440), and 42.1% of men in Namibia (n=1633), who, in the last 12 months before the survey, had any non-marital/non-cohabiting (i.e., casual) sexual partners. Women are also interviewed in DHS studies, but we focus on men in this study because men are more likely to have multiple and non-marital partnerships.

Variables

Outcome measure

Starting in 2003, the DHS and AIS have included new methods of self-reported data collection related to consistent condom use. The original question “did you use a condom at last sex” is included, and new questions are added about consistency of condom use (always, sometimes, never). The Phase 5 and 6 (2003-2013) surveys ask these two questions for each of the (up to) last three partners in the last year (MEASURE DHS, n.d.).

For this study, we use “condom always used with any partner in the last 12 months” as a measure of consistent condom use (where “any partner” could refer to any one of their last three partners). The fact that some respondents use condoms *every time* with some or all of their partners implies that they may have a higher propensity to use condoms consistently with all partners, and this will have implications for programming.

Independent variables

The main independent variable assesses marital status and number of sexual partners in our sample of men that have any non-marital and non-cohabiting partners. It is coded as: married or cohabiting with any non-marital/non-cohabiting (i.e., casual) partners in the last 12 months before the survey; unmarried/non-cohabiting with only one casual partner in the last 12 months; or unmarried/non-cohabiting with two or more casual partners in the last 12 months.

Notably, the married/cohabiting men with any non-marital/non-cohabiting partners have two or more partners, because one of their partners is a marital/cohabiting partner and the other

is a non-marital/non-cohabiting partner. We also include variables for age, education, religion (except for Tanzania), place of residence, wealth quintiles, number of children born, ever taken an HIV test and gotten test results, had any STI or STI symptoms in the last 12 months, sex with a commercial sex worker or paid for sex in the last 12 months, total number of lifetime partners, knowledge that condoms prevent HIV, and belief that a wife is justified in asking her husband to use a condom if she believes he has a STI. The categorizations and distributions of these variables are presented in Table 1 by country.

Analyses

Analyses included calculating frequencies and percentages of all variables; calculating unadjusted odds ratios of the relationship between sexual partnerships and condom use; and conducting multivariate logistic regression analyses. All analyses were stratified by country and included only men who had sex in the last 12 months and reported having any non-marital sexual partners. Our analyses were conducted in STATA version 10.1 (College Station, TX) using the *svy* command for complex survey data. We present our findings with weighted percentages and weighted sample sizes.

Results

Among men with any casual sexual partners in the 12 months preceding the survey, the majority were non-married/non-cohabiting with only one sexual partner (Table 1). This ranged from 51% of respondents in Tanzania to 70% in Namibia. Conversely, Tanzania had the highest proportion of married/cohabiting respondents with any non-marital sexual partner (34%) than the other countries, and Zambia the lowest (9%). The proportion of non-married/non-cohabiting men with two or more casual sexual partners ranged from 15% in Tanzania and Zambia to 24% in Swaziland.

Across countries, the mean age of men with any casual sexual partner in the previous 12 months was between 26 and 27 years old (Table 1). The majority of men across all countries had never had children (from 54% in Tanzania and Swaziland to 60% in Namibia). The majority of men in Swaziland, Namibia, and Zambia had secondary levels of education, while the majority of men in Tanzania only had primary levels of education. There was no religion question in the Tanzania AIS, while in Namibia and Zambia the majority of men were Protestant. In Swaziland, the largest religious group was Zionist (36%). Men in the sample were most likely to live in the rural countryside in Tanzania and Swaziland, while in Namibia and Zambia men were equally likely to reside in rural and urban areas. About one half of the men were in the richer or richest wealth quintile (ranging from 44% in Tanzania to 55% in Zambia).

Among the knowledge, attitudes, and behavioral factors that are associated with condom use, the large majority of men with casual sexual partners reported that they know that condoms prevent HIV (from 78% in Zambia to 91% in Swaziland) (Table 1). In terms of attitudes, the overwhelming majority reported that a wife is justified to ask her husband to use condoms if she suspects that he has an STI (from 87% in Tanzania to 96% in Swaziland). Notably, less than one-third of men across the countries had ever taken an HIV test and received the results (22% in Zambia to 32% in Namibia). Men's reports of having an STI, abnormal discharge, and/or sore or ulcer in the last 12 months ranged from 4% in Namibia to 17% in Swaziland. Just under three-quarters of men had three or more lifetime sexual partners, this was consistent across countries. The proportion of men who had paid for sex or had sex with a sex worker in the last 12 months ranged widely, from 0.2% in Swaziland to 27% in Tanzania. The relatively low proportion in Swaziland is likely due to the way the question was asked. The Swaziland DHS did not ask any questions about paying

for sex; the only information was about whether men had sex with a sex worker in the last 12 months.

Association between relationship type and condom use

Of men with any casual sexual partner in the previous 12 months, between 41% in Zambia and 70% in Namibia used a condom every time with at least one of their sexual partners (Table 2). There was a trend for lowest use of condoms every time with any partner among non-married/non-cohabiting men with one sexual partner. In Swaziland in adjusted analyses and in Zambia in unadjusted and adjusted analyses, non-married/non-cohabiting men with one sexual partner had significantly lower odds of using condoms every time with any partner compared with married/cohabiting men with any non-marital/non-cohabiting partners (OR = 0.56 adjusted, $p=0.01$ in Swaziland and OR=0.62 unadjusted, $p<0.001$ and OR = 0.14 adjusted, $p<0.001$ in Zambia) (Tables 2 and 3).

Across countries, use of condoms every time with at least one partner was most common among non-married/non-cohabiting men with two or more partners in the last year. This was only statistically significant in Namibia; non-married/non-cohabiting men with two or more partners in the last year in Namibia had significantly higher odds than married/cohabiting men with at least one non-marital partner of using condoms every time with at least one of their partners (OR = 3.14 unadjusted, $p<0.001$; OR = 2.80 adjusted, $p<0.01$) (Tables 2 and 3).

Factors other than type of relationship were found to be significantly associated with condom use every time with any partner in multivariate analyses (see Table 3). In terms of socioeconomic factors, having secondary education or higher (exception Swaziland), Catholic or Protestant religion in Namibia, more wealth in Tanzania and Namibia, and having no children (exception Tanzania) were significantly associated with using a condom every time with any partner. For the more proximal determinants of condom use, getting tested for HIV and receiving the results (exception Zambia), having an STI in Swaziland and Namibia, having one lifetime partner in Namibia, knowing that condoms prevent HIV (exception Zambia), and believing that a wife is justified to ask her husband to use a condom in Tanzania and Zambia were significantly associated with consistent condom use.

Discussion

The results underscore the need to continue to focus on increasing condom use among people engaging in more risky sexual relationships, specifically men with casual or multiple partnerships in generalized epidemic contexts. Consistent condom use remains an elusive goal since only 41% to 70% of men with casual sexual relationships in the last year reported using a condom every time with any partner, despite the high HIV prevalence contexts in which they live. Consistent condom use, particularly with non-marital partners, is crucial if condoms are going to have a population-level influence on preventing HIV (Bracher, Santow, & Watkins, 2004).

Results suggest strategies to target condom use messages to men in casual relationships will vary by context. In Tanzania there is a need to increase condom use among men with casual relationships in general. Condom use every time with any partner was only 50% and there were no differences in condom use by marital status or number of partners. In Swaziland and Zambia, there is a need to increase condom use among unmarried/non-cohabiting men with one partner in the last year. In these relatively high HIV prevalence contexts, any unprotected sex with casual partners carries risk. In Namibia, messages are needed to increase condom use among married/non-cohabiting men with casual partners. Men in Namibia had the highest overall levels of condom use (70% used a condom every time with

any partner), but there was a critical gap in use among married/non-cohabiting men with casual partners (59% used a condom every time with any partner) especially when compared with the non-married/non-cohabiting men with two or more casual partners (82% used a condom every time with any partner).

Across countries, consistent condom use was relatively low among unmarried/non-cohabiting men with only one partner in the last year. Even though these men reported only one partner, in high HIV prevalence contexts, these relationships carry risks. In order to target messages to this group, more information is needed about their relationships. In certain contexts, their relationships may be perceived as more long-term or committed relationships, such as between a boyfriend and girlfriend. On the other hand, these could be youth who often have only had one partner (usually considered a girlfriend), have sex infrequently, and report not having a condom available as a reason for non-use (Biddlecom et al., 2007). Because of the potential variation in the characteristics of unmarried/non-cohabiting men with only one partner in the last year, it makes it difficult to make conclusions about this group as a whole.

Levels of consistent condom use were highest among non-married/non-cohabiting men with two or more casual partners and highest in Namibia, reaching 82% with any partner. This is consistent with other studies that find higher levels of condom use among men with multiple casual relationships compared with other men (Westercamp et al., 2010; Ahmed et al., 2001). Both groups of men, married/cohabiting and non-married/non-cohabiting men with casual partners, will benefit from targeted messages about using condoms consistently with casual partners combined with messages about reducing concurrent and multiple partnerships (Potts et al., 2008).

Although the governments' responses intensified in the years preceding the surveys (AVERT, n.d.-b; AVERT, n.d.-c; Government of the Kingdom of Swaziland, National Emergency Response Council on HIV and AIDS Monitoring and Evaluation Office, & Joint United Nations Programme on HIV/AIDS, 2008), cultural and structural change to positively facilitate condom use may be lagging. For example, in Tanzania and Swaziland, there was still some notable confusion and conflicting messages about the effectiveness of condoms from national leaders, particularly religious or traditional leaders (Van Rossem & Meekers, 2007; Tanzania Commission for AIDS, 2007; AVERT, n.d.-a). Tanzanian women are particularly vulnerable to HIV due to early marriage, age differences with their partners, gender imbalances, and the practice of "sugar daddies" (Luke & Kurz, 2002). HIV-related stigma and fear of stigma is still a major problem (AVERT, n.d.-b). In Namibia, consistent condom use is challenged by misperceptions of the efficacy of condoms, pervasive alcohol abuse, high levels of intergenerational sex, and low levels of HIV risk-perception (Ministry of Health and Social Services & Macro International Inc., 2008; De la Torre, Khan, Eckert, Luna, & Kopenhagen, 2009).

All reports of condom use are subject to biases based on social desirability and recall. Since condom use is based on self-reports, respondents may over or under report condom use based on how stigmatizing or expected the behavior is (Curtis & Sutherland, 2004). Recalling condom use for long periods of time, like the one year time frame used in the DHS, may reduce the accuracy of reports (Noar, Cole, & Carlyle, 2006). The measure of consistent condom use included in this study, condom used 'always' with at least one of the last (up to) three partners in the last year, does not take in to account the type of partner with whom the condom use occurred. Also, no information is available on the number or proportion of sex acts where condoms are used. So 'consistent condom use' may have different meanings for someone who has sex 50 times with a partner and uses a condom

every time compared with the person who has sex twice with a partner. Future studies could include these details to extend the analyses presented here.

HIV prevention programs need to refine, target, and test their messages to reach married/cohabiting and unmarried/non-cohabiting men with casual and multiple relationships. These messages will be more effective if combined with other prevention messages such as decreasing multiple and concurrent relationships (Hearst & Chen, 2004), and those that are accompanied by clear, consistent messages from national leaders. Structural and cultural barriers to condom use will also have to be addressed. It is these types of multi-faceted and targeted interventions that should lead to increases in consistent condom use and reduced risk of HIV spread to all women and men in these high risk contexts.

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Table 1

Percentage of men ages 15-49* with any non-marital sexual partner in the last year according to their social and demographic characteristics and other factors associated with condom use, by country.

Variable	Tanzania AIS 2007-08 (N=2045)	Swaziland DHS 2006-07 (N=1440)	Namibia DHS 2006-07 (N=1633)	Zambia DHS 2007 (N=1688)
<i>Marital Status % (n)</i>				
Married/ cohabiting with any non-marital/non-cohabiting partners	34.1 (697)	14.6 (210)	8.7 (142)	28.2 (476)
Non-married/non-cohabiting with 1 non-marital/non-cohabiting partner	51.0 (1043)	61.3 (882)	70.5 (1151)	56.6 (956)
Non-married/non-cohabiting with 2+ non-marital/non-cohabiting partner	14.9 (305)	24.2 (348)	20.8 (340)	15.2 (256)
<i>Mean age (standard error)</i>	26.9 (0.26)	26.8 (0.23)	26.3 (0.26)	26.1 (0.22)
<i>Number of children ever born</i>				
0	53.5 (1094)	53.5 (770)	60.0 (980)	58.3 (983)
1-2	22.5 (460)	27.4 (395)	25.7 (420)	18.9 (319)
3+	24.0 (491)	19.1 (275)	14.3 (233)	22.9 (386)
<i>Education % (n)</i>				
No education	12.1 (248)	6.5 (93)	7.0 (115)	3.7 (62)
Primary	74.8 (1529)	30.8 (443)	24.9 (407)	42.4 (716)
Secondary +	13.1 (268)	62.8 (904)	68.1 (1111)	53.9 (910)
<i>Religion % (n) (Namibia and Zambia)</i>				
Catholic			26.9 (439)	24.3 (409)
Protestant	NA		69.9 (1141)	72.3 (1220)
<i>Religion % (n) (Swaziland)</i>				
Zionist		36.3 (523)		
No religion		23.2 (334)		
<i>Place of residence % (n)</i>				
Capital, city or town	25.3 (516)	32.2 (463)	50.6 (826)	47.7 (806)
Countryside/rural	74.8 (1528)	67.8 (977)	49.4 (806)	52.3 (881)
<i>Wealth index % (n)</i>				
Poorest	16.6 (338)	12.7 (183)	12.0 (196)	16.1 (272)
Poorer	20.2 (413)	14.1 (203)	15.6 (255)	11.6 (196)
Middle	19.4 (397)	21.3 (307)	23.1 (377)	17.7 (298)
Richer + richest	43.7 (894)	51.9 (748)	49.2 (804)	54.6 (922)
<i>Knows condoms prevent HIV % (n)</i>	85.4 (1746)	90.6 (1304)	89.3 (1458)	78.2 (1320)
<i>Wife justified to ask for condom use if suspects husband has STI % (n)</i>	86.9 (1777)	96.4 (1388)	93.9 (1533)	89.4 (1508)
<i>Ever taken HIV test and gotten results % (n)</i>	28.8 (588)	19.1 (275)	32.3 (527)	21.6 (364)
<i>Had any STI, abnormal discharge and/or sore ulcer in the last 12 months % (n)</i>	9.7 (198)	16.6 (239)	4.2 (69)	10.1 (171)
<i>Total number of lifetime sexual partners % (n)</i>				
1	10.5 (214)	10.0 (145)	12.2 (199)	10.8 (183)
2	14.0 (287)	11.6 (166)	11.5 (188)	12.0 (203)

Variable	Tanzania AIS 2007-08 (N=2045)	Swaziland DHS 2006-07 (N=1440)	Namibia DHS 2006-07 (N=1633)	Zambia DHS 2007 (N=1688)
3+	73.5 (1503)	72.4 (1043)	72.0 (1176)	74.8 (1263)
Don't Know	2.0 (40)	5.7 (82.35)	4.1 (68)	2.3 (39)
<i>Had sex with sex worker /paid for sex last 12 months[†] %(n)</i>	26.5 (541)	0.2 (4)	2.8 (46)	15.9 (268)

* Notes: In Zambia, men ages 15-59 were eligible.

[†]In Tanzania, Zambia and Namibia, this variable includes information about whether men paid anyone for sex in the last 12 months and whether they had sex with a commercial sex worker in the last 12 months. In Swaziland, there is only information about whether the type of partner in the last 12 months was a sex worker.

NA = not available.

Table 2

Percent and unadjusted odds ratios (and 95% confidence interval) of the relationship between sexual partnerships and condom use every time with any partner, by country.

Country	Measure	Condom use every time with any partner % (n)	Unadjusted odds ratio (95% confidence interval)
Tanzania	All	49.5 (988)	--
	Married/ cohabiting with any non-marital/non-cohabiting partners	50.1 (339)	REF
	Non-married/non-cohabiting with 1 non-marital/non-cohabiting partner	46.1 (479)	.85 (.67, 1.09)
	Non-married/non-cohabiting with 2+ non-marital/non-cohabiting partner	57.9 (170)	1.36 (.93, 1.98)
Swaziland	All	54.9(787)	--
	Married/ cohabiting with any non-marital/non-cohabiting partners	56.3 (117)	REF
	Non-married/non-cohabiting with 1 non-marital/non-cohabiting partner	51.4(450)	.82 (.57,1.17)
	Non-married/non-cohabiting with 2+ non-marital/non-cohabiting partner	63.1 (219)	1.33 (.91, 1.93)
Namibia	All	69.9 (1125)	--
	Married/ cohabiting with any non-marital/non-cohabiting partners	59.3(78)	REF
	Non-married/non-cohabiting with 1 non-marital/non-cohabiting partner	67.6 (772)	1.43 (.92, 2.24)
	Non-married/non-cohabiting with 2+ non-marital/non-cohabiting partner	82.0 (275)	3.14 (1.73, 5.69)***
Zambia	All	40.5(674)	--
	Married/ cohabiting with any non-marital/non-cohabiting partners	46.9 (215)	REF
	Non-married/non-cohabiting with 1 non-marital/non-cohabiting partne		.62 (.49, .78)***
	Non-married/non-cohabiting with 2+ non-marital/non-cohabiting partner	48.7 (124)	1.08 (.76, 1.53)

p<.001

Table 3

Multivariate analysis with dependent variable condom use every time with any partner in the last 12 months.

	Tanzania (N=1998)		Swaziland (N=1432)		Namibia (N=1608)		Zambia (N=1664)	
	Odds ratio	P> t	Odds Ratio	P> t	Odds Ratio	P> t	Odds Ratio	P> t
Age	1.02	0.14	0.98	0.04	1.00	0.73	1.00	0.44
Education (REF: No education)								
Primary	1.10	0.59	0.66	0.08	1.21	0.40	1.02	0.96
Secondary or higher	2.18	0.00	1.15	0.57	1.71	0.02	1.79	0.06
Religion (REF: Other, Swaziland; None/Other, Namibia and Zambia)								
Zionist	--	--	0.82	0.19	--	--	--	--
No religion	--	--	0.78	0.17	--	--	--	--
Catholic	--	--	--	--	3.03	0.00	1.58	0.12
Protestant	--	--	--	--	3.53	0.00	1.25	0.44
Residence (REF:Capital, city or town)								
Rural	0.76	0.09	1.01	0.95	1.42	0.06	1.23	0.27
Wealth index (REF: Poorest)								
Poorer	1.56	0.03	0.80	0.34	2.15	0.00	0.91	0.65
Middle	1.86	0.01	0.86	0.48	2.94	0.00	0.90	0.58
Rich	2.57	0.00	1.36	0.18	3.68	0.00	1.76	0.01
# children ever born (REF: 0)								
1-2	0.97	0.88	0.73	0.05	0.56	0.00	0.72	0.09
3 or more	0.69	0.16	0.72	0.16	0.68	0.17	0.55	0.02
Tested and got HIV result (REF: No)	1.37	0.02	1.37	0.05	1.54	0.02	1.21	0.15
Had any STI(REF: No)	1.09	0.68	0.53	0.00	0.55	0.07	0.87	0.52
Paid for sex (REF: No)	1.28	0.08	1.63	0.58	1.11	0.79	1.31	0.12
Number of lifetime partners (REF: 1)								
2	1.16	0.53	0.66	0.09	0.56	0.03	1.31	0.33
3 or more	1.01	0.95	0.83	0.37	0.62	0.03	1.16	0.50
Don't know	1.16	0.74	0.74	0.32	1.72	0.23	1.28	0.57
Knows condoms prevent HIV (REF: No)	2.78	0.00	2.01	0.00	1.48	0.09	1.10	0.47
Wife justified to ask for condom use (REF: No)	1.37	0.08	0.91	0.75	1.39	0.24	1.42	0.08
Marital status (REF: Married/cohabiting with any non-marital/non-cohabiting partners)								
Non-married/non-cohabiting with 1 non-marital/non-cohabiting partner	0.80	0.27	0.56	0.01	1.14	0.66	0.41	0.00
Non-married/non-cohabiting with 2+ non-marital/non-cohabiting partner	1.34	0.24	0.91	0.71	2.80	0.00	0.74	0.20