
USING IMPROVED PREDICTORS OF CONDOM USE TO BETTER TARGET SWAZI YOUTH WITH REGULAR PARTNERS

INTRODUCTION

In sub-Saharan Africa youth are the most vulnerable group for HIV infection. Throughout the continent, HIV infections increase rapidly with age, making young, sexually active youth a key target group for HIV prevention. With an estimated prevalence rate of 33.4 percent, Swaziland has the highest HIV prevalence rate in the world ("The UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance" 2006). HIV prevalence rates among Swazi women attending antenatal clinics (ANC) increased rapidly over the past decade, from 3.9 percent in 1992 to 31.6 percent in 1998, to 38.6 percent in 2002 (Government of Swaziland and Ministry of Health and Social Welfare 2002).

Among women attending ANC, the highest rates of HIV infection are among women aged 20 to 29 (Government of Swaziland and Ministry of Health and Social Welfare 2002).

Among women aged 20 to 29, approximately 46 percent of women attending ANC were HIV positive. HIV prevalence among women aged 15 to 19 attending ANC is remarkably high—at 32.5 percent—highlighting the importance of targeting youth with AIDS prevention messages. The government of Swaziland's HIV/AIDS/STIs policy focuses on Prevention, care and support, and impact mitigation { Government of Swaziland & Ministry of Health and Social Welfare 2002 # 33352} . As consistent condom use has the potential to significantly decrease the spread of HIV in a population (Ahmed et al. 2001), increasing condom use remains crucial to a comprehensive AIDS prevention campaign.

BACKGROUND

The HIV prevalence rate for youth differs greatly between young men and women. Consistent with the spread of the epidemic in the region, young women in Swaziland have substantially higher HIV prevalence rates than their male agemates. The estimated prevalence rate for men aged 15 to 24 is 7.7 percent while the estimated rates for women is

22.7 percent ("The UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance" 2006).

Patterns of Condom use in region

Since 1993 condom use among single young women in Africa has increased at a rate of approximately 1.4 percent per year (Cleland and Ali 2006). Condom use during last sexual intercourse remains insufficient, with approximately 28 percent of single young women reporting use (Cleland and Ali 2006). The role of condoms in preventing pregnancy appears to be an important factor among condom users (Cleland and Ali 2006). However, little is known about the specific determinants of condom use among youth in Swaziland. However, research throughout the regions suggests a few patterns in youth's use of condoms.

Condom use among youth is often patterned along educational and economic lines. Students and those with higher levels of education often differ from non-students in terms of reproductive health behavior. Students in Uganda have been found to have fewer sexual partners, have had a later age at first sex, and be more likely to use modern contraception than youth who are not in school (Ndyanabangi, Kipp, and Diesfeld 2004). Similarly, in Angola, consistent condom use is associated with being in school and higher levels of education (Prata, Vahidnia, and Fraser 2005).

Condom use is often higher among individuals who report multiple partnerships. Among Angolan males, those who have multiple partners were more likely to use condoms consistently than other males (Prata et al. 2005). In Tanzania, men and women who reported more than one partner in the past four weeks were more than three times as likely to report having used condoms (Kapiga 1996).

Although there is little known about the role of religion in AIDS prevention behaviors, research from Zambia suggests that young women who are affiliated with strongly conservative religious groups are more likely to delay sex, yet less likely to use condoms (Agha, Hutchinson, and Kusanthan 2006).

Condom use is often higher in urban areas than in rural areas. In Angola, youth living in urban areas reported higher levels of condom use than those in rural areas (Prata et al. 2005).

Similarly, women in urban Tanzania are twice as likely as women in rural areas to report having used a condom in the past four weeks (Kapiga 1996).

Additionally, many studies have found that past sexual experiences are important predictors of condom use among youth. For example, those who report an early age at first sex often experience a variety of negative reproductive health outcomes. Early first sex is associated with more lifetime partners, higher risk of HIV (Hallett, Lewis, Lopman, and et al. 2007; Mpofu, Flisher, Bility, Onya, and Lombard 2006; Harrison, Cleland, Gouws, and Frohlich 2005; Pettifor, Dunbar, Shiboski, and Padian 2004; 2000). The research is divided as to whether those who have an earlier first sex are more or less likely to report condom use. Although in rural Zimbabwe, women who reported an early first sex reported more lifetime condom use (Hallett et al. 2007) studies in rural South Africa and among male students in South Africa find that an early first sex is associated with less condom use (Harrison et al. 2005; Peltzer 2001).

Opportunity, Ability and Motivation

Recently, AIDS prevention programs have begun to focus on the psychosocial predictors of condom use. Among male youth in Ghana, condom use was greater among those with higher risk perception, lower barriers to condom use, and greater perceived social support (Adih and Alexander 1999). Research conducted among youth in urban Cameroon suggests that social support fosters an enabling environment for adopting protective behavior (Meekers and Klein 2002). In South Africa, the psychosocial predictors of intentions to use condoms differ by sex of the respondent. Among males, positive attitudes towards condoms and subjective norms are associated with greater intentions to use condoms, whereas among females attitudes and self-efficacy were associated with intentions to use condoms (Boer and Mashamba 2007). Among Angolan youth, consistent condom use is associated with positive attitudes towards condoms (Prata et al. 2005).

Youth often report that they do not use condoms if they trust their partner, are too shy to purchase condoms, have low condom use self-efficacy, have little knowledge of condoms, perceive weak social support for use, or feel unable to negotiate condom use with their partner (see for example: (Bracher, Santow, and Watkins 2004; Abdool Karim, Abdool

Karim, Preston-Whyte, and Sankar 1992; Adih and Alexander 1999; Klein and Coombes 2005; Longfield, Glick, Waithaka, and Berman 2004; Meekers and Klein 2002; Luke 2003; MacPhail and Campbell 2001; Bond and Dover 1997; Plummer et al. 2006; Ao, Sam, Manongi, Seage, and Kapiga 2003; Meekers, Silva, and Klein 2005; Sunmola 2005)

Often there are gender differences in the factors associated with condom use. For example, among young males in Tanzania, condom use is associated with perceived self-efficacy, while among female youth, discussing condom use and perceived ability to refuse sex without a condom were the predictors associated with condom use (Babalola 2006).

Swaziland

Research conducted among students in four coeducational secondary schools in Swaziland showed that over half of the students (54%) reported being sexually experienced and nearly a fifth (18.1%) of male students reported that they had their first sex before they were 13 years old (Buseh 2004). Coupled with a relatively early age at first sex, a substantial fraction of youth reported that they had four or more partners over the course of their lives: 24.8 percent of males and 6.6 percent of females (Buseh 2004). Condom use is relatively high among sexually experienced students, with about half (51.6%) reporting that they used a condom in their last sex (Buseh 2004). Younger students reported higher levels of condom use than those aged 18 or older.

Despite this relatively high level of condom use, 14.8 percent of all students and over a fifth of those aged 18 or older reported that they had either been pregnant or had caused a pregnancy (Buseh 2004).

Whereas in most countries the HIV epidemic tends to be concentrated more in urban areas than in rural areas, in Swaziland the epidemic is relatively evenly spread throughout the country (Whiteside, Hickey, Ngcobo, and Tomlinson 2003) with the lowest HIV prevalence rates at ANC being 36.6 percent in the region of Hhohho and the highest being 41.2 percent in the region of Manzini.

DATA AND METHODS

The data presented in this paper stem from the 2005-06 TRaC Baseline survey conducted by Population Services International (PSI)/Swaziland from December 2005-January 2006. The 2005-06 Swaziland TRaC survey is part of PSI's Project TRaC, a four-year project to develop and implement tracking surveys for social marketing (Chapman and Coombes 2003). These tracking surveys measure levels and trends of preventive behavior, exposure to behavior change interventions, and respondents' opportunity, ability and motivation to change behavior. Consecutive tracking surveys are used by PSI to guide the social marketing program decisions in order to optimize behavior change impact, cost-effectiveness, equity, and efficiency.

A total of 1,254 youth were interviewed in the 2005-06 Swaziland TRaC Survey. The sampling procedure used a three-staged sampling design. In the first stage, 19 Tinkhundla were randomly. Within each Tinkhundla, enumeration areas were selected using PPS. Finally, households were randomly selected. Within each household, eligible respondents were identified and interviewed. This analysis is restricted to the 594 respondents who reported that they have had sex with a regular partner and responded to the two questions related to condom use with a regular partner.

Methods

The behavior of interest is condom use with a regular partner. In the 2005-06 Swaziland TRaC Survey, respondents who reported having a regular partner—defined as someone they did not live with but had a steady relationship with and expected to have sex with again—were asked if they used a condom in their last sex with their regular partner and how often they use a condom with their regular partner. Respondents who reported that they “always” use condoms with their regular partners were then coded as “consistent” condom users.

Our analysis captures three types of influences on protective behavior: social and demographic characteristics; experiences; and opportunity, ability, and motivation. This analysis allows us to explore the value in adding indicators of opportunity, ability, and motivation to a model of condom use with a regular partner. After describing the data, we conduct a series of multivariate logistic regressions to explore condom use in last sex and consistent use. For each measure of condom use, our first model contains only the social

and demographic variables. Our second model builds upon the first and tests if adding measures of an individual's opportunity, ability, and motivation improve the fit of each model of condom use. Results are presented in odds ratios (OR) with the corresponding p-values and 95 percent confidence intervals (C.I.).

Measures

Social and demographic characteristics

A series of dichotomous variables capture the respondent's age in two-year age groups, with the youngest group—those aged 15 to 16—as the reference category. Level of education was categorized as none/primary, secondary, or higher. Youth's employment status was categorized as in school, unemployed, working full-time, or other, with other as the reference category. Religion was coded as Catholic, other Christian, or other. Other religion was the reference category. Household income was coded as a series of dichotomous variables capturing three gross monthly income levels: those less than E malangeni (E) 1, those E1 – E 1000, and those E 1001 or higher. The reference category is respondents with a household income of between E1 and E 1000.

Experiences

An individual's past experiences often shape their current behavior. Therefore, we included a series of variables that measure respondents' sexual experiences. Qualitative evidence suggests that while condom use within marriage is rare, married individuals tend to use condoms with outside partners in order to avoid bringing HIV into their marriage (**NEED citation**). As such, we expect that married respondents will be more likely than unmarried respondents to report condom use with a non-marital partner. Similarly, we expect youth who have multiple partners to perceive themselves to be at higher risk and therefore to be more likely to use condoms.

Youth who report that they had an early first sexual intercourse have been found to have a variety of subsequent risky behaviors, including elevated number of lifetime partners, and higher rates of HIV (Hallett et al. 2007; Auvert, Carel, Males, and Ferry). We expect that

youth who have had an early first sex are less likely to use condoms than those who did not have an early first sex.

Youth who have had a negative reproductive health outcome in the past may either adopt measures to prevent future occurrences or may be further disempowered by their experiences. We expect that youth who have had mistimed pregnancies or who report an STI in the past year will also be less likely to report condom use.

Youth who have gone for HIV testing are likely to have had individual counseling on HIV prevention and are likely to have higher levels of condom use than youth who have never gone for HIV testing.

Determinants of Behavior: Opportunity, Availability, and Motivation

After generating a model of condom use that included socio-demographic variables and indicators of the respondent's previous sexual history, we tested whether the addition of variables from PSI's behavior change framework improved our ability to describe the patterns of condom use among youth in Swaziland. PSI's behavior change framework includes elements from several behavior change models, such as the Health Belief Model, Theory of Planned Behavior, and Social Cognitive Theory (Bandura 1997; Fishbein et al. 1991; Fishbein 1997). PSI breaks these elements into three categories of general factors that enable behavior change: opportunity, availability, and motivation (Chapman and Astatke 2003). Items used to measure various elements in the PSI behavior change framework were included in the Swaziland 2005 Baseline Survey. Based on the standard PSI HIV questionnaire, PSI/Swaziland adapted the questionnaire to the local context. Factor analysis was conducted to explore the dimensionality and reliability of the scales. Items in a scale with weak factor loadings ($<.3$) were excluded from the scales and only the scales from the behavior change framework that had an alpha of 0.70 were included in the analysis. Missing values on the scales were imputed to the mean of the item.

Opportunity

Condom availability is an individual's perception about the frequency and accessibility of condoms (Patel and Chapman 2005; Rosero-Bixby in press). Condom availability was

measured using two items: "I know a place where I can get condoms" and "I have easy access to condoms." It is expected that greater condom availability will be associated with higher levels of condom use among youth.

Ability

Condom use self-efficacy is an individual's belief about their ability to use a condom effectively (Patel and Chapman 2005). It is measured by a series of agree-disagree statements on a 5-point Likert scale, such as "I can put a condom correctly in the dark" and "I can ask for a condom from a friend without fear of embarrassment." We expect that youth who have higher levels of condom use self-efficacy will report higher levels of condom use.

Social support for condom use is the respondent's perception of the quality or quantity of help received related to condom use (Patel and Chapman 2005). Condom use social support was measured through items such as "I get condoms from friends" and "I discuss condoms with health workers." Youth who perceive greater social support for condom use are more likely to report condom use.

Motivation

Condom attitude is measured to assess the respondent's evaluation of condoms (Eagly & Chaiken, 1993; Patel and Chapman 2005). We expect that youth who have a more positive evaluation of condoms are more likely to use condoms than those who have a more negative evaluation of condoms. Condom attitude was measured by items such as "using a condom is good" and "using a condom is healthy."

Condom beliefs refer to the respondent's perception of condoms, whether the beliefs are or are not true (Patel and Chapman 2005). Often condom beliefs gauge the extent to which the respondent believes in myths or misconceptions about condoms. Examples of items used to measure condom beliefs include, "sex is unexciting if you use a condom" (reverse coded) and "Condoms are not effective" (reverse coded). We expect that youth who have more negative beliefs about condoms will be less likely to report condom use.

Outcome expectations for condom use refer to the individual's belief that condoms are effective for the intended outcome (Patel and Chapman 2005; Bandura 1977). We expect

that respondents with more positive outcome expectations will be more likely to use condoms. Condom outcome expectation was measured by a series of items, including, "If I use condoms I am unlikely to get infected with HIV/AIDS" and "Condoms seem reliable"

Subjective norms refer to the pressure the respondent feels, based on their perceptions about the beliefs of others in their social group, to use or not use condoms (Patel and Chapman 2005)(Fishbein & Ajzen, 1975). We expect that youth who feel pressure to use condoms based on others' beliefs about condoms will be more likely to report condom use. Subjective norms were measured by a series of items, including, "I think my parents would want me to use condoms" and "My brothers and sisters approve of me using condoms."

RESULTS

Sample description

Our sample is restricted to the 594 respondents who reported having sex with a regular partner in the past year. The level of reported condom use with a regular partner is relatively high among the youth in our sample. The majority of respondents (70%) reported that they used a condom in their last sex with a regular partner and half (49%) reported that they consistently use condoms with their regular partner.

A third of the respondents in our sample had secondary education (32%), half the respondents (51%) had higher than secondary education, and one in six (17%) had either no education or only primary schooling. A quarter of the youth were still in school (28%). Many of the youth (40%) were unemployed and only 13 percent were working full-time. Most of the youth (60%) had a monthly household income between 1 and 1000 Emalangeni (1 and 140 USD). The sample is primarily rural (70%) and Christian (68%, 11% Catholic, 21% other religion). A large majority of the respondents were unmarried (91%), although some respondents who reported sex with a regular partner in the past 12 months (9%) reported that they were married.

(Table 1 about here)

The youth in our sample reported a variety of high-risk sexual behavior in their past. For example, a substantial proportion of youth reported that they had two or more partners in

the past year (47%). Further, nearly one in five (18%) reported that their first sex was before age 16. The rates of high risk sexual behavior coincided with a substantial proportion of youth reporting negative reproductive health outcomes: 24 percent reported a mistimed pregnancy and 14 percent reported an STI in the past 12 months. However, a quarter (24%) reported that they had ever been tested for HIV.

There were no differences between males and females in terms of condom use, rural/urban residence, marital status, or testing for HIV. While there were no sex differences in education or student status, full-time employment was twice as high for males as for females (17% compared with 10%, $p < 0.01$) and women were more likely to be unemployed (45% compared with 36%). Consistent with the employment differences by sex, a larger percent of males than females reported a high household income (29% compared with 16%, $p < .001$), although a larger percent of females than males reported a medium household income (66% compared with 54%).

Young men were significantly more likely to report having two or more partners in the past year than were young women (64% compared with 29%, $p < .01$). Nearly half of the young women in the sample reported that they had a mistimed pregnancy (48%), while only 1 percent of young men reported that they were responsible for a mistimed pregnancy ($p < 0.01$). Young men were more likely to report that they had an STI in the past 12 months than young women (18% compared with 11%, $p < .05$). Finally, young men reported significantly higher levels of condom use self-efficacy, condom use social support, negative condom beliefs, and positive condom attitudes than young women.

Condom use during last sex with a regular partner

Reported condom use during last sex with a regular partner increased with the respondent's level of education. For example, while only 43 percent of youth with no schooling or primary education reported use in their last sex, 82 percent of those with higher than secondary education reported use ($p < .01$). Use appears to have a u-shaped relationship with household income—with those from lower and higher income households reporting higher use than those from medium income households (84%, 75%, and 64%, respectively, $p < 0.01$).

Condom use during last with a regular partner was higher among Catholics and other Christians than it was among those reporting that they belonged to an other religion (76%, 74%, and 55% respectively, $p < 0.01$). Use during last with a regular partner was higher among unmarried respondents than married respondents (74% compared with 32%, $p < 0.01$).

Youth who had two or more partners in the past year reported lower levels of condom use during last with a regular partner than did those who did not have multiple partners in the past year (62% compared with 77%, $p < 0.01$).

Youth who had negative reproductive health outcomes in the past reported lower levels of condom use during last with a regular partner. Youth who reported that they had experienced a mistimed pregnancy reported lower levels of condom use than those who did not report a mistimed pregnancy (54% compared with 75%, $p < 0.01$). Use was also lower among youth who reported that they had an STI in the past 12 months than among other youth (45% compared with 74%, $p < 0.01$). Alternatively, youth who had ever been tested for HIV reported higher levels of condom use in their last sex with a regular partner than did youth who have never been tested (82% compared with 66%, $p < 0.01$).

Condom use during last with a regular partner did not differ by age, employment status, rural/urban residence, or age at first sex.

Consistent condom use with a regular partner

Consistent condom use with a regular partner decreased with age, from 62 percent among those 15 to 16 years old, to 43 percent among those 23 to 24 years old ($p < .05$). Consistent condom use increased with the respondent's level of education: from 30 percent among those with no school or primary schooling, to 39 percent among those with a secondary education, to 62 percent among those with higher than secondary education. Similarly, students reported higher levels of consistent condom use (61%) than non-students.

As with condom use during last sex with a regular partner, consistent condom use also appears to have a u-shaped relationship with household income—73 percent of those from lower, 54 percent of those from higher income households, and 41 percent of those from

medium income households reported use ($p < 0.01$). Consistent condom use was higher among youth residing in urban areas (56%) than youth residing in rural areas (46%, $p < .05$).

Again, Catholics (60%) and other Christians (51%) reported higher levels of condom use than those who reported that they belonged to an other religion (36%, $p < .01$).

Unmarried youth were twice as likely to report consistently using condoms with their nonmarital regular partner than were married youth (52% compared with 25%, $p < .01$). Consistent condom use was lower for youth who reported that they had multiple partners in the past year (39%) than among other youth (59%, $p < .01$).

Youth who experienced past negative reproductive health outcomes were also less likely to report consistent condom use with their regular partner. For example, those who had a first sex prior to age 16 were less likely to report consistent condom use than those who had a later age at first sex (40% compared with 51%, $p < .05$). In addition, use was lower among youth who reported a mistimed pregnancy (31%) than other youth (55%, $p < .01$). Youth who reported that they had an STI in the past 12 months were less likely to report consistent condom use with their regular partner than other youth (20% compared with 54%, $p < .01$). Finally, youth who reported that they had ever been tested for HIV reported higher levels of consistent condom use than those who had never been tested (66% compared with 44%, $p < .01$).

Multivariate logistic regressions

Tables 3 and 4 present the results of multivariate logistic regressions to explore condom use in last sex and consistent use, respectively. For each measure of condom use, our first model contains only the social and demographic variables. Our second model builds upon the first and tests if adding measures of an individual's opportunity, ability, and motivation improve the fit of each model of condom use. Model building allows us to explore whether adding indicators of opportunity, ability, and motivation to a model of condom use with a regular partner improves our ability to explain behavior.

Consistent with the bivariate results, condom use during last sex decreases with age. Compared to youth 15 to 16 years old, 17 to 18 year olds are nearly half as likely to report

use and older youth are a third as likely to report use. Youth who have no education or primary education are half as likely to report condom use in their last sex as those who attained a secondary education. Youth who attained higher than secondary education were twice as likely to report use as those who attained secondary.

Married youth were 75 percent less likely to report condom use with their non-marital regular partners than unmarried youth. Youth who had a mistimed pregnancy were a third as likely to report use as other youth. As expected, youth who had ever been tested for HIV were substantially more likely to report condom use (OR=2.13) than those who have never been tested.

Condom use during last sex was not associated with sex, employment status, rural/urban residence, number of partners in the past year, age at first sex, or having had an STI in the past 12 months.

Model 2 adds measures of an individual's opportunity, ability, and motivation, specifically: condom use self-efficacy, condom availability, condom social support, condom beliefs, condom attitudes, condom outcome expectations, and condom subjective norms. The addition of these variables to the model improves the fit of the model and does not substantially change the magnitude or significance of the variables already in the model. Condom use self-efficacy (OR= 1.38, $p<.01$), condom beliefs (OR= 1.75, $p<.01$), condom attitudes (OR= 1.39, $p<.05$) each are associated with higher levels of condom use during a last sex with a regular partner.

Consistent with the bivariate results and condom use during last sex, consistent use decreases with age. Compared to youth 15 to 16 years old, 17 to 18 year olds are half as likely to report use and older youth are a fifth as likely to report use. Youth who attained higher than secondary education were two and a half times as likely to report use as those who attained secondary education. Youth from lower income households were 2.82 times as likely to consistently use condoms as those from middle income households. Those from higher income households were also more likely to report consistent use, although they were only 1.71 times as likely as those from middle income households.

Again, youths' sexual history is associated with consistent condom use. Youth who had multiple partners in the past year were nearly half as likely to report consistently using condoms as youth who did not have multiple partners. Youth who had their first sex before age 16 were half as likely to report use. Youth who had a mistimed pregnancy were a third as likely to report use as other youth. Youth who had an STI in the past 12 months were 60 percent less likely to report consistent condom use. Finally, as expected, youth who had ever been tested for HIV were substantially two and a half times more likely to report condom use than those who have never been tested.

Condom use during last sex was not associated with sex, rural/urban residence, religion, or marital status.

The addition of the indicators of an individual's opportunity, ability, and motivation in model 2 improves the fit of the model and does not substantially change the magnitude or significance of the variables already in the model. Condom use self-efficacy (OR= 1.31, $p < .01$), condom availability (OR= 1.36, $p < .01$), condom beliefs (OR= 1.85, $p < .05$) each are associated with higher levels of consistent condom use with a regular partner.

DISCUSSION AND PROGRAMMATIC RECOMENDATIONS

While some studies conducted elsewhere in the region have found that married respondents tend to be more likely to use condom when engaging in extramarital relations, this was not found in our data. Given that elsewhere in the region higher levels of condom use are found in extramarital relationships, programs should explore behavior change communications that encourage married couples to keep HIV out of their marriage.

Sexual history appears to be an important predictor of condom use. Taken together with results from previous research, our results suggest that a negative reproductive health outcome may set youth on a path of higher risk and lower rates of protective behavior. As such, HIV prevention programs should seek to target youth well in advance of their sexual debut in order to delay their first sex and ensure that once an individual has decided to engage in sex, that their first sex is protected.

We had expected that youth who have multiple partners to perceive themselves to be at higher risk and therefore to be more likely to use condoms. Recent research has shown that concurrency of partnerships has a strong bearing on the course of the spread of HIV. Given the role of concurrency and our finding that youth with multiple partners are less likely to use condoms, Swazi youth who have multiple partners appear to be an important target group for HIV prevention.

The OAM model improves the fit of the model for two different measures of condom use.

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Table 1: Sample characteristics

	Female	Male	Total	p-value
Condom use in last sex				
No	31.42	28.52	29.97	
Yes	68.58	71.48	70.03	
				0.441
consistent condom use				
No	49.66	51.68	50.67	
Yes	50.34	48.32	49.33	
				0.623
Age				
15-16	12.16	4.7	8.42	
17-18	17.23	12.08	14.65	
19-20	18.92	20.13	19.53	
21-22	26.69	20.81	23.74	
23-24	25	42.28	33.67	
Education				
None/Primary	16.55	17.11	16.84	
Secondary	36.15	28.19	32.15	
Higher	47.3	54.7	51.01	
				0.103
Employment Status				
Student	28.72	24.83	26.77	0.285
Working Full-time	9.8	17.45	13.64	0.007
Unemployed	45.27	35.91	40.57	0.020
Other				
Household income				
Low	18.24	16.78	17.51	
Medium	65.88	54.03	59.93	
High	15.88	29.19	22.56	
				0.000
Rural/ Urban Residence				
Rural	68.92	70.47	69.7	
Urban	31.08	29.53	30.3	
				0.681
Religion				
Catholic	11.49	11.41	11.45	0.976
Other Christian				
Other religion	10.81	30.87	20.88	0.000
Marital Status				
Unmarried	89.86	92.28	91.08	
Married	10.14	7.72	8.92	
				0.302
Sexual History				
2< Partners in past year				
No	70.61	36.24	53.37	
Yes	29.39	63.76	46.63	

					0.000
First sex<=15	No	82.09	81.88	81.99	
	Yes	17.91	18.12	18.01	
					0.946
Mistimed Pregnancy	No	52.36	99.33	75.93	
	Yes	47.64	0.67	24.07	
					0.000
Had STI in past 12 months	No	89.53	82.21	85.86	
	Yes	10.47	17.79	14.14	
					0.011
Ever tested for HIV	No	73.99	78.52	76.26	
	Yes	26.01	21.48	23.74	
					0.194
<hr/>					
Means					
Condom Use Self-Efficacy		3.12	4.14	3.63	0.000
Condom Availability		2.34	2.45	2.39	0.072
Condom Social Support		2.72	3.36	3.04	0.000
Condom Beliefs		4.24	4.10	4.17	0.023
Condom Attitudes		4.71	4.59	4.65	0.045
Condom Outcome Expectations		4.60	4.59	4.60	0.799
Condom Subjective Norms		3.81	3.71	3.76	0.245
total %		49.83	50.17		
Total N		296	298		

Table 2: Bivariate analysis: Condom Use in Last Sex and Consistent Condom Use by Background Characteristics

	Condom Use in Last Sex			Consistent Condom Use		
	No	Yes	p-value	No	Yes	p-value
Age						
15-16	24.00	76.00		38.00	62.00	
17-18	24.14	75.86		41.38	58.62	
19-20	30.17	69.83		49.14	50.86	
21-22	31.21	68.79		53.90	46.10	
23-24	33.00	67.00		56.50	43.50	
			0.519			0.047
Education						
None/Primary	57.00	43.00		70.00	30.00	
Secondary	35.08	64.92		60.73	39.27	
Higher	17.82	82.18		37.95	62.05	
			0.000			0.000
Employment Status						
Student	24.53	75.47	0.080	38.99	61.01	0.001
Working Full-time	32.10	67.90	0.652	56.79	43.21	0.236
Unemployed	30.29	69.71	0.887	51.87	48.13	0.631
Household income						
Low	16.35	83.65		26.92	73.08	
Medium	35.96	64.04		59.27	40.73	
High	24.63	75.37		46.27	53.73	
			0.000			0.000
Rural/ Urban Residence						
Rural	31.40	68.60		53.62	46.38	
Urban	26.67	73.33		43.89	56.11	
			0.247			0.029
Religion						
Catholic	23.53	76.47		39.71	60.29	
Other Christian	26.37	73.63		48.51	51.49	
Other religion	45.16	54.84		63.71	36.29	
			0.000			0.002
Marital Status						
Unmarried	26.25	73.75		48.24	51.76	
Married	67.92	32.08		75.47	24.53	
			0.000			0.000
2< Partners in past year						
No	22.71	77.29		41.32	58.68	
Yes	38.27	61.73		61.37	38.63	
			0.000			0.000
First sex<=15						
No	28.54	71.46		48.67	51.33	
Yes	36.45	63.55		59.81	40.19	
			0.106			0.037

Mistimed Pregnancy						
	No	24.83	75.17		45.01	54.99
	Yes	46.15	53.85		68.53	31.47
				0.000		0.000
Had STI in past 12 months						
	No	25.88	74.12		45.88	54.12
	Yes	54.76	45.24		79.76	20.24
				0.000		0.000
Ever tested for HIV						
	No	33.77	66.23		55.85	44.15
	Yes	17.73	82.27		34.04	65.96
				0.000		0.000

Table 3: Condom use during last sex with a regular partner

		Model 1					Model 2				
		Odds Ratio	p-value	[95% Conf. Interval]		Odds Ratio	p-value	[95% Conf. Interval]			
Sex of respondent											
	Female	1.00		-		1.00		-			
	Male	0.90	0.728	0.51	-	1.61	0.77	0.410	0.41	-	1.44
Age											
	15-16	1.00				1.00					
	17-18	0.56	0.235	0.21	-	1.46	0.60	0.323	0.22	-	1.65
	19-20	0.34	0.028	0.13	-	0.89	0.35	0.036	0.13	-	0.93
	21-22	0.30	0.017	0.11	-	0.81	0.29	0.019	0.10	-	0.82
	23-24	0.36	0.044	0.13	-	0.98	0.33	0.033	0.12	-	0.91
Education											
	None/Primary	0.52	0.026	0.29	-	0.92	0.57	0.071	0.31	-	1.05
	Secondary	1.00		-		1.00			-		
	Higher	2.08	0.003	1.28	-	3.38	1.83	0.024	1.08	-	3.08
Employment Status											
	Student	0.75	0.402	0.38	-	1.47	0.89	0.747	0.44	-	1.80
	Working Full-time	0.90	0.755	0.45	-	1.80	0.92	0.828	0.44	-	1.92
	Unemployed	1.28	0.412	0.71	-	2.31	1.55	0.172	0.83	-	2.89
	Other (self employed/part-time)	1.00		-		1.00			-		
Household income											
	Low	1.74	0.093	0.91	-	3.30	1.17	0.660	0.58	-	2.34
	Medium	1.00		-		1.00			-		
	High	1.55	0.144	0.86	-	2.81	1.64	0.124	0.87	-	3.08
Rural/ Urban Residence											
	Rural	1.00		-		1.00			-		
	Urban	1.06	0.795	0.67	-	1.67	0.99	0.976	0.60	-	1.64
Religion											
	Catholic	0.99	0.985	0.50	-	1.97	0.75	0.436	0.37	-	1.54
	Other Christian	1.00		-		1.00			-		
	Other religion	0.53	0.016	0.31	-	0.89	0.55	0.035	0.31	-	0.96
Marital Status											
	Unmarried	1.00		-		1.00			-		
	Married	0.25	0.000	0.12	-	0.53	0.28	0.002	0.13	-	0.62
Sexual History											
	2< Partners in past year	0.66	0.083	0.41	-	1.06	0.60	0.053	0.36	-	1.01
	First sex<=15	0.85	0.583	0.47	-	1.54	1.16	0.634	0.62	-	2.17
	Mistimed Pregnancy	0.30	0.000	0.16	-	0.56	0.32	0.001	0.17	-	0.61
	Had STI in past 12 months	0.57	0.056	0.33	-	1.01	0.67	0.205	0.37	-	1.24
	Ever tested for HIV	2.13	0.008	1.22	-	3.71	1.66	0.089	0.93	-	2.97
OAM Variables											
	Condom Use Self-Efficacy					1.38	0.003	1.12	-	1.71	
	Condom Availability					1.14	0.382	0.85	-	1.54	
	Condom Social Support					0.98	0.855	0.78	-	1.23	
	Condom Beliefs					1.75	0.003	1.21	-	2.55	
	Condom Attitudes					1.39	0.044	1.01	-	1.91	
	Condom Outcome Expectations					0.89	0.528	0.61	-	1.29	

Condom Subjective Norms		1.09	0.419	0.89	-	1.34
N	594.00	594				
LR chi2(27)	145.17	184.92				
Prob > chi2	0.00	0.00				
Log likelihood	-290.0978	-270.2256				
Pseudo R2	0.2001	0.2549				
LR chi2(7) =	39.74					
Prob > chi2 =	0.0000					

Table 4: CONSISTENT USE WITH REGULAR partner

		Model 1			Model 2		
		Odds Ratio	p-value	[95% Conf. Interval]	Odds Ratio	p-value	[95% Conf. Interval]
Sex of respondent							
	Female	1.00		-	1.00		-
	Male	0.79	0.359	0.48 - 1.31	0.65	0.127	0.37 - 1.13
Age							
	15-16	1.00		-	1.00		-
	17-18	0.48	0.103	0.20 - 1.16	0.55	0.203	0.22 - 1.38
	19-20	0.27	0.005	0.11 - 0.67	0.29	0.010	0.11 - 0.74
	21-22	0.19	0.001	0.07 - 0.48	0.18	0.001	0.07 - 0.48
	23-24	0.22	0.002	0.09 - 0.57	0.20	0.001	0.08 - 0.53
Education							
	None/Primary	1.16	0.628	0.63 - 2.15	1.46	0.258	0.76 - 2.82
	Secondary	1.00		-	1.00		-
	Higher	2.41	0.000	1.53 - 3.81	2.08	0.004	1.27 - 3.41
Employment Status							
	Student	1.28	0.442	0.68 - 2.40	1.66	0.127	0.86 - 3.21
	Working Full-time	0.78	0.442	0.41 - 1.48	0.82	0.570	0.42 - 1.62
	Unemployed	1.49	0.168	0.85 - 2.63	2.04	0.022	1.11 - 3.74
	Other (self employed/part-time)	1.00		-	1.00		-
Household income							
	Low	2.82	0.000	1.61 - 4.94	1.80	0.057	0.98 - 3.31
	Medium	1.00		-	1.00		-
	High	1.71	0.051	1.00 - 2.93	1.97	0.022	1.10 - 3.51
Rural/ Urban Residence							
	Rural	1.00		-	1.00		-
	Urban	1.38	0.131	0.91 - 2.09	1.20	0.440	0.76 - 1.88
Religion							
	Catholic	1.42	0.267	0.77 - 2.62	1.06	0.860	0.55 - 2.05
	Other Christian	1.00		-	1.00		-
	Other religion	0.78	0.330	0.47 - 1.29	0.78	0.376	0.45 - 1.35
Marital Status							
	Unmarried	1.00		-	1.00		-
	Married	0.65	0.296	0.30 - 1.45	0.75	0.529	0.31 - 1.82
Sexual History							
	2< Partners in past year	0.57	0.012	0.37 - 0.88	0.54	0.010	0.34 - 0.86
	First sex<=15	0.51	0.031	0.28 - 0.94	0.75	0.374	0.39 - 1.42
	Mistimed Pregnancy	0.30	0.000	0.17 - 0.54	0.29	0.000	0.16 - 0.54
	Had STI in past 12 months	0.39	0.005	0.21 - 0.75	0.43	0.015	0.21 - 0.85
	Ever tested for HIV	2.56	0.000	1.59 - 4.12	2.21	0.002	1.35 - 3.64
OAM Variables							
	Condom Use Self-Efficacy				1.31	0.009	1.07 - 1.60
	Condom Availability				1.36	0.038	1.02 - 1.81
	Condom Social Support				1.03	0.796	0.83 - 1.27
	Condom Beliefs				1.85	0.001	1.28 - 2.66
	Condom Attitudes				1.14	0.424	0.82 - 1.59
	Condom Outcome Expectations				1.25	0.234	0.86 - 1.82

Condom Subjective Norms		1.12	0.239	0.93	-	1.36
Number of obs	594	594				
LR chi2(27)	170.4	222.8				
Prob > chi2	0	0.00				
Log likelihood	-326.47	-300.28				
Pseudo R2	0.21	0.27				