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HIV/STD Risk Behaviors Among In-School Adolescents in Post-Conflict Liberia

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Abstract

We conducted a randomized trial to address the health needs of in-school adolescents in Liberia, where we analyzed data from a behavioral survey administered to 820 students from 8 urban schools. Our findings suggest that adolescents are at significant risk for HIV and other sexually transmitted diseases (STDs): 36% of respondents were sexually experienced, 34% of those had first sex at ages 14 or younger, and 66% of first sexual encounters were unprotected while 16% were described as “forced.” Also, females were more likely to have older boyfriends (Pearson chi

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Conflict of Interest Statement

The authors report no real or perceived vested interests that relate to this article (including relationships with pharmaceutical companies, biomedical device manufacturers, grantors, or other entities whose products or services are related to topics covered in this manuscript) that could be construed as a conflict of interest.

Authorship

All authors reached consensus on the intellectual contents of the paper. The first draft was written by Drs. Stephen B. Kennedy and Katharine A. Atwood. The data analysis was performed by Dr. Atwood. All authors reached consensus on relevant tables for inclusion into the paper. All authors reviewed and revised the draft versions, and approved the final version of the paper.

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square = 19.2, $p = 0.0001$) and sex resulting into pregnancies (Pearson chi square = 11.5, $p = 0.01$), while males were more likely to have a greater number of sexual partners (Pearson chi square = 5.6, $p = 0.05$) in the previous 3 months. We recommend further research to explore challenges associated with implementing behavioral-driven studies in post-conflict environments.

Keywords

adolescents; HIV/STDs; Liberia; post-conflict setting; school; sub-Saharan Africa

Adolescents and young adults ages 10–24 years in Sub-Saharan Africa account for a large burden of the global HIV/sexually transmitted disease (STD) crisis (Joint United Nations Programme on HIV/AIDS [UNAIDS] & the World Health Organization [WHO], 2009). Contributing factors include, for example, engaging in unprotected sexual intercourse; having multiple sexual partners; lacking the skills to correctly and consistently use condoms, including inadequate knowledge about condom use and the unavailability of condoms; and perceived invulnerability. Adolescents and young adults lack access to accurate health information about reproductive health services for HIV/STD prevention, care, and support (Kennedy et al., 2004; Kennedy et al., 2007). Also, HIV/STD prevention programs are rarely tailored or designed to meet the needs of adolescents, and local health workers and peer educators are usually not adequately trained to implement structured behavioral-driven prevention programs (Cowan & Pettifor, 2009; Michielsen et al., 2010; Paul-Ebhohimhen, Poobalan, & van Teijlingen, 2008). Furthermore, youth residing in high poverty endemic environments tend to initiate sexual activity at earlier ages, engage in high-risk sexual behaviors, and face increased risk for a host of adverse health outcomes (Kennedy et al., 2004; Liberia Demographic and Health Survey [LDHS], 2007).

The scarcity of reliable HIV prevalence data provides a blink picture of the HIV epidemic among adolescents in Liberia. The 2007 population-based *Liberia Demographic and Health Survey* (LDHS) documented an HIV prevalence rate of 1.5% among the general population ages 15 to 49 years with rates higher for women (1.8%) than for men (1.2%). In addition, the difference in HIV rates between women and men was particularly strong in the younger age groups, with HIV rates among young women being 3 times higher than those of young men in the 15- to 24-year-old age group (LDHS, 2007; National AIDS Commission, Republic of Liberia, 2010). Strikingly, risky sexual behaviors among youth have also not been adequately addressed in Liberia. For example, a 2006 key informant-based needs assessment indicated that there are few, if any, structured behavioral-driven HIV/STD prevention interventions for Liberian youth and none were evidence-based programs (Atwood, Johnson, Kennedy, & Harris, 2006). Furthermore, of approximately 1,548 Liberian youth, ages 10 to 25 years, who completed a cross-sectional survey conducted by the United Nations Children's Fund (UNICEF) and the New African Research and Development Agency (2005), 76% reported ever having had sex, with only 14% using condoms at sexual debut (National AIDS Commission, Republic of Liberia, 2010). Also, findings from a survey conducted by the Liberia Institute of Statistics and Geo-Information Services in four political sub-divisions (or counties) in 2008 revealed that 33% of respondents (41% females and 28% males) received money or were given gifts for sex while the use of preventive risk reduction measures such as condoms was not generally practiced (National AIDS Commission, Republic of Liberia, 2010). Adolescent females in Liberia are particularly vulnerable to HIV; a higher proportion of young women (17%) who have had sex before the age of 15 than young men (9%; LDHS, 2007). As such, Liberia accounts for one of the highest teenage pregnancy rates in the world (UNICEF & the New African Research and Development Agency, 2005), including a significantly high total fertility rate, with many of

these pregnancies ending in abortions (LDHS, 2007; National AIDS Commission, Republic of Liberia, 2010).

With Liberian youth representing a majority of the country's population (LDHS, 2007), the effective delivery of skills-directed HIV/STD evidence-based prevention programs in schools to prevent risky sexual behaviors such as the strengthening of condom negotiation skills is critical to preventing the spread of HIV infections. To improve reproductive health among adolescents, we conducted a school-level randomized trial to culturally adapt, implement, and evaluate an evidence-based HIV/STD prevention program in Liberia. For this paper, we analyzed the baseline data to describe the prevalence and determinants of high-risk sexual behaviors among in-school adolescents in Liberia. To our knowledge, this is the first published account of HIV/STD risk behaviors among junior high school students in post-conflict Liberia.

Methods

The data for these analyses, as inclusion criteria, were derived from a baseline survey administered to sixth and seventh grade students (age range = 13–19 years) attending eight high schools in Monrovia, the capital city and most urbanized commercial hub of Liberia. The schools selected for this study were recruited from four designated demographic zones in Monrovia, for zonal representation purposes, and matched based on school (e.g., class size, student-to-teacher ratio) and community (e.g., location, distance, available resources) characteristics. As such, schools with the most similarly matched characteristics were paired and one school from each matched pair was randomly assigned to the intervention group while the other was assigned to the comparison group to minimize potential confounds and contaminations. Each school randomized to a program condition had four sixth and seventh grade classes with about 50 students per class. Because the study required about 100 students per school based on sample size calculations, we randomly selected two of four classes per school where all students were invited to participate in the study. Of the approximately 954 students asked to participate in the study, 820 (86%) elected to participate. Lastly, students who elected not to participate (and/or if their parents elected for them not to participate) were assigned to one of the other non-program classes per the designated school during program administration days to minimize disruption in their academic programs.

Program administration consisted of intervention and comparison programs. Making Proud Choices (MPC), an eight-module Western-based, evidence-directed safer-sex program that uses integrated teaching strategies to provide adolescents with the knowledge, motivation, and skills necessary to change their behaviors in ways that would reduce the risk of HIV/STDs and pregnancy (Jemmott, Jemmott, & Fong, 1998), was culturally adapted to the needs of Liberian youth and administered to the intervention schools. In addition, an attention-matched General Health Program, an eight-module interactive science-based curriculum that was developed to provide Liberian youth with practical knowledge on highly prevalent health-related conditions among youth (e.g., malaria, tuberculosis), was modified to replace two modules with HIV prevention knowledge and subsequently administered to the comparison schools.

The survey represents the first of four waves of data collection from a school-based HIV prevention cohort study. The research staff described the study to students during class and distributed active parental consent and participant assent forms. Self-report surveys were administered by the research team in the classrooms. Students were provided 122 Liberian dollars (approximately \$2.00 USD) as incentives for survey completion. A sample of 820 students completed the baseline survey. Of the sample, about 2% did not complete the

survey question on gender ($n = 18$); therefore, we limited our analysis to the sample of 802 respondents who reported their gender and responded to sexual behavior questions. The study was approved by the institutional review boards of the Pacific Institute for Research and Evaluation (PIRE) in the United States and the University of Liberia in Monrovia, Liberia.

Survey Development

Four sets of focus group discussions ($n = 36$) were held with sixth and seventh grade students from a junior high school, not involved in the study, to explore sexual risk behaviors that were prevalent among this age group in Liberia. The focus groups were conducted in English, the official language of Liberia. Based on these findings, a draft survey instrument was developed in partnership with the Liberian and U.S. research teams while the Liberian team provided interpretations of the cultural meanings of the survey items. Suggestions for changes were made to ensure that the survey items measured the same underlying domains of interest. The survey was pilot-tested with 10 in-school youth from the sixth and seventh grades of a comparable junior high school to assess wording clarity and comprehension, and modifications were incorporated.

The final survey included demographic questions and multi-item scales to assess sexual risk behaviors such as frequencies of unprotected sex and condom use. The variables incorporated key components of Bandura's Social Cognitive Theory (Bandura, 1994), the theoretical underpinning of the larger study. Social Cognitive Theory has been widely employed in risk reduction-based intervention research to prevent sexual risk taking behaviors among adolescents in Sub-Saharan Africa (Michielsen et al., 2010; Paul-Ebhohimhen et al., 2008).

Measurement

The main outcomes of interest were measured with items asking whether respondents ever engaged in sexual intercourse, the age of sexual initiation, whether condoms were used at first intercourse, and if their first intercourse had been "forced." Previous 3-month sexual behavior questions inquired about whether respondents had had sex in the last 3 months (*Yes* or *No*), how often condoms were used (Likert scale ranging from *never* to *every single time*), the number of sexual partners, and whether respondents were "forced" to have sex in the previous 3 months (*Yes* or *No*). Multi-item scales representing factors that tended to mediate engagement in sexual risk behaviors such as condom use and condom negotiation, HIV prevention knowledge, peer norms, and perceived HIV risk were incorporated. These measures were adapted from established scales and found to have relevant internal consistency when adapted for in-school Liberian youth (Cronbach's alpha statistic ranged from 0.60–0.85). The construct domains, Cronbach's alpha statistics based on the Liberian in-school sample ($N = 820$), example of survey items, and the source of each multi-item scale are listed in Table 1.

Statistical Analyses

We first assessed the internal consistency of each multi-item scale, estimating the Cronbach's alpha statistic. Multi-item scales with low alphas (< 0.60) were examined further to assess whether the reliability score increased or decreased when items were dropped from the overall scale. For multi-item scales whose alphas remained at the 0.60 level, a principal component analysis was conducted using varimax rotation to assess the extent to which items in the multi-item scale were correlated with one another and whether subscales should be created.

We then assessed the distribution of key demographic variables, mediating variables and sexual behaviors for the study population. Using Student's *t*-tests and Pearson chi-square tests, we assessed whether those behaviors and the respective mediating variables varied by gender, assessing statistical significance at $p < 0.05$.

Results

Demographic Characteristics

Students in the sixth and seventh grades completed the baseline survey from eight schools in Monrovia, the capital city of Liberia ($N = 820$). Of the total study sample ($N = 820$), there were missing data for about 2% ($n = 18$) of the question on gender; therefore, this analysis is limited to the 802 respondents who reported gender in the study. As seen in Table 2, slightly more than half of the respondents were male (56%) relative to female (44%). The majority of respondents described themselves as Christian (88%), while the remaining indicated that they were Islamic (9%) or followed no religion (3%). The sample was primarily drawn from the seventh grade (71%); the remaining students were from the sixth grade (29%). The mean age of respondents was 16.4 ($SD = 1.75$). The majority of respondents reported that they lived with their mothers/fathers (82%); 17% lived with other family members, and 1% reported living alone. There were no significant differences in these demographic characteristics when stratified by gender (see Table 2).

Sexual Risk Behaviors

Respondents of the cross-sectional baseline survey reported high-risk sexual behaviors. As shown in Table 2, 36% of respondents indicated ever having had sexual intercourse, 20% engaged in sexual intercourse during the previous 3 months, while 14% had been pregnant or gotten someone pregnant on one or more occasions. When asked about the age of first intercourse, the majority of sexually experienced respondents (66%) reported first intercourse between the ages of 15–17; 27% were 11 to 14 years of age and 7% were 10 years of age or younger at first intercourse. Of public health concern is the fact that 66% of those first sexual encounters did not involve the use of condoms and that 16% of those first sexual encounters were described as “forced,” (i.e., having sex against the respondent's will). Surprisingly, there was no significant difference in whether a condom was used at first intercourse among those “forced” to have sex when compared to those respondents “not forced” to have sex (33% vs. 36%, $p = 0.82$). As seen in Table 2, among those sexually active in the previous 3 months, the majority had had only one sex partner (79%), while 21% had two to four sexual partners. Similarly, the majority of respondents had had sex one to two times in the previous 3 months (79%) with the balance having had sex 3 or more times (21%). However, 26% of those who had been sexually active in the last 3 months reported not using a condom during that same time period.

Gender Differences

When examining gender differences, few significant differences in the sexual risk behaviors of males and females were identified. For example, females, when compared to males, were more likely to have been in a relationship with a person who was older (Pearson chi square = 19.2, $p = 0.0001$; see Table 2) and were more likely to have had a sexual encounter that resulted in a pregnancy (25% vs. 13%, chi square = 11.5, $p = .01$; Table 3). Males had a greater number of sexual partners in the previous 3 months (Pearson chi square = 5.6, $p = 0.05$; Table 3). However, there were no significant gender-related differences in condom use, the frequency of sex in the previous 3 months, the age of first sexual intercourse, or being forced to have sex at first intercourse. When examining gender differences in condom-related attitudes and behaviors, males reportedly had more positive attitudes toward condoms ($t = 2.06$, $p = 0.04$), greater condom negotiation self-efficacy ($t = 2.19$, $p = 0.02$),

and greater condom use self-efficacy ($t = 2.38, p = 0.02$), yet they perceived themselves to be at greater risk for acquiring HIV infection when compared to females ($t = 2.42, p = 0.02$; Table 4). Moreover, both genders had relatively low means on the peer norms and sexual attitudes scales, suggesting a general pattern of less protective views. In addition, means on the parental communication about sex scale were also quite low for both genders. Lastly, a number of scales had means in the neutral range, which is of concern in important areas such as sexual refusal and negative attitudes about condoms. Accordingly, we assume that such findings may have implications for targeted interventions.

Limitations

It is important to note that this paper is based on self-report survey and may be impacted by socially desirable responses. While there is some missing data, in most instances it is less than 5% of responses (see Tables 2 and 3). The two exceptions are the survey questions: *Were you forced to have sex at first intercourse* and *were you forced to have sex in the last 3 months*. In these instances, up to 20% of participants did not respond to the question; therefore, findings related to “forced sex” should be interpreted with caution. Further, our self-report data indicated that the majority of respondents had had sex with only one to two partners and on one to two occasions over the previous 3 months. We recognize that using a frequency of condom use measure may not be the most valid measure of assessing condom use in the last 3 months in cases where respondents did not report numerous sexual encounters.

Discussion

Liberia is recovering from nearly 2 decades of political conflicts that severely damaged the economic, education, and health care sectors (Barbiero & Barh, 2007; Johnson et al., 2005; Kennedy et al., 2004; Kennedy et al., 2006; LDHS, 2007). As a consequence, significant proportions of adolescents and young people, especially females, engage in risky sexual behaviors (Save the Children, United Kingdom, 2006; UNICEF & the New African Research and Development Agency, 2005). While efforts have been initiated to revitalize school-based social services and formulate adolescent sexual health-related policies and programs (LDHS, 2007), published reports on HIV risk behaviors among school-attending adolescents in Liberia remain scant.

Based on this preliminary analysis, in-school Liberian adolescents are at high risk for HIV infections, especially adolescent females (See Tables 3 and 4). Among sexually experienced adolescents, for example, 11% of first sexual encounters had been “forced,” 34% had had sex for the first time at ages 14 or younger, 14% had been pregnant or gotten someone pregnant, and 20% had had sex in the previous 3 months. Among those sexually active in the last 3 months, 79% had sex once or twice and 21% had had sex three or more times. Strikingly, among these sexually active adolescents, 26% had never used condoms and 11% were forced to have sex in the last 3 months.

In settings with improving school enrollments, educational venues can be crucial avenues for reaching high-risk school-attending adolescents with uniquely tailored skills-building behavioral programs to mitigate the spread of HIV infections. Similar strategies are being developed, implemented, and assessed in Lesotho, Namibia, Zambia, Botswana, and Tanzania (UNAIDS, UNICEF, United Nations Population Fund [UNFPA], & WHO, 2008). In addition, our data revealed that school-age young females are particularly vulnerable to HIV. As such, a prevention strategy to mount sustained efforts in response to the evidence regarding young girls and HIV is highly warranted. For example, Zimbabwe has formulated a gender-focused national behavioral change communication strategy that recognizes the need to prevent multiple sexual partnerships and promotes condoms among sexually

experienced young people, as well as supporting the need to delay sexual initiation among sexually inexperienced adolescents (UNAIDS, UNICEF, UNFPA, & WHO, 2008).

A comprehensive in-country assessment for the development of Liberia's National HIV/AIDS Strategic Framework II (National AIDS Commission, Republic of Liberia, 2010), based on the analyses of data from the 2007 Liberia Demographic and Health Survey, established that the age of first sex in Liberia was uniformly early and that a majority of young women and men initiated sexual intercourse prior to matrimony. In addition, it revealed that greater than three quarters of women and almost half of men were sexually active by age 18. Nineteen percent of women had reportedly had sex by age 15 and half of all women ages 20–49 had had their first sexual intercourse by about 16 years of age. These findings were relatively consistent with the sexual risk behavior characteristics of our Liberian in-school adolescent populations, clearly supporting our assertion that Liberian adolescents are at high risk for HIV/STDs.

Accordingly, targeted interventions to reduce high-risk sexual behaviors among in-school Liberian adolescents are highly warranted. For example, it has been suggested that successful HIV prevention interventions should include a narrow focus on a small number of key behaviors and established theoretical approaches (e.g., social cognitive theory, the theory of reasoned action, the theory of planned behavior). Furthermore, interventions should include activities to address social pressures, provide modeling of and practice with communication, use a variety of teaching methods, be of relatively long duration, and involve health educators who believe in the program they are using and are appropriately trained (Kirby, 2001). Moreover, other reviews suggest that interventions that focus on skill building and are grounded in sound behavioral theory are likely to meet with greater success (Centers for Disease Control and Prevention, 2007; Franklin & Corcoran, 2000). We posit that any intervention that incorporates these successful components and are specifically tailored to the unique needs of the designated group would have an increased likelihood to be effective in mitigating high-risk behaviors.

This is the first scientifically published report of high-risk sexual behaviors among in-school adolescents in Liberia and these baseline data are relatively preliminary in scope. However, we expect to expand on our initial findings in subsequent publications on this high-risk population. In addition, we anticipate that other targeted studies will be conducted by international researchers to better understand the determinants and characteristics of high-risk sexual behaviors among school attending adolescents in post-conflict environments in order to guide HIV prevention programs and policies as presently being employed in other HIV burdened countries in Sub-Saharan Africa (UNAIDS, UNICEF, UNFPA, & WHO, 2008).

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Clinical Considerations

- Adolescents who have been exposed to trauma in post-conflict settings are at especially high risk of developing behaviors that could result in infection with HIV or other sexually transmitted diseases.
- Involving targeted adolescents in planning, developing, implementing, and evaluating youth-centered programs is vital for program success.
- Trained health workers, social workers, and/or nurses can best intervene with these adolescents by providing culturally appropriate programs that focus on behaviors to decrease the risks of sexual activity.
- Targeted interventions should incorporate components on voluntary counseling and testing services, non-invasive testing services for other sexually transmitted diseases, and proactive case referrals and effective management services.

Table 1**Sample Scales of Multi-Item Constructs Used in the Survey**

Construct	Number of Items (scale source)	Number of Items, internal reliability in current study (α)	Survey question examples, response items
Sexual refusal self-efficacy	6 items (Modified from Donohew et al., 2000)	9 items, $\alpha = 0.79$	<p>“Would you be able to say No to have sex with someone who you went out with before and you want to go out with again?”^{a, b}</p> <p>1 = I am sure I can say no, 5 = I am sure I can't say no</p>
Condom use self-efficacy	4 items (Brien et al., 1994)	4 items, $\alpha = 0.60$	<p>“Would you be able to put a condom on yourself or your partner?”^{a, b}</p> <p>1 = I am sure I can do this, 5 = I am sure I can't do this</p>
Condom negotiation self-efficacy	5 items (Modified from Sacco et al., 1991)	5 items, $\alpha = 0.77$	<p>“Would you be able to talk about using a condom if you were unsure of your partner's feelings about condoms?”^{a, b}</p> <p>1 = I am sure I can do this, 5 = I am sure I can't do this</p>
Perceived peer norms	6 items (Floyd, 2009)	3 items, $\alpha = 0.64$	<p>“Most of my friends are having sex”^{b, d}</p> <p>1 = Agree a lot, 5 = Disagree a lot</p>
Condom outcome expectancies: Barriers to condom	5 items based on decisional balance (Modified from Janis, 1977)	5 items, $\alpha = 0.76$	<p>“Using condoms during sex would be a lot of trouble?”^a</p> <p>1 = Agree a lot, 5 = Disagree a lot</p>
Condom outcome expectancies: Perceived benefits	5 items based on decisional balance (Modified from Janis, 1977)	5 items $\alpha = 0.86$	<p>“Using condoms during sex would make me feel safer”^{a, b}</p> <p>1 = Agree a lot, 5 = Disagree a lot</p>
HIV risk perception	6 items (Modified from Witte et al., 2002)	5 items, $\alpha = 0.82$	<p>“People my age are too young to get an HIV infection.”^b</p> <p>1 = Agree a lot, 5 = Disagree a lot</p>
Sexual attitudes	6 items (Modified from Basen-Enquist et al., 1999; Zimmerman, 2003)	3 items, $\alpha = 0.60$	<p>“I believe people my age should get as much sexual experience as they can.”^{b, e}</p> <p>1 = Agree a lot, 5 = Disagree a lot</p>

Construct	Number of Items (scale source)	Number of Items, internal reliability in current study (α)	Survey question examples, response items
Parent communication about sex	9 items (Modified from Dilorio et al., 1999)	6 items $\alpha = 0.85$	“In the last 3 months how often have you and your parents talked about sex?” ^b 1 = Never, 5 = All the time

Note.

^aReverse coded.

^bAveraged to create scales with high scores representing pro-social behaviors or attitudes.

^cAveraged to create a scale with higher scores representing more negative attitudes towards condoms.

^dBased on the principal component analysis, the 6-item peer norm scale was represented by two components, peers having sex ($\alpha = .64$, Eigen value = 1.8, 30% variance explained) and peers waiting to have sex ($\alpha = .50$, Eigen value = 1.52, 20% variance explained). The peers having sex 3-item subscale was used in the analyses due to the higher variance explained and higher internal reliability.

^eAdapted for use as a four item scale, one of the four items was dropped due to low internal consistency.

Table 2

Gender Differences in Demographic Characteristics of the Study Population

Demographic characteristics	Whole Sample (N = 802)			Males (n = 449)			Females (n = 353)			t	df
	M (SD)	(N)	%	M (SD)	(n)	%	M (SD)	(n)	%		
Age of respondent (13–19 years)	16.36 (1.75)			16.36 (1.79)			16.33 (1.70)			0.28	1
	%	(N)		%	(n)		%	(n)		χ^2	df
Grade											
6 th	29%	(230)		27%	(122)		30%	(108)		0.3	1
7 th	71%	(570)		73%	(325)		70%	(245)			
Total	100%	(800) ^a		100%	(447) ^a		100%	(353)			
Religion											
Christianity	88%	(705)		87%	(390)		89%	(315)		1.8	2
Islam	9%	(73)		10%	(45)		8%	(28)			
None	3%	(23)		3%	(13)		3%	(10)			
Total	100%	(801) ^a		100%	(448) ^a		100%	(353)			
Live with:											
Mother/Father	82%	(661)		83%	(372)		82%	(289)		1.7	2
Other Family	17%	(132)		16%	(72)		17%	(60)			
Alone	1%	(8)		1%	(4)		1%	(4)			
Total	100%	(801) ^a		100%	(448) ^a		100%	(353)			
Boyfriend/Girlfriend	40%	(334)		39%	(175)		45%	(159)		2.6	1
Age boyfriend/girlfriend											
3 or more years older	17%	(55)		12%	(20)		23%	(35)		19.2 [*]	3
1–2 years older	24%	(78)		18%	(31)		31%	(47)			
Same age	44%	(141)		53%	(91)		33%	(50)			
Younger	15%	(48)		17%	(28)		13%	(20)			
Total	100%	(322)		100%	(170) ^a		100%	(152) ^a			

Note. M = mean; SD = standard deviation; df = degrees of freedom;

^{*} p < .0001 (two tailed);^a Missing respondents n < 4%.

Table 3

Gender Differences in Sexual Risk Behaviors

	Whole Sample (N = 802)			Males (n = 449)			Females (n = 353)		
	%	(N)		%	(n)		%	(n)	
All respondents									χ^2 df
Ever had sex	36%	(287)		38%	(171)		33%	(116)	1.8 1
Sex in the last 3 months	20%	(159)		18%	(81)		22%	(78)	2.7 1
Respondents who ever had sex									χ^2 df
	%	(N)		%	(n)		%	(n)	
Age at first sex (years) ^c									
10 or younger	7%	(19)		8%	(13)		5%	(6)	
11–12	4%	(11)		6%	(9)		2%	(2)	
13–14	23%	(63)		26%	(42)		19%	(21)	6.1 3
15–17	66%	(180)		60%	(98)		74%	(82)	
Total	100%	(273) ^a		100%	(162) ^a		100%	(111) ^a	
Condom use at first sex	34%	(97)		35%	(60)		32%	(37)	0.2 1
Forced sex first time									
Yes	16%	(43)		15%	(24)		18%	(19)	0.6 1
No	84%	(227)		85%	(141)		82%	(86)	
Total	100%	(270) ^a		100%	(165) ^a		100%	(105) ^b	
Gotten someone/been pregnant									
Yes	14%	(38)		7%	(13)		21%	(25)	11.5 ^{***} 1
No	86%	(246)		93%	(156)		79%	(90)	
Total	100%	(284) ^a		100%	(169) ^a		100%	(115) ^a	
Respondents who had sex in last 3 months									χ^2 df
	%	(N)		%	(n)		%	(n)	
Number of sex partners last 3 months									
1	79%	(120)		70%	(54)		88%	(66)	5.6 [*] 2
2–3	14%	(21)		19%	(15)		8%	(6)	
4 +	7%	(11)		11%	(8)		3%	(3)	
Total	100%	(152) ^a		100%	(77) ^a		100%	(75) ^a	
Number of times had sex in last 3 months									

	Whole Sample (N = 802)			Males (n = 449)			Females (n = 353)			χ^2	df
	%	(N)	%	(n)	%	(n)	%	(n)			
All respondents											
1–2 times	79%	(120)	76%	(59)	82%	(61)			0.8	1	
3 or more times	21%	(32)	24%	(19)	18%	(13)					
Total	100%	(152) ^a	100%	(78) ^a	100%	(74) ^a					
Condom use last 3 months											
Never	26%	(40)	24%	(19)	28%	(21)			0.9	3	
Less than ½ the time	16%	(25)	14%	(11)	18%	(14)					
Often/almost every time	34%	(54)	35%	(28)	34%	(26)					
Every time	24%	(37)	26%	(21)	21%	(16)					
Total	100%	(156) ^a	100%	(79) ^a	100%	(77) ^a					
Forced sex last 3 months											
Yes	11%	(14)	9%	(6)	13%	(8)			0.9	1	
No	89%	(113)	91%	(59)	87%	(54)					
Total	100%	(127) ^b	100%	(65) ^b	100%	(62) ^b					

Note. M = mean; SD = standard deviation; df = degrees of freedom;

* $p < .05$;

** $p < .01$ (two tailed);

^a Missing respondents < 6%;

^b Missing respondents < 20%.

Table 4

Gender Differences in Mean Scores on Attitudes, Norms, Perceived Risk, and Parent Communication Scales

	Males		Females		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Sexual refusal self-efficacy ^a	3.67	0.86	3.76	0.94	-1.44
Condom use self-efficacy ^a	3.42	1.0	3.25	1.0	2.38*
Condom negotiation self-efficacy ^a	4.06	1.0	3.90	1.1	2.19*
Peer norms about sexual activity ^a	2.82	0.63	2.83	0.53	-0.14
Negative attitudes about condom use ^b	3.03	0.98	2.98	0.95	-0.67
Positive attitudes about condom use ^a	3.94	1.01	3.79	1.05	2.06*
Perceived HIV risk ^a	3.36	1.09	3.18	1.03	2.42*
Sexual attitudes ^a	2.54	1.07	2.42	1.0	1.67
Parent communication about sex ^a	2.16	1.18	2.31	1.19	-1.80

Note. *M* = mean; *SD* = standard deviation;^aScale range 1–5 (higher values reflect more protective beliefs, attitudes, norms, higher perceived risk, and greater parental communication about sexual topics);^bScale range 1–5 (higher values reflect more negative attitudes about condoms);* *p* < .05 (two tailed)