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Prevalence rates of sexual coercion victimization and perpetration among Uganda adolescents

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Abstract

Coercion is consistently reported as a risk factor for HIV in sub-Saharan Africa. Because of the gendered nature of previous research however, little is known about male victims or female perpetrators. To address this gap, we report survey data from 354 sexually experienced secondary school students in Mbarara, Uganda. Findings suggest that females are more likely to report involvement in coercive sex compared to males (66% vs. 56% respectively). Of those involved, females are most likely to report being a victim-only (40%) and males, perpetrator-victims (32%). Although involvement in violent and coercive sex is gendered, 47% of males report victim experiences and 25% of females report perpetration behavior. Furthermore, about one in ten female *and* male perpetrators reported using physical force or threats to compel sex. When all potentially influential factors were considered simultaneously, several characteristics seem to differentiate youth by their coercive sex (in)experience. For example, victims are more likely to have lower levels of social support from their families, and feel that they have an above average or very strong chance of getting HIV compared to otherwise similar youth with no experience with coercive sex. Perpetrators are more likely to have had an HIV test but use condoms less than half the time or never compared to their otherwise similar, yet uninvolved peers. They also are significantly more likely to report dating violence perpetration. Perpetrator-victims share some similarities with other experienced youth, as well as some differences. Findings underscore both the importance of asking all youth, irrespective of biological sex, perpetrator and victimization questions; and also the need for more work to be done to help youth plan for a healthy and wanted first sexual experience.

Keywords

Coercive sex; adolescents; Uganda; developing country

An estimated 4.3% of females and 1.1% of males between the ages of 15–24 are HIV positive in Uganda (Government of Uganda, 2010). One important factor related to adolescent HIV risk is sexual coercion (Ajuwon, 2005; Campbell et al., 2008; Dunkle et al.,

2004; Erulkar, 2004; Jewkes & Morrell, 2010; S. C. Kalichman & Simbayi, 2004; Koenig et al., 2004; Luke & Kurz, 2002; Maman, Yamanis, Kouyoumdjian, Watt, & Mbwambo, 2010; Moore, Biddlecom, & Zulu, 2007; Varga, 2003), broadly defined as forcing an individual into any sexual act that is involuntary, whether through “threats, intimidation, trickery or some other form of pressure or force” (Farris, Treat, Viken, & McFall, 2008). Although there is some overlap between intimate partner violence and sexual violence, sexual coercion is committed by a wider range of perpetrators because it can happen within sexual partnerships but also between those not connected as such.

Coercive sex is common in Sub-Saharan Africa (SSA) (Moore et al., 2007) and Uganda is no exception (S Neema, Musisi, & Kibombo, 2004). In a national survey of adolescents, Neema and colleagues (2006) report that 23% of adolescent girls 12–19 were not at all willing the first time they had sexual intercourse. Key factors related to increased likelihood of coercion in sub-Saharan Africa include age differentials between the two people in the relationship; being younger generally (under 25 years old), as well as at first sex specifically (i.e., 15 years or younger); and the use of alcohol or drugs in the sex act (e.g., to make someone more willing to “agree” to have sex) (Ajuwon, 2005; Erulkar, 2004; S. Kalichman et al., 2005; Koenig et al., 2004; Moore et al., 2007; S Neema et al., 2004; Varga, 2003; Zablotska et al., 2009). Beyond these factors however, one of the most commonly cited reasons is gender inequality. Cultural norms in many SSA settings pressure girls against being in charge of their sexuality or assertively communicating their sexual interest. Boys’ understanding of this culturally sanctioned ‘coyness’ promotes an environment where a girl’s ‘no’ is reinterpreted to be ‘yes’ (Varga, 2003). This, combined with the socialization of males to think that they cannot control their ‘sexual urges’ (Moore et al., 2007) creates an almost perfect storm supportive of ‘soft rape’, which refer to situations where a girl has sexually ‘teased’ the boy into coercive sex (Balmer et al., 1997). In fact, a study in South Africa found that one in four adults agree that rape usually happens because of something the woman has done or said (S. Kalichman et al., 2005).

While this explanation provides useful context for female victims, it provides no explanation for why male victimization would ever occur. And, yet it does. Because females are often presumed to be victims and males perpetrators, little data are available about male victims. In the only available study we were able to identify, 4% of Uganda adolescent boys 12–19 were not at all willing the first time they had sexual intercourse (S. Neema et al., 2006). Although less than one percent said they were forced to have sex with their first sexual partner (0.4%), 5% of boys also said that their partner’s insistence was a reason they had sex the first time.

United States-based research fails to serve as a supplementary guide because of similar sex bias (Abbey & McAuslan, 2004; Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Maxwell, Robinson, & Post, 2003; White & Smith, 2009). In studies that include both males and females as potential perpetrators, results are conflicting: some report female sexual violence perpetration at the same or higher rates as males (Gray & Foshee, 1997; Molidor & Tolman, 1998), while others report females to be less likely to engage in sexually violent behavior than males (Fago, 2003; Hall & Barongan, 1997). What seems to be consistent is that females are more often victims of severe violence, and therefore, report more severe physical and emotional reactions (Foo & Margolin, 1995; Molidor & Tolman, 1998).

Little is known about adolescent male victims and female perpetrators in SSA. As such, it is not clear whether males and females differ in the extent to which they engage in (perpetrate) and experience (are victims of) sexual coercion; and how victimization and perpetration generally relate to risk behaviors among adolescents who experience coercion. To address

these gaps, we report findings from secondary school students in rural Uganda surveyed about their relationships and sexual experiences.

Methods

Data were collected between September and October, 2008 and March and April, 2009. Institutional Review Board (IRB) approval for the Mbarara Adolescent Health survey was granted by Mbarara University IRB in Uganda as well as Chesapeake IRB in the U.S.

Mbarara municipality, with a population of 69,000 (based on the 2002 census), is the sixth largest urban center in Uganda (Uganda Bureau of Statistics, 2005). The greater Mbarara district is second in population only to the Kampala district, yet it falls in the bottom half of districts in terms of population density. Mbarara municipality is, therefore, best described as serving mainly a rural population in sub-Saharan Africa. Access to education in Mbarara is mixed. Data indicate that Mbarara district's net secondary enrollment rate in 2004 was slightly lower than the national average (11.3% versus 14.6%) (Uganda Bureau of Statistics, 2005).

Participants were recruited from five secondary schools. Three schools were non-religion affiliated, one was a Catholic school, and another was a Muslim school. One school was all-girls, two were all-boys, and two were mixed-sex. Eligibility criteria for the quantitative survey included 1) current enrollment in classes Secondary 1 (S1) through Secondary 4 (S4) in one of the five participating secondary schools ($n = 4,359$); 2) caregiver / adult permission; and 3) student assent. Parents of day students provided written informed consent; headmasters, as legal guardians of boarding students, provided consent for these students. All students provided written assent to participate.

1,738 students were randomly invited to participate from the five schools' current class lists; 1,523 completed surveys were received. Of the 1,523 completed surveys, 17 students completed the survey without being invited. In the first school the survey was fielded, students were not matched to the recruitment list to protect anonymity. It was discovered that students not on the list had shown up, provided assent, and completed the survey. This process was subsequently changed for all subsequent schools. Because these surveys were completely anonymous, it was impossible to identify the errant surveys. Although we could have randomly deleted 17 surveys, we chose to maximize the amount of data available. Thus, 1,506 of the 1,738 students invited, completed the survey yielding a response rate of 86.7%.

Measures

The definition of coercive sex is difficult to articulate because so much of it is culturally bound (Koenig et al., 2004). Indeed, in cultures like Uganda where sex is often seen as the obligation of the woman and the right of the man, it is hard for men and women alike to describe the line between coercive and non-coercive sexual intercourse (Heise et al., 1995; as cited in Koenig et al., 2004). For the current survey, victimization and perpetration were measured with the following three questions among youth who reported having had sex: 1) Has anyone ever (have you ever) lied, deceived or said something to you that he or she didn't really mean so that you were more likely to have sex with him or her?; 2) Has anyone ever (have you ever) given you alcohol or drugs so that you were more likely to have sex with him or her?; 3) Has anyone ever (have you ever) physically forced, hurt, or threatened you into having sexual intercourse? Responses were dichotomous (yes/no). One additional victimization question was asked: Have you ever had sex because you were too afraid to say 'no'? It was not asked of perpetration because it was thought to require too much self-awareness on the part of the perpetrator. Participants who experienced at least one of these

types of coercion as a victim but did not engage in any of these coercive behaviors were classified as “victims.” Those who engaged in at least one of these types of coercion but did not experience any of them as a victim were classified as “perpetrators.” “Perpetrator-victims” were youth reporting at least one behavior of each type. Youth who neither engaged in nor experienced as a victim any of these types of coercion were classified as “inexperienced.”

Data cleaning and statistical methods—All surveys were double entered by project staff to ensure accuracy. Data were imputed using best-set regression (StataCorp, 2009). Missing and non-responsive (don't know) data were imputed using best-set regression (StataCorp, 2009). To protect against imputing truly non-responsive surveys (e.g., participants who dropped out halfway through the survey), a two-stage data validity check was put into place. At the first step, each case was required to have valid data (i.e., not ‘do not want to answer’) for at least 50% of all of the variables in the dataset. Based on this criterion, 20 respondents were dropped. Among the resulting 1,503 youth, 390 were coded as having had sex. At the second step, these youth were required to have valid data for 80% of the analytical variables examined in the current analyses. Thirty-six participants did not meet this criterion, resulting in a final analytical sample size of 354 sexual experienced youth.

Chi-square and t-tests were used to measure statistically significant differences at the bivariate level. Then, multinomial logistic regression was used to quantify the conditional odds of reporting 1) victimization experiences; 2) perpetration experiences; 3) both perpetration and victimization experiences; or 4) neither perpetration nor victimization experiences (reference group). A parsimonious model that included the least number of variables necessary to best explain the odds of experience with coercive and violent sex was sought. Beginning with a saturated model that included all variables, a final model was identified via backward stepwise deletion. Given the exploratory nature of our investigation, the threshold for retention in the model was generous: $p < 0.10$; adjusted OR (aOR) ≥ 2.4 ; or at least two categories of violent or coercive experience with $aOR \geq 2.0$ on the same youth characteristic, suggesting trend across categories. We leave the final determination of clinical or statistical significance to the reader.

Results

Respondents were on average, 15.5 years of age (SD = 1.5; Range: 12–19+). Twenty-five percent were female and 15% were day students. As shown in Table 1, sexually active females and males were similar in terms of age (M: 15.3 years [SD = 1.5] vs. 15.6 years [SD = 1.5], respectively; $p = 0.10$) and parental education (e.g., Maternal education 20% vs. 21%, respectively, $p = 0.81$). Both sexes were equally likely to report having had a boyfriend or girlfriend (83% vs. 84%, respectively; $p = 0.80$). Age at first sex (M: 12.7 [SD = 2.5] vs. 12.7 [SD = 2.5], respectively; $p = 0.87$) and measures of current condom use (38% vs. 36%, respectively, $p = 0.76$) also were similar for females and males. On the other hand, females were significantly more likely to report being not at all willing at first sex (40% vs. 13%, $p < 0.001$) and having a greater age difference between themselves and their first sexual partner (M: 2.4 years [SD 2.6] vs. M: 0.004 years [SD = 1.6], respectively; $p < 0.001$). The number of lifetime partners also varied by sex: more males than females reported four or more partners (23% vs. 8%, respectively), and more females than males reported only one partner (53% vs. 39%, respectively; $p = 0.006$). Differences in dating violence involvement also were noted: more boys than girls reported being victims (14% vs. 8%) whereas more girls reported being perpetrators (13% vs. 5%) or perpetrator-victims (37% vs. 27%, $p = 0.004$).

Coercive sex

As shown in Figure 1, females were more likely to report involvement in coercive sex in some way compared to males (66% vs. 56% respectively). Of those involved, females were most likely to report victim-only experiences (40%) and males most likely to report perpetrator-victim experiences (32%). Nonetheless, 24% of females also reported perpetrator-victim experiences. Only 1% and 9% of females and males, respectively, reported only perpetration behavior.

Female victims were significantly more likely to report feeling too afraid to say 'no' (43% vs. 22%, $p < 0.001$) or being physical forced, hurt, or threatened to have sex (32% vs. 13%, $p < 0.001$) compared to male victims (Table 2). Among perpetrators, males were significantly more likely than females to report lying or otherwise deceiving the other person to compel sex (38% vs. 23%, respectively; $p = 0.01$). About one in ten female *and* male perpetrators reported using physical force or threats to compel sex (12% vs. 13%, respectively; $p = 0.80$).

When all potentially influential factors were considered within the same model, several characteristics seemed to differentiate the four groups of youth (see Table 3). Compared to inexperienced youth, otherwise similar victims were significantly more likely to be slightly older (aOR = 1.35, $p = 0.05$) be female (aOR 3.7, $p = 0.002$), and have fathers with primary school or less (aOR 3.06, $p = 0.03$). They also were significantly more likely to have lower levels of social support from their families (aOR 0.89, $p = 0.02$) and to be concerned about having enough to eat (aOR 2.52, $p = 0.16$). Victims also felt that they had an above average or very strong chance of getting HIV compared (aOR 3.46, $p = 0.02$) even though they were much more likely to have used a condom at last sex (aOR 4.11, $p = 0.002$) compared to otherwise similar youth with no experience with coercive sex.

Perpetrators were significantly more likely to be male (aOR = 12.64, $p = 0.03$) compared to otherwise similar, but uninvolved youth. They also seemed to be more likely to be in lower versus upper grades (e.g., aOR for being S1 = 4.99, $p = 0.16$) and boarding versus day students (aOR = 3.54, $p = 0.19$). They also were less likely than uninvolved youth to have social support from their family (aOR = 0.84, $p = 0.04$) and to be worried about having enough money (aOR = 0.29, $p = 0.20$), but disagreed that they had nothing to look forward to in the future (aOR = 0.11, $p = 0.07$). All other things being equal, perpetrators were significantly more likely to report ever having had an HIV test (aOR = 3.61, $p = 0.02$) but use condoms less than half the time or never (aOR = 2.44, $p = 0.21$) compared to their otherwise similar, yet uninvolved peers. Perpetrators also were older than uninvolved youth at first sex (aOR = 1.36, $p = 0.04$), but were to be not at all willing (aOR = 0.40, $p = 0.28$) at their sexual debut. Finally, perpetrators of coercive behaviors were significantly more likely to report being a perpetrator (aOR = 8.45, $p = 0.04$) or perpetrator-victim (aOR = 2.98, $p = 0.08$) of dating violence.

Perpetrator-victims shared some similarities with other experienced youth, as well as some differences. Like victims and perpetrators, perpetrator-victims reported significantly lower levels of familial social support compared to uninvolved youth (aOR = 0.89, $p = 0.02$). They were similar to perpetrators in that they were significantly more likely to report having had an HIV test (aOR = 1.96, $p = 0.05$) and to be older at first sex (aOR = 1.15, $p = 0.10$) than uninvolved youth. They also shared with perpetrators a significantly increased likelihood of involvement in dating violence as a perpetrator (aOR = 5.37, $p = 0.01$) or perpetrator-victim (aOR = 3.87, $p < 0.001$); they uniquely were more likely to be victims of dating violence however (aOR = 3.22, $p = 0.01$). Additionally unique characteristics of coercive sex perpetrator-victims included their increased likelihood of anticipating not having a bright future (aOR = 2.88, $p = 0.06$), being worried about having enough to eat (aOR = 2.84, $p = 0.08$), to ever have a boyfriend or girlfriend (aOR = 3.70, $p = 0.04$), and to have a greater age

difference with their first sexual partner (aOR = 1.24, p=0.02) compared to otherwise similar, uninvolved youth.

The following factors did not significantly contribute to the model ($\chi^2(30) = 18.09, p=0.96$): number of lifetime sexual partners, social support from a special person, poor health, feeling useless, maternal education, worries about not having enough money for school fees, not being involved in outside activities, and feeling no good.

Discussion

Among the one-quarter of secondary school students who report a history of sexual activity in our Mbarara, Uganda adolescent health survey, sexually coercive behaviors are widespread. In fact, two in three sexually active females (66%) and one in two males (56%) report involvement. Victimization and perpetration behaviors are gendered: males are more likely to be perpetrators, and females are more likely to be victims. Nonetheless, 47% of males report victimization experiences and 25% of females report perpetration behavior. Indeed, females are just as likely as males to report using physical force or threats to compel sex. These findings underscore the need to carefully avoid the assumptions that females are not perpetrators, and males not victims of coercion. Furthermore, the generally high endorsement rates of coercion suggest not only that the behaviors are common, but also that they are not highly stigmatized. Perhaps one of the most powerful interventions to reduce sexual coercion would be to talk about these behaviors and why they are related to unhealthy relationships, and to demonstrate to young people more assertive and effective means to communicate one's sexual desire.

Overall, 20% of youth report they were not at all willing the first time they had sexual intercourse. These rates are strikingly similar to those reported by Neema and colleagues (2006) in their national adolescent study. Interestingly, however, we have a higher rate of boys reporting unwillingness (13% versus 4% in Neema et al.). This difference could be due to sampling differences (regional versus national) or data collection methodologies (self-report versus interviewer). Whatever the reason, this finding amplifies both the importance of asking males questions about unwanted sexual experiences, and also the need for more work to be done to help youth plan for a healthy and wanted first sexual experience.

Similar to data from the US about violence within the adolescent dating relationship (Renner & Whitney, 2010), dual involvement as a perpetrator and victim is the most common type of involvement in sexual coercion reported by males in our study. Indeed, few youth of both sexes report only perpetration behavior; the majority of perpetrators also are victims. Some have explained female perpetration rates in the dating violence scenario to instead be females who are fighting back against the male perpetration. This fails to explain the current findings however given the behaviors in question. It seems unlikely, for example, that a female victim would lie or deceive her male partner into having sex as a form of retaliation for abuse. More possibly, our data speak to the larger issue of violence as a dyadic experience. Victims of sexual violence as children are significantly more likely to be perpetrators of sexual violence as adolescents and adults (Casey, Beadnell, & Lindhorst, 2009; Hickey, McCrory, Farmer, & Vizard, 2008; Seto & Lalumiere, 2010). While a different type of violent experience, it seems possible that past victimization could affect future perpetration of sexual violence and coercion in adolescence. Unfortunately, analyses of temporal issues such as these are beyond the scope of the current paper.

Limitations

Findings should be interpreted within the limitations of the data. First, it is not known how adolescents in Uganda interpret the questions about coercion (S. Neema et al., 2006); nor

whether females and males interpret it similarly. Second, this is a representative sample of youth in these five secondary schools. It is likely that youth not attending secondary schools and/or living in less urban areas have different personal characteristics and experiences with coercion. Valid data patterns suggest that the skip patterns in the survey were confusing for some students. Finally, English is a second language for all participants. It is possible that there were some language barriers.

Conclusions

Coercion is consistently reported as a risk factor for HIV, including an increased likelihood of engaging in risky sexual behavior (e.g., multiple partners; unprotected intercourse) and of having a sexually transmitted infection (Ajuwon, 2005; Campbell et al., 2008; Dunkle et al., 2004; Erulkar, 2004; Jewkes & Morrell, 2010; S. C. Kalichman & Simbayi, 2004; Koenig et al., 2004; Luke & Kurz, 2002; Maman et al., 2010; Moore et al., 2007; Varga, 2003). For both males and females, perpetrators and victims, coercion is associated with behaviors that place young people at risk for HIV. If we are to design effective intervention strategies to reduce coercive sexual experiences, we need to be aware that victimization and perpetration happens by both sexes.

Acknowledgments

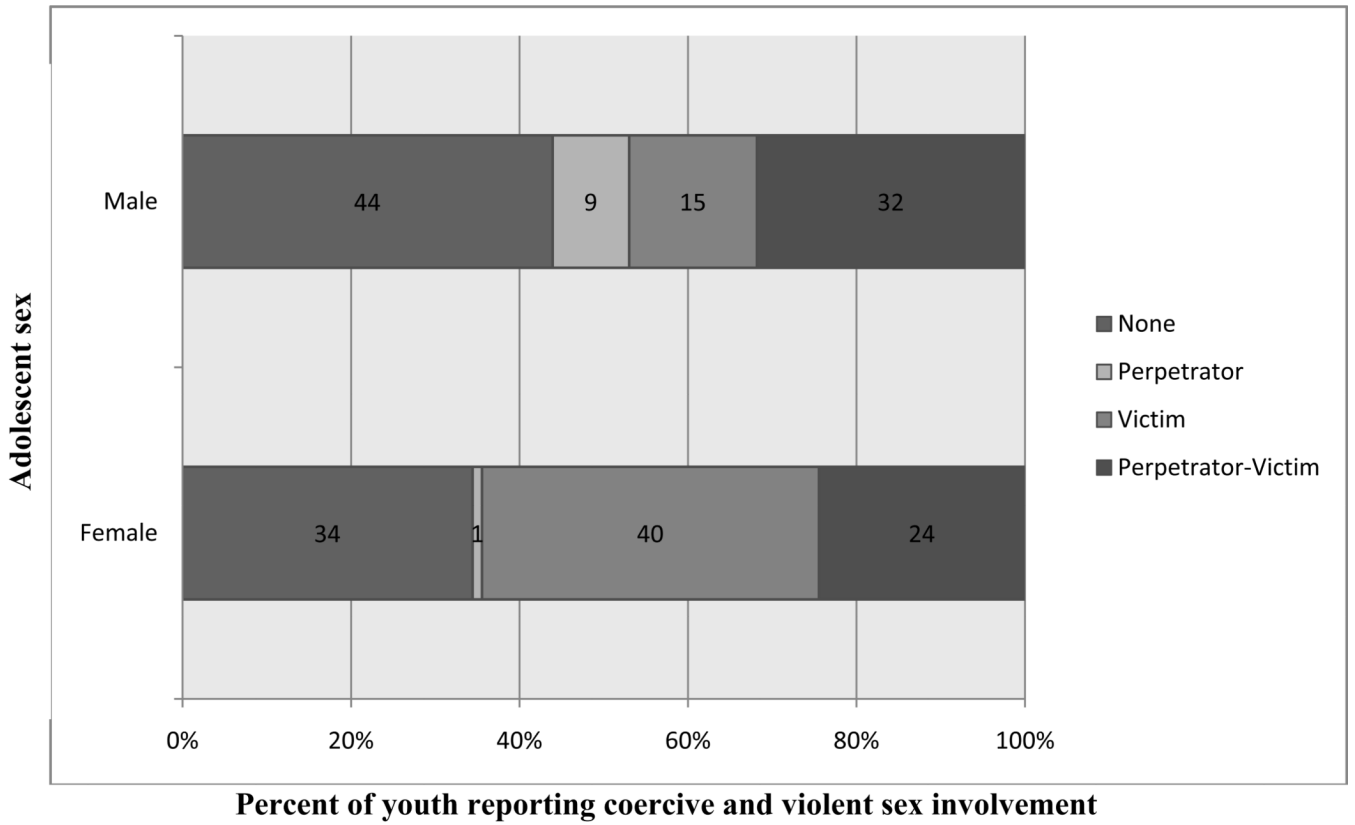
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Notes: $\chi^2(3) = 28.03$ ($p < 0.001$).

Figure 1. Distribution of coercive and violent sex perpetration and victimization experiences among sexually experienced Ugandan adolescents (n=354)

Table 1

Sample characteristics of sexually experienced Ugandan adolescents (n=354)

Personal characteristics	Female	Male	Statistical comparison	p-value
	25% (90)	75% (264)		
	<i>M(SD)</i>	<i>M(SD)</i>		
Demographic characteristics				
Age (years)	15.3 (1.5)	15.6 (1.5)	t(352)=-1.64	0.10
	% (n)	% (n)		
Maternal education primary school or lower	20% (18)	21% (56)	$\chi^2(1)=0.06$	0.81
Paternal education primary school or lower	10% (9)	13% (35)	$\chi^2(1)=0.65$	0.42
Grade			$\chi^2(3)=2.29$	0.52
Secondary 1	22% (20)	22% (59)		
Secondary 2	22% (20)	30% (79)		
Secondary 3	39% (35)	34% (90)		
Secondary 4	17% (15)	14% (36)		
Boarding school (vs. Day school)	79% (71)	87% (230)	$\chi^2(1)=3.57$	0.06
Does not engage in after-school activities	10% (9)	5% (14)	$\chi^2(1)=2.44$	0.12
Psychosocial indicators				
Somewhat / very unlikely I have a bright future	12% (11)	9% (25)	$\chi^2(1)=0.56$	0.46
I certainly feel useless at times	28% (25)	8% (22)	$\chi^2(1)=22.04$	<0.001
I feel I am no good at times	29% (26)	20% (54)	$\chi^2(1)=2.73$	0.10
I have nothing to look forward to in the future	27% (24)	16% (41)	$\chi^2(1)=5.55$	0.02
Social support from a special person (M:SD) *	11.6 (4.6)	11.8 (4.5)	t(352)=-0.23	0.82
Social support from family (M:SD) *	12.8 (3.3)	12.8 (3.5)	t(352)=-0.08	0.94
Health indicators				
Fair or poor physical health	18% (16)	18% (48)	$\chi^2(1)=0.01$	0.93
Ever had an HIV test	28% (25)	28% (73)	$\chi^2(1)=0.00$	0.98
Chance of HIV above average / strong	13% (12)	13% (33)	$\chi^2(1)=0.04$	0.84
Economic indicators				
Very worried about having enough to eat	10% (9)	9% (23)	$\chi^2(1)=0.14$	0.71
Very worried about having enough money	21% (19)	16% (43)	$\chi^2(1)=1.08$	0.30
Very worried about school fees	33% (30)	24% (63)	$\chi^2(1)=3.11$	0.08
Sexual behavior indicators				
Ever had a boyfriend / girlfriend	83% (75)	84% (223)	$\chi^2(1)=0.07$	0.80
Age at first sex (M:SD)	12.7 (2.5)	12.7 (2.5)	t(352)=-0.16	0.87
Age difference between self and partner at first sex (M:SD)	2.4 (2.6)	0.004 (1.6)	t(352)=10.4	<0.001
Not at all willing at first sex	40% (36)	13% (35)	$\chi^2(1)=29.94$	<0.001
Number of sexual partners (lifetime)			$\chi^2(3)=12.48$	0.006
1 partner	53% (48)	39% (104)		
2 partners	21% (19)	23% (62)		

Personal characteristics	Female	Male	Statistical comparison	p-value
	25% (90)	75% (264)		
	<i>M(SD)</i>	<i>M(SD)</i>		
3 partners	18% (16)	14% (36)		
4+ partners	8% (7)	23% (62)		
Condom use at last sex	38% (34)	36% (95)	$\chi^2(1)=0.09$	0.76
General condom use: less than half the time / never	68% (61)	64% (170)	$\chi^2(1)=0.34$	0.56
Involvement in dating violence			$\chi^2(3)=13.52$	0.004
Not at all	42% (38)	55% (144)		
Victim-only	8% (7)	14% (36)		
Perpetrator-only	13% (12)	5% (12)		
Victim-perpetrator	37% (33)	27% (72)		

^aRange: 0–16; higher score reflects greater support

Table 2

Rates of coercive and violent sex perpetration and victimization among sexually experienced Ugandan adolescents (n=354)

Type of coercion or violence	Female (n=90)	Male (n=264)	Statistical comparison	p-value
Victimization				
Been lied to, deceived, or had something said that the other person didn't mean to compel sex	39% (35)	36% (96)	$\chi^2 (1) = 0.18$	0.67
Been given alcohol or drugs so that you were more likely to have sex	16% (14)	14% (36)	$\chi^2 (1) = 0.20$	0.65
Too afraid to say 'no'	43% (39)	22% (57)	$\chi^2 (1) = 16.1$	<0.001
Been physically forced, hurt, or threatened to have sex	32% (29)	13% (33)	$\chi^2 (1) = 18.1$	<0.001
Perpetration				
Lied, deceived, or said something they didn't mean to compel sex from the other person	23% (21)	38% (100)	$\chi^2 (1) = 6.3$	0.01
Given alcohol or drugs so that the other person is likely to have sex	4% (4)	9% (24)	$\chi^2 (1) = 2.0$	0.16
Physically forced, hurt, or threatened someone to have sex	12% (11)	13% (35)	$\chi^2 (1) = 0.06$	0.80

Table 3

Parsimonious multinomial logistic regression model estimating the relative odds of experience with coercive and violent sex perpetration and victimization versus no experience among Ugandan adolescents with a history of sexual activity (n=354)

Personal characteristics	Victim-only (n=76)		Perpetrator-only (n=25)		Victim-perpetrator (n=106)	
	aOR (95% CI)	P-value	aOR (95% CI)	P-value	aOR (95% CI)	P-value
Demographic characteristics						
Male	0.27 (0.12, 0.61)	0.002	12.64 (1.26, 126.91)	0.03	1.99 (0.83, 4.77)	0.12
Age (years)	1.35 (1.01, 1.82)	0.05	0.70 (0.42, 1.17)	0.18	1.02 (0.77, 1.36)	0.88
Paternal education primary school or lower	3.06 (1.12, 8.38)	0.03	5.67 (1.34, 23.93)	0.02	1.53 (0.56, 4.16)	0.41
Grade						
Secondary 1	0.52 (0.18, 1.51)	0.23	4.99 (0.54, 45.94)	0.16	1.53 (0.51, 4.55)	0.45
Secondary 2	0.48 (0.16, 1.40)	0.18	2.13 (0.22, 21.10)	0.52	0.83 (0.27, 2.49)	0.73
Secondary 3	0.56 (0.20, 1.61)	0.28	1.61 (0.15, 17.86)	0.70	0.98 (0.32, 2.99)	0.97
Secondary 4	1.0 (RG)		1.0 (RG)		1.0 (RG)	
Boarding student	1.19 (0.46, 3.07)	0.72	3.54 (0.53, 23.75)	0.19	1.51 (0.63, 3.60)	0.35
Psychosocial indicators						
Somewhat/very unlikely I have a bright future	1.61 (0.49, 5.35)	0.43	1.85 (0.34, 10.08)	0.48	2.88 (0.95, 8.74)	0.06
Somewhat/strongly agree I have nothing to look forward to in the future	0.57 (0.23, 1.42)	0.23	0.11 (0.01, 1.16)	0.07	0.71 (0.31, 1.62)	0.42
Social support from family	0.89 (0.80, 0.98)	0.02	0.84 (0.72, 0.99)	0.04	0.89 (0.80, 0.98)	0.02
Health indicators						
Ever had an HIV test	1.09 (0.50, 2.38)	0.82	3.61 (1.27, 10.26)	0.02	1.96 (1.01, 3.80)	0.05
Chance of HIV above average / strong	3.46 (1.20, 10.02)	0.02	1.63 (0.30, 8.67)	0.57	1.51 (0.55, 4.19)	0.42
Economic indicators						
Very worried about having enough to eat	2.52 (0.69, 9.19)	0.16	1.18 (0.10, 13.28)	0.90	2.84 (0.87, 9.27)	0.08
Very worried about having enough money	0.62 (0.24, 1.62)	0.33	0.29 (0.04, 1.93)	0.20	1.17 (0.51, 2.68)	0.71
Sexual behavior indicators						
Ever had a boyfriend	0.72 (0.30, 1.70)	0.45	0.75 (0.18, 3.19)	0.70	3.70 (1.10, 12.51)	0.04
Age at first sex	0.96 (0.80, 1.15)	0.66	1.36 (1.02, 1.81)	0.04	1.15 (0.97, 1.36)	0.10
Age difference between self and partner at first sex	1.06 (0.89, 1.27)	0.52	1.16 (0.86, 1.58)	0.33	1.24 (1.04, 1.47)	0.02
Not at all willing at first sex	1.13 (0.50, 2.51)	0.77	0.40 (0.08, 2.09)	0.28	0.65 (0.28, 1.53)	0.33
General condom use less than half the time / never	1.38 (0.60, 3.19)	0.45	2.44 (0.62, 9.66)	0.21	0.86 (0.40, 1.82)	0.69

Personal characteristics	Victim-only (n=76)		Perpetrator-only (n=25)		Victim-perpetrator (n=106)	
	aOR (95% CI)	P-value	aOR (95% CI)	P-value	aOR (95% CI)	P-value
Condom use at last sex	4.11 (1.71, 9.90)	0.002	2.43 (0.60, 9.74)	0.21	1.75 (0.79, 3.88)	0.17
Dating violence						
Not involved	1.0 (RG)		1.0 (RG)		1.0 (RG)	
Victim-only	0.75 (0.23, 2.40)	0.63	0.61 (0.09, 4.20)	0.61	3.22 (1.30, 7.97)	0.01
Perpetrator-only	1.24 (0.31, 5.02)	0.76	8.45 (1.17, 61.28)	0.04	5.37 (1.56, 18.48)	0.01
Perpetrator-victim	0.74 (0.32, 1.72)	0.49	2.98 (0.88, 10.05)	0.08	3.87 (1.87, 8.00)	<0.001

Abbreviations: aOR, adjusted odds ratios (all variables are adjusted for all other variables listed in the Table); RG, Reference group Bold denotes $p < 0.10$ or adjusted OR (aOR) ≥ 2.4 ; or at least two categories of violent or coercive experience with aOR ≥ 2.0 on the same youth characteristic, suggesting trend across categories.