Risk and Protective Correlates of Young Women's First Sexual Experiences in Rakai, Uganda

CONTEXT: *Sexually active young women bear the brunt of the HIV epidemic in Sub-Saharan Africa. Information is needed on risk and protective correlates at the family, partner and individual level for the design of programs to encourage safer sexual behaviors and reduce HIV risk among young women.*

METHODS: *The study was conducted among 1,675 sexually experienced women aged 15–24 living in Rakai, Uganda. The sample was taken from an ongoing community cohort study initiated in 1994 in 56 villages by the Rakai Health Sciences Program. Contextual variables at the family, partner and individual levels were analyzed in relation to three outcome variables: sex before the age of 15, coerced first sex and condom use at first sex.*

RESULTS: *At the family level, young females who did not live with both parents were more likely than those who did to have had sex before the age of 15 and to have experienced sexual coercion at first sex. Those whose mothers had some secondary education and whose female caregiver did not consume alcohol had elevated odds of using a condom at first sex. Having initiated sex at age 15 or older was the strongest individual-level characteristic associated with having used a condom at first sex.*

CONCLUSIONS: *Reproductive health interventions should target adolescents and their parents to delay the onset of sexual activity, prevent sexual coercion and encourage condom use. Both adolescents and their parents should be educated about the risks associated with different types of sexual partnerships.*

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Young people are at the center of the global HIV epidemic. An estimated 5.4 million youth aged 15–24 are living with HIV, and every day about 2,320 new HIV infections occur in this age-group.[1] Sub-Saharan Africa is home to almost two-thirds of all youth living with HIV or AIDS (3.3 million), and females are bearing the brunt of the epidemic (76%). Young females' elevated risk for HIV has been discussed primarily in terms of individual characteristics. Several studies conducted in Sub-Saharan African contexts have shown not only that adolescent females tend to have sex earlier than their male counterparts, but that those who begin sexual activity early are particularly likely to become infected with HIV.[2–6]

A growing body of evidence suggests that coercion plays a large role in early initiation of sexual intercourse among young women.[2,6–10] Sexual coercion refers to a range of experiences, any of which can lead a person to have sex against his or her will.[11] Sexual coercion may operate through violence, threats, deception, cultural expectation or economic disadvantage. Recent research also shows that apart from being a traumatic event in itself, early experience of sexual coercion places young women at risk for additional negative sexual and reproductive health outcomes.[12–15] Several studies conducted in Sub-Saharan Africa, for example, found that women who had been coerced at first intercourse were more likely than those whose first sex had not been coerced to report subsequent risky behaviors, such as engaging in unprotected sex,[14–16] having multiple sexual partners and obtaining unsafe abortions.[7] In Rakai, Uganda, studies have shown that women who reported coerced first sex were less likely than other women to use contraceptives, including condoms. Women coerced into first sex were also more likely to report their current or most recent pregnancy as having been unintended (among ever-pregnant women) and to report having had one or more genital tract symptoms.[14]

A better understanding of the characteristics and contexts of female adolescents' first sexual experience, including those associated with coercion at first sex, is of vital importance to policymakers and programmers concerned with designing effective interventions to reduce the risk of HIV among adolescents. Research over the last few decades has now shown that adolescents' sexual behaviors and related outcomes are largely influenced by their social environments. Parents and guardians, other family members, peers, teachers and other significant adults all play an important role, as do the communities in which adolescents live.[17] While such research has identified a variety of important risk and protective factors that affect adolescent health in the United States and other industrialized countries,[18] in Sub-Saharan African contexts, it still remains poorly understood whether similar factors can exert the same influence on adolescent sexual risk behaviors. To date, there have only been a handful of studies published

on risk and protective factors related to first-time sexual behaviors in Sub-Saharan African contexts.[4,19–21] This study aims to examine characteristics at the family, partner and individual levels to determine the relative strength of their association with the sexual behaviors of young women in Rakai, Uganda.

Theoretical Framework

The theoretical framework guiding this study integrates two interrelated paradigms: the risk and protective factor framework and the ecological perspective. The first paradigm suggests that there are multiple risk and protective factors that combine to shape adolescents' behavior over the course of their development.[18] By definition, factors are called "protective" if they increase the likelihood of positive health behaviors or outcomes (e.g., abstinence, condom use, contraceptive use) or if they moderate or discourage behaviors leading to negative health outcomes. Factors are labeled "risk" if they increase the likelihood of negative health behaviors and outcomes or discourage positive behaviors that might prevent them.

One way to understand the interactions between risk and protective factors is to view them within an ecological model, which recognizes that each person functions within a complex network of individual, family, school and community contexts that affect their ability to avoid risk.[22] For this study, we were interested in describing young women's first sexual experiences by examining potential relationships between sexual outcomes—age of sexual debut, coerced first sex and condom use at first sex—and family, partner and individual characteristics.

METHODS

Study Location and Participants

The study was conducted among a randomly selected sample of 1,675 sexually experienced young women aged 15–24 living in Rakai, Uganda. The sample was drawn from an ongoing community cohort study initiated in 1994 in 56 villages by the Rakai Health Sciences Program. For this analysis, information came from the 10th round of data collection, which was conducted between March 2003 and November 2004 and included a special module developed specifically for 15–24-year-olds (n=1,884). The module included questions pertaining to young people's life circumstances at age 11 or 12 and covered the survival status and educational attainment of both biological parents, family living arrangements, alcohol consumption by caregivers (i.e., biological parents or other legal guardians), family socioeconomic conditions, regularity of school attendance and the perceived degree of concern felt by caregivers toward the respondents. Only those who answered affirmatively to ever having had sex were included in the analysis.

MEASURES

• *Dependent variables.* We examined three dependent variables: sex before age 15, coercion at first sex and use of a condom at first sex. Sex before age 15 was measured by asking young women their age at first sexual intercourse. Young women who answered affirmatively to the question, "Was force used when you had sex the first time?" were classified as having experienced coerced sex and were then asked about the specific actions (both verbal and physical) that accompanied coercion at first sex. For the bivariate and multivariate analyses of condom use at first sex, only respondents who did not report coerced first sex were included. Nonresponses or responses of "I don't know" were coded as missing. The total sample size, excluding respondents who had never had sex and those with missing data, was 1,675 for the outcomes sex before age 15 and coerced first sex; the sample size for condom use at first sex was 1,501.

• *Family characteristics.* In the ecological model, the family is one of the most influential sources of risk and protection for adolescent sexuality. Evidence from the United States and other industrialized countries shows that there are three major categories of family-level variables associated with adolescent sexual behavior: family structure, family demographic characteristics and family processes (which can include measures such as parental concern, parental monitoring and parental behaviors).

For this study, we included five aspects of the family environment that reflect these major categories: family structure, family socioeconomic status, parents' education, caregivers' substance use and caregivers' concern for the respondents' childhood problems (as perceived by the respondent). Family structure was assessed by asking respondents about whom they lived with when they were approximately 11 or 12 years old: both parents, mother only or "others" (father only, other relatives or unrelated adults). Very few respondents lived only with their father. To measure family socioeconomic status, we asked young women whether they thought their household when they were aged 11 or 12 was "well-off," "average" or "poor." Each parent's education was classified by whether he or she had attended school for less than five years, 5–7 years or more than seven years. Because primary education in Uganda consists of seven years of schooling, parents with more than seven years of schooling were considered to have at least some secondary education. Caregivers' substance use was measured by asking respondents whether their parents or guardians drank alcohol "never," "sometimes" or "often" when the respondent was aged 11 or 12. Many respondents were missing data on their father or other male guardian: Twenty-four percent of the sample (466 respondents) did not have any knowledge of their male guardian's substance use, and 39% (726 respondents) did not have any information about his education. Because a subanalysis among young people for whom these data were available revealed that the male guardian's characteristics were not associated with the examined sexual behaviors, these two variables were removed from subsequent analyses. Finally, parental concern was measured by asking young women whether they felt their caregivers cared about their problems at around age 11 or 12 "very much,"

"somewhat," "not very much" or "not at all."

• *Partner characteristics.* The age differential between partners and the type of relationship they have has been found to be related to a number of adolescent sexual outcomes.[23–26] We measured male partners' age relative to the respondents' age, categorizing partners as the same age or younger, 1–4 years older, or at least five years older or of an unknown but older age. Respondents' first sexual partner was classified as boyfriend, husband or cohabiting partner, occasional or casual friend, fellow student (not considered a casual friend) or "other" (visitor, boss or work supervisor, teacher, stranger or relative).

• *Individual characteristics.* Research has shown that having a strong religious affiliation is associated with delayed sexual experience.[27–30] In particular, in some Sub-Saharan African contexts, Muslims and Christians have distinctly different patterns of sexual initiation and childbearing; early sexual initiation and early childbearing are less common among Muslims. For our study, we asked young women to classify themselves as either Muslim or non-Muslim to determine differences in adolescent sexual behavior between religions. In addition, since several studies have shown that being in school or having higher school attendance is protective for early sexual debut and condom use,[31–34] we asked young women to classify their school attendance at age 11 or 12 as having "never/rarely missed," "sometimes missed" or "frequently missed/never attended."

Data Analysis

Descriptive and bivariate analyses were conducted to assess the associations between each of the three outcomes—sex before age 15, coerced sex and condom use at first sex—and the individual, partner and family characteristics. Multivariate logistic regression was then used to examine the net association of the family and individual characteristics with our main outcomes. All analyses were conducted using Stata 9.

RESULTS

Descriptive Data

Participants ranged in age from 15 to 24, with a mean age of 20.9 years. Only 12% indicated that they were still in school (not shown). A majority of young women reported growing up in households where both parents were present (55%); however, 32% of respondents stated that they had lived in households where the biological mother was absent (Table 1). Nearly 90% of respondents reported their caregivers were at least somewhat concerned about their problems when they were 11 or 12. Most women also reported that their families were of average socioeconomic status at that time (72%), and the majority classified themselves as non-Muslim (83%).

Sexual Behaviors

Approximately one out of every five young women (21%) had had their sexual debut before age 15. The median age at first intercourse was 16 (not shown). While 90% reported that their first sexual experience was consensual, 10% said that their first sexual encounter was coerced. Most young women reported not having used a condom during sexual debut (66%). More than half of all respondents said that their first sexual partner was their boyfriend (53%) and was less than five years older (67%).

TABLE 1. Percentage distribution of sexually experienced respondents, by individual, family and partner characteristics, Rakai, Uganda

Characteristic	% (n=1,675)
Age at first sex	
<15	20.8 (349)
15–16	42.9 (718)
≥17	36.3 (608)
Coerced first sex	
Yes	10.2 (171)
No	89.8 (1504)
Condom use at first sex	
Condom not used	66.1 (1,107)
Condom used	33.6 (563)
Missing	0.3 (5)
Relationship to first partner	
Boyfriend	52.7 (883)
Husband/cohabiting partner	22.0 (369)
Occasional/casual friend	11.0 (185)
Fellow student	10.5 (176)
Other	3.7 (62)
Partner's age relative to respondent	
Same age or younger	18.0 (302)
1–4 years older	48.5 (813)
≥5 years older or unknown	33.4 (560)
Living arrangement*	
With both parents	54.9 (919)
With mother only	13.4 (224)
Other	31.8 (532)
Mother's education	
<5 years	19.2 (321)
5–7 years	33.7 (564)
>7 years	15.4 (258)
Do not know	31.8 (532)
Female caregiver's alcohol consumption*	
None	69.1 (1,157)
Sometimes/often	30.9 (518)
Religion	
Non-Muslim	83.2 (1,393)
Muslim	16.8 (282)
Family socioeconomic status*	
Well-off	10.2 (171)
Average	72.1 (1,208)
Poor	17.7 (296)
Caregivers cared about problems*	
Very much	47.3 (792)
Somewhat	42.0 (704)
Not very much/not at all	10.7 (179)
School attendance*	
Never/rarely missed	42.0 (703)
Sometimes missed	48.1 (806)
Frequently missed/never attended	9.9 (166)
Total	100.0

*When respondent was aged 11 or 12.

Bivariate Analysis

According to a bivariate analysis examining characteristics associated with early sexual initiation, nonconsensual first sex was significantly more likely to be reported by respondents who had initiated sex before age 15 than by those who had initiated sex later (14% vs. 9%; Table 2). In addition, early initiators were more likely than later initiators to report that their first sexual partner had been a casual friend (17% vs. 10%), fellow student (14% vs. 10%) or other acquaintance (5% vs. 3%). The proportion reporting that their first sexual partner was their husband was more than twice as high among those who initiated sex at age 15 or older (25% vs. 11%); the proportions of early and later initiators who reported that their first sexual partner was their boyfriend were the same (53% each).

TABLE 2. Percentage distribution of respondents, by timing of sexual initiation, according to selected characteristics

Characteristic	<15	≥15
Coerced first sex**		
Yes	14.3	9.1
No	85.7	90.9
Relationship to first partner***		
Boyfriend	53.0	52.6
Husband/cohabiting partner	11.5	24.8
Occasional/casual friend	16.6	9.6
Fellow student	13.5	9.7
Other	5.4	3.2
Partner's age relative to respondent		
Same age or younger	22.3	16.9
1–4 years older	45.3	49.4
≥5 years older or unknown	32.4	33.7
Living arrangement*,†**		
With both parents	44.7	57.5
With mother only	14.3	13.1
Other	40.1	29.3
Mother's education		
<5 years	16.9	19.8
5–7 years	35.2	33.3
>7 years	12.3	16.2
Do not know	35.5	30.8
Female caregiver's alcohol consumption,†**		
None	61.9	70.1
Sometimes/often	38.1	29.0
Religion		
Muslim	18.3	16.4
Non-Muslim	81.7	83.6
Family socioeconomic status*,†		
Well-off	10.2	10.2
Average	66.8	73.5
Poor	22.9	16.3
Caregivers cared about problems*,†**		
Very much	37.8	49.8
Somewhat	44.7	41.3
Not very much/not at all	17.5	8.9
School attendance,†**		
Never/rarely missed	37.8	43.1
Sometimes missed	47.0	48.4
Frequently missed/never attended	15.2	8.5
Total	100.0	100.0

*p<.05. **p<.01. ***p<.001. †When respondent was aged 11 or 12.

We observed a significant relationship between childhood living arrangements and sexual initiation. Females who initiated sex before age 15 were less likely than those who initiated sex later to have lived with both parents (45% vs. 58%) and more likely to have lived with other adults (40% vs. 29%). Similarly, early initiators were less likely than later initiators to report that their parents or guardians cared very much about their childhood problems (38% vs. 50%). Early initiators were more likely than those who initiated sex at a later age to report that their female caregiver during childhood consumed alcohol (38% vs. 29%). Finally, females who initiated sex before age 15 were more likely than later initiators to report having frequently missed or never attended school (15% vs. 9%).

A bivariate analysis of characteristics associated with coercion at sexual initiation showed that among respondents who experienced coerced first sex, 44% had had their sexual debut at age 15 or 16 (Table 3). Those who were coerced at first sex were more likely than those who were not coerced to have had sex before age 15 (29% vs. 20%). A higher proportion of women who reported coerced first sex than of those who did not said that their first sexual partner was at least five years older (42% vs. 33%). Females who had experienced coerced first sex were more likely than those who had not to have lived with caregivers other than their biological mother (42% vs. 31%) when they were children; however, females whose first sexual experience was consensual were more likely than those whose first sex was coerced to report living with their mother only (14% vs. 6%). Females who experienced coerced first sex were also more likely to report that their female caregiver consumed alcohol than were those whose first sex was not coerced (38% vs. 30%). Young women whose first sex was coerced were more likely than those whose first sex was consensual to report that their family had been well-off when they were children (16% vs. 10%).

Correlations between respondent characteristics and condom use at first sex were examined in a third bivariate analysis. Young women who used a condom at first sex were less likely than those who did not to have been younger than 15 at first sex (15% vs. 22%; Table 4), and those who used a condom were more likely than those who did not to report that their first partner had been their age or younger (22% vs. 16%). Feeling that caregivers cared very much about their childhood problems was more likely among those who used a condom at first sex than among those who did not (52% vs. 44%). Nearly 60% of those reporting condom use at first sex said that their mother had at least five years of education, compared with 44% among those not reporting condom use. Young women who did not use a condom at first sex were more likely than those who did to report that their mother had less than five years of education (21% vs. 16%, respectively), that their female caregiver consumed alcohol (32% vs. 26%) and that they frequently missed or never attended school (11% vs. 6%).

TABLE 3. Percentage distribution of respondents, by coercion at sexual initiation, according to selected characteristics

Characteristic	Coerced	Not coerced
Age at first sex**		
<15	29.2	19.9
15–16	44.4	42.7
≥17	26.3	37.4
Partner's age relative to respondent**		
Same age or younger	21.1	17.7
1–4 years older	37.4	49.8
≥5 years older or unknown	41.5	32.5
Living arrangement,†**		
With both parents	51.4	55.3
With mother only	6.4	14.2
Other	42.1	30.6
Mother's education		
<5 years	22.2	18.8
5–7 years	30.4	34.0
>7 years	13.5	15.6
Do not know	33.9	31.5
Female caregiver's alcohol consumption*		
None	62.0	69.9
Sometimes/often	38.0	30.1
Religion		
Muslim	14.0	17.2
Non-Muslim	86.0	82.9
Family socioeconomic status*,†		
Well-off	16.4	9.5
Average	66.1	72.8
Poor	17.5	17.7
Caregivers cared about problems,†**		
Very much	52.6	46.7
Somewhat	31.6	43.2
Not very much/not at all	15.8	10.1
School attendance†		
Never/rarely missed	41.5	42.0
Sometimes missed	45.0	48.5
Frequently missed/never attended	13.5	9.5
Total	100.0	100.0

*p<.05. **p<.01. ***p<.001. †When respondent was aged 11 or 12.

TABLE 4. Percentage distribution of respondents, by condom use at first sex, according to selected characteristics

Characteristic	Condom at first sex (n=528)	No condom at first sex (n=973)
Relationship to first partner***		
Boyfriend	74.8	46.9
Husband/cohabiting partner	1.9	35.2
Occasional/casual friend	9.5	9.3
Fellow student	12.5	8.0
Other	1.3	0.7
Age at first sex***		
<15	15.3	22.4
15–16	41.5	43.3
≥17	43.2	34.3
Partner's age relative to respondent***		
Same age or younger	21.6	15.5
1–4 years older	57.8	45.6
≥5 years older or unknown	20.6	38.9
Living arrangement†		
With both parents	54.4	55.7
With mother only	17.1	12.6
Other	28.6	31.7
Mother's education (yrs.)***		
<5 years	15.7	20.5
5–7 years	37.3	32.3
>7 years	22.5	11.8
Do not know	24.4	35.5
Female caregiver's alcohol consumption**		
None	73.9	67.7
Sometimes/often	26.1	32.3
Religion		
Muslim	17.1	17.2
Non-Muslim	83.0	82.8
Family socioeconomic status†		
Well-off	9.9	9.4
Average	73.9	72.3
Poor	16.3	18.4
Caregivers cared about problems,†**		
Very much	51.7	44.0
Somewhat	38.1	46.0
Not very much/not at all	10.2	10.0
School attendance,†**		
Never/rarely missed	43.8	41.2
Sometimes missed	50.1	47.4
Frequently missed/never attended	6.1	11.4
Total	100.0	100.0

*p<.05. **p<.01. ***p<.001. †When respondent was aged 11 or 12.

Multivariate Analysis

• *Sexual initiation before age 15.* In a multivariate logistic regression analysis looking at early sexual initiation (Table 5, page 158, first panel), the only partner-level characteristic associated with early sexual initiation was the relationship to the first sexual partner. In comparison with young women who reported that their first sexual partner was a boyfriend, those who said he was a casual friend were more likely to have initiated sex before age 15 (odds ratio, 1.5), and those whose first partner was their husband were less likely to have had sex before age 15 (0.4).

At the family level, early sexual initiation was associated with elevated odds of having grown up in a household without both parents present (1.5–1.6) and of having a female caregiver who consumed alcohol (1.5). Young women who said that they felt their caregiver cared little about their problems during childhood were nearly twice as likely to have initiated sex before age 15 than were those who felt their parents or guardians cared very much about their problems during childhood (2.0). In addition, respondents who had frequently missed or never attended school were much more likely than those who had rarely or never missed school to have first had sex before age 15 (1.7).

• *Coerced first sex.* The measure most strongly associated with coerced first sex was young women's relationship with their first sexual partner (Table 5, panel 2). In comparison with those whose first sexual partner was their boyfriend, respondents had higher odds of having experienced coerced first sex if their first sexual partner was

classified as "other" (96.4), a casual friend (9.3) or a fellow student (6.7).

Contrary to what we expected, young women who lived with their mothers only were less likely than those who lived with both parents to have experienced coerced first sex (odds ratio, 0.5). In addition, young women of either average (0.5) or poor socioeconomic status (0.4) were less likely to have experienced coerced first sex than those who felt they were well-off. Finally, young women who felt that their caregivers were somewhat concerned about their problems during childhood were less likely to have experienced coerced first sex than were those who felt their parents or guardians cared very much (0.6).

TABLE 5. Odds ratios (and 95% confidence intervals) from logistic regression analyses of early sexual initiation and coerced first sex among respondents, by selected characteristics

Characteristic	Sex before age 15	Coerced first sex
Relationship to first partner		
Boyfriend (ref)	1.00	1.00
Husband/cohabiting partner	0.44 (0.30–0.65)***	1.20 (0.63–2.29)
Occasional/casual friend	1.53 (1.06–2.20)**	9.26 (5.50–15.50)***
Fellow student	1.46 (1.00–2.15)	6.71 (3.87–11.60)***
Other	1.31 (0.72–2.36)	96.40 (45.70–203.20)***
Age at first sex		
<15	na	1.41 (0.84–2.39)
15–16	na	1.20 (0.76–1.88)
≥17 (ref)	na	1.00
Partner's age relative to respondent		
Same age or younger (ref)	1.00	1.00
1–4 years older	0.78 (0.56–1.08)	0.99 (0.60–1.66)
≥5 years older or age unknown	0.92 (0.64–1.32)	1.21 (0.70–2.09)
Living arrangement†		
With both parents (ref)	1.00	1.00
With mother only	1.46 (1.01–2.12)*	0.45 (0.22–0.91)*
Other	1.59 (1.20–2.09)**	1.28 (0.84–1.94)
Mother's education		
<5 years	1.18 (0.75–1.86)	1.66 (0.85–3.22))
5–7 years	1.46 (0.98–2.17)	1.22 (0.66–2.24)
>7 years (ref)	1.00	1.00
Do not know	1.28 (0.86–1.92)	0.98 (0.53–1.82)
Female caregiver's alcohol consumption†		
Never (ref)	1.00	1.00
Sometimes/often	1.47 (1.13–1.91)**	1.28 (0.86–1.91)
Religion		
Muslim (ref)	1.00	1.00
Non-Muslim	0.71 (0.51–0.98)*	1.23 (0.72–2.12)
Family socioeconomic status†		
Well-off (ref)	1.00	1.00
Average	0.88 (0.58–1.33)	0.52 (0.30–0.89)**
Poor	1.11 (0.68–1.79)	0.39 (0.19–0.79)**
Caregivers cared about problems†		
Very much (ref)	1.00	1.00
Somewhat	1.38 (1.06–1.81)**	0.55 (0.36–0.84)**
Not very much/not at all	1.97 (1.33–2.92)**	0.77 (0.41–1.42)
School attendance†		
Never/rarely missed (ref)	1.00	1.00
Sometimes missed	1.03 (0.79–1.35)	0.85 (0.57–1.28)
Frequently missed/never attended	1.74 (1.14–2.65)**	1.17 (0.60–2.28)
LRχ^2 (df)	*107.95 (14)*	*306.24 (15)*
Prob χ^2	*0.000*	*0.000*
Pseudo R^2	*0.063*	*0.277*

*p<.05. **p<.01. ***p<.001. †When respondent was aged 11 or 12. *Notes:* ref=reference category. na=not applicable.

• *Condom use at first sex.* One of the strongest correlates of condom use at first sex was age at first sex (Table 6). Women who had first had sex when they were at least 15 were more likely to have used a condom at that encounter than those who were younger than 15 (odds ratios, 1.8 and 2.6). At the partner level, young women who reported that their first sexual partner was their husband or cohabiting partner were far less likely to have used a condom at first sex than those whose first partner was their boyfriend (0.03). In addition, the odds of having used a condom at first sex were lower among young women whose first sexual partner was at least five years older than among those whose first partner was the same age or younger (0.7).

Finally, at the family level, mothers' characteristics were strongly associated with daughters' condom use. For example, respondents whose mother had more than seven years of education were more likely to have used a condom at their first sexual encounter than those whose mother had less than five years of education (odds ratio, 2.2). Similarly, young women whose female caregiver did not consume any alcohol were more likely to have used a condom at first sex than those whose caregiver did consume alcohol (1.4). In addition, women who felt that their parents or guardians cared somewhat about their problems during childhood were less likely to have used a condom than those who felt their caregivers cared very much about their problems (0.7); we found no relationship between condom use at first sex and reporting that caregivers did not care at all about their problems.

DISCUSSION

This study clearly highlights the importance of examining young females' first sexual experiences at multiple ecological levels, including the family and partner levels. At the family level, young females who did not live with both parents were more likely than those who did to have had sex before age 15 and to have experienced coerced first sex. Indeed, other studies have noted the importance of the presence and availability of both parents during a female adolescent's formative years.[35–39] However, in our study, family structure was not associated with protective sexual behaviors, i.e., condom at first sex. Elevated odds of condom use were found only among those whose mother was comparatively well-educated and whose female caregiver did not consume alcohol.

Another family characteristic that emerged as significant was caregivers' concern. Females who believed that their parent or guardian cared very much about their problems during childhood had decreased odds of early sexual debut and, to a lesser extent, of condom use at first sex. Parental concern was related to sexual coercion, but not in the manner we would have predicted; young women whose caregivers cared somewhat about their childhood problems were less likely to have experienced coerced first sex than those whose caregivers cared very much. This finding may

TABLE 6. Odds ratios (and 95% confidence intervals) from logistic regression analyses of condom use at first sex among respondents whose first sex was not coerced, by selected characteristics

Characteristic	Odds ratio
Age at first sex	
<15 (ref)	1.00
15–16	1.75 (1.23–2.42)**
≥17	2.61 (1.86–3.68)***
Relationship to first partner	
Boyfriend (ref)	1.00
Husband/cohabiting partner	0.03 (0.02,0.06)***
Occasional/casual friend	0.86 (0.58–1.27)
Fellow student	0.93 (0.64–1.36)
Other	1.28 (0.41–3.95)
Partner's age relative to respondent	
Same age or younger (ref)	1.00
1–4 years older	1.16 (0.85–1.57)
≥5 years older or age unknown	0.68 (0.47–0.98)*
Living arrangement†	
With both parents	1.22 (0.92–1.61)
With mother only	1.42 (0.96–2.08)
Other (ref)	1.00
Mother's education	
<5 years (ref)	1.00
5–7 years	1.28 (0.90–1.82)
>7 years	2.20 (1.44–3.34)***
Do not know	0.91 (0.63–1.33)
Female caregiver's alcohol consumption†	
Sometimes/often (ref)	1.00
Never	1.42 (1.08–1.85)*
Religion	
Muslim (ref)	1.00
Non-Muslim	0.93 (0.67–1.30)
Family socioeconomic status†	
Poor (ref)	1.00
Average	1.09 (0.78–1.51)
Well-off	1.12 (0.68–1.84)
Caregivers cared about problems†	
Very much (ref)	1.00
Somewhat	0.70 (0.54–0.90)**
Not very much/not at all	1.16 (0.74–1.81)
School attendance†	
Never/rarely missed	1.28 (0.77–2.13)
Sometimes missed	1.34 (0.82–2.20)
Frequently missed/never attended (ref)	1.00
LRχ^2*(df)*	386.89 (16)
Probχ^2	0.0000
Pseudo R^2	0.1987

*p<.05. **p<.01. ***p<.001. †When respondent was aged 11 or 12. *Notes*: ref=reference category. N=1,501.

reflect the fact that sexual coercion is usually not related to females' behavioral choices. Although the study's findings complement previous research about the role and importance of parents, particularly mothers, in the lives of their adolescent and young adult children,[38–40] very little attention has been paid to the relationship between a mother's risky behaviors (such as alcohol use) and the sexual behaviors of her children in Sub-Saharan African contexts. The findings from this study now provide a basis, and a clear rationale, for future research on these relationships.

At the partner level, the strongest factor in relation to the outcomes of interest was the type of first sexual partner. Females whose first sexual partners were comparatively casual (i.e., friend or fellow student vs. boyfriend, boyfriend vs. husband) tended to have elevated odds of reporting early sexual debut and coerced first sex, but also of having used a condom at first sex. Such findings have been reported elsewhere and suggest that how young people define their partners (i.e., serious vs. casual) plays a crucial role in determining their engagement in unsafe sexual behaviors.[41–43] Interestingly, while it is often reported in the literature that the age of the partner makes a difference in the ability of the female to negotiate sex or condom use, this study found no evidence in the multivariate analyses to support that conclusion.

Finally, at the individual level, one of the strongest factors related to condom use at first sex was the respondent's age at sexual debut. The earlier the sexual debut, the less likely a young woman was to report using a condom at first sex. According to the literature, the younger the age of sexual initiation, the stronger the likelihood that sex was coerced and the more likely it was to have occurred without protection.[43,44] Indeed, a high proportion of young women in our sample (nearly 20%) had their sexual debut before age 15, and very few in that group used a condom at first sex. There is also evidence that early entry into sexual activity is associated with a heightened risk of pregnancy.[6,45]

Some important limitations of this study should be acknowledged. First, the study examines self-reported behaviors and childhood characteristics, and the data are thus subject to reporting errors, recall bias and social desirability bias of unknown direction and magnitude. Second, the data come from a cross-sectional survey and therefore we cannot determine the direction or causality of relationships. Third, some of the variables included in the analysis are less reliable than others. For instance, the measure of socioeconomic status used in this study was extremely subjective, and that may explain why it was not associated with the dependent variables as expected. Finally, sexual coercion is a complex and nuanced concept, and it may not have been fully captured by the survey. Some respondents, for example, may have been coerced into sex by way of economic disadvantage, but whether they considered this to be "forced" sex is not clear. If coercion was not clearly defined in the survey, it would likely have been underreported.

Despite these limitations, this study points to the need for developing better strategies to address early, unprotected sexual debut and sexual coercion among young females as a means for preventing the spread of HIV among this population. To date, the majority of HIV prevention programs emphasize abstinence, faithfulness in relationships and condom use—none of which protect young women in unwanted sexual situations.[16] The results of this study indicate that young women's early sexual well-being may benefit from programs and policies aimed at improving parenting behaviors and educating young people about avoiding coerced sex.

In accordance with behavioral change theories, strategies should conceptualize parents and other guardians as role models whose behaviors and attitudes influence their children's behaviors and attitudes.[46] Programs should explore targeting mothers, along with daughters, since their behaviors and their presence in the home are correlated with their daughter's sexual behaviors. For young women who do not have a close relationship with their mother, or whose mother has died, there is some evidence to suggest that mentoring programs may be valuable for preventing sexual coercion, particularly for those in unstable living environments.[47] Also important is educating parents and guardians about how to demonstrate care and support for their children, especially when adolescents face problems. A large body of research demonstrates the importance of a loving and supportive parent-child relationship for adolescent sexual and reproductive health.[48,49] The World Health Organization's recent publication entitled *Helping Parents in Developing Countries Improve Adolescents' Health* provides cross-cultural evidence and programmatic examples and may be useful for promoting these parenting skills in developing country contexts, including in Rakai.[39]

Finally, because this study shows the importance of the type of relationship adolescents have with their first sexual partner, strategies need to focus on educating male and female adolescents, as well as their parents and guardians, about the risks associated with all types of sexual partnerships. Married and cohabiting adolescents have been found to be at high risk for HIV[50,51] and may benefit from targeted education about condom use. Because the odds of sexual coercion are very high among young women whose sexual initiation is with a relative or stranger, strategies can focus on teaching adolescents and their caregivers to recognize and provide guidance on how to avoid coercive situations with such individuals, as well as on educating young men about the importance of consent, in order to help change norms that may condone sexual coercion. Indeed, the large proportion of young women reporting coerced first sex in this study warrants the urgency to develop such programs and policies to protect future generations of young women in Africa.

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RESUMEN

Contexto: *Las mujeres jóvenes sexualmente activas llevan la peor parte de la epidemia del VIH en África subsahariana. Se necesita información sobre los factores de riesgo y protección a nivel de la familia, la pareja e individual, para el diseño de programas que fomenten conductas sexuales más seguras y reduzcan el riesgo de VIH entre las mujeres jóvenes.*

Métodos: *El estudio se llevó a cabo en 1.675 mujeres con experiencia sexual en edades de 15–24 que vivían en Rakai, Uganda. La muestra se tomó de un estudio de cohorte comunitaria en proceso iniciado en 1994 en 56 pueblos, realizado por el Programa de Ciencias de la Salud de Rakai. Se analizaron factores contextuales a nivel de la familia, la pareja e individual, en relación con tres variables de resultado: relaciones sexuales antes de los 15 años, primera relación sexual bajo coerción y uso del condón en la primera relación sexual.*

Resultados: *A nivel de la familia, las mujeres jóvenes que no vivían con ambos padres tuvieron mayor probabilidad que las que sí vivían con sus padres de tener relaciones sexuales antes de los 15 años y de haber experimentado coerción sexual en la primera relación sexual. Aquellas mujeres jóvenes cuyas madres tenían algún nivel de educación secundaria y cuyas cuidadoras no consumían alcohol, tuvieron altas probabilidades de usar un condón en la primera relación sexual. El haber iniciado relaciones sexuales a los 15 años o más fue la característica más importante a nivel individual asociada con haber usado condón en la primera relación sexual.*

Conclusiones: *Las intervenciones de salud reproductiva deben dirigirse a las adolescentes y sus padres para retrasar el inicio de la actividad sexual, prevenir la coerción sexual y fomentar el uso del condón. Tanto las adolescentes como sus padres deben recibir educación sobre los riesgos asociados con los diferentes tipos de parejas sexuales.*

RÉSUMÉ

Contexte: *Les jeunes femmes sexuellement actives sont les plus affectées par l'épidémie du VIH en Afrique subsaharienne. Il serait utile de documenter les facteurs de risque et de protection au niveau de la famille, du partenaire et de l'individu, en vue de la conception de programmes aptes à encourager les comportements sexuels plus sûrs et d'amoindrir le risque de contraction du VIH chez les jeunes femmes.*

Méthodes: *L'étude a été menée parmi 1.675 femmes ayant déjà eu des rapports sexuels, âgées de 15 à 24 ans et vivant à Rakai (Ouganda). L'échantillon est extrait d'une étude de cohorte communautaire en cours entamée en 1994 dans 56 villages dans le cadre du Rakai Health Sciences Program. Les facteurs contextuels au niveau de la famille, du partenaire et de l'individu ont été analysés selon trois variables de résultats: rapports sexuels avant l'âge de 15 ans, premiers rapports forcés et usage du préservatif aux premiers rapports.*

Résultats: *Au niveau de la famille, les jeunes femmes qui ne vivaient pas avec leurs deux parents sont plus susceptibles d'avoir eu des rapports sexuels avant l'âge de 15 ans et d'avoir eu des premiers rapports forcés. Pour celles dont la mère avait atteint un certain niveau d'éducation secondaire et dont la femme-pourvoyeuse de soins ne consommait pas d'alcool, les*

chances d'avoir utilisé le préservatif lors des premiers rapports sont élevées. Avoir eu ses premiers rapports sexuels à l'âge d'au moins 15 ans représente la plus forte caractéristique de niveau individuel associée à l'usage du préservatif aux premiers rapports.

Conclusions: *Les interventions de santé génésique doivent cibler les adolescentes et leurs parents afin de différer le début de l'activité sexuelle, de prévenir la contrainte sexuelle et d'encourager l'usage du préservatif. Les deux groupes doivent être sensibilisés aux risques associés aux différents types de partenariat sexuel.*

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