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Social Exchange and Sexual Behavior in Young Women's Premarital Relationships in Kenya

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Abstract

Transactional sex, or the exchange of money and gifts for sexual activities within nonmarital relationships, has been widely considered a contributing factor to the disproportionate prevalence of HIV/AIDS among young women in sub-Saharan Africa. This study applied social exchange theory to premarital relationships in order to investigate the linkages between a variety of young women's resources—including employment and material transfers from male partners—and sexual behaviors. Data on the first month of premarital relationships (N=551 relationships) were collected from a random sample of young adult women ages 18–24 in Kisumu, Kenya, using a retrospective life history calendar. Consistent with the hypotheses, results showed that young women's income increases the likelihood of safer sexual activities, including delaying sex and using condoms consistently. Material transfers from the male partner displayed the opposite effect, supporting the view that resources obtained from within the relationship decrease young women's negotiating power.

Keywords

adolescent sexual behavior; AIDS; decision making; premarital sex; social exchange

Although HIV incidence in sub-Saharan Africa has been in slow decline, the epidemic continues in the region, with an estimated 1.8 million people newly infected in 2009 alone (Joint United Nations Program on HIV/AIDS [UNAIDS], 2010). Importantly, young women are disproportionately affected (Gouws, Staneckib, Lyerla, & Ghys, 2008; UNAIDS, 2010). In Kenya, women ages 20–24 are four times more likely to be HIV positive (7.4%) than men of the same age group (1.9%) (National AIDS and STI Control Programme [NASCOP], 2009). Researchers and policymakers have paid increasing attention to the role of *transactional sex*, or the exchange of money and gifts (what we refer to as "transfers") within nonmarital relationships, as a key explanation for the gender difference in infection rates (Côté et al., 2004; Dunkle, Jewkes, Brown, Gray, McIntryre, & Harlow, 2004; Hope, 2007). Many young women enter transactional relationships, often as a means of obtaining economic resources. For example, data from Ghana, Malawi, and Uganda showed that at least three fourths of girls ages 12–19 years received money or material goods in exchange for sex with recent partners (Moore, Biddlecom, & Zulu, 2007). The receipt of transfers is

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said to leave young women with little decision-making power over sexual activities, making them vulnerable to infection (Dunkle et al., 2004; Kuate-Defo, 2004). Associations between material transfers and sexual behavior have been described in a large body of qualitative work but have rarely been tested using survey data to draw more generalizable conclusions. Furthermore, few studies have considered how resources obtained outside the relationship, including employment and earnings, could empower young women to influence these behaviors.

In this study, we develop a theoretical framework based on social exchange to investigate how a variety of resources are related to sexual behavior in young women's premarital relationships, including whether sexual intercourse occurs, the frequency of sex, and the consistency of condom use. Whereas in marriage women's ability to affect sexual activities is often constrained, we posit that in premarital relationships there is increased room for negotiation. We hypothesize that young women's independent resources—including employment and income—will increase their negotiating power and resultant safe sexual activities in premarital relationships, whereas material transfers given within the relationship will have the opposite effect on sexual outcomes. We empirically test our hypotheses and consider alternative explanations using unique data collected from young adults in urban Kenya.

Theoretical Perspectives

Social Exchange and Individual Resources

Social exchange theory views interactions between individuals as an exchange of goods and services that is carried out in pursuit of individual goals (Homans, 1958). The terms of the exchange reflect the relative power of each partner. The partner who is least dependent on the relationship for valued benefits has greater bargaining power to improve on the exchange (Cook & Emerson, 1978; van de Rijt& Macy, 2006). Dependency and bargaining power are operationalized as partners' relative resources, and greater access to support outside the relationship is theorized to decrease dependency and increase an individual's power to shape outcomes within the relationship (Bittman, England, Folbre, Sayer, & Matheson, 2003).

Individual employment and earnings have been commonly used as measures of bargaining power in studies in both developed and developing countries. For example, research from Africa found that women's wage labor and income were positively associated with decision making with respect to household expenditures in Côte d'Ivoire (Hoddinott & Haddad, 1995) and the use of contraception in Ethiopia (Hogan, Berhanu, &Hailemariam, 1999). With respect to sexual activities, a study from Uganda found that women who worked for cash had more power to negotiate the timing and conditions of sex with their husbands than nonworking women (Wolff, Blanc, & Gage, 2000).

Social exchange theory also contends that the potential for new relationships—real or perceived—that offer comparable forms of support decreases an individual's dependency and boosts bargaining power (Sprecher, 1998; van de Rijt & Macy, 2006). In sub-Saharan Africa, many adolescents and young adults are involved in concurrent sexual partnerships (Xu, Luke, & Zulu, 2010), which are also believed to fuel the spread of HIV/AIDS (Lurie & Rosenthal, 2010). But no research to date has examined the effect of these existing alternative partnerships on individuals' negotiating power and sexual activities.

The literature examining bargaining power and relative resources has generally focused on exchange between partners in marital and cohabiting unions; numerous studies have found that women's power is often constrained within these partnerships. For example, feminist and other scholars of South Asia have noted that the influence of employment and income

are diminished when women lack control over their earnings or when they make small contributions to household budgets (Bloom, Wypij, & Das Gupta, 2001; Kabeer, 1997; Kantor, 2003). Social norms can also limit the household domains in which negotiation can occur; this is particularly true in areas in which men's domination is considered inherent, such as sexual relations (Wolff et al., 2000), or in which women's responsibilities are seen as natural, such as housework (Bittman et al., 2003) and child care (Agarwal, 1997). Moreover, in contexts where divorce is legally unavailable or socially unacceptable and restrictions on extramarital relationships are strong, women have few alternative relationship options and are more reliant on marital partners (Agarwal, 1997).

There could be fewer restrictions on young women's bargaining power in premarital relationships, particularly in sub-Saharan Africa. Qualitative research has shown that norms of male decision making in partnerships outside marriage are less absolute (Orubuloye, Caldwell, & Caldwell, 1991; Smith, D. J., 2001). In addition, women appear to be able to initiate and terminate nonmarital relationships at will (Luke, 2003), and engagement with multiple partners, sequentially or concurrently, is more socially acceptable (Swidler & Watkins, 2007). Furthermore, in comparison to women in South Asia, women in Africa are more likely to control their own income within and outside of marriage (Cornwall, 2002). An important question, therefore, is if individual resources can enable young African women in premarital relationships to negotiate sexual activities that can protect them from HIV infection.

Negotiation would be unnecessary if partners' preferences were identical. Social exchange theory assumes that preferences in many household and relationship domains are gendered. In the sexual realm, social science and evolutionary perspectives contend that men are motivated to have sex for pleasure and reproduction, whereas women suffer greater physical and social costs of sexual intercourse and unprotected sex due to unintended pregnancy and childbirth (Baumeister & Vohs, 2004; Trivers, 1972). Empirical studies support these arguments. Both men and women in sub-Saharan Africa perceive men to have a more highly charged sex drive than women (Orubuloye, Caldwell, & Caldwell, 1997; O'Sullivan, Harrison, Morrell, Monroe-Wise, & Kubeka, 2006), and young unmarried women often risk termination of education (Biddlecom, Gregory, Lloyd, & Mensch, 2008; Eloundou-Enyegue, 2004) and reduced opportunities for marriage (Hattori & Larsen, 2007) if they engage in sexual activity, and particularly if they become pregnant. In addition, in contexts of high HIV/AIDS prevalence, both men and women have incentives to use condoms consistently; nonetheless, higher transmission probabilities for women (Glynn et al., 2001) and reduced pleasure for men (Tavory & Swidler, 2009) suggest that women's preferences for condom use remain stronger than men's. The combination of fewer constraints on bargaining power in premarital relationships and higher costs of unsafe sexual practices for young women lead us to hypothesize that in relationships before marriage, women's independent resources will be associated with safe sexual behaviors, including the delay of sexual intercourse, lower frequency of sex, and more consistent condom use.

Transactional Sex and Material Transfers

Although employment and income have the potential to increase negotiating power within relationships, in many settings in sub-Saharan Africa, formal labor force opportunities are severely limited for women (United Nations Development Fund for Women [UNIFEM], 2005). Many engage in transactional sex as an alternative strategy to obtain economic resources, and some enter into multiple relationships to increase this support (Kuate-Defo, 2004; Luke, 2003). Previous research has shown that transactional sex is prevalent in both urban and rural areas throughout Africa, and large amounts of material transfers are exchanged (Kuate-Defo, 2004; Luke, 2003, 2006; Matasha et al., 1998; Moore et al., 2007).

Researchers and policymakers generally conclude that these exchange relationships disempower young women and afford them little say over sexual activities (Dunkle et al., 2004; Hope, 2007; Kuate-Defo, 2004). Social exchange theory helps to conceptualize the mechanisms by which transfers and sexual activities are linked. Because material transfers originate inside the relationship rather than from outside sources, they render women dependent on their partners, which reduces their bargaining position. Larger transfers only serve to increase this dependency. Therefore, the receipt of transfers from the male partner and the amount should be associated with women's decreased power to negotiate safe sexual behaviors within the relationship.

Intimate relationships in which transfers have a direct connection to sexual activities are referred to as "commodity exchange" in the anthropological literature on social exchange (Carrier, 1991; Luke, 2005; Mauss, 1990). The best known example is commercial sex work. Transactional sex is a more informal means of commodity exchange, where the exchange of transfers for sexual activity does not occur at each encounter and payment need not be predetermined or explicitly stated. Nevertheless, the expectation that sex must be reciprocated with material transfers persists (Luke, 2005; Sprecher, 1998). Evidence from a range of qualitative studies in Africa supports the view that many nonmarital relationships can be considered commodity exchanges, because women understand that the receipt or promise of transfers means they must agree to unsafe sexual practices (Dunkle et al., 2004; Hunter, 2002; Kaufman & Stavrou, 2004; Maganja, Maman, Groues, & Mbwambo, 2007; Wamoyi, Fenwick, Urassa, Zaba, & Stones, 2010; Wojcicki, 2002).

A contrasting view in the literature argues that money and gifts in premarital relationships in Africa are not related to bargaining but are part of loving relationships often leading to marriage (Clark, Kabiru, & Mathur, 2010; Cole, 2004). In this case, transfers represent "gift exchange," where they are given to signal commitment and solidify an ongoing relationship. Importantly, there is no return expectation of sex (Carrier, 1991; Luke, 2005; Mauss, 1990). Gift exchange provides an alternative explanation for the linkage between material transfers and sexual activities: Men who are committed to their female partners show their affections by giving transfers; those transfers are in larger amounts. At the same time, sexual activity is more common and condom use less consistent in committed relationships due to love and trust or a normative context similar to marriage (Tavory & Swidler, 2009). Thus, material transfers could proxy for love or commitment, and the negative association between transfers and safe sexual activities could therefore be spurious. Nevertheless, given that much of the extant literature emphasizes the transactional nature of young women's premarital relationships in sub-Saharan Africa (Clark et al., 2010; Wamoyi et al., 2010), we hypothesize that the associations between transfers and sexual activities are not spurious. Overall, there have been few quantitative investigations of the linkages between material transfers and sexual behavior (for exceptions, see Luke, 2006; Moore et al., 2007). Furthermore, none has examined the degree to which material transfers predict sexual activity in comparison to women's own resources, nor has any investigated how love and commitment might attenuate any observed associations.

Hypotheses

The prior discussion leads to three specific hypotheses relating to resources and sexual activities within young women's premarital relationships. First, young women's employment, income, and engagement in concurrent partnerships will be associated with sexual behaviors that women prefer, specifically a decreased likelihood of sexual intercourse, lower frequency of sex, and increased likelihood of consistent condom use. Second, the receipt of material transfers from the male partner within the relationship and larger amounts of material transfers will have the opposite effect on these sexual outcomes. Third, controlling for the level of commitment within the relationship, material transfers

from male partners will continue to be negatively associated with safe sexual behaviors for young women. In addition to these main associations, we also controlled for important factors that are likely to be correlated with economic resources and sexual behavior, including the ages of young women and their partners as well as educational attainment.

We tested our hypotheses in Kisumu, the third largest city in Kenya and capital of Nyanza Province. Despite ongoing political and economic instability, Kisumu is a destination for many young migrants seeking employment and educational opportunities. Kisumu is also the epicenter of a mature HIV/AIDS epidemic in this part of East Africa. HIV prevalence in Nyanza Province was estimated at 13.9% in 2008–2009, with young women ages 15–24 four times more likely to be infected (11.4%) than their male counterparts (3.1%) (Kenya National Bureau of Statistics& ICF Macro, 2010). Previous research in Kisumu has also revealed high rates of transactional sex (Luke, 2006; Mattson, Bailey, Agot, Ndinya-Achola, & Moses, 2007). Kisumu thus provides an important testing ground to examine the linkages between a variety of young women's resources and sexual behaviors that place them at risk for HIV/AIDS.

Method

Data and Data Quality

In this study, we used data collected with an innovative survey instrument called the Relationship History Calendar (RHC) (Luke, Clark, & Zulu, forthcoming). The RHC is a modification of life history calendars, which have been used in other studies to gather time-varying retrospective information on contraceptive use, births, migration, and schooling (Axinn, Pearce, & Ghimire, 1999; Belli & Callegaro, 2009). Similar to many calendars, the RHC gathered information on monthly changes in schooling, employment, and income for the 10 years previous to the survey (Freedman, Thornton, Camburn, Alwin, & Young-Demarco, 1988). In addition, the RHC was specifically designed to capture young adults' relationship histories. Respondents provided detailed information about each of their sexual and nonsexual (termed "romantic") partnerships over the last 10 years. Among the data collected were partners' demographic characteristics, relationship dimensions (including level of commitment and money and gifts exchanged), and sexual activities (including the frequency of sex and condom use). The researchers were particularly concerned that respondents provide details on the RHC of all types of romantic and sexual relationships, regardless of type, length, and occurrence of sexual intercourse. During extensive pretesting in Kisumu, the research team developed a comprehensive list of relationship types that was given to respondents during survey administration to stress the wide range of relationships to be reported on the RHC.

Data quality was of primary importance to the study. The collection of retrospective data is subject to recall error, and life history calendars were created to help minimize the risk of its occurrence (Axinn et al., 1999; Belli & Callegaro, 2009). The RHC is a large foldout grid, with information on each topic recorded in a timeline format as opposed to the usual question–response method of survey instruments (Freedman et al., 1988). With this method, respondents can review the sequence of life events and the most salient transitions (such as those related to schooling and migration) and serve as memory aids to help respondents recall the occurrence and timing of other events like relationships and sexual behaviors within them (Belli & Callegaro, 2009; Luke et al., forthcoming). Numerous evaluations have found that life history calendars significantly improve the reliability of retrospective reporting (e.g., Belli & Callegaro, 2009; Freedman et al., 1988; Goldman, Moreno, & Westoff, 1989; Smith, J. P., 2009).

Social desirability bias is another type of measurement error that is particularly relevant when gathering information on sensitive sexual behaviors (Nnko, Boerma, Urassa, Mwaluko, & Zaba, 2004; Poulin, 2010). To reduce this type of bias, the RHC incorporated qualitative techniques (Plummer et al., 2004). Interviewers were trained to develop significant rapport with respondents. The interview was flexible and conversational in nature, with the order of questions left up to the interviewer. In addition, the structure of the questioning also minimized the potential embarrassment of questions on sexual behavior by embedding them within the more innocuous context of relationships as well as in conjunction with schooling, work, and migration histories (Luke et al., forthcoming).

The quality of the RHC data was assessed through a field experiment conducted among young adults in Kisumu in 2007. The sample was drawn by contacting every other household in 45 randomly selected urban enumeration areas. Men and women ages 18 to 24 in the selected households were eligible to be interviewed; one eligible respondent was chosen randomly from each household. Selected respondents were randomly assigned to be interviewed with the RHC or a standard demographic survey. The results of the methodological experiment found that, compared with the standard instrument, the RHC decreased social desirability bias and increased reporting of a variety of measures of sexual behavior (Luke et al., forthcoming).

For our analysis, we used data from 286 female RHC respondents who were involved in a total of 610 romantic and sexual relationships in the 10 years before the survey. We constructed a data set that included information on the first month of these relationships. We chose this stage of the relationship for methodological and substantive reasons. Given its salience, recall is likely to be optimal for the first month of relationships. Furthermore, this is the time in the relationship when bargaining is most likely to be operative, because patterns of dependency and negotiation are yet to be established (Smith, D. J., 2001; Wamoyi et al., 2010).

Because of our interest in behavior within premarital relationships, we excluded the 38 relationships in which respondents were married in the first month (6% of the total sample). These were likely arranged marriages (Ocholla-Ayayo, 1976). Overall, the survey had very few missing data, although about 4% of the relationships in our sample were missing the male partner's age and education level. For these cases, we imputed the mean age and modal education group. Twenty-one other relationships (3%) were missing a value for one of the other independent variables and were removed, yielding a final sample size of 551 relationships in the last 10 years.

Finally, we recognized that although the RHC was designed to improve retrospective reporting, remembering details over a 10-year period could have been difficult for some respondents. Therefore, we repeated our analyses for relationships that began in the last 5 years (n = 362 relationships) under the assumption that recall would be better for events that took place fewer years in the past. If recall bias existed, we expected our results to change as we used data further back in time.

Dependent Variables

On the RHC, respondents reported the frequency of intercourse for each month of each relationship using four response categories: 0 times engaging in intercourse in the month, 1–4 times, 5–14 times, and 15 or more times. Based on this information, the first dependent variable was a dichotomous indicator of whether or not sexual activity occurred in the first month. Our second dependent variable used the same RHC question to measure high frequency of sex dichotomously as 5 or more times in the month or less than 5 times. The third dependent variable indicated whether condoms were used consistently in the first

month, coded 1 if the respondent reported that condoms were *always* used and 0 if they were used *most of the time*, *sometimes*, *very rarely*, or *never*. We defined consistent condom use in this manner because only condom use at each sexual encounter affords the greatest protection from HIV/AIDS (Manlove, Ryan, & Franzetta, 2008).

Independent Variables

The independent variables also referred to characteristics in the first month of premarital relationships. On the RHC, respondents were asked to estimate the value of money, gifts, and material assistance received from each partner in the first month and how this amount changed over time. A separate estimate was elicited of the value of transfers respondents gave to each partner. We used this information to create several material transfers variables. First, we constructed dichotomous variables for whether or not the respondent received any money-gifts-assistance in the first month and whether the respondent gave any money-gifts-assistance. We also included two variables for the estimated value of transfers received and given; the difference between these constituted the net value of transfers received by the respondent in the first month. Finally, the RHC recorded respondents' main and secondary reasons for being in the relationship. *Money-gifts-assistance* was among the multiple response categories (which also included physical attraction, adventure-experimentation, coercion, and love), and we constructed a dichotomous variable coded 1 if the respondent reported that money-gifts-assistance was the main or secondary reason for being in the relationship; 0 if she did not mention this reason.

We included several variables relating to young women's individual resources. On the RHC, respondents reported the amount of income earned in cash or kind per month. We constructed a dichotomous variable indicating whether the respondent earned income or not in the first month of the relationship and a variable for the amount of income earned. With respect to concurrent relationships, we included two variables indicating if the respondent had another romantic or sexual partner during the month (only 9% had more than one) as well as the net amount of money-gifts-assistance given to her by this partner(s).

The respondent's household economic status was constructed as a standardized, weighted index of 14 items relating to household assets and infrastructure (Luke et al., forthcoming). Unlike the other indicators, this information was recorded for the time of survey only and not retrospectively. Although this variable was not time-varying, measures of wealth based on accumulated assets and housing characteristics generally change less readily over time than employment and income (Mberu, 2006). Male partner's economic status was measured over time as what the respondent perceived to be his status (*low* or *medium* vs. *high*). Although subjective, we considered this to be an appropriate measure of those aspects of the partner's economic status that might influence the respondent's behavior. We also included a variable for whether the respondent knew or suspected her partner had another sexual partner(s) (marital or nonmarital) during the month.

Commitment within the relationship was measured in three ways. Type of premarital relationship was designated as fiancé, serious relationship, dating relationship, casual relationship, and less common partnership types like commercial sex or a one-night stand. Because several categories contained few observations, we created a trichotomous premarital relationship type variable: *fiancé/serious*, *dating*, and *casual/other*. We also included a dichotomous variable coded 1 if *love* was the main or secondary reason for being in the relationship in the first month; 0 if this reason was not mentioned. Finally, a variable for the respondent's future aspirations for marriage with the partner was coded 1 if *yes* and 0 if *no* or *never considered it*. Seriousness of relationship (Glick & Sahn, 2008), love (Tavory & Swidler, 2009), and marital aspirations (Clark, Poulin, & Kohler, 2009) have all been associated with sexual intercourse and inconsistent condom use in previous studies.

Analytical Strategy

We begin by presenting descriptive statistics for the first month of relationships that took place in the last 10 years and in the last 5 years. We then conducted logistic regressions for each of the three dependent variables using the sample of relationships that began in the last 10 years. For each dependent variable, Model 1 incorporated variables for material transfers and individual economic resources, including controls. Model 2 added the variables relating to commitment within the relationship. We then repeated the same logistic regression analysis for the sample of relationships in the last 5 years. The regressions examining frequency of sexual intercourse and consistency of condom use were limited to relationships in which sexual intercourse had occurred in the first month.

For each of our measures of economic resources available to the respondent, we included in our regression models two related variables: whether these resources were accessed as well as the amount accessed. Specifically, we included receipt of any level of transfers and the net amount received, earning any level of income and the amount, and having at least one concurrent partner and the net amount received from this partner(s). In this way, we examined whether access to these resources affected sexual activities in general and, conditional on the resource being received, if the level had an additional effect on sexual activities.

Because some young women were involved in more than one relationship in the last 10 or 5 years, some respondents contributed multiple observations. Observations across a respondent's multiple relationships are not independent and therefore we used the robust cluster command in Stata to compute standard errors that accounted for heteroscedasticity and correlated residuals across relationships for the same individual.

Results

Descriptive Statistics

Table 1 presents descriptive statistics. With respect to material transfers, in a large majority (approximately 70%) of premarital relationships in the last 10 years, young women received some form of material transfer from their male partners during the first month. In contrast, in only 20% of relationships did young women give money, gifts, or assistance to their male partners. The average amount received was much higher than the amount given. Across all relationships, young women received Kenyan shillings (Ksh) 775 (US$11) on average, and a net amount of Ksh 702 (US$10). Interestingly, in only 5% of relationships, young women gave larger amounts of transfers to their male partners than they received (not shown). In approximately 20% of relationships, young women reported being motivated to be in the relationship by money, gifts, or assistance. All the figures for relationships in the last 5 years were slightly higher, particularly the average gross and net amounts received from male partners.

Young women earned some form of income in the first month of approximately one fifth of their relationships in the last 10 years. The average amount of earnings was Ksh 565 (US$8) for all women, including those with no income. This increased to Ksh 810 (US$12) when relationships were restricted to the last 5 years, partially a function of increased labor force participation with age. It could be the case that many young women did not earn income because they were focused on schooling. Nonetheless, in 51% of relationships in the last 5 years women were out of school during the first month, and they did not earn income 60% of the time (not shown).

Table 1 indicates that concurrent partnerships were not uncommon in Kisumu. In 18% of relationships in the last 10 years, young women had another partner during the first month.

Across all respondents, Ksh 140 (US$2) was received on average from concurrent partners; restricting to only those with concurrent partners, the average amount received was Ksh 792 (US$11) (not shown). These figures rose for relationships in the last 5 years.

With regard to commitment, the large majority of young women's premarital relationships in the last 10 and 5 years were described as dating (approximately 58%) in the first month, with the remainder divided equally between very significant (fiancé [5%] or serious [16%]) and casual or other types of partners. Love motivated 30% of relationships and young women aspired to marry 28% of their partners. The correlations between these commitment variables were positive but not extremely high, suggesting that they capture different aspects of emotional ties within premarital relationships. For example, the correlation coefficient between love and marital aspirations was .2.

Finally, Table 1 presents statistics for the sexual activity outcomes. In the last 10 years, young women engaged in sexual intercourse during the first month in 35% of their relationships. Of the relationships with sexual activity in this month, 39% involved a high frequency of sex and 39% involved consistent condom use. The figures were similar for the last 5 years, although consistent condom use appeared to have increased.

Multivariate Results

Table 2 presents the results of the logistic regression analysis of the occurrence of sexual intercourse in the first month of the relationship, showing odds ratios. We first consider the results for Models 1 and 2, which pertain to relationships that began in the 10 years before the survey. We found that young women who received any level of material transfers were twice as likely to engage in sexual intercourse compared to those who did not. Given the receipt of transfers, every Ksh 1,000 received was associated with a 12% increase in the likelihood of engaging in sex. In contrast, giving transfers to male partners was not associated with sexual intercourse in the first month. Young women in relationships motivated by money, gifts, or assistance were approximately 1.8 times more likely to engage in sex than those without this motivation. Simply earning any level of income was not significantly related to sexual intercourse, although the amount of income was. Every Ksh 1,000 earned by young women was associated with a 14% decline in the likelihood of having sex. A young woman having a concurrent partner and the net amount received from this partner were not significantly associated with the likelihood of sexual intercourse. But a man having another sexual partner was positively associated with the likelihood of sexual intercourse. In Model 2, which added variables measuring commitment within the relationship, the coefficients remained largely the same as in Model 1. None of the commitment variables were significantly associated with the likelihood of sexual intercourse.

The results for relationships in the 5 years before the survey (Models 3 and 4) were similar to those in Models 1 and 2. The effects of receiving material transfers and being motivated by transfers increased, and the effect of income was virtually unchanged. The odds ratio for the net amount of transfers received was similar in magnitude but no longer significant.

Table 3 presents the results of the logistic regression analysis of a high frequency of intercourse (5 or more times per month) in the first month of relationships. In Models 1 and 2 only one of the material transfers variables was significant; every Ksh 1,000 received in net transfers was associated with a 40% increase in the likelihood of a high frequency of sex. The addition of the commitment variables in Model 2 did not substantively change this result. Compared to casual or other types of relationships, young women in serious relationships were 8 times as likely to have a high frequency of sex and those in dating relationships were 3 times as likely. The findings pertaining to relationships that took place

in the last 5 years were on the whole similar in magnitude to the findings for the last 10 years. In addition, since the opportunity for a high frequency of sex is limited in one-night stands, we confirmed that the results in Table 3 were robust to excluding these relationships (*n*=12).

Table 4 displays the results for the analysis of consistent condom use in the first month of premarital relationships. With respect to material transfers, in Models 1 and 2 the receipt of any level of transfers was not significantly related to the likelihood of consistent condom use, although the amount of transfers was significantly related to the likelihood of consistent condom use. Every Ksh 1,000 received in net transfers was associated with a 12% decrease in the likelihood of consistent condom use. With regard to individual resources for young women, every Ksh 1,000 earned was associated with a 46% increase in the likelihood of consistent condom use. Having a concurrent partner was not associated with condom use but the amount received from this partner had a positive effect on condom use. The addition of the commitment variables did little to change the coefficients in Models 1 and 3. Furthermore, young women who were dating their partners were 70% less likely to use condoms consistently compared to those in casual or other types of relationships. Young women who aspired to marry their partners in the future were less likely than those who did not to use condoms consistently.

The findings related to condom use for relationships in the last 5 years differed in some respects from those in the last 10 years. In Model 3, the receipt of any amount of transfers reduced the likelihood of consistent condom use by approximately 85%; the association with the net amount received was similar in magnitude to Models 1 and 2, but no longer significant. The effect of young women's income was no longer significant in Model 3; the effect of net transfers from concurrent partners became marginally significant. The results for Model 4, which included the commitment variables, were generally similar to Model 3.

Notably, the effect of giving any material transfers by young women was marginally significant in two of the four models of condom use in Table 4. This finding is consistent with our theory of social exchange, where transfers given by an individual increase his or her power over sexual decision making within the relationship. This led us to further investigate whether the amount of young women's transfers had an independent effect on condom use. We replaced the net amount received with two variables for the amount given and the amount received in the specifications in Table 4 (not shown). We found that the coefficients on the amount given by young women were small and insignificant in all models, while the coefficients on the amount received were essentially the same in magnitude and significance as the net amount received in all models in Table 4. This was not unexpected, given that young women are the main recipients of transfers and the amounts given by them are, on average, so small. The coefficients on the variable for giving any transfers by young women increased compared to those in Table 4 and were significant in Model 1 and marginally significant in all other models. Indeed, we found that young women who gave any transfers in the relationship were approximately 4 times more likely to use condoms consistently than those who did not give anything. We also note that these results did not change substantially when the commitment variables were added. These results suggest that the material amount young women investin relationships does not influence consistent condom use, but the act of giving any transfers affords them a measure of power to protect themselves with condoms.

Finally, to further test the robustness of our results to recall bias, we replicated all of our analyses with a sample limited to relationships that began in the last 3 years. Although this reduced the sample sizes considerably (n = 236 for the first outcome and n = 76 for the

second two outcomes), the results were very similar to Models 3 and 4 in terms of coefficient sizes and significance levels for all three outcomes (not shown).

Discussion

Transactional sex has been widely considered a contributing factor to the disproportionate prevalence of HIV/AIDS among young women in sub-Saharan Africa. In this study, we drew on social exchange theory to predict how material transfers from male partners, as well as young women's independent resources, affect sexual activities within premarital relationships. Using data from urban Kisumu, Kenya, we investigated three sexual behavior outcomes: the occurrence of sex, sexual frequency, and consistent condom use, all of which have a significant bearing on the transmission of HIV infection (Robin et al., 2004).

We hypothesized that young women's own resources decrease their dependency on male partners and increase their power to negotiate safe sexual behaviors. In support of this view, our results showed that in the first month of premarital relationships, young women's income was associated with not having sexual intercourse and, when sexual activity did occur, with the consistent use of condoms. There was no connection between income and the frequency of sex. This latter finding suggests that young women may expend their negotiating power in one sexual realm at the expense of another, or that they may prioritize consistent condom use over limiting sexual activity.

Social exchange theory also conceptualizes alternative sexual partners as resources that can influence power and dependency in existing relationships. In support of this view, we found that male partners' concurrency increased the likelihood of sexual intercourse within the relationship, whereas larger amounts of transfers young women received from their concurrent partners increased the likelihood of consistent condom use. An alternative interpretation of this latter effect is that young women with multiple partners take steps to protect one or both of them through the increased use of condoms. Yet simply engaging in concurrent partnerships was not significantly related to the outcome; rather, it was the amount of transfers young women received from these men that significantly affected condom use in the index relationship. This suggests that it is the material resources themselves that increase young women's power. Another explanation is that material transfers from concurrent partnersproxy for the type of concurrent relationship. Larger transfers reflect committed relationships, implying that the index relationship is more likely to be casual, where condom use will generally be high. To rule out this explanation, we added a variable for the type of concurrent partner to the condom use regressions (not shown) and found that the magnitude and significance of the variable for transfers from these partners remained virtually unchanged. This provides further evidence that transfers from concurrent partners are related to women's increased bargaining power. These findings have important implications for HIV/AIDS in sub-Saharan Africa, where epidemiologists have argued that concurrency is a major mechanism for transmission of the disease. Nevertheless, there is increasing evidence that some types of concurrency limit the spread of HIV (Lurie & Rosenthal, 2010). Our results suggest that concurrency with a transactional component may increase condom use by young women, which lowers their partners' risk of infection and thus could slow the onward transmission of HIV at the population level.

A primary contribution of our study was the empirical investigation of common assumptions regarding the nature and extent of transactional relationships in sub-Saharan Africa. We found that in almost 70% of premarital relationships in Kisumu, young women received transfers in the first month from their male partners. One fifth of relationships were motivated explicitly by money and gifts. We employed social exchange theory to investigate whether the material transfers reflected commodity exchange, where transfers are directly

connected to sexual activities, or gift exchange, where transfers are given as part of loving and committed relationships with no expectation of sexual reciprocation. Our regression results showed that the amount of transfers received by young women was significantly associated with having sex, with a higher frequency of sex, and with inconsistent condom use, even after controlling for measures of love and commitment. These findings support the hypothesis that (on average) money and gifts take on a transactional function within premarital relationships, at least in the first month, and support the contention that transactional sex could be an important source of HIV transmission among young women. Nevertheless, we recognize that there is great heterogeneity in relationships and that even within partnerships there can be both transactional and affective elements that can develop and change over time (Luke, 2005; Moore et al., 2007; Poulin, 2007). In addition to the influence of material transfers on the HIV risk behaviors examined, we also found that commitment and desires for marriage were independently associated with greater sexual frequency and less consistent condom use. A challenge to policymakers is to tailor HIV/AIDS programs to take into account both the transactional and affective dimensions contributing to HIV risk (Clark et al., 2010).

A major strength of our study was the use of unique retrospective data collected on young women's resources and their relationship histories. Nevertheless, there are limitations. Recall bias, such as failing to recall certain types of relationships or remembering them in a more positive light, was of particular concern. We addressed this issue in several ways. First, we restricted our analysis to the first month of relationships, an especially salient time that is less subject to reinterpretation (Clark et al., 2010). Second, we tested the robustness of our results by restricting the sample to relationships that began in the last 5 years and 3 years and found no evidence of major differences in findings across periods. That some of the effects lost significance despite maintaining similar magnitude is likely due to smaller sample sizes for the last 5 and 3 years. The stability of these results suggests that recall bias is not a serious problem with our data. As with any analysis using observational data, bias due to unobserved heterogeneity is a potential concern. The overall consistency of our results across multiple sexual activity outcomes and over different time periods gives us confidence in our theoretical interpretation of the findings, however. The numerous robustness checks that we performed and the alternative explanations we considered serve to increase this confidence.

Our results underscore the central importance of economic resources in shaping sexual behaviors among young women in urban Africa. Although young women's income increased their power to influence sexual activities in Kisumu, their level of employment was quite low. Indeed, we found that the young women in our sample earned income in less than one fifth of their relationships, whereas they received money, gifts, or other material assistance from their male partners in the great majority of relationships. As long as young women lack other avenues for obtaining material support, it appears that campaigns to simply educate women about the dangers of transactional relationships will be of limited success (Baumeister & Vohs, 2004; Hope, 2007). Instead, employment and income opportunities would likely decrease young women's need to engage in transactional sex while simultaneously increasing their power to negotiate safe sexual behaviors within their relationships.

Our theory and empirical findings suggest that young women and their male partners in urban Kenya have opposing preferences with regard to the onset of sexual intercourse, sexual frequency, and condom use. Programs encouraging men to internalize the risks of unsafe sexual behavior are clearly important, such as mass-media campaigns, individual counseling, and peer education (Hope, 2007). If young women and their partners agreed on

strategies with respect to HIV prevention, bargaining would no longer be necessary to achieve safe sexual outcomes within premarital relationships.

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References

Agarwal B. “Bargaining” and gender relations: Within and beyond the household. Feminist Economics. 1997; 3:1–51.

Axinn WG, Pearce LD, Ghimire D. Innovations in life history calendar applications. Social Science Research. 1999; 28:243–264.

Baumeister RF, Vohs KD. Sexual economics: Sex as female resource for social exchange in heterosexual interactions. Personality and Social Psychology Review. 2004; 8:339–363. [PubMed: 15582858]

Belli, RF.; Callegaro, M. The emergence of calendar interviewing. In: Belli, RF.; Stafford, FP.; Alwin, DF., editors. Calendar and time diary methods in life course research. Los Angeles: Sage; 2009. p. 31-52.

Biddlecom A, Gregory R, Lloyd CB, Mensch BS. Associations between premarital sex and leaving school in four sub-Saharan African countries. Studies in Family Planning. 2008; 39:337–350. [PubMed: 19248719]

Bittman M, England P, Folbre N, Sayer L, Matheson G. When does gender trump money? Bargaining and time in household work. American Journal of Sociology. 2003; 109:186–214.

Bloom SS, Wypij D, Das Gupta M. Dimensions of women’s autonomy and the influence on maternal health care utilization in a North Indian city. Demography. 2001; 38:67–78. [PubMed: 11227846]

Carrier J. Gifts, commodities, and social relations: A Maussian view of exchange. Sociological Forum. 1991; 6:119–136.

Clark S, Kabiru C, Mathur R. Relationship transitions among youth in urban Kenya. Journal of Marriage and Family. 2010; 72:73–88. [PubMed: 20885992]

Clark S, Poulin M, Kohler HP. Marital aspirations, sexual behaviors, and HIV/AIDS in rural Malawi. Journal of Marriage and Family. 2009; 71:396–416. [PubMed: 20161389]

Cole J. Fresh contact in Tamatave, Madagascar: Sex, money, and intergenerational transformation. American Ethnologist. 2004; 31:573–588.

Cornwall A. Spending power: Love, money, and the reconfiguration of gender relations in Ado-Odo, southwestern Nigeria. American Ethnologist. 2002; 29:963–980.

Cook KS, Emerson RM. Power, equity and commitment in exchange networks. American Sociological Review. 1978; 43:721–739.

Côté A, Sobela F, Dzukoto A, Nzambi K, Asamoah-Adu C, Labbé A, Mâsse B, Mensah J, Frost E, Pépin J. Transactional sex is the driving force in the dynamics of HIV in Accra, Ghana. AIDS. 2004; 18:917–925. [PubMed: 15060439]

Dunkle KL, Jewkes RK, Brown HC, Gray GE, McIntryre JA, Harlow SD. Transactional sex among women in Soweto, South Africa: Prevalence, risk factors and association with HIV infection. Social Science and Medicine. 2004; 59:1581–1592. [PubMed: 15279917]

Eloundou-Enyegue PM. Pregnancy-related dropouts and gender inequality in education: A life table approach and application to Cameroon. Demography. 2004; 41:509–528. [PubMed: 15461012]

Freedman D, Thornton A, Camburn D, Alwin D, Young-Demarco L. The life history calendar: A technique for collecting retrospective data. Sociological Methodology. 1988; 18:37–68. [PubMed: 12282712]

Glick PJ, Sahn DE. Are Africans practicing safer sex? Evidence from Demographic and Health Surveys for eight countries. Economic Development and Cultural Change. 2008; 56:397–439.

Glynn J, Caraël M, Auvert B, Kahindo M, Chege J, Musonda R, Kaona F, Buvé A. Why do young women have a much higher prevalence of HIV than young men? A study in Kisumu, Kenya and Ndola, Zambia. AIDS. 2001; 15:S51–S60. [PubMed: 11686466]

Goldman N, Moreno L, Westoff CF. Collection of survey data on contraception: An evaluation on an experiment in Peru. Studies in Family Planning. 1989; 20:147–157. [PubMed: 2734811]

Gouws E, Staneckib KA, Lyerla R, Ghys PD. The epidemiology of HIV infection among young people aged 15–24 years in southern Africa. AIDS. 2008; 22:S5–S16. [PubMed: 19033755]

Hattori MK, Larsen U. Motherhood status and union formation in Moshi, Tanzania 2002–2003. Population Studies. 2007; 61:185–199. [PubMed: 17558885]

Hoddinott J, Haddad L. Does female income share influence household expenditures? Evidence from Cote d'Ivoire. Oxford Bulletin of Economics and Statistics. 1995; 57:77–96.

Hogan DP, Berhanu B, Hailemariam A. Household organization, women's autonomy, and contraceptive behavior in southern Ethiopia. Studies in Family Planning. 1999; 30:302–314. [PubMed: 10674326]

Homans GC. Social behavior as exchange. The American Journal of Sociology. 1958; 63:597–606.

Hope, R. Addressing cross-generational sex: A desk review of research and programs. Washington, DC: Population Reference Bureau; 2007.

Hunter M. The materiality of everyday sex: Thinking beyond "prostitution. African Studies. 2002; 61:99–120.

Joint United Nations Program on HIV/AIDS (UNAIDS). Report on the global AIDS epidemic. Geneva, Switzerland: UNAIDS and WHO; 2010.

Kabeer N. Women, wages and intra-household power relations in urban Bangladesh. Development and Change. 1997; 28:261–302.

Kantor P. Women's empowerment through home-based work: Evidence from India. Development and Change. 2003; 34:425–445.

Kaufman CE, Stavrou SE. "Bus fare please": The economics of sex and gifts among young people in urban South Africa. Culture, Health and Sexuality. 2004; 6:377–391.

Kenya National Bureau of Statistics & ICF Macro. Kenya demographic and health survey 2008–09. Calverton, MD: Author; 2010.

Kuate-Defo B. Young people's relationships with sugar daddies and sugar mummies: What do we know and what do we need to know? African Journal of Reproductive Health. 2004; 8:13–37. [PubMed: 15623116]

Luke N. Age and economic asymmetries in the sexual relationships of adolescent girls in sub-Saharan Africa. Studies in Family Planning. 2003; 34:67–86. [PubMed: 12889340]

Luke, N. Investigating exchange in sexual relationships in sub-Saharan Africa using survey data. In: Jejeebhoy, SJ.; Shah, I.; Thapa, S., editors. Sex without consent: Young people in developing countries. London: Zed Books; 2005. p. 105-124.

Luke N. Exchange and condom use in informal sexual relationships in urban Kenya. Economic Development and Cultural Change. 2006; 54:319–348.

Luke N, Clark S, Zulu EM. The relationship history calendar: Improving the scope and quality of data on youth sexual behavior. Demography. forthcoming.

Lurie MN, Rosenthal S. Concurrent partnerships as a driver of the HIV epidemic in sub-Saharan Africa? The evidence is limited. AIDS and Behavior. 2010; 14:17–24. [PubMed: 19488848]

Maganja RK, Maman S, Groues A, Mbwambo JK. Skinning the goat and pulling the load: Transactional sex among youth in Dar es Salaam, Tanzania. AIDS Care. 2007; 19:974–981. [PubMed: 17851993]

Manlove J, Ryan S, Franzetta K. Contraceptive use patterns across teens' sexual relationships: The role of relationships, partners, and sexual histories. Demography. 2008; 44:603–621. [PubMed: 17913013]

Matasha E, Ntembelea T, Payaud P, Saidi W, Todd J, Mujaya B, Tendo-Wambua L. Sexual and reproductive health among primary and secondary school pupils in Mwanza, Tanzania: Need for intervention. AIDS Care. 1998; 10:571–582. [PubMed: 9828954]

Mattson CL, Bailey RC, Agot K, Ndinya-Achola JO, Moses S. A nested case-control study of sexual practices and risk factors for prevalent HIV-1 infection among young men in Kisumu, Kenya. Sexually Transmitted Diseases. 2007; 34:731–736. [PubMed: 17495591]

Mauss, M. The gift. New York: W.W. Norton; 1990.

Mberu BU. Internal migration and household living conditions in Ethiopia. Demographic Research. 2006; 14:509–540.

Moore AM, Biddlecom AE, Zulu EM. Prevalence and meanings of exchange of money and gifts for sex in unmarried adolescent sexual relationships in sub-Saharan Africa. African Journal of Reproductive Health. 2007; 11(3):44–61. [PubMed: 18458736]

National AIDS and STI Control Programme (NASCOP), Ministry of Health. Kenya AIDS indicator survey 2007: Final report. 2009. Retrieved from http://www.aidskenya.org/public_site/webroot/cache/article/file/Official_KAIS_Report_20091.pdf

Nnko S, Boerma JTJ, Urassa M, Mwaluko G, Zaba B. Secretive females or swaggering males?: An assessment of the quality of sexual partnership reporting in rural Tanzania. Social Science and Medicine. 2004; 59:299–310. [PubMed: 15110421]

Ocholla-Ayayo, ABC. Traditional ideology and ethics among the Southern Luo. Uppsala, Sweden: Scandinavian Institute of African Studies; 1976.

Orubuloye IO, Caldwell JC, Caldwell P. Sexual networking in the Ekiti District of Nigeria. Studies in Family Planning. 1991; 22:61–73. [PubMed: 1858106]

Orubuloye IO, Caldwell JC, Caldwell P. Perceived male sexual needs and male sexual behaviour in southwest Nigeria. Social Science and Medicine. 1997; 44:1195–1207. [PubMed: 9131743]

O'Sullivan LF, Harrison A, Morrell R, Monroe-Wise A, Kubeka M. Gender dynamics in the primary sexual relationships of young rural South African women and men. Culture, Health and Sexuality. 2006; 8:99–113.

Plummer ML, Ross DA, Wight D, Changalucha J, Mshana G, Wamoyi J, Todd J, Anemona A, Mosha FF, Obasi AIN, Hayes RJ. "A bit more truthful": The validity of adolescent sexual behaviour data collected in rural Northern. 2004

Tanzania using five methods. Sexually Transmitted Infections. 80:Sii49–Sii56.

Poulin M. Sex, money and premarital partnerships in southern Malawi. Social Science and Medicine. 2007; 65:2383–2393. [PubMed: 17764797]

Poulin M. Reporting on first sexual experience: The importance of interviewer–respondent interaction. Demographic Research. 2010; 22(11):237–288. [PubMed: 20357897]

Robin L, Dittus P, Whitaker D, Crosby R, Ethier K, Mezoff J, Miller K, Passas-Deluca K. Behavioral interventions to reduce incidence of HIV, STD, and pregnancy among adolescents: A decade in review. Journal of Adolescent Health. 2004; 34:3–26. [PubMed: 14706401]

Smith DJ. Romance, parenthood, and gender in a modern African society. Ethnology. 2001; 40:129–151.

Smith JP. Reconstructing childhood health histories. Demography. 2009; 46:387–403. [PubMed: 21305399]

Sprecher S. Social exchange theories and sexuality. Journal of Sex Research. 1998; 35:32–43.

Swidler A, Watkins SC. Ties of dependence: AIDS and transactional sex in rural Malawi. Studies in Family Planning. 2007; 38:147–162. [PubMed: 17933289]

Tavory I, Swidler A. Condom semiotics: Meaning and condom use in rural Malawi. American Sociological Review. 2009; 74:171–89.

Trivers, R. Parental investment and sexual selection. In: Campbell, B., editor. Sexual selection and the descent of man 1871–1971. Chicago: Aldine; 1972. p. 136-179.

United Nations Development Fund for Women (UNIFEM). Progress of the world's women 2005: Women, work and poverty. New York: Author; 2005.

van de Rijt A, Macy MW. Power and dependence in intimate exchange. Social Forces. 2006; 84:1455–1470.

Wamoyi J, Fenwick A, Urassa M, Zaba B, Stones W. "Women's bodies are shops": Beliefs about transactional sex and implications for understanding gender power and HIV prevention in Tanzania. Archives of Sexual Behavior. 2011; 40:5–15. [PubMed: 20652390]

Wojcicki JM. Commercial sex work or *Ukuphanda*? Sex-for-money exchange in Soweto and Hammanskraal Area, South Africa. Culture, Medicine and Psychiatry. 2002; 26:339–370.

Wolff B, Blanc AK, Gage AJ. Who decides? Women's status and negotiation of sex in Uganda. Culture, Health and Sexuality. 2000; 2:303–322.

Xu H, Luke N, Zulu E. Concurrent sexual partnerships among youth in urban Kenya: Prevalence and partnership effects. Population Studies. 2010; 64:1–15. [PubMed: 20043269]

Table 1

Young Women's Reports Regarding the First Month of Premarital Relationships, by Timing of Relationship Start: Descriptive Statistics

	Last 10 Years (*N*= 551)		Last 5 Years (*N*= 362)	
Variables	***M* or %**	***SD***	***M* or %**	***SD***
Material transfers in relationship				
Received money-gifts-assistance	0.69		0.70	
Amount received (Ksh)	774.68	3257.40	966.45	3958.59
Gave money-gifts-assistance to partner	0.20		0.23	
Amount given (Ksh)	72.32	414.48	80.51	398.34
Net amount received (Ksh)	702.37	3235.24	885.93	3916.93
In relationship for money-gifts-assistance	0.19		0.20	
Individual economic resources				
Earned income	0.21		0.26	
Amount of income (Ksh)	565.28	3276.91	804.99	4006.03
Had another partner	0.18		0.21	
Net amount received from other partners (Ksh)	139.34	1060.60	200.31	1293.09
Respondent other characteristics				
Age	17.29	2.59	18.40	2.22
Level of education				
None/primary	0.38		0.26	
Secondary or higher	0.62		0.74	
Household economic status index[a]	−0.03	0.07	−0.03	0.08
Partner characteristics				
Age	21.83	4.78	22.77	4.72
Level of education				
None/primary	0.19		0.14	
Secondary	0.62		0.63	
Post-secondary	0.18		0.23	
High economic status	0.21		0.22	
Partner had another partner(s)	0.16		0.15	
Commitment within relationship				
Relationship type				
Fiancé/serious	0.21		0.22	
Dating	0.58		0.57	
Casual/other	0.21		0.20	
In relationship for love	0.30		0.29	
Aspires to marry partner	0.28		0.29	
Sexual behavior outcomes				
Had sexual intercourse	0.35		0.33	
Frequency of intercourse[b]				
1–4 times	0.61		0.59	

Variables	Last 10 Years (*N*= 551)		Last 5 Years (*N*= 362)	
	***M* or %**	***SD***	***M* or %**	***SD***
5–14 times	0.31		0.30	
15 + times	0.08		0.11	
Condom use[b]				
Always	0.39		0.50	
Most of the time	0.03		0.04	
Sometimes	0.12		0.14	
Rarely	0.02		0.03	
Never	0.44		0.30	

Note. Standard deviations are not reported for binary or categorical variables. Ksh denotes Kenyan shillings. At the time of survey, 70 Ksh corresponded to 1 U.S. dollar.

[a] Standardized index of 14 household items (range = −0.2–0.13).

[b] Analysis carried out among those who had sex.

Table 2

Summary of Logistic Regression Analysis for Variables Predicting the Occurrence of Sexual Intercourse in the First Month of Young Women's Premarital Relationships, for Relationships Beginning 10 (N = 551) and 5 (N = 362) Years before the Survey

	Relationships in last 10 years				Relationships in last 5 years			
	Model 1		Model 2		Model 3		Model 4	
	OR	***RSE***	***OR***	***RSE***	***OR***	***RSE***	***OR***	***RSE***
Material transfers in relationship								
Received money-gifts-assistance	2.11**	0.51	1.93**	0.47	2.61**	0.89	2.45**	0.84
Gave money-gifts-assistance to partner	1.30	0.36	1.20	0.34	1.49	0.46	1.41	0.44
Net amount received[a]	1.12†	0.07	1.12*	0.06	1.15	0.13	1.14	0.12
In relationship for money-gifts-assistance	1.77*	0.45	1.89*	0.50	2.53**	0.90	2.48*	0.90
Individual economic resources								
Earned income	0.83	0.26	0.86	0.27	0.62	0.25	0.63	0.25
Amount of income[a]	0.87*	0.06	0.86*	0.06	0.88†	0.06	0.87*	0.06
Had another partner	1.20	0.33	1.34	0.37	1.10	0.40	1.18	0.42
Net amount received from other partners[a]	1.00	0.09	1.01	0.10	1.01	0.09	1.02	0.09
Respondent other characteristics								
Age	1.10†	0.06	1.09	0.06	1.07	0.08	1.06	0.08
Level of education[b]								
Secondary or higher	0.26***	0.08	0.27***	0.09	0.35**	0.14	0.35*	0.15
Household economic status index[c]	0.19	0.35	0.18	0.34	0.10	0.22	0.09	0.19
Partner characteristics								
Age	1.02	0.03	1.02	0.03	1.03	0.04	1.03	0.04
Level of education[b]								
Secondary	1.73†	0.49	1.68†	0.48	1.25	0.50	1.20	0.50
Post-secondary	1.98†	0.81	1.90	0.78	1.64	0.85	1.56	0.83
High economic status[d]	1.05	0.28	1.11	0.30	1.15	0.40	1.25	0.42
Had another partner(s)	1.94*	0.50	1.91*	0.52	1.80	0.68	1.84	0.72
Commitment within relationship								

	Relationships in last 10 years				Relationships in last 5 years			
	Model 1		Model 2		Model 3		Model 4	
	OR	*RSE*	*OR*	*RSE*	*OR*	*RSE*	*OR*	*RSE*
Relationship type[e]								
Fiancé/serious	—		1.72	0.59	—		1.72	0.69
Dating	—		1.15	0.31	—		1.29	0.47
In relationship for love	—		1.29	0.29	—		1.03	0.32
Aspires to marry partner	—		1.37	0.34	—		1.09	0.37
χ^2	66.19		71.88		56.01		58.95	
df	16		20		16		20	

Notes: OR = odds ratio. *RSE* = robust standard error. Ksh denotes Kenyan shillings. At the time of survey, 70 Ksh corresponded to 1 U.S. dollar.

[a] Per 1000 Ksh.

[b] Reference is none/primary.

[c] Standardized index of 14 household items (range = −0.2–0.13).

[d] Reference is medium/low.

[e] Reference is casual/other.

† $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Summary of Logistic Regression Analysis for Variables Predicting High Frequency[a] of Sexual Intercourse in the First Month of Young Women's Premarital Relationships, for Relationships Beginning 10 (N = 190) and 5 (N = 119) Years before the Survey

	Relationships in last 10 years				Relationships in last 5 years			
	Model 1		Model 2		Model 3		Model 4	
	OR	***RSE***	***OR***	***RSE***	***OR***	***RSE***	***OR***	***RSE***
Material transfers in relationship								
Received money-gifts-assistance	0.98	0.42	1.01	0.45	3.38	2.65	3.39	2.90
Gave money-gifts-assistance to partner	1.43	0.57	1.10	0.47	1.41	0.69	1.10	0.59
Net amount received[b]	1.39*	0.21	1.43*	0.23	1.49†	0.32	1.46†	0.31
In relationship for money-gifts-assistance	1.15	0.44	1.01	0.42	1.37	0.70	1.17	0.68
Individual economic resources								
Earned income	0.33	0.24	0.32	0.22	0.64	0.74	0.67	0.68
Amount of income[b]	1.05	0.30	1.05	0.28	0.93	0.37	0.92	0.31
Had another partner	1.03	0.42	1.58	0.67	0.76	0.46	0.87	0.45
Net amount received from other partners[b]	0.76	0.16	0.84	0.19	0.44	0.23	0.50	0.25
Respondent other characteristics								
Age	1.30**	0.13	1.24*	0.13	1.38*	0.22	1.30†	0.21
Level of education[c]								
Secondary or higher	0.48	0.22	0.57	0.30	0.40	0.28	0.42	0.36
Household economic status index[d]	10.10	23.88	9.60	24.54	41.00	123.59	32.89	112.37
Partner characteristics								
Age	0.97	0.04	0.96	0.05	0.95	0.06	0.95	0.07
Level of education[c]								
Secondary	1.55	0.71	1.57	0.78	1.64	1.01	1.59	1.13
Post-secondary	1.02	0.68	0.96	0.65	1.11	0.95	1.05	0.91
High economic status[e]	0.75	0.30	0.92	0.39	0.51	0.31	0.69	0.47
Had another partner(s)	0.92	0.36	0.91	0.37	1.56	0.91	1.83	1.14
Commitment within relationship								
Relationship type[f]								

	Relationships in last 10 years				Relationships in last 5 years			
	Model 1		Model 2		Model 3		Model 4	
	OR	*RSE*	*OR*	*RSE*	*OR*	*RSE*	*OR*	*RSE*
Fiancé/serious	—		8.15***	5.26	—		6.10*	4.67
Dating	—		3.13*	1.74	—		2.30	1.29
In relationship for love	—		0.73	0.30	—		1.09	0.62
Aspires to marry partner	—		1.17	0.46	—		1.12	0.61
χ^2	28.88		37.87		25.74		39.72	
df	16		20		16		20	

Note. OR = odds ratio. *RSE* = robust standard error. Ksh denotes Kenyan shillings. At the time of survey, 70 Ksh corresponded to 1 U.S. dollar.

[a] Defined as sex 5 or more times in the month.

[b] Per 1000 Ksh.

[c] Reference is none/primary.

[d] Standardized index of 14 household items (range = −0.2–0.13).

[e] Reference is medium/low.

[f] Reference is casual/other.

† $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 4

Summary of Logistic Regression Analysis for Variables Predicting Consistent Condom Use in the First Month of Young Women's Premarital Relationships, for Relationships Beginning 10 (N = 190) and 5 (N = 119) Years before the Survey

	Relationships in last 10 years				Relationships in last 5 years			
	Model 1		Model 2		Model 3		Model 4	
	OR	***RSE***	***OR***	***RSE***	***OR***	***RSE***	***OR***	***RSE***
Material transfers in relationship								
Received money-gifts-assistance	0.79	0.40	0.91	0.49	0.17**	0.10	0.14**	0.09
Gave money-gifts-assistance to partner	2.11	0.99	2.23†	1.04	2.51†	1.39	2.66	1.62
Net amount received[a]	0.87*	0.05	0.88*	0.06	0.90	0.07	0.89	0.07
In relationship for money-gifts-assistance	0.66	0.29	0.64	0.31	0.66	0.35	0.49	0.29
Individual economic resources								
Earned income	0.67	0.47	0.60	0.49	2.26	1.79	2.35	2.17
Amount of income[a]	1.46*	0.24	1.46*	0.27	1.27	0.25	1.27	0.25
Had another partner	1.41	0.99	1.20	0.89	0.38	0.24	0.40	0.34
Net amount received from other partners[a]	2.19*	0.72	1.94*	0.62	4.09†	3.38	3.73	3.54
Respondent other characteristics								
Age	1.38**	0.15	1.47***	0.16	1.38*	0.22	1.54*	0.26
Level of education[b]								
Secondary or higher	1.05	0.52	0.89	0.45	0.43	0.30	0.34	0.24
Household economic status index[c]	0.002*	0.004	0.01*	0.01	0.004	0.02	0.02	0.07
Partner characteristics								
Age	0.96	0.05	0.95	0.04	0.97	0.06	0.96	0.06
Level of education[b]								
Secondary	1.35	0.60	1.51	0.69	2.12	1.39	2.39	1.62
Post-secondary	6.26**	4.00	6.89**	4.48	16.01***	13.45	16.80***	14.25
High economic status[d]	4.24***	1.91	3.16*	1.52	5.45***	2.84	5.89**	3.43
Had another partner(s)	1.75	0.79	1.60	0.76	1.65	1.09	1.38	1.03
Commitment within relationship								
Relationship type[e]								

	Relationships in last 10 years				Relationships in last 5 years			
	Model 1		Model 2		Model 3		Model 4	
	OR	*RSE*	*OR*	*RSE*	*OR*	*RSE*	*OR*	*RSE*
Fiancé/serious	—		0.46	0.28	—		2.19	1.89
Dating	—		0.32*	0.17	—		1.14	0.71
In relationship for love	—		0.89	0.35	—		0.46	0.24
Aspires to marry partner	—		0.45†	0.20	—		0.26*	0.15
χ^2	61.55		77.65		37.94		53.24	
df	16		20		16		20	

Note. OR = odds ratio. *RSE* = robust standard error. Ksh denotes Kenyan shillings. At the time of survey, 70 Ksh corresponded to 1 U.S. dollar.

[a] Per 1000 Ksh.

[b] Reference is none/primary.

[c] Standardized index of 14 household items (range = −0.2–0.13).

[d] Reference is medium/low.

[e] Reference is casual/other.

† $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.