Published in final edited form as:
Stud Fam Plann. 2012 September ; 43(3): 161–174.

Dating, Sex, and Schooling in Urban Kenya

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Abstract

Completion of secondary school is increasingly viewed as a desirable life goal for young men and women in urban Kenya. Yet achieving this goal often conflicts with other key transitions to adulthood, such as becoming sexually active, marrying, having children, and finding employment. Drawing upon exceptionally rich life-history calendar data from young people in Kisumu, Kenya, we explore how the timing and sequencing of key transitions affects the likelihood of secondary school completion. Conversely, we also examine how school enrollment and performance affect the timing of sexual initiation. Our findings indicate that sexual activity and the transition toward family formation are largely incompatible with young women's schooling. For men, however, romantic and sexual partnerships have no impact on schooling unless a partner becomes pregnant. Instead, paid employment appears to be least compatible with continued education.

As adolescents shift into adulthood between the ages of 15 and 24, they typically undergo a series of transitions that include completing school, finding a job, becoming sexually active, marrying, and having children. "Successful" completion of these transitions is critical, for they are pivotal in shaping life trajectories and can have far-reaching implications throughout the life course (National Research Council and Institute of Medicine 2005). These transitions are not independent events; rather, they are dependent on the success or failure of prior transitions. Thus, the order and timing of these events matter. For example, successful completion of schooling tends to enhance young men's and women's ability to secure a job and support a family. In contrast, making the transition into marriage or parenthood at an early age may hinder adolescents' ability to complete secondary school.

To ensure successful transitions, many societies proscribe norms for the proper sequencing of these events. The order and timing of key transitions in many sub-Saharan African countries, including Kenya, however, have been disrupted by recent social changes, particularly with regard to education and marriage (National Research Council and Institute of Medicine 2005). During the past 20 years, Kenya has experienced an impressive rise in educational attainment. Overall, 95 percent of young people aged 15–19 have received at least some primary school education (CBS [Kenya], MOH [Kenya], and ORC Macro 2004), and three-quarters of Kenyans have completed all eight years of primary school (Standards 1 to 8). Nonetheless, school attendance drops off precipitously after completing primary school and continues to decline sharply during the four years of secondary school (Forms 1 to 4), when a pronounced gender gap appears (Mensch and Lloyd 1998; Hungi and Thuku 2010). Even in urban areas such as Kisumu, Mombasa, and Nairobi, where access to secondary education is widespread, only 35 percent of adult women, compared with 44 percent of adult men, have completed secondary education (CBS [Kenya], MOH [Kenya], and ORC Macro 2004). This decline partly reflects the school system in Kenya. Although all children are eligible to attend primary school, given the limited number of secondary

schools, enrollment in Form 1 is very competitive. At the end of Standard 8, students must take a primary school completion exam. All students who fail this exam, and most students with low scores, are not admitted to government-funded secondary schools (Mensch and Lloyd 1998; Mensch et al. 2001).

In addition to changes in education throughout Africa, as in other parts of the world, the transition into marriage has transformed during the last half-century. The age at first marriage has risen substantially for women (Bledsoe 1990b; Harwood-Lejeune 2001; Mensch, Singh, and Casterline 2005; Kabiru and Ezeh 2007), resulting in a higher proportion of women who initiate sexual activity before rather than within marriage (Blanc and Way 1998; Mensch, Grant, and Blanc 2006). Moreover, an equally important shift has taken place in the courtship and spousal-selection process. In the past, kin, and particularly parents, played a large role in choosing spouses for young relatives. Today, young men and women increasingly find their own marriage partners (Bledsoe 1990b; Bledsoe and Pison 1994; Meekers 1995; Mukiza-Gapere and Ntozi 1995; Smith 2001). This shift is especially evident in urban areas, where young people actively seek potential spouses (Smith 2001; Johnson-Hanks 2007). Recent research has indicated that among young people in urban Kenya, the formation of sexual and romantic partnerships is integrally linked to the marriage process (Clark, Kabiru, and Mathur 2010). In short, what one might call "dating,"[1] for lack of a better term, has become both a common context for sexual debut and a common precursor to marriage.

This article contributes to the growing literature on changes in education, marriage, and the context of sexual debut by focusing on young people in urban Kenya and addressing two main questions. First, we explore whether entry into dating, initiation of sexual activity, becoming pregnant, or developing marital aspirations decreases adolescent boys' and girls' chances of finishing secondary school. Second, we assess whether boys' and girls' school enrollment and school performance are associated with timing of sexual debut.

Impact of Sex, Pregnancy, and Marriage on Schooling

Among studies examining whether early transitions into sexual activity, pregnancy, or marriage impede prospects of school completion for both boys and girls, few have addressed the issue of dating per se. Yet dating may be incompatible with schooling to the extent that it is a distraction from studies (Poulin 2007) or leads to a cascade of events such as sexual activity, pregnancy, or marriage (Kabiru and Ezeh 2007; Clark, Kabiru, and Mathur 2010), which in turn jeopardizes prospects of secondary school completion. Although being out of school is strongly associated with being sexually active among both boys and girls (Lloyd 2010), event history analysis indicates that being sexually active generally has a more detrimental effect on girls' secondary schooling than boys' (Biddlecom et al. 2008).

One of the primary reasons sexual partnerships may hinder girls' school achievement is the risk of pregnancy. Earlier research indicates that pregnancy could account for between one-third and one-half of all schoolgirl dropouts (Meekers and Ahmed 1999; Eloundou-Enyegue 2004). Other researchers have questioned the extent to which schoolgirl pregnancies contribute to dropout, however, estimating that pregnancy accounts for no more than 20 percent of school dropouts and may be as low as 5 percent in some countries (Mensch et al. 2001; Lloyd 2008; Lloyd and Mensch 2008). To our knowledge, no studies have directly

[1]Throughout this article, the term "dating" refers to the formation of sexual and romantic partnerships between unmarried young people. The term may be a bit of a misnomer in this context, however, to the extent that it implies a series of formal outings to public places (restaurants, movies, public events). As in many contexts, the behaviors that define different types of relationships are constantly evolving. Dating, however, can be distinguished from other forms of socializing with friends in that it entails romantic and/or sexual feelings.

examined the impact of a partner's pregnancy on boys' education; this effect is generally presumed to be minimal (Meekers and Ahmed 1999; Mensch et al. 2001; Lloyd 2008).

Another path through which dating may lead to early departure from school is the formation of marital aspirations. Adolescent girls who find a suitable marriage partner may be enticed to leave school early rather than wait and risk losing a potential spouse. Additionally, because more education is usually associated with higher bridewealth (payment of money or goods given by the groom's family to the bride's family) (Isiugo-Abanihe 1995), obtaining a secondary school degree may decrease the eligible pool of spouses (Bledsoe 1990b). Nonetheless, young women may also pursue greater education as a strategy for "marrying up," and some may even persuade their boyfriends to assist with paying for their school fees as a means of increasing their prestige and making initial payments toward their bridewealth (Bledsoe 1990a). Thus, for some women, remaining in school may enhance rather than hinder their marriage prospects. One study, however, which relied on self-reported reasons for dropping out of school, found that 11 percent of young women in Kenya cited marriage as the main reason for leaving school (Lloyd and Mensch 2008). For young men, by contrast, finding a suitable marriage partner may have no negative effect on education. Moreover, the completion of secondary education unambiguously increases a man's desirability as a prospective marriage partner.

Influence of Schooling on Sexual Debut and Pregnancy

Just as sexual activity and pregnancy may increase the likelihood of school dropout, remaining in school may provide an incentive to delay sexual initiation and avoid pregnancy. Whether enrollment in school can delay sexual onset is a critical question, particularly in areas most severely affected by the AIDS epidemic, where delaying sexual initiation could be lifesaving (Hargreaves et al. 2008; Jukes, Simmons, and Bundy 2008; Birdthistle et al. 2009). Moreover, delaying pregnancy has well-established health benefits for women and considerable advantages for their children (Gage 1998; Zabin and Kiragu 1998). Most cross-sectional studies show a strong association between being out of school and being sexually active (Karim Mehryar et al. 2003; Kayembe et al. 2008; McGrath et al. 2009). Results from more detailed studies using retrospective or longitudinal data are mixed. In Biddlecom and colleagues' 2007 study of four sub-Saharan African countries, no effects from school enrollment or timing of school entry on timing of premarital sex for boys or girls were found. One study in South Africa, however, found that boys and girls who performed better on standardized exams were less likely to become sexually active, suggesting that school enrollment and school performance may matter (Marteleto, Lam, and Ranchhod 2008; Lam, Marteleto, and Ranchhod 2009).[2] With respect to pregnancy, a study in South Africa found that girls who were on track in their schooling (a measure of previous school performance) were less likely to become pregnant than girls who were not in the expected grade for their age (Grant and Hallman 2008). Thus, both school enrollment and performance are potentially important and independent predictors of sexual behavior, but the effects may vary substantially by gender and context.

Although this previous research has shown a clear and often bidirectional link between education and sexual debut, important gaps and significant methodological deficiencies are present in the literature. With the notable exception of the study by Biddlecom and colleagues (2008), few studies investigate the links between education and sexual debut for young men. Men and women in sub-Saharan Africa follow strikingly different pathways to adulthood. Marriage and parenthood generally occur at much younger ages for women,

[2]These studies also found that girls who are on track in school are more likely to be sexually active than girls who are behind, suggesting a negative peer effect for girls.

although both men and women typically become sexually active during adolescence. Thus, assuming that sexual activity and its potential consequences, such as pregnancy, are unrelated to schooling for men is not justified. In addition, previous studies have focused on single predictors such as “ever had sex” or “school enrollment,” without recognizing the multidimensional aspects of sexual activity and schooling.

This study moves beyond previous research by examining the effect of having ever had sex, but also several dimensions of sexual activity, including the number of both romantic and sexual partners (“dating behaviors”), pregnancy, and marital aspirations on secondary school completion for young men and women. Measures such as the number of romantic partners and marital aspirations are rarely available in studies conducted in sub-Saharan Africa. In addition, following innovative research in South Africa, we explore the implications of not only being in school but also of school performance on sexual debut.

Our study offers important methodological advances over the existing literature by drawing on exceptionally rich life-history calendar data. The ten-year retrospective calendar captures detailed monthly data on schooling and nuanced information regarding many aspects of romantic and sexual partnerships. These time-varying measures allow us to examine the relationship between schooling and sexual activity from a life-course perspective. Most important, because these events are recorded in monthly, rather than yearly, intervals, our study can more precisely establish the sequential order of events. Cross-sectional surveys, and even most longitudinal studies, typically provide only crude annual indicators of when transitions occur. For example, both age at first sex and age at first marriage are generally reported in years, rendering it impossible to establish the order of these events if they happened at the same age. Given the high density of transitions during adolescence, many events occur within 12 months of each other. Thus, creating a clear picture of the dynamic relationship between different transitions to adulthood requires that the timing of key events be reported with greater precision.

Data and Methods

Data for our analyses were drawn from a study conducted in Kisumu, Kenya, in the summer of 2007. The study employed a novel survey instrument called the Relationship Histories Calendar (RHC), a modification of the well-established life-history calendar method. The RHC gathered retrospective information on monthly changes in residence, schooling (enrollment and level), employment, and household composition (including survival status of parents). The RHC also captured detailed data on all romantic and sexual partners in the preceding ten years, including when (if ever) sexual activity occurred, any pregnancies (of the respondents or partners), and whether the respondents wanted to marry any of their partners. The RHC was specifically designed to: (1) enhance reporting of timing of transitions by placing these events in the context of other key transitions using the calendar as a visual aid, and (2) improve the reporting of sensitive sexual behaviors by placing sexual behaviors in the broader context of their relationships and by increasing rapport between the respondent and the interviewer. A comparison of the quality of the data gathered by the RHC and a standard face-to-face interview has shown that, overall, the RHC facilitates greater reporting on some sensitive sexual behaviors relative to standard surveys (Luke, Clark, and Zulu 2011).

Sample Selection

Our sample was drawn by contacting every other household in 45 randomly selected urban enumeration areas within Kisumu. Men and women aged 18–24 in the selected households were eligible to be interviewed. If the selected household contained more than one individual in this age range, one respondent was randomly chosen. Because many university

students live in hostels, we included these buildings if they fell in our sampling frame and treated each room as a household. Unfortunately, access to dorms where many boarding-school students reside is restricted. If a boarding-school student was mentioned as a member of our sampled households, we attempted to locate him or her at the school in Kisumu. Individuals aged 18–24 who were attending a boarding school at the time of the survey and who were not from Kisumu were not included in our study. Selected respondents were randomly assigned to receive either the RHC or a more standard demographic survey. In the present study, we use data from the RHC only. Up to three attempts were made to contact each selected respondent, resulting in a response rate of 95 percent, with no significant differences by gender. Most of the selected respondents who were not interviewed either could not be located or did not have the time to complete the survey. In total, 608 respondents (286 women and 322 men) received the RHC. Ethical approval was granted by all collaborating institutions (the African Population and Health Research Center, McGill University, and Brown University).

We relied on two slightly different analytic samples to investigate two distinct outcomes: (1) dropping out of school before completing secondary school, and (2) initiating sexual activity. Our analysis of school dropout focuses on the period between ages 14 and 24, because the vast majority of young Kenyans will complete primary school during this time. We removed 50 individuals (8 percent) who had left school permanently before the age of 14, yielding an analytic sample of 558 respondents (261 women and 297 men). Although we do not know why these individuals left school before the age of 14, their reasons for leaving primary school are presumably different from reasons for leaving secondary school. Among our female respondents, only one woman was married and seven had become pregnant before age 14. No men reported either marrying or impregnating their partners before age 14. Our second analytic sample is used to examine predictors of sexual debut. Because sexual debut starts at young ages in Kisumu, we begin our survival analysis of first sex at exact age ten. Nonetheless, nine of our respondents had their first sexual experience before the age of ten and were removed from our analysis. Another three respondents were removed because they did not report a date of first sex. Thus, 596 respondents are included in our analyses of sexual debut.

Survival Analysis Models

To assess both school dropout and sexual debut, we use piecewise exponential survival analysis. Piecewise constant exponential models are a generalization of the standard exponential model in which the time axis is split into discrete periods (Blossfeld, Golsch, and Rohwer 2007). Within each of these time periods, the transition rates are assumed to be constant, but the transition rates can differ between time periods. One advantage of this modeling method is that it allows us to treat time as a continuous variable, which is more appropriate than discrete time methods for events measured in months. Another advantage is that because we do not know the shape of the underlying hazard function for either school dropout or sexual debut, we can incorporate a flexible hazard function that changes over specific time periods. Because we analyze the outcomes for men and women separately, we create separate piecewise exponential models that best fit their specific survival functions.

Like other types of survival analysis measured in discrete time units, problems can arise when events “tie” (occur during the same time interval). For our analyses, ties are especially problematic if the respondent reports having had his or her first sexual experience and completed or dropped out of secondary school in the same month. One of the main advantages of having monthly rather than yearly measures of these events is that it dramatically reduces the number of such ties. In our sample, only 2 percent of respondents report having had sex for the first time and leaving school in the same month, although nearly one-third (31 percent) of all transitions out of school occur within a year of sexual

debut. These results demonstrate that many transitions to adulthood occur in rapid succession, rendering annual measures of these events inadequate to capture the temporal order.

Nonetheless, although monthly measures result in fewer ties, respondents may have difficulty remembering events with precision. In the analyses presented below, all of our independent variables are lagged by one month to handle ties and to ensure that changes in independent variables occur before the status of the dependent variable changes. To test whether moderate levels of misreporting of the timing of events could substantially alter our main findings and conclusions, we also run models in which key independent variables are lagged by six months (results shown in Appendix Tables A1 and A2). Overall, we find few differences in these lagged models, although we highlight the one potentially important difference in our discussion of the results below.

To further explore whether recall bias may be affecting our results, we include controls for the age of the respondent at the time of the interview in all of our models. Given that our respondents are relatively young (< 25 years of age), most events have occurred relatively recently. Older respondents, however, had to remember events in the more distant past. On average, respondents reported having their first sexual encounter five years before the survey and leaving school three years before the survey. The maximum recall period was 14 years for sexual debut and 9 years for leaving school.

Models for Dropping Out of School—Our first set of survival-analysis models examines covariates associated with a higher risk of dropping out before completing secondary school. Men and women are considered to have dropped out if they are no longer enrolled in school and did not complete at least nine months of Form 4.[3] Students are expected to complete Form 4 when they are 17 or 18 years old. Because of high rates of grade repetition and temporary absences from school, however, students often take longer to complete secondary school. One respondent in our sample, for example, finished Form 4 at the age of 23. Students who are still enrolled in school or who have completed at least nine months of Form 4 are treated as censored. Thus, in our schooling analyses, respondents are observed until they complete secondary school or drop out of school. If they are currently enrolled, they are last observed at the time of the survey.

In all our models, we control for time-constant and time-varying socioeconomic characteristics, which are correlated with educational attainment. These include time-constant variables for the respondent's religion and ethnicity and the time-varying measures of whether the respondent has migrated from elsewhere and whether the respondent is earning any income. We also account for whether, and if so when, the respondent has become a maternal, paternal, or double orphan. Unfortunately, our study (like most studies) lacks a time-varying measure of household wealth. We follow the example of other studies that have attempted to mitigate this problem by using current measures of household assets (Mensch et al. 2001; Biddlecom et al. 2007; Grant and Hallman 2008). Nonetheless, this measure of wealth should be interpreted with caution because it may reflect the effect of schooling on wealth rather than the effect of wealth on schooling. The inclusion of measures of current wealth slightly diminishes the magnitude of the effect of sexual partners and pregnancy for both men and women.

We are especially interested in how dating of both romantic and sexual partners, pregnancy, and marital aspirations are associated with the risk of dropping out of school. Thus, we

[3]Students who were temporarily not enrolled in school because of school holidays or absences between grades are not considered to have dropped out.

include a measure for dating (total number of both romantic and sexual partners) in Model 2. In Model 3, to further explore whether sexual partners pose a greater threat to educational achievement than nonsexual partners, we restrict our measure to sexual partners only. In our final model (Model 4), we assess whether the risk posed by having sexual partners can be partly or entirely explained by an increased risk of pregnancy and the development of marital aspirations. Hence, we include a time-varying measure for ever being pregnant (for women) or ever impregnating a partner (for men).[4] We also include a time-varying measure that equals 1 if the respondent reports wanting to marry their romantic or sexual partner.

Models for Sexual Debut—In our second set of survival analysis models, we explore the effects of school enrollment and school performance on sexual debut. Men and women who have not had sex by the time of the survey are treated as censored. Additionally, because we are interested in the predictors of premarital sex, we treat marriage as a disrupting event and censor the 13 respondents (11 women and 2 men) who had sex for the first time in the same month as their marriage. Thus, for these analyses, the end of observation refers to the age of sexual debut if the respondent is sexually active, or the age at the time of the survey if the respondent never had sex.

We control for all the same socioeconomic characteristics included in our analysis for dropping out of school in Model 1. The same caveats regarding our measures of household wealth also apply to these analyses. In Model 2, we add a time-varying measure of educational attainment, which incorporates an indicator of prior school performance. Specifically, we create a categorical variable that equals 1 if the respondent has dropped out of school prior to finishing secondary school, 2 if the respondent is no longer in school but completed secondary school, 3 if the respondent is enrolled in school but behind, and 4 if the respondent is in school and on track.

Results

Dropping Out of School

Table 1 provides a full description of both the time-constant and time-varying variables used in our models. This table also shows the tremendous changes in the lives of adolescents between the age of 14 and the time when they either dropped out of school or completed secondary education. Among respondents who were in school at age 14, 46 percent of women had dropped out of school, 52 percent had completed secondary school, and only 3 percent were still in school at the end of the observation period. Among men, 34 percent had dropped out, 55 percent had completed secondary school, and 11 percent were still enrolled. Other important events also occurred. By the end of the observation period, more than a quarter of the respondents had migrated and 3 percent of women and 10 percent of men had begun earning an income while still in school. At the age of 14, 23 percent of women and 21 percent of men had experienced the death of at least one parent, and at the end of the observation period this figure rose to about 35 percent for both men and women.

Our respondents also experienced a sharp increase in number of romantic and sexual partners during this time period. About 78 percent of women and 66 percent of men reported no sexual or romantic partners by the age of 14. This number fell to 28 percent of women and only 15 percent of men by the end of the observation period. About 13 percent of girls reported ever becoming pregnant while in school, compared with 6 percent of men who reported that their partner became pregnant. Concurrent with the rise in romantic and sexual

[4]Unfortunately, the number of respondents who reported that the pregnancy was not carried to term was too small to assess whether a differential effect of pregnancy conditional on the outcome of the pregnancy exists.

partnerships, both young men and women started thinking about marriage during this time period. Whereas only about 5 percent of 14-year-olds reported having found a partner whom they would like to marry (at least someday), this figure rose to 33 percent by the end of their schooling among women, and 38 percent among men.

The results from our multivariate survival analyses of school dropout for women and men are presented in Table 2. Although we are primarily interested in the effects of dating and sexual behaviors on secondary school completion, we note that several sociodemographic characteristics were strongly associated with whether girls dropped out of school. Muslim girls and, to a lesser extent, girls who follow traditional African religions were less likely to finish secondary school than were either Catholics or Protestants. Higher levels of poverty (at the time of the survey) were associated with a significantly greater risk of dropping out of school. Additionally, girls who were orphaned, regardless of the type of orphanhood (maternal, paternal, or double), were significantly more likely to drop out of school. We also find that girls who had found a job and had started to earn income during secondary school were significantly more likely to drop out of school. Girls who had moved to Kisumu appear to have an advantage with respect to schooling, perhaps indicating that some girls move to Kisumu to take advantage of the larger number of secondary schools, although this effect was only significant in Model 4. Importantly, the age of the respondent at the time of the survey had no significant effect on the reported age of last school enrollment, and no clear trend existed in the relationship between current age and likelihood of school dropout, suggesting little evidence of systematic recall bias with respect to age. Moreover, the inclusion of measures of age at the time of the survey had no appreciable effect on any of the coefficients in any models, further indicating that age is not an important mediating factor in the reporting of retrospective events.

In Model 2 we add the measures of dating and find that women's risk of dropping out of school, conditional on being in school at age 14, rises proportionally with the cumulative number of romantic and sexual partners. Young women who had three or more partners had more than three times the risk of dropping out of school, compared with women who had never dated. In Model 3 we assess the effects of sexual partners only. We find that the relationship between dropping out of school and total number of sexual partnerships was much stronger than the relationship with all partners, suggesting that sexual partners rather than romantic partners place adolescents at risk of dropping out of school. Moreover, not only the first sexual partner (sexual debut), but each additional partner progressively elevated girls' risk of leaving school. The hazard ratio of a young woman who had three or more sexual partners was almost eight times that of a young woman who never had a sexual partner.

Finally, in Model 4 we examine whether having sexual partners ipso facto limits girls' educational attainment or whether their sexual partnerships lead to both an increased risk of pregnancy and the development of marital aspirations, which in turn reduce the chances of finishing secondary school. After including indicators for ever being pregnant and ever wanting to marry a partner, the magnitude of the coefficients for number of sexual partners was greatly diminished, although the difference between having no sexual partners and having three or more partners remained significant. Girls who became pregnant experienced an almost fourfold increase in the risk of dropping out of school. Finding a partner whom they would like to marry was also detrimental to girls' schooling and was associated with a 78 percent increase in the risk of dropping out before completing secondary school. When we lag measures of sexual partnerships, ever being pregnant, and marital aspirations by six months, however, we find that the effects of the number of sexual partners becomes noticeably stronger, while the effect of wanting to get married decreases from a hazard ratio of 1.8 to 1.4 and becomes insignificant (Appendix Table A1, Model 3). These results may

indicate either the potential bias if these dates are misreported or that girls genuinely leave school very shortly after finding a partner to marry.

For young men, as for young women, we find no significant relationship between age at the time of the survey and reported schooling outcomes (Table 2). Although being an orphan had a strong negative effect on women's schooling, the effects of orphanhood on men's schooling were not statistically significant. In contrast to our findings for women, we find that migration among men was negatively associated with educational attainment, particularly in Model 4. In all our models, men who started to earn income while in school were at greater risk of dropping out of school, as were young men affiliated with traditional African religions.

Models 3 and 4 show striking gender differences with respect to dating and sexual partnerships. Neither all partnerships nor sexual partnerships exclusively had a detrimental effect on men's schooling. Nonetheless, if the man's partner became pregnant (and he was aware of the pregnancy), he experienced a significant increase in risk of dropping out of school (hazard ratio 3.2). Indeed, the magnitude of this effect for men was almost as large as the effect of pregnancy among women. The effect of marital aspirations, however, had the opposite effect for men than for women. Men who had found a partner whom they wished to marry were less likely to drop out of school, although this effect was not significant. Our models that include six-month lags (see Appendix Table A1) differ very little from the models presented in Table 2.

Sexual Debut

By the time of the survey, 81 percent of unmarried women and 86 percent of unmarried men had had sex, demonstrating the relatively high levels of premarital sex among men and women. Table 3 describes key transitions for both men and women from the age of ten until the age of first sex or the time of the survey. Thirty-five percent of women and 26 percent of men moved to Kisumu, a local hub for internal migration, during this observation period. Although only about 10 percent of our respondents were orphaned by age ten, this proportion eventually rose to 33 percent for women and 29 percent for men. Many of the respondents (10 percent of women and 18 percent of men) had begun to work for pay despite Kisumu's overall unemployment rate of 30 percent (TICH 2006). By the age of ten, only 6 percent of girls and 5 percent of boys were not in school. By the end of the observation period, however, half of the women (51 percent) and almost one-third of the men (30 percent) were no longer in any type of school. More than half of the respondents who were no longer in school did not complete secondary school, and of those still in school, roughly half fell behind by the time they became sexually active. Reasons for students not being on track include late entry into school, temporary absences, and grade repetition. The sharp increase after age ten suggests that the risk of falling behind continued well into secondary school. In Table 4 we examine factors associated with young women's and men's sexual debut. For women, the effects of both school enrollment and school performance on the timing of sexual debut were very strong. Women who were both in school and on track were the least likely to become sexually active, whereas women who had dropped out of school were the most likely to initiate sexual activity. Interestingly, even among women who were no longer in school, those who had dropped out were significantly more likely to become sexually active than those who had finished secondary school. After controlling for educational status (Model 2), we find very little effect of orphanhood status, earning income, migration, or religion on the timing of sexual debut among women. Luo women, however, appear to initiate sexual activity at slightly younger ages than Luhya women, and women from poorer households tend to become sexually active earlier than those living in richer households. Consistent with our results for schooling, we find no significant relationship between age at the time of the survey and reported age of sexual

debut, indicating little recall bias with respect to the respondent's age. Moreover, when we lag our measures of education by six months, we find no notable differences (Appendix Table A2).

Among men, the most striking finding is the lack of relationship between school enrollment or performance and the timing of sexual debut. Just as men's sexual partnerships appear to have little effect on their schooling (Table 2), schooling achievement appears to have little effect on sexual behavior. Poorer men and men who are maternal orphans initiate sex at slightly younger ages in Kisumu. Finally, as with women, no evidence exists of biased reporting detected by our measures of current age or in our models with lagged variables.

Limitations

Life-history calendars, particularly those that record information in monthly intervals, can significantly improve our ability to identify the temporal order of events and enhance our understanding of the process of adolescent transitions. Nonetheless, our life-history data suffer from four important limitations: recall bias, social desirability bias, omitted variable bias, and limited period of observation.

Although all retrospective data suffer from recall bias, calendars have been found to greatly enhance recall by paralleling the structure of autobiographical memory and by using highly salient events to improve the reported timing and order of other transitions (Belli 1998). Thus, memorable personal events, such as when respondents moved, lost a parent, or had their first child, as well as memorable public events, such as the presidential election of Mwai Kibaki, the US embassy bombing, or major sporting championships, are typically recorded first and help anchor other events. Moreover, as respondents report their educational or sexual histories, they recall them in the context of their broader lives, including where they lived, whether they were working, their grade and type of schooling, and who they were dating, thus creating a more fluid narrative of their life histories. By placing important life events in clear juxtaposition to one another, the calendar facilitates recall and also allows for the immediate recognition of inconsistencies. For example, if a respondent initially reports ending her relationship with her first partner two years ago but knows that she broke up with her partner when she moved to Kisumu three years ago, she can adjust her calendar dates during the interview process. Despite the potential of calendars to improve respondents' memory, recall bias may persist. To the extent that recall errors are random, they would increase our standard errors and reduce the likelihood of significant findings. Systematic or deliberate recall errors, however, could bias our findings. We find no evidence of systematic recall bias with respect to the respondent's age and few differences in our results if we allow for modest levels of systematic misreporting of the timing of events.

Deliberate misreporting is more problematic. Some respondents may deliberately revise their life histories to conform to social norms or personal ideals, thus introducing social desirability bias into our findings. Girls may, for example, systematically move their date of sexual debut until after they have left school. The social norms regarding the timing of sex with respect to schooling, however, are much weaker than the norms regarding timing with respect to marriage. Moreover, previous analyses of these data have shown that, compared with a more standard survey questionnaire, the calendar improved the reporting of most sexual behaviors and minimized social desirability bias (Luke, Clark, and Zulu 2011).

Although our life-history calendar captures a wide range of time-varying factors, it omits several variables. The omission of retrospective measures of household wealth before or at the time of the transitions is of concern because it may produce substantial endogeneity. For example, household poverty may lead a young woman to both drop out of school and

become sexually active at a young age. Other important unobserved characteristics such as scholarly aptitude, family structures, social skills, romantic proclivities, and ambition are omitted in our own study and in most other surveys.[5] Despite our concerns about omitted variable bias, we find that the inclusion or exclusion of measures of household wealth at the time of the survey has little effect on the strength of the key associations explored in this study.

Finally, we note that our analysis of school completion is limited to ages 14–24, when dating, sex, pregnancy, and marital aspirations have the greatest effect on schooling. These factors are likely to be less important at younger ages, especially at ages younger than ten. Completion of primary school in Kenya, particularly in urban Kenya, has increased dramatically, and dropout rates now peak in secondary school. In our sample, only 8 percent had permanently left school by the age of 14, and among those still in school at age 14, more than one-third of the boys and nearly half the girls failed to complete secondary school. Nonetheless, it would have been interesting to examine the predictors of school dropout over a longer portion of the respondent's life course.

Discussion

This study sheds light on the complex relationships between dating, sexual debut, and schooling among adolescents in sub-Saharan Africa. In particular, because events are recorded in our data on a monthly basis, our study achieves greater precision in the sequencing of events than is generally possible in cross-sectional and even most longitudinal studies, where key events are measured in years. We find, for example, that nearly one-third of respondents become sexually active within one year of leaving school. By examining the influence of sexual activity on schooling and the affect of schooling on sexual debut separately for men and women, we highlight how differently these transitions unfold. For young women, dating leads to a cascade effect that ultimately puts their academic careers in jeopardy. Similar to previous studies, we find that being sexually active (that is, having at least one sexual partner) affects young women's schooling. We extend the findings of these previous studies by showing that as the number of sexual partners increases, the likelihood that a young woman will graduate from secondary school decreases. Moreover, we show that the association between sexual activity and schooling primarily operates through the increased risk of both pregnancy and developing marital aspirations. Our finding that young women who have found a partner whom they wish to marry are significantly more likely to drop out of school is particularly interesting because estimates of the effects of marital intention on schooling are relatively rare, despite widespread assertions that many adolescent girls drop out of school to marry.

Additional analyses show that girls who have dropped out of school before completing secondary education are the most likely to become sexually active. Moreover, consistent with the research by Grant and Hallman (2008) in South Africa, we find that girls who are already behind in school are more likely to engage in sexual activity, suggesting that some girls may be deliberately choosing pathways leading to pregnancy and marriage when they are faltering in the educational system. Becoming sexually active may be the first step toward becoming pregnant and/ or finding a suitable spouse, which in turn may increase the risk of school dropout. In short, for young women the transitions to becoming a mother and wife continue to conflict with the goal of finishing secondary school.

[5]Studies using the Cape Area Panel Study data in South Africa, which include both standardized measures of literacy and numeracy and longitudinal measures of income and household wealth, are an important exception (Dinkelman, Lam, and Leibbrandt 2008; Marteleto, Lam, and Ranchhod 2008; Lam, Marteleto, and Ranchhod 2009).

The situation for men's adolescent transitions is markedly different. Men's sexual relationships appear to have no direct effects on their schooling, and men's performance in school bears no relationship to the timing of sexual debut, suggesting that these two transitions are broadly independent of one another. These findings are consistent with the limited previous research on the relationship between schooling and sexual debut among young men (Biddlecom et al. 2007 and 2008). Previous studies have assumed that a partner's pregnancy has no negative repercussions for a man's education; however, we find that if a man's partner becomes pregnant (and he is aware of the pregnancy), he is more likely to drop out of school. This is an important finding because it suggests a conflict between men taking responsibility for their offspring and their educational pursuits. In contrast, wanting to marry a partner has no negative effect on schooling for men and, in fact, might provide a slight incentive for remaining in school, although the result is not significant. For men, job opportunities, rather than sexual and marital factors, pose the greatest incentive to leave school early. Similar to our findings for girls, boys who have earned an income are significantly more likely to leave secondary school.

These findings have important policy implications for Kenya, which is seeking to achieve universal secondary education and close the gender gap. Clearly, adolescent transitions into sexual activity, marriage, parenthood, and employment are not the only factors that influence the rate of secondary school completion. Economic factors play a critical role, as evidenced by the strong negative effects of household poverty and orphanhood on remaining in school. Moreover, structural factors such as the availability and quality of government-funded secondary schools and the level of associated school fees and exam requirements are likely to have a big impact. Nonetheless, in the midst of rapid changes in both the timing and order of key transitions to adulthood, assessing when transitions are complementary and when they are conflicting is useful.

Completing secondary school may be complementary, and thereby may increase the success of other transitions, partly by delaying them. For example, finishing secondary school before making the transition into sexual activity, marriage, parenthood, or employment could have numerous benefits such as lowering the risk of HIV (Hargreaves et al. 2008), establishing more stable and compassionate unions (Tilson and Larsen 2000), reducing maternal mortality (Zabin and Kiragu 1998), improving children's health (Hobcraft 1993), and increasing job security and wages (Anderson, Case, and Lam 2001). Our findings that girls who stay in school and are on track are less likely to become sexually active suggest that improvements in the quality and availability of secondary schools could help delay some of these transitions for girls. Obtaining a secondary degree even after making some of these transitions, however, is still likely to bestow important advantages. Thus, policies that make these transitions more compatible are needed.

Many countries, such as Botswana, previously enhanced the conflict between motherhood and schooling by imposing a one-year expulsion of pregnant schoolgirls or compelling young mothers to enroll in different schools (Meekers and Ahmed 1999 and 2000). More recently, South Africa and other countries have adopted policies that both enable pregnant schoolgirls to stay in school and encourage their return after the birth of their child (Madhavan and Thomas 2005). The success of these programs is evidenced by a return rate of up to 50 percent of young mothers in South Africa (Marteleto, Lam, and Ranchhod 2008). For more than a decade, researchers have made appeals for similar policies in Kenya (Meekers, Gage, and Zhan 1995) and the policy community is beginning to respond by encouraging adolescent girls to stay in school or return if they have left.

No countries, to our knowledge, have policies designed to keep young fathers in school and simultaneously encourage paternal recognition and responsibility. Similarly, virtually no

progress has been made in making marriage and schooling more compatible. Although roughly one-third of both boys and girls in our sample had found a partner they wished to marry, none of our married respondents remained in school after marriage. Surprisingly little attention has been given to finding ways to make secondary schooling more compatible with earning an income. Whereas a surge in the number of vocational schools has helped ease the transition from school to gainful employment, little recognition of the need to earn an income while in school has taken place, even though many adolescents are expected to contribute to their educational expenses. As a result, many working students find that they must either leave school temporarily or fall behind in their studies, resulting in the need to repeat a grade. For both girls and boys, we find that earning an income is negatively associated with remaining in school.

If young Kenyan men and women perceive the decision to remain in school as complementary to their life goals, they may seek to delay these other transitions. The economic and social reality of low school quality, high school fees, floundering labor markets for skilled workers, and a potential marriage-market penalty for well-educated women, however, provides strong disincentive to stay in school. Thus, one of the key challenges to increasing the rates of secondary school completion will be to find ways of both encouraging the delay of some transitions to adulthood and at the same time accommodating students who have already become parents, spouses, and wage earners.

Acknowledgments

Funding for this research was provided by the National Institutes of Health (NIH)/National Institute of Child Health and Human Development (NICHD). The authors wish to thank Caroline Kabiru, Nancy Luke, Eliya Zulu, and other members of the research team for implementing this study. This article has also benefited from insightful comments from Cynthia Lloyd and Leticia Marteleto.

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Appendix

Table A1

Piecewise exponential survival analyses of dropping out of school with six-month lagged measures, Kisumu, Kenya

	Women			Men		
Characteristic	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Sociodemographic characteristic						
Age (at time of survey)						
18 –19 (r)	1.00	1.00	1.00	1.00	1.00	1.00
20 – 21	0.95	1.00	1.03	0.82	0.84	0.81
22 – 24	1.19	1.22	1.29	0.78	0.77	0.78
Ethnicity						
Luo (r)	1.00	1.00	1.00	1.00	1.00	1.00
Luhya	0.75	0.68	0.69	0.94	1.00	1.04
Other	1.05	1.03	1.02	0.60	0.63	0.66
Religion						
Catholic (r)	1.00	1.00	1.00	1.00	1.00	1.00
Protestant	0.77	0.74	0.73	0.78	0.78	0.77
Pentecostal	1.19	1.24	1.31	1.25	1.23	1.28
Traditional/African	1.77	1.91	2.02*	2.01*	1.93	1.96*
Muslim/Other	2.53*	2.77*	2.93**	1.63	1.56	1.52
Ever migrated	0.63	0.69	0.60	1.48	1.51	1.54
Currently earning income	4.53*	5.86**	5.89**	2.54**	2.58**	2.68**
Asset index						
Bottom third (r)	1.00	1.00	1.00	1.00	1.00	1.00
Middle third	0.41***	0.42***	0.40***	0.27***	0.27***	0.28***
Top third	0.21***	0.23***	0.21***	0.18***	0.18***	0.18***
Orphanhood status						
Both parents alive (r)	1.00	1.00	1.00	1.00	1.00	1.00
Maternal orphan	2.08*	2.18*	2.19*	1.40	1.38	1.41
Paternal orphan	1.82**	1.73*	1.87**	1.43	1.44	1.56
Double orphan	2.39*	2.38*	2.51**	1.59	1.56	1.59
Dating and sexual behavior						
Romantic and sexual partners (lagged)						
0 (r)	1.00			1.00		
1	1.27			1.03		
2	2.69***			0.73		
3+	3.85**			1.28		
Sexual partners only (lagged)						
0 (r)		1.00	1.00		1.00	1.00
1		1.72*	1.30		1.12	1.11
2		2.15*	1.78		0.90	0.86
3+		9.37***	5.36*		1.16	0.92

	Women			Men		
Characteristic	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Ever pregnant or ever impregnated partner (lagged)			3.76***			2.85*
Ever wanted to marry a partner (lagged)			1.39			0.83
Wald Chi-squared	2028.5***	2028.5***	1993.3***	2,133.9***	2,139.0***	2,125.2***
Log likelihood	−237.4	−237.2	−231.5	−203.4	−204.2	−202.1
Person-months (N)	10,858 (261)	10,858 (261)	10,858 (261)	15,371 (297)	15,371 (297)	15,371 (297)

*Significant at $p \leq 0.05$;
**$p \leq 0.01$;
***$p \leq 0.001$.

(r) = Reference category.

Note: All lagged measures are lagged by six months.

Table A2

Piecewise exponential survival analyses of sexual debut with six-month lagged measures, Kisumu, Kenya, 2007

Characteristic	**Women**	**Men**
Socioeconomic characteristic		
Age (at time of survey)		
18–19 (r)	1.00	1.00
20–21	1.26	1.00
22–24	1.16	0.95
Ethnicity		
Luo (r)	1.00	1.00
Luhya	0.70*	0.74
Other	0.65	0.68
Religion		
Catholic (r)	1.00	1.00
Protestant	1.06	0.94
Pentecostal	1.30	0.97
Traditional/African	0.92	1.19
Muslim/Other	1.05	0.75
Ever migrated	0.96	1.01
Currently earning income	2.00**	1.18
Asset Index		
Bottom third (r)	1.00	1.00
Middle third	0.90	0.61*
Top third	0.61**	0.59**
Orphanhood status		
Both parents alive (r)	1.00	1.00
Maternal orphan	1.28	2.12**
Paternal orphan	0.84	1.38

Characteristic	Women	Men
Double orphan	1.20	1.00
Educational status (lagged)		
Not in school		
Did not finish secondary (r)	1.00	1.00
Finished secondary	0.45 *	1.62
In school		
Behind	0.65 *	0.74
On track	0.43 ***	1.13
Wald Chi-squared	4,082.8 ***	4,756.4 ***
Log likelihood	−201.6	−274.9
Person-months (N)	18,694 (284)	18,430 (312)

* Significant at $p \leq 0.05$;
** $p \leq 0.01$;
*** $p \leq 0.001$.

(r) = Reference category.

Note: All lagged measures are lagged by six months.

Table 1

Percentage of women and men surveyed, by schooling outcome, sociodemographic characteristics, and dating and sexual behaviors, at age 14 and at end of observation period, Kisumu, Kenya, 2007

	Women (n = 261)		Men (n = 297)	
Characteristic	**At age 14**	**At end of observation**	**At age 14**	**At end of observation**
Schooling outcome				
Completed Form 4	0.0	51.7	0.0	54.6
Dropped out	0.0	45.6	0.0	34.3
Still in school	100.0	2.7	100.0	11.1
Sociodemographic characteristic				
Age (at time of survey)				
18–19		31.4		33.3
20–21		36.4		28.3
22–24		32.2		38.4
Ethnicity				
Luo		70.5		76.8
Luhya		19.5		10.1
Other		10.0		13.1
Religion				
Catholic		26.1		23.6
Protestant		39.5		45.8
Pentecostal		21.5		15.2
Traditional/African		7.7		7.1
Muslim/Other		5.4		8.4
Ever migrated	7.3	26.8	12.8	29.0
Currently earning income	0.8	2.7	4.4	9.8
Asset Index				
Bottom third		25.8		30.3
Middle third		32.2		35.0
Top third		41.0		34.7
Orphanhood status				
Both parents alive	77.0	65.1	79.1	65.2
Maternal orphan	4.3	6.6	3.4	6.4
Paternal orphan	16.3	20.9	13.2	19.6
Double orphan	2.3	7.4	4.4	8.8
Dating and sexual behavior				
Cumulative number of sexual and romantic partners				
0	78.2	27.6	65.7	14.5
1	18.4	39.9	30.6	37.0
2	2.7	22.2	3.0	28.6
3+	0.8	10.3	0.7	19.9
Cumulative number of sexual partners only				

	Women (n = 261)		Men (n = 297)	
Characteristic	**At age 14**	**At end of observation**	**At age 14**	**At end of observation**
0	87.0	51.3	77.1	31.3
1	10.7	32.6	20.5	40.4
2	1.9	12.3	1.7	16.8
3+	0.4	3.8	0.7	11.5
Ever pregnant or ever impregnated partner	1.5	12.6	0.0	6.4
Ever wanted to marry partner	5.0	33.0	5.4	38.1

Table 2

Piecewise exponential survival analyses of hazard ratios of dropping out of school, Kisumu, Kenya, 2007

	Women				Men			
Characteristic	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Sociodemographic characteristic								
Age (at time of survey)								
18–19 (r)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20–21	0.93	0.96	1.00	1.07	0.84	0.83	0.83	0.81
22–24	1.13	1.21	1.23	1.28	0.77	0.78	0.78	0.80
Ethnicity								
Luo (r)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Luhya	0.72	0.76	0.70	0.69	0.98	1.00	1.04	1.11
Other	0.94	1.04	1.06	1.10	0.63	0.62	0.65	0.71
Religion								
Catholic (r)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Protestant	0.80	0.77	0.72	0.69	0.79	0.79	0.81	0.80
Pentecostal	1.38	1.21	1.19	1.29	1.23	1.24	1.21	1.28
Traditional/African	1.88	1.76	1.86	2.02*	1.95*	1.97*	1.99*	2.00*
Muslim/Other	2.90**	2.51*	2.72*	2.92**	1.54	1.54	1.60	1.47
Ever migrated	0.74	0.64	0.67	0.57*	1.51	1.48	1.50	1.58*
Currently earning income	4.68*	3.63*	6.08**	5.63**	2.52**	2.53**	2.58**	2.81***
Asset index								
Bottom third (r)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Middle third	0.39***	0.42***	0.42***	0.41***	0.26***	0.27***	0.27***	0.28***
Top third	0.20***	0.22***	0.24***	0.21***	0.18***	0.18***	0.18***	0.19***
Orphanhood status								
Both parents alive (r)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maternal orphan	2.82**	2.16*	2.05	2.08*	1.43	1.45	1.39	1.38
Paternal orphan	1.82**	1.83**	1.78**	2.06***	1.47	1.48	1.48	1.63
Double orphan	2.39*	2.39*	2.46*	2.58**	1.59	1.59	1.57	1.57

Characteristic	Women				Men			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Dating and sexual behavior								
Romantic and sexual partners								
0 (r)		1.00				1.00		
1		1.18				0.98		
2		2.23**				1.09		
3+		3.28**				1.15		
Sexual partners only								
0 (r)			1.00	1.00			1.00	1.00
1			1.72*	1.14			1.19	1.21
2			2.55**	1.62			1.49	1.44
3+			7.71***	3.19*			1.18	0.93
Ever pregnant or ever impregnated partner				3.83***				3.20**
Ever wanted to marry partner				1.78*				0.64
Wald Chi-squared	2066.3***	2035.7***	2017.1***	1953.8***	2,140.2***	2,139.0***	2,135.1***	2109.3***
Log likelihood	−244.5	−238.5	−235.7	−224.7	−204.4	−204.3	−203.7	−199.6
Person-months (N)	10,858 (261)	10,858 (261)	10,858 (261)	10,858 (261)	15,371 (297)	15,371 (297)	15,371 (297)	15,371 (297)

* Significant at $p \leq 0.05$;

** $p \leq 0.01$;

*** $p \leq 0.001$.

(r) = Reference category.

Stud Fam Plann. Author manuscript; available in PMC 2013 September 01.

Table 3

Percentage distribution of women and men experiencing sexual debut, by sociodemographic characteristics and educational status, at age10 and at end of observation period, Kisumu, Kenya, 2007

	Women (n = 284)		Men (n = 312)	
Characteristic	**At age 10**	**At end of observation**	**At age 10**	**At end of observation**
Sexual debut				
Had sex	0.0	80.6	0.0	86.2
Never had sex	100.0	19.4	100.0	13.8
Sociodemographic characteristic				
Age (at time of survey)				
18–19		31.3		32.7
20–21		35.2		30.1
22–24		33.5		37.2
Ethnicity				
Luo		71.1		75.3
Luhya		19.0		11.2
Other		9.9		13.5
Religion				
Catholic		25.7		23.1
Protestant		38.7		44.9
Pentecostal		21.5		15.4
Traditional/African		8.8		8.7
Muslim/Other		5.3		8.0
Ever migrated	0.0	34.5	0.6	26.3
Currently earning income	1.1	9.9	4.8	17.6
Asset Index				
Bottom third		29.6		32.4
Middle third		31.7		34.3
Top third		38.7		33.3
Orphanhood status				
Both parents alive	86.9	66.6	92.5	70.6
Maternal orphan	1.8	6.8	1.3	6.2
Paternal orphan	10.2	19.8	4.9	16.8
Double orphan	1.1	6.8	1.3	6.5
Educational status				
Not in school				
Did not finish secondary	6.3	29.2	5.1	17.6
Finished secondary	0.0	22.2	0.0	12.5
In school				
Behind	14.1	23.6	19.9	35.3
On track	79.6	25.0	75.0	34.6

Table 4

Piecewise exponential survival analyses of hazard ratios of sexual debut, Kisumu, Kenya, 2007

	Women		Men	
Characteristic	**Model 1**	**Model 2**	**Model 1**	**Model 2**
Sociodemographic characteristic				
Age (at time of survey)				
18–19 (r)	1.00	1.00	1.00	1.00
20–21	1.19	1.26	0.98	1.00
22–24	1.14	1.11	0.93	0.95
Ethnicity				
Luo (r)	1.00	1.00	1.00	1.00
Luhya	0.71	0.69 *	0.72	0.74
Other	0.65	0.65	0.72	0.69
Religion				
Catholic (r)	1.00	1.00	1.00	1.00
Protestant	1.02	1.10	0.96	0.94
Pentecostal	1.24	1.32	0.99	0.95
Traditional/African	1.02	0.90	1.10	1.14
Muslim/Other	1.06	1.01	0.75	0.75
Ever migrated	1.02	0.92		1.01
Currently earning income	2.22 ***	1.59		1.23
Asset Index				
Bottom third (r)	1.00	1.00	1.00	1.00
Middle third	0.73	0.96	0.66 **	0.64 **
Top third	0.49 ***	0.65 *	0.67 *	0.62 **
Orphanhood status				
Both parents alive (r)	1.00	1.00	1.00	1.00
Maternal orphan	1.46	1.17	1.89 *	2.05 *
Paternal orphan	0.94	0.80	1.33	1.39
Double orphan	1.31	1.12	0.92	0.96
Educational status				
Not in school				
Did not finish secondary (r)	1.00		1.00	
Finished secondary	0.59 *		1.13	
In school				
Behind	0.44 ***		0.71	
On track	0.32 ***		1.02	
Wald Chi-squared	4,136.4 ***	4,048.0 ***	4,791.2 ***	4,769.9 ***
Log likelihood	−210.1	−195.7	−280.6	−277.0
Person-months (N)	18,694 (284)	18,694 (284)	18,430 (312)	18,430 (312)

* Significant at $p \leq 0.05$;

** $p \leq 0.01$;

*** $p \leq 0.001$.

(r) = Reference category.