Dating, Sex, and Schooling in Urban Kenya

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Acknowledgements:
Funding for this research was provided by the National Institutes of Health (NIH)/ National Institute of Child Health and Human Development (NICHD). Grant number 5R21HD053587-02. The authors wish to thank Nancy Luke, Eliya Zulu, Caroline Kabiru, and other members of the research team for implementing this study. This paper has also benefited from insightful comments from Cynthia Lloyd and Leticia Marteleto.

Abstract:
Completing secondary school is increasingly viewed as a desirable life goal for young men and women living in urban Kenya. Yet, achieving this goal often conflicts with other key transitions to adulthood such as becoming sexually active, getting married, having children, and finding a job. Drawing on exceptionally rich life history calendar data from youths in Kisumu, Kenya, we explore how the timing and sequencing of key transitions affect the likelihood of completing secondary school for men and women, separately. We also examine how enrolment and performance in school may, in turn, affect the timing of sexual debut. We find that sexual activity and transitions towards family formation are largely incompatible with young women's schooling, while for men having romantic and sexual partnerships has no impact on their schooling, unless their partner becomes pregnant. Instead, finding paid employment appears to be least compatible with men's continued education.

Introduction:

As adolescents move into adulthood they typically undergo a series of transitions, including completing schooling, finding a job, becoming sexually active, getting married, and starting to have and raise children. Indeed, a defining characteristic of the period spanning adolescence to young adulthood (roughly between the ages of 15 and 24) is the large number of important transitions. These transitions are pivotal in shaping life trajectories and can have far-reaching implications throughout the life course; thus, making "successful" transitions is critical. Since these transitions are not independent events, but rather dependent on the failure or success of prior transitions, the order and timing of these events matters. For example, successfully completing schooling is often regarded as an essential step prior towards securing a job and supporting a family. In contrast, making the transition into marriage at an early age generally conflicts with an adolescent's ability to continue their schooling, particularly for girls.

Many societies proscribe norms about the "proper" sequencing of these events, which are believed to be most conducive to ensuring that these transitions will be successful. However, dramatic changes, particularly with respect to education and marriage, have disrupted both the order and timing of key transitions in many countries in sub-Saharan Africa including Kenya. Over the last 20 years, Kenya has experienced an impressive rise in educational attainment. Overall, 95% of men and women ages 15 to 19 have received at least some primary school education (CBS et al. 2004). Nonetheless, although three-quarters of Kenyans have completed the eight years of primary school (Standards 1 to 8), school attendance drops off precipitously during the four years of secondary school (Forms 1 to 4) and a pronounced gender gap appears (Hungi and Thuku 2010). Even in urban areas such as Nairobi, Mombassa and Kisumu, where access to secondary education is widespread, only 35.1% of adult women compared to 44.4% of adult men have completed secondary education (CBS et al. 2004).

Throughout Africa, as in other parts of the world, the process of marriage has transformed over the last half-century. Not only has the age of first marriage risen substantially for women, but there has been an equally important shift in the courtship and spousal selection process. In the past, kin, particularly parents, played a large role in choosing the spouses of younger relatives. In urban areas today, however, young men and women are increasingly responsible for finding their own marriage partner. Recent research has shown that, among youth in urban Kenya, the formation of both sexual and romantic partnerships is integrally linked to the marriage process (Clark et al. 2010). In short, what one might call *dating*[1] (for lack of a better term) has become both a common context for sexual debut as well as a common precursor to marriage.

[1] Throughout this paper we use the term "dating" to refer to the formation of different sexual and romantic partnerships among unmarried youths. The term dating, however, may be a bit of a misnomer in this context to the extent that it implies a series of formal outings to public places (i.e. restaurants, movies, or 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.

At the societal level, the cumulative and interactive effects of these changes are evident. The increasing levels of secondary education, for example, are considered to be one of the key reasons for the rising age of first marriage among women. The rising age of first marriage, in turn, is often cited as one of the primary reasons for the changing context of sexual debut for woman, in which a higher proportion of women initiate sexual activity before marriage rather than within marriage (Lloyd 2008; Mensch et al. 2006). Due to the inherent endogeneity of these transitions and methodological difficulties in establishing their temporal order, however, demonstrating these causal links at the individual level is complex. For example, although a female adolescent may drop out of school because she plans to get married, the marriage will almost invariably occur *after* she has left school. Crude measures of time also make it difficult to determine the sequence of events, particularly given the dense number of transitions that occur during adolescence. 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 large number of adolescent transitions and the potential for bidirectional effects within each pairing, the number of possible interactions among all transitions is quite large. In sub-Saharan Africa, however, the most studied relationships are between schooling, on the one hand, and sexual debut, pregnancy, and marriage, on the other.

The Implications of Sex, Pregnancy, and Marriage on Schooling

At the individual level, there are well-established associations between being out of school and higher rates of sexual activity, pregnancy, and marriage, particularly for adolescent girls. Recent research has attempted to move beyond these simple correlations and identify potential causal relationships by capitalizing on longitudinal or detailed retrospective data. The majority of the previous research has focused on whether early transitions into sexual activity, marriage, or pregnancy impede prospects of completing schooling for both boys and girls.

Few studies have addressed the issue of dating *per se*. One qualitative study in rural Malawi found that some schoolgirls had forsworn all dating, stating that having a boyfriend would "disturb their education" (Poulin 2007). More often researchers focus on sexual activity, rather than dating, even though adolescent sexual activity often takes place in the context of an on-going relationship. Biddlecom et al. (2007), for example, find that for girls being sexually active decreases their chances of completing secondary school in Uganda, Tanzania, and Ghana. For boys, this effect was evident only in Uganda.

One of the primary reasons sexual partnerships may hinder girls' school achievement is the risk of pregnancy. A large number of studies have focused on the detrimental effect of pregnancy on girls schooling in sub-Saharan Africa. Earlier research indicates that pregnancies among school girls could account for between one-third and one-half of all schoolgirl dropouts particularly in countries like South Africa and Botswana where the rates of premarital pregnancies are particularly high (Meekers and Ahmed 1999). Some researchers have even posited that reducing the number of pregnancy-related dropouts could reduce the gender gap in secondary school completion rates (Eloundou-Enyegue 2004). In response, several countries have adopted policies that both enable pregnant school girls to stay in school and encourage their return after the birth of their child (Meekers and Ahmed 1999). The success of these programs has been

evidenced by a return rate of up to 50% of young mothers in South Africa (Marteleto et al. 2008). Other researchers, however, have questioned the extent to which schoolgirl pregnancies contribute to school dropout (Lloyd 2008). Lloyd and Mensch (2008) found that schoolgirl pregnancy accounts for only 5% to 10% of school dropout for girls in francophone Africa while another study in rural Kenya found that only about 12% of girls who dropped out before the age of 19 were pregnant before or at the same time that they left school (Mensch et al. 2001). To our knowledge, there are no direct studies on the impact of getting a partner pregnant on boy's education, however, it is often presumed that this effect is minimal (Meekers and Ahmed 1999; Mensch et al. 2001; Lloyd 2008).

Another pathway through which dating may lead to leaving school early is through the formation of marital aspirations. As mentioned above, youths are increasingly responsible for finding their future spouses. Dating, including the formation of both romantic and sexual partnerships, plays a vital role in this process (Clark et al. 2010). Adolescent girls who find a suitable marriage partner may be enticed to leave school early rather than wait and risk losing a potential spouse. For young men, however, finding a suitable marriage partner may have less of a harmful effect on their education. Because men generally marry at older ages, adolescent men may not develop marital aspirations until after completing their schooling. In fact, the completion of secondary education may increase their desirability as a prospective marriage partner. Although early marriage is believed to be an important reason for women leaving school early, measuring the effect of marriage on girls' schooling is very challenging because women generally do not get married before dropping out of school. Rather they leave school in anticipation of getting married. One study, which relied on self-reported reasons for dropping out of school, found that 11% of women in Kenya aged 20 to 24 cited marriage as the main reason for leaving school (Lloyd and Mensch 2008).

The Implications of Schooling on Sexual Debut and Pregnancy

Just as dating (and the related risks of sexual activity, pregnancy, and marital aspirations) may increase the likelihood of dropping out of school, staying in school may in turn provide an incentive to delay sexual initiation. The literature documenting the effects of education on sexual debut, and by extension pregnancy, is relatively sparse. Nonetheless, the potential for school enrollment to delay sexual onset is a critical question, particularly in areas hit hardest by the AIDS epidemic, where finding effective means of encouraging adolescents to delay sexual initiation could potentially be life-saving (Jukes et al. 2008). Moreover, delaying pregnancy has well-established health benefits for women and considerable advantages for their children. Previous research among youth in rural South Africa found that secondary school attendance was associated with safer sexual behavior and a lower rate of HIV infection (Hargreaves et al. 2008). Another study in South Africa found that boys and girls who performed better on standardized exams were less likely to become sexually active. Other research, however, is less encouraging. In their study of four countries in sub-Saharan Africa, Biddlecom et al. (2007) found no effects of either school enrolment or timing of school entry on the timing of premarital sex for boys or girls. A study focusing on the effects of school quality on sexual debut in rural Kenya found very few effects of school characteristics on sexual initiation for girls or boys, although girls who attended more "gender-neutral" primary schools began sex at slightly older ages (Mensch et al. 2001).

Beyond the issue of school of enrollment is that of being at the appropriate grade level for each age, or "on track". Interestingly, girls who have completed more grades for their age have been found to be *more* likely to be sexually active than girls who are behind, suggesting a negative peer effect for girls (Marteleto et al. 2008). With respect to pregnancy, a study by Grant and Hallman (2008) found that previous school performance played a substantial role in determining which school girls in South Africa became pregnant. Girls who were behind in schooling were significantly more likely to become pregnant than girls who were in the expected grade for their age, which suggests that girls who are not performing well in school may find early motherhood to be a more attractive alternative. One particularly innovative study, using a randomized intervention design, found that reducing the cost of schooling (by providing free uniforms) resulted in a 10% decrease in adolescent girls' childbearing rates (Duflo et al. 2006). Thus, both school performance and enrolment are potentially important and independent predictors of sexual behaviors, but the effects may vary substantially by gender and across different contexts.

In this paper, we contribute to this growing literature, by addressing two main questions. First, we explore whether entry into dating, initiation of sexual activity, becoming pregnant, or developing marital aspirations decrease adolescent boys' and girl's chances of finishing secondary school. Second, we assess whether boy's and girl's school enrollment and school performance is associated with their timing of sexual debut. We draw on exceptionally rich life history calendar data from youth in Kisumu, Kenya, which offer three key advantages. First, the calendar captures a multitude of key transitions including nuanced information about all romantic and sexual partnerships. Second, all transitions are recorded in monthly, rather than yearly, intervals, enabling superior inference of temporal relationships. Third, our sample includes both young men and women, allowing us to make direct gender comparisons.

Data and Methods:

Data for our analyses come 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), which is 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 the survival status of parents). In addition, the RHC captured detailed data of all romantic and sexual partners in the preceding ten years, including when (if ever) sexual activity occurred, any pregnancies (of the respondent or their partners), and whether the respondent wanted to marry their partner. The RHC was specifically designed to 1) enhance the reporting of timing of key 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 compared to a standard face-to-face interview method has shown that, overall the RHC facilitates greater reporting on some sensitive sexual behaviors relative to standard surveys (Luke et al. 2011). Ethical approval was granted by all collaborating institutions.

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 to 24 in the selected households were eligible to be interviewed. One respondent was randomly chosen per household and he or she was randomly assigned to receive either the RHC or a more standard demographic survey. In the present study, we use data from the RHC only. In total, 608 respondents (286 women and 322 men) received the RHC.

We rely 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 ages between 14 and 24 as the vast majority of young Kenyans will complete primary school during this time. Thus, we remove 51 individuals who had permanently left school before the age 14, yielding an analytic sample of 557 respondents (261 women and 296 men). 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 10. Even so, nine of our respondents had their first sexual experience before the age of ten and are removed from our analysis. Another three respondents are removed because although they fail to report a date of first sex. Thus, a total of 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 et al. 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 since we do not know the shape of the underlying hazard function for either school dropout or for sexual debut, we can incorporate a flexible hazard function that changes over specific time-periods. Since we analyze the outcomes for men and women separately, we create separate piecewise exponential models that best fit their specific survival functions.

Models for dropping out of school:

Our first set of survival analysis models examines covariates associated with a higher risk of dropping out of school before completing secondary school. Men and women are considered to have "dropped out" if they are no longer enrolled in school did not complete at least nine months

of Form 4.[2] Students who are still enrolled in school or who have completed at least nine months of Form 4 are treated as censored.

In all our models, we control for time-constant and time-varying socio-economic 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. In addition, we account for whether, and if so when, the respondent became 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 (Biddlecom et al. 2007; Mensch et al. 2001; Grant and Hallman 2008). Nonetheless, this measure of wealth should be interpreted with caution as it may reflect the effect of schooling on wealth rather than the effect of wealth on schooling. The inclusion of current wealth measures slightly diminishes the magnitude of the effect of sexual partners and pregnancy for both men and women.

As an indicator of our respondents' prior school performance, we created a time-varying dummy variable which equals "1" if the student is in the expected grade for his or her age. We label these students as being "on-track" in school. Lastly, we are especially interested in how dating of both romantic and sexual partners, pregnancy, and marital aspirations are related to the risk of dropping out of school. Thus, we include measure for dating (total number of partners) in Model 2. In Model 3, to further explore whether sexual partners pose a greater threat to educational achievement than non-sexual partners, we split our measure of partners into sexual and romantic partnerships.[3] 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 getting a partner pregnant (for men). We also include a time-varying measure which equal "1" if the respondent wanted to marry their romantic or sexual partner.

Models for sexual debut:

In our second set of survival analyses models, we explore the effects of school enrollment and school performance on sexual debut. Men and women who had not had sex by the time of the survey were treated as censored. In addition, since 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.

We control for the all the socio-economic characteristics found in our model for dropping out of school. The same caveats regarding our measures of household wealth apply to these analyses as well. However, in our analyses of sexual debut, we expand our time-varying measure of

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

[3] Note that a romantic (non-sexual) partner can evolve into a sexual partner over time. At the time when a partnership becomes sexual, it is added to the cumulative number of sexual partners, but is no longer counted in the cumulative number of romantic partnerships.

educational attainment by creating a categorical variable, where 1=dropped out of school permanently, 2=enrolled in school, but behind, and 3=in school and on-track. We also assess whether dating non-sexual partners acts as a "gateway" for sexual initiation and also whether wanting to marry a non-sexual partner accelerates the rate of transition into sexual activity.

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 attests to the tremendous changes in the lives of adolescents between the age of 14 and the time when they either drop out of school or complete secondary education. By the time of the survey, 45.6% of women had dropped out of school, 52.1% had completed secondary school, and only 2.3% were still in school. For men, 34.1% had dropped out, 54.7% had completed secondary school, and 11.2% were still enrolled. Falling behind in school, however, is not uncommon. There are several reasons why students may not be "on-track" such as late entry into school, temporary absences from school, and grade repetition. While many students who are behind in school ultimately graduate from Form 4, lagging behind may increase the risk of dropping out. A large percentage of students (46.0% of women and 57.4% of men) are already behind by age 14, and this proportion continues to rise during the period of observation. By the end of observation, over of quarter of the respondents had migrated and 2.7% of women and 9.8% of men had begun earning an income while still in school. At the age of 14, 23.0% of women and 20.7% of men have experienced the death of at least one parent, but by the end of the observation period this figure rises to about 35%.

Our respondents also experience a sharp rise in their number of romantic and sexual partners over this time period. About 78.2% of women and 64.5% of men report no sexual or romantic partners by the age of 14. This number falls to 27.6% of women and only 14.2% of men by the end of the period of observation. About 12.6% of girls reported ever getting pregnant while in school, compared to 6.4% of men who reported that their partner got pregnant. Finding a partner whom the respondent would like to marry (at least someday) is surprisingly common for both men (38.2%) and women (33.0%) while they are in school.

(insert Table 1 about here)

The results from our multivariate survival analyses of school drop-out for women 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 socio-economic characteristics are strongly associated with whether girls drop out of school. Higher levels of poverty (at the time of the survey) are associated with a significantly greater risk of dropping out of school. In addition, girls who are orphaned are significantly more likely to drop out of school. These effects are particularly strong for double orphans and maternal orphans. We also find in that girls who have found a job and started to earn some income during secondary school are also more likely to drop out of school, although this effect is only significant in Model 4. Perhaps not surprisingly, girls who are "on-track" in school are much less likely to leave school before completing secondary school. Girls who are in the right grade for their age only one third as likely to drop

out of school compared to girls who are behind. This strong effect persists even after the inclusion of measures of dating and sexual behaviors.

In Model 2, we add the measures of dating and find that women's risk of dropping out of school rises proportionally with their cumulative number of romantic and sexual partners. Young women who have had three or more partners have over 3.8 times the risk of dropping out of school compared to women who have never dated. In Model 3, we attempt to discern whether non-sexual dating has the same detrimental effect as having sexual partners by disaggregating romantic and sexual partners. We find that the total number of romantic partners has no significant effect on schooling, while the total number of sexual partners has a very strong effect. Moreover, not only the first sexual partner (i.e. sexual debut) but each additional sexual partner elevates the risk of leaving school for girls. The hazard rate of a young woman who has had three or more *sexual* partners is over six times that of a young woman who has never had a sexual partner.

(insert Table 2 about here)

Finally, in Model 4 of Table 2, we examine whether having sexual partners *ipso facto* limit 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 girls' chances of finishing secondary school. After including controls for both ever being pregnant and ever wanting to marry a partner, the magnitude of the coefficients for number of sexual partners is greatly diminished and it becomes insignificant. Girls who become pregnant, however, experience a greater than three-fold risk in dropping out of school. Finding a partner whom they would like to marry is also detrimental to girls' schooling and is associated with a two-fold increase in the risk of dropping out of school.

Turning to young men (Table 3), we find that, like young women, being behind in school is associated with being more likely to drop out of school. However, the effect is smaller for men than for women. Although being an orphan had a strong negative effect on women's schooling, we find very little effect for men with one exception. Paternal orphans are significantly more likely to drop out of school after controlling for number of sexual partners, partner's pregnancy, and marital aspirations (Model 4). Migration is also associated with a higher rate of school dropout for men, though it has no significant effect for women. In all our models, men who have started to earn an income while in school are at a higher risk of dropping out of school, as are young men affiliated with traditional African religions.

There are striking gender differences with respect to dating and sexual partnerships. Neither romantic nor sexual partnerships have a detrimental effect on men's schooling. Nonetheless, if the man's partner becomes pregnant (and he is aware of this pregnancy), he experiences a significant increase in the risk of dropping out of school (hazard ratio 2.88). Indeed, the magnitude of this effect for men is almost as large as the effect of pregnancy for women. The effect of marital aspirations, however, has the opposite effect for men than it does for women. Men who have found a partner whom they wish to marry are less likely to drop out of school although this effect is not significant.

(insert Table 3 about here)

Sexual Debut

80.6% of unmarried women and 86.2% of unmarried men have had sex by the time of the survey, demonstrating the relatively high level of premarital sex among both men and women. Table 4 describes men's and women's key transitions from the age of 10 until their age of first sex or the time of the survey. A full 34.5% of women and 26.3% of men moved to Kisumu, a local hub for internal migration, during this observation period. Although only about 10% of our respondents were orphaned at age 10, this percentage eventually rises to 33.4% for women and 29.4% for men. In addition, many of these respondents (9.9% of women and 17.6% of men) have begun to work for an income despite high levels of overall unemployment in the region. At the age of 10 only 6.3% of girls and 5.1% of boys are not in school. By the end of the observation period, however, almost half of girls (45.1%) and a quarter of boys are no longer in school and 29.9% of girls and 40.1% of boys are in school, but not on-track. Nearly all respondents (over 96%) report having at least one romantic partner before becoming sexually active or before the time of the survey. A surprisingly high number of respondents report that they also wanted to marry these romantic partners.

(insert Table 4 about here)

In Tables 5 and 6, we examine factors associated with young women's and men's sexual debut. For women (Table 5), the effects of both school enrolment and school performance on the timing of sexual debut are very strong. Women who are both in school and "on-track' are the least likely to become sexually active, while women who have dropped out of school are the most likely to initiate sexual activity. Interestingly, in Model 3, however, we find that after controlling for dating and marital aspirations, girls who are out of school are no longer significantly more likely than girls who are behind in school to become sexually active. We also find a very strong relationship between dating (i.e. having romantic partners) and initiating first sex, suggesting that non-sexual dating is a common precursor to sexual activity for young women. Moreover, if a young woman aspires to marry one of her romantic partners, she is almost twice as likely to have sex with him. After controlling for educational status, dating, and marital aspirations (Model 3), we find very little effect of orphanhood status, earning income, migration, or religion on the timing of sexual debut for women. However, Luo women appear to engage in sexual activity at slightly younger ages than Luhya women and women from poorer households tend to become come sexually active earlier than women currently living in richer households.

(insert Table 5 about here)

For men (Table 6), the most striking finding is the lack of any relationship between men's school enrollment or performance and the timing of their sexual debut. Interestingly, the effect of romantic partnerships for men is even larger than that for women, suggesting that dating is also an important avenue towards gaining sexual experience for young men. Similar to our findings with respect to school completion, we find that marital aspirations have an opposite effect on men's sexual debut than on women's. For men, wishing to marry of their romantic partners

actually decreases their risk of initiating sex. There is also some indication that men who are poorer, men who are maternal orphans, and men who belong to the Luo tribe initiate sex at slightly younger ages in Kisumu.

(insert Table 6 about here)

Discussion:

When measured over an extended period of the life course and in relatively small units of time, retrospective life history calendar data can make important contributions to our understanding of the process of adolescent transitions. Although all retrospective data suffers from recall bias, calendars have been found to greatly enhance recall by paralleling the structure of autobiographical memory and using highly salient events to improve the reported timing and order of other transitions (Belli 1998). Moreover, since events are recorded on a monthly basis, we can achieve far greater precision in the sequence of events, than is generally possible in cross-sectional and even most longitudinal data, where key events are measured in years. In our study, for example, we find that about one-third of all transitions out of school occurred within a year of sexual debut. Establishing the correct sequence of events is a key step towards determining causality, but it alone is not sufficient-- particularly if the event is anticipated (as is often the case with marriage) or when there are key omitted variables (such as time-varying wealth measures in this study). Nonetheless, while the quest for causality remains elusive, the sequencing can help inform our understanding of the implications of transition event sequences on the life trajectories of adolescents.

Our study sheds new light on our growing understanding of the complex relationships between dating, sexual debut, and schooling among adolescents in sub-Saharan Africa. Most importantly, by examining both how sexual activity influences schooling and how schooling affects sexual debut separately for men and women, we highlight how differently these transitions unfold for men and women. For women dating leads to a cascade effect that ultimately puts young women's academic careers in jeopardy. Although having romantic (non-sexual) partners alone has no direct risk, we find that these romantic partnerships are very likely to transition into sexual partnerships. Moreover, we find that not only does being sexually active (i.e. having at least one sexual partner) affect young women's schooling, but as the number of sexual partners increases, the likelihood that a young woman will graduate from secondary school diminishes. The converse is also true; 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 to getting pregnant and/or find a suitable spouse, both factors associated with higher rates of dropping out of school. In short, for young women the transitions towards becoming a mother and wife continue to conflict with the goal of finishing secondary school.

The situation for men's adolescent transitions is markedly differently. Although like for women, their non-sexual dating quickly evolves into sexual relationships, there are no implications of these sexual relationships on their schooling. Only if a man's partner becomes pregnant (and he is aware of the pregnancy) does sexual involvement impinge on academic attainment. Similarly,

men's performance in school bears no relationship to the timing of sexual debut. These two transitions appear to be broadly independent of each other. Of particular note, we find that wanting to marry a partner has no effect on schooling for men. In fact, developing marital aspirations may actually act as an incentive for boys to delay sex and stay in school. For boys, job opportunities, rather than sexual, reproductive, and marital factors, pose the greatest incentive to leave school early.

These findings do not imply that early motherhood and marriage are the only reasons girls do not complete secondary school. Indeed, only 16% of girls who dropped out of school were pregnant and 33% wanted to get married. The strong negative effects of household poverty and orphanhood on remaining in school, strongly suggest that financial difficulties and family obligations also play a pivotal role in schooling decisions. If Kenya seeks to achieve universal secondary education and close the gender gap, then young Kenyan men and women need to perceive the decision to remain in school as complementary to their life goals. Given that the returns to secondary school education are high in both the labor and marriage market, men and women may become more willing to remain in school and delay competing transitions. However, low school quality, high school fees, floundering labor markets for skilled workers, and a potential marriage market penalty for well-educated women, will provide strong disincentives to stay in school.

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Table 1. *Descriptive Characteristics of Men and Women at the Time of Entry (age 14) and Exit (last time in school).*

	WOMEN *n=261*		**MEN** *n=296*	
	Enter **%**	***Exit*** **%**	***Enter*** **%**	***Exit*** **%**
Schooling Outcome				
Completed Form 4	0.0	45.6	0.0	34.1
Dropped out	0.0	52.1	0.0	54.7
Still in school	100.0	2.3	100.0	11.2
Socio-economic Characteristics				
Religion				
Catholic	26.1		23.7	
Protestant	39.5		46.0	
Pentecostal	21.5		15.2	
Traditional/African	7.7		7.1	
Muslim/Other	5.4		8.1	
Ethnicity				
Luo	70.5		76.7	
Luhya	19.5		10.1	
Other	10.0		13.2	
Ever migrated	7.3	26.8	12.8	29.1
Currently earning income	0.8	2.7	4.4	9.8
Asset Index				
Bottom third		25.8		30.1
Middle third		32.2		35.1
Top third		41.0		34.8
Orphanhood status				
Both parents alive	77.0	65.1	79.3	65.4
Maternal orphan	4.3	6.6	3.4	6.4
Paternal orphan	16.3	20.9	12.9	19.3
Double orphan	2.3	7.4	4.4	8.8
Educational History				
In school, behind	46.0	50.2	57.4	63.9
In school, on-track	54.0	49.8	42.6	36.2
Dating and Sexual Behaviors				
Cumulative number of partners				
Zero	78.2	27.6	64.5	14.2
One	18.4	39.9	31.8	37.2
Two	2.7	22.2	3.0	28.7
Three or more	0.8	10.3	0.7	19.9
Cumulative sexual partners				
Zero	87.0	51.3	76.0	31.1
One	10.7	32.6	21.6	40.5
Two	1.9	12.3	1.7	16.9
Three or more	0.4	3.8	0.7	11.5
Cumulative romantic partners				
Zero	90.0	63.6	87.5	59.1
One	9.2	27.2	11.8	31.4
Two or more	0.8	9.2	0.7	9.5
Ever got or got partner pregnant	1.5	12.6	0.0	6.4
Ever wanted to marry a partner	5.0	33.0	5.4	38.2

Table 2. *Piecewise Exponential Survival Analyses of Dropping-out of School (Women).*

	Model 1		Model 2		Model 3		Model 4	
	n=10,920		*n=10,920*		*n=10,920*		*n=10,920*	
	Hazard	***Sig.***	***Hazard***	***Sig.***	***Hazard***	***Sig.***	***Hazard***	***Sig.***
Socio-economic Characteristics								
Ethnicity								
Luo (ref)	1.00		1.00		1.00		1.00	
Luhya	0.73		0.78		0.72		0.67	
Other	0.88		0.95		0.95		0.95	
Religion								
Catholic (ref)	1.00		1.00		1.00		1.00	
Protestant	0.71		0.66		0.64	+	0.63	
Pentecostal	1.20		1.02		1.04		1.14	
Traditional/African	1.41		1.40		1.36		1.54	
Muslim/Other	2.24	*	1.85		1.99		2.21	
Ever migrated	0.79		0.73		0.76		0.67	
Currently earning income	3.34		2.26		3.62		3.50	*
Asset Index								
Bottom third (ref)	1.00		1.00		1.00		1.00	
Middle third	0.47	***	0.52	**	0.50	**	0.49	**
Top third	0.28	***	0.31	***	0.32	***	0.29	***
Orphanhood status								
Both parents alive (ref)	1.00		1.00		1.00		1.00	
Maternal orphan	3.21	***	2.58	**	2.35	*	2.68	**
Paternal orphan	1.58	*	1.53		1.53		1.76	*
Double orphan	2.48	**	2.46	*	2.55	**	2.76	**
Educational History								
"On-track" in school	0.34	***	0.32	***	0.34	***	0.34	***
Dating and Sexual Behaviors								
Cumulative number of partners								
Zero (ref)			1.00					
One			1.20					
Two			2.38	**				
Three or more			3.82	***				
Cumulative sexual partners								
Zero (ref)					1.00		1.00	
One					1.66	*	1.01	
Two					2.59	**	1.42	
Three or more					6.41	***	2.43	
Cumulative romantic partners								
Zero (ref)					1.00			
One					1.18			
Two or more					1.43			
Ever got or got partner pregnant							3.26	***
Ever wanted to marry a partner							2.08	**

***p<=0.001, **p<=0.01, *p<=0.05

Table 3. *Piecewise Exponential Survival Analyses of Dropping-out of School (Men).*

	Model 1		Model 2		Model 3		Model 4	
	n=15,431		*n=15,431*		*n=15,431*		*n=15,431*	
	Hazard	***Sig.***	***Hazard***	***Sig.***	***Hazard***	***Sig.***	***Hazard***	***Sig.***
Socio-economic Characteristics								
Ethnicity								
Luo (ref)	1.00		1.00		1.00		1.00	
Luhya	0.98		1.00		1.03		1.11	
Other	0.67		0.66		0.69		0.75	
Religion								
Catholic (ref)	1.00		1.00		1.00		1.00	
Protestant	0.83		0.84		0.87		0.84	
Pentecostal	1.36		1.38		1.37		1.41	
Traditional/African	2.06	*	2.08	*	2.12	*	2.16	*
Muslim/Other	1.44		1.42		1.45		1.36	
Ever migrated	1.59	*	1.51		1.51		1.63	*
Currently earning income	2.53	**	2.54	**	2.57	**	2.77	***
Asset Index								
Bottom third (ref)	1.00		1.00		1.00		1.00	
Middle third	0.29	***	0.30	***	0.30	***	0.31	
Top third	0.21	***	0.21	***	0.22	***	0.22	
Orphanhood status								
Both parents alive (ref)	1.00		1.00		1.00		1.00	
Maternal orphan	1.42		1.42		1.39		1.36	
Paternal orphan	1.52		1.52		1.53		1.65	*
Double orphan	1.63		1.60		1.62		1.62	
Educational History								
"On-track" in school	0.55	*	0.53	*	0.51	*	0.56	*
Dating and Sexual Behaviors								
Cumulative number of partners								
Zero (ref)			1.00					
One			1.09					
Two			1.26					
Three or more			1.34					
Cumulative sexual partners								
Zero (ref)					1.00		1.00	
One					1.24		1.26	
Two					1.69		1.57	
Three or more					1.32		1.02	
Cumulative romantic partners								
Zero (ref)					1.00			
One					1.15			
Two or more					1.16			
Ever got or got partner pregnant							2.88	*
Ever wanted to marry a partner							0.66	

***p<=0.001, **p<=0.01, *p<=0.05

Table 4. *Descriptive Characteristics of Men and Women at the Time of Entry (age 10) and Exit (sexual debut).*

	WOMEN *n=284*		**MEN** *n=312*	
	Enter **%**	***Exit*** **%**	***Enter*** **%**	***Exit*** **%**
Sexual Debut				
Had sex	0.0	80.6	0.0	86.2
Never had sex	100.0	19.4	100.0	13.8
Socio-economic Characteristics				
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	
Ethnicity				
Luo	71.1		75.3	
Luhya	19.0		11.2	
Other	9.9		13.5	
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 History				
Not in school	6.3	45.1	5.1	25.3
In school, behind	14.0	29.9	19.9	40.1
In school, on-track	79.6	25.0	75.0	34.6
Dating and Sexual Behaviors				
Cumulative romantic partners				
Zero	94.4	3.2	92.0	3.2
One	5.6	72.5	8.0	78.5
Two		24.3		18.3
Ever wanted to marry a partner	1.8	39.1	2.6	29.5

Table 5. *Piecewise Exponential Survival Analyses of Sexual Debut (Women).*

	Model 1 n=18,694		Model 2 n=18,694		Model 3 n=18,694	
	Hazard	***Sig.***	***Hazard***	***Sig.***	***Hazard***	***Sig.***
Socio-economic Characteristics						
Ethnicity						
Luo (ref)	1.00		1.00		1.00	
Luhya	0.71		0.72		0.69	*
Other	0.64		0.65		0.62	
Religion						
Catholic (ref)	1.00		1.00		1.00	
Protestant	1.01		1.06		0.86	
Pentecostal	1.25		1.25		0.92	
Traditional/African	0.98		0.88		0.80	
Muslim/Other	1.06		1.00		0.79	
Ever migrated	1.03		0.96		0.89	
Currently earning income	2.20	***	1.47		1.23	
Asset Index						
Bottom third (ref)	1.00		1.00		1.00	
Middle third	0.73		0.89		0.91	
Top third	0.49	***	0.62	**	0.58	**
Orphanhood status						
Both parents alive (ref)	1.00		1.00		1.00	
Maternal orphan	1.43		1.23		0.83	
Paternal orphan	0.94		0.84		0.90	
Double orphan	1.32		1.22		1.14	
Educational History						
Not in school (ref)			1.00		1.00	
In school, behind			0.56	**	0.70	
In school, on-track			0.39	***	0.41	***
Dating						
Cumulative number of partners						
Zero (ref)					1.00	
One					4.26	***
Two					4.18	***
Ever wanted to marry a partner					1.82	**

***p<=0.001, **p<=0.01, *p<=0.05

Table 6. *Piecewise Exponential Survival Analyses of Sexual Debut (Men).*

	Model 1		Model 2		Model 3	
	n=18,430		*n=18,430*		*n=18,430*	
	Hazard	***Sig.***	***Hazard***	***Sig.***	***Hazard***	***Sig.***
Socio-economic Characteristics						
Ethnicity						
Luo (ref)	1.00		1.00		1.00	
Luhya	0.72		0.75		0.79	
Other	0.71		0.70		0.63	*
Religion						
Catholic (ref)	1.00		1.00		1.00	
Protestant	0.95		0.94		1.04	
Pentecostal	0.98		0.95		1.20	
Traditional/African	1.11		1.14		1.11	
Muslim/Other	0.75		0.75		0.86	
Ever migrated	1.04		1.05		0.79	
Currently earning income	1.40		1.31		1.06	
Asset Index						
Bottom third (ref)	1.00		1.00		1.00	
Middle third	0.66	**	0.64	**	0.52	***
Top third	0.67	*	0.63	**	0.46	***
Orphanhood status						
Both parents alive (ref)	1.00		1.00		1.00	
Maternal orphan	1.89	*	2.05	**	1.79	*
Paternal orphan	1.34		1.38		1.23	
Double orphan	0.93		0.96		1.11	
Educational History						
Not in school (ref)			1.00		1.00	
In school, behind			0.81		0.77	
In school, on-track			1.11		0.82	
Dating						
Cumulative number of partners						
Zero (ref)					1.00	
One					6.84	***
Two					6.34	***
Ever wanted to marry a partner					0.64	*

***p<=0.001, **p<=0.01, *p<=0.05