Timing and sequencing of events marking the transition to adulthood in two informal settlements in Nairobi, Kenya

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ABSTRACT

Young people living in poor urban informal settlements face unique challenges as they grow up. Using Event History Analysis techniques, this paper uses retrospective information from the baseline survey of a three-year prospective study, to examine the timing and sequencing of four key markers (first sex, marriage, birth and independent housing) of the transition to adulthood among 3,944 adolescents in two informal settlements in Nairobi city, Kenya. Results indicate that there is no significant gender difference with regard to first sexual debut among adolescents. For the majority of adolescents, sexual debut occurs outside of union. Boys transition to parenthood and marriage later than girls but they transition to first independent housing earlier. For males, the sequencing of entry begins with entry into first sex, followed by independent housing. Few males enter into parenthood in the age group. Conversely, for females, the sequencing begins with first sex and then parenthood.

INTRODUCTION

The years from late adolescence through the twenties are a complex and dynamic period marked by key life course events that are often viewed as formal markers of the transition from adolescence to adulthood. These markers include leaving school, entering the labor force, leaving one's natal home, getting married, and becoming a parent.[1, 2] Cultural, economic, educational, demographic, and other social changes greatly impact on the sequencing and relevance of these salient markers of adult status. For example, a comparative study of perceptions of the transition to adulthood among Chinese and American college students reveals that the Chinese assign greater importance to role transitions, such as marriage, parenthood, and completion of education in defining adulthood than do Americans.[3] Similarly, aboriginal college students in Canada place more value on these life

course transitions than their European Canadian compatriots.[4] There is evidence that the 'transition' period in Western societies has lengthened considerably[5, 6] leading scholars such as Arnett[6] to argue for a theory of development that captures a period distinct from adolescence and young adulthood that he calls "emerging adulthood" around 18-25 years. In his perspective, this period is characterized by independent exploration, and experimentation without the 'dependency of childhood and adolescence' nor the 'enduring responsibilities that are normative in adulthood' (p. 469).[6]

Until recently, most of the research on the transition to adulthood has been conducted in Western countries. Evidence drawn from these societies may not be applicable in developing countries since socio-cultural and economic differences are likely to have significant impacts on the way young people experience the change from adolescence to adulthood. For example, studies conducted in African capital cities such as Dakar, Bamako, Lomé, Yaoundé and Nairobi show that the lack of employment opportunities and the increasing uncertainty about the future leads young urbanites to postpone marriage as well as leaving their natal home.[7, 8] These studies, however, mainly focus on the effect of macroeconomic changes on economic integration and demographic behavior of the city-dwellers. These studies also rely on information collected from adults to examine the transition from adolescence to adulthood. Beyond these studies, little is known about the entry into adult life in many parts of sub-Saharan Africa and, especially, in the rapidly growing urban slum settlements, which are characterized by extreme poverty and poor living conditions. In particular, there is limited research clarifying the linkages between the slum context and the timing, sequencing, and long term consequences of major markers of the transition to adulthood. The main objective of this paper is, therefore, to examine the timing and sequencing of critical events marking transition from childhood to adolescence as well as from adolescence to adulthood, including

first sexual intercourse, marriage, independent housing and parenthood in two poor urban informal settlements in Nairobi, Kenya's capital city.

BACKGROUND

Markers of Transition to Adulthood

Sexual debut among young people is considered one of the primary markers of the transition to adulthood,[9] especially in societies that promote virginity till marriage. While adolescent sexual behavior in sub-Saharan Africa is often studied in the context of reproductive health risk,[10-12] sexual maturity, experimentation and building of sexual partnerships are part of the normal process of human development. It is important, nevertheless, to understand age at initiation of sex because, apart from the health risks associated with early sexual debut, early sexual experiences often shape sexual values and social relationships that persist into adulthood.[13]

Differences are observed in age at first intercourse between males and females, as well as between poor and non-poor households. In general, females tend to engage in first intercourse at an older age. For example, in Nairobi, the median age at first intercourse for females is estimated at 19.2 years compared to 17.2 years among their male compatriots.[14] This difference in age at first intercourse has also been noted in other parts of sub-Saharan Africa and has been attributed, in part, to socio-cultural norms that proscribe virginity for females, often until marriage, while endorsing sexual prowess among young males.[15-17] Evidence from Nairobi shows that slum dwellers in the city initiate sex considerably earlier than other city and rural residents.[18, 19] Another key feature of transition to first sex is that there has been an increase in the age at first sex in many African societies. In Kenya for instance, there is a

delay in first sex among young people. For example, the 2003 KDHS[14] shows that the median age at first sex is approximately 17 years for women aged 40 years and above while the median age among women younger than 40 years is 18 years. However, with increasing age at first marriage, there is now a greater likelihood that first sex will occur outside of marriage,[9] and the importance of sexual debut as a marker of adulthood may diminish as more young people become sexually experienced well before the other markers of adulthood are experienced. Indeed, in societies where age at first sex is low and many young people initiate sex outside marriage, age at first sex may actually be seen more as a marker of the transition from childhood to adolescence as opposed to transition from adolescence to adulthood.

While entry into marriage is a key marker of the transition to adulthood in many contexts, the increasing occurrence of premarital sex, premarital childbearing, and proportions of men and women who do not get married until much later in their lives (if at all) mean that marriage is losing its significance as a marker of adulthood. In contexts where age at first marriage is high, therefore, independent living may be a more critical marker of adulthood than entry into marital unions. However, because marriage is associated with other key transitions, such as independent living and financial independence,[5] and most people globally bear children within the marriage context, it is often considered a decisive event in the transition to adulthood. Further, even in contexts where marriage is not always considered a marker of adulthood, such as in the United States, marriage continues to be highly-valued and most young people aspire to be married.[20]

Although the vast majority of births take place within marriage, the increasing proportions of children born before and outside marriage means that childbearing is becoming an important

marker of adulthood, especially for women.[5] Age at first marriage and age at childbearing have increased significantly both in the developed and developing worlds. In Kenya, for instance, the median age at first birth had risen from 19.6 years among women aged 25-29 years in 1998 to 20.1 years in 2003.[14] A slight increase in age at first marriage was also observed in the same period; from 19.2 in 1998 to 19.7 years in 2003 among women in the 25-49 age cohort, and from 24.8 years to 25.1 years among men in the 25-54 age cohort over the same period. Among young women in the United States, Aronson[5] noted that the delay in the timing of childbearing for some women is driven by desire to get married first or find the right partner, establish their careers, and/or achieve financial independence.

In a study conducted among adolescents 10-19 years living in informal settlements in Kenya, 16% of females and 2% of males report that they have ever been married.[21] Close to two-thirds of these perceive that their marriage was too early. With respect to childbearing, 16% of females and 1% of males in the same study reported that they had begun childbearing. Among females, childbearing is higher among those who are married (63% have had children) than the never-married (28%). However, for the majority of those with children, the first birth was not desired at the time and 73% of females reported that their first pregnancy was not intended at that time.[21]

Independent housing is an important marker of the transition to adulthood because it signifies the beginning of individual responsibility. In a study among college students in the United States, Arnett [22] noted that moving out of the natal home was endorsed by a majority of respondents as an important criterion for adult status. However, it is important to bear in mind that increased career flexibility and limited job opportunities also means that the pathway to residential independence is not necessarily linear but may be circular with young

people leaving home for certain periods of time and then returning to their natal home when they experience financial difficulty. In Dakar and Bamako in Western Africa, Marcoux and Tokindang[23] stress the central role of financial independence on the access to independent housing, which is strongly delayed for males who are inactive, studying or unemployed. Also, even when employed, younger generations of males delayed their leaving of parental home because of the increasing costs of renting a house.

While examination of each marker of the transition to adulthood is informative, the foregoing review demonstrates that it would even be more useful to view transition to adulthood as a process marked by the temporal sequence of some of its markers. In the US, Marini[2] reported that about half of male and female high-school students in Illinois experienced exit from school first, followed in order by first job, first marriage and first child. In a study examining the impact of economic crisis on transition to adulthood in Nairobi City, Agwanda et al.[7] found strong gender and cohort differences in the ordering of key transition markers. For females, the most common ordering was the one in which employment occurs first, followed by union formation, and parenthood for the older generation while for the younger generation, parenthood precedes union formation. For both generations of males, the most common pattern is the one in which employment occurs first, followed by own housing, union formation and parenthood.

Context

Urban informal settlements constitute an opportune context in which to examine the passage to adulthood because of the unique challenges that young people face in these communities. Young people in these settlements grow up in a hostile environment characterized by high levels of unemployment, crime, substance abuse, poor schooling facilities, and lack of

recreational facilities.[24-27] For instance, adolescents in the slums of Nairobi initiate sex about 3 years earlier and they are 2 times more likely to have multiple sexual partners than adolescents who live in non-slum parts of the city.[19] These differences also prevail when one compares slum residents and other groups outside Nairobi, including the rural poor.[28] This early sexual intercourse has many dire consequences for the adolescents, including unwanted pregnancies and births and their associated risks, as well as high maternal and child morbidity and mortality.[29] Early sexual debut may also lengthen the period of exposure to the risk of pregnancy and childbearing, especially in contexts where women have limited access to contraception. In fact, much of the high fertility in sub-Saharan Africa may be attributed to young age at first birth. The timing of the first birth is usually an indicator of future fertility patterns and larger completed family size is one of the long-term demographic effects of adolescent fertility.[30]

Studies of urban integration conducted in several African capital cities hit by strong economic recession over the past three decades have shown that economic conditions, changes in social values, greater access to educational opportunities, among other factors, play a significant role in influencing the transition from childhood to adulthood. Yet, very few studies have focused on the transition to adulthood in the rapidly growing[31] urban poor settings in sub-Saharan Africa. A nuanced understanding of the experiences and challenges that young people undergo when entering adulthood is important in informing development policy programs. In this paper, we add to the emerging body of literature on transitions to adulthood in sub-Saharan Africa, first, by investigating whether there is a specific pattern of transition into adulthood in Nairobi slums. Secondly, we explore whether the timing and sequencing of salient markers of the transition to adulthood differ by sex, birth cohort, socio-

economic status and place of birth. We focus on transitions to first sex, independent housing, union and childbearing.

DATA AND METHODS

Study Description and Procedures

This paper draws on data collected under the Transition to Adulthood (TTA) project conducted among adolescents living in two informal settlements in Nairobi: Korogocho and Viwandani. Korogocho and Viwandani are located about 5-10 km from the city centre and 3 km from each other. Korogocho has a more settled population. On the other hand, Viwandani, which is close to Nairobi's industrial area, attracts a youthful and highly mobile population seeking job opportunities in the nearby industries. This population is mainly made up of males and is also better educated compared to that in Korogocho.

The TTA was designed to follow-up young people aged 12-22 years for three years in order to identify protective and risk factors in their lives, and to examine how these factors are related to various markers of the transition to adulthood. The study is nested in the longitudinal Nairobi Urban Health and Demographic Surveillance System (NUHDSS), which covers nearly 72,000 people in 28,000 households in the two informal settlements every year. Fieldworkers collect information from all households and its members every four months on a wide range of issues including: demographic events (births, deaths, migrations, etc.); health outcomes and practices (morbidity in the last two weeks, vaccination, health seeking behavior, etc.), and socio-economic status (education, household possessions and amenities, livelihood sources, etc.).

The NUHDSS database provided the sampling frame that used to randomly select young people aged 12-22 in the two slum settlements. During the first wave of the three-year study (November 2007 - June 2008) 4,058 randomly selected adolescents (50% males) aged 12-22 were interviewed. This number reflects an overall 75% response rate of the targeted sample (5,398). Korogocho has a higher response rate (80%) than Viwandani (71%), mostly due to the differences in the levels of mobility and economic activities between the two study sites. The analytic sample includes 3,944 adolescents since we omitted 114 individuals (3%) with inconsistent or missing data on age, date of birth and/or age at first event.

The Kenya Medical Research Institute's ethical review board provided ethical approval for the study. Signed or verbal consent was obtained from all respondents. For respondents aged 12-17 years, parental consent was also obtained. The questionnaire was translated and administered in Swahili, Kenya's national language.

Measures

Outcome variables: For each first event (independent housing, union (i.e. marriage or cohabitation), sexual intercourse, and childbearing), the outcome variable is based on answers to three questions. For instance, the outcome variable for first independent housing is based on answers to the following questions: "Have you ever owned or rented your own residence, such as a structure or house?" and if so, "In what month and year did you first own or rent your own residence", "How old where you when you first owned or started renting your own residence?" The outcome variable is the age at which a person makes the transition to first independent residence (uncensored individuals) or age at interview if the event had not occurred as at the time of the survey (censored individuals). Similar questions are used to compute outcome measures for the transitions to first union, first sexual intercourse, and first

parenthood. For every event, a dichotomous variable (coded 1 if the event occurred and 0 if not) is used to define the censoring status. For example, for union, the censoring variable is coded 1 (Yes) if the individual is married/living together and 0 (No) if never married or cohabited.

Demographic and socioeconomic correlates: We compare the timing of occurrence of events by age group, gender, place of birth and wealth status of the household. Three age groups are considered: 12-14, 15-17 and 18-22 years. Socio-economic status is measured through a set of variables that characterize household asset ownership, using principal component analysis.[32] Three categories were considered: least wealthy, middle and most wealthy. Place of birth comprises three categories: born in the slums, born in rural areas, and born in other areas.

Analytic approach

Event History Analysis techniques are employed to examine the timing of the events that mark the passage to adulthood in the two informal settlements.[33, 34] Each analysis of the considered event (first sexual intercourse, first independent housing, first union and first child) consists of measuring the time between a starting point common to all individuals who can possibly experience the event and the date of the occurrence of the event, or the date of exit from observation (time of survey). To allow first events to be censored (individuals may not have experienced the event by the time of survey), age at first events are treated as time-to-event data. For example, in the study of first sexual intercourse, individuals are considered from their birth until they first have sex or the time of the survey for those who were not yet sexually experienced. For the latter, the eventual age at first sex is "censored. For individuals who have yet to reach a particular age and who have not experienced the event of interest, the risk of occurrence of the event of interest at that age is assumed to be the same as it is for

individuals who have reached that age. Separate analyses for males and females are performed since we assume that the pathways to adulthood differ between boys and girls. For each transition, survival curves are derived from Kaplan-Meier estimates using the complement to 1 of the probability of not having made the particular transition at a specific age. Wilcoxon-Breslow-Gehan tests of equality of survivor functions were conducted to determine whether differences across socio-demographic groups were statistically significant. We also examine the sequencing of key events. All analyses are conducted using Stata 10.1. We used 5% as the threshold for statistical significance. Study findings should be interpreted in light of several limitations. First, we do not conduct explanatory analysis; multivariate analysis would help better understand all the factors at stake when it comes to transition to adulthood in urban slum settlements. Analysis is also based on self-reported information and thus, is subject to self-report bias. However, steps were taken to assure respondents of the confidentiality of all information collected.

RESULTS

Sample description

Table 1 displays descriptive characteristics for the 3,944 participants in the analytic sample. About 32% reported having had sexual intercourse, 10% had ever been married or lived together with a partner, 12% had had a child, and 17% reported having ever owned or rented a house. Respondents were on average 16.6 years old, 50% were male, 48% were living in Viwandani and 51% in Korogocho. Kikuyus comprised 34% of the sample, Luos 17%, Kambas 17%, Luhyas 13%, and Somalis 11%. Fifty-six percent were born in the slum area; 38% in rural areas and 6% in urban Kenya or neighboring countries. Sixty-seven percent of

the respondents have attained primary level of education, 32% have at least the secondary level, and only 1% have never attended school. At the time of the survey, 58% of adolescents were attending school.

<Table 1 about here>

Timing of key transitions

Timing of first sexual intercourse: Figure 1 shows the probability that an adolescent will engage in first sexual intercourse by a particular age, according to current age, sex, place of birth and socio-economic status. The curves show that males are more likely to have sex than females before age 16 but the opposite holds after age 16. For example, 14% of males and 10% female had engaged in first sexual intercourse by age 15, whereas 53% of males and 62% females had done so by age 20. By age 22, about 73% males and 74% females were sexually experienced. Median age at first sex is estimated at 19.5 years and 18.9 years, respectively for boys and girls. Tests of survival curves shows that overall, these gender differences in first sexual intercourse are not significant at the 5% level. We observe a significant but slight delay in age at first intercourse among younger cohorts. By age 12, 1% of 12-14 year olds, 3% of those aged 15-17 and 4% of 18-22 year old adolescents have had their first sexual experience. Further, 9% of adolescents aged 15-17 have had their first sexual intercourse by age 15; the corresponding figure for those aged 18-22 is 16%. These findings suggest that younger adolescents are delaying their first sexual experience.

There is no significant difference in probabilities of having first sex by place of birth. In fact, median age at first sex is almost the same across groups – 19.3 years for those born in the

slums, 19.1 for those born in rural areas and 19.0 for those born in other areas. With respect to socio-economic status, estimates indicate that the most wealthy group is significantly more likely to have first sex earlier than the middle wealth group. By age 18, 40% of adolescents in the least wealthy households had experienced first sex, while 34% had done so in the middle group. No significant differences were found between the most wealthy and the middle group on one hand and the least wealthy on the other hand.

<Figure 1 about here>

Timing of first union: Figure 2 shows the probabilities of making the transition to first union, by age, according to birth cohort, sex, place of birth and socio-economic status. Results indicate that females enter into first union earlier than males. About 18% of adolescent girls were married by age 18 compared to 2% of their male counterparts. This difference increases by age reaching a 34 percentage point difference by age 22. Median age is not obtained; however, the first quartile suggests that 25% of females get married by age 18.8. The earlier transition to first marriage among females compared to males prevails across all age cohorts (results not shown). As with the transitions to first sex, our data suggests a delay in the transition to first union among younger adolescents. By age 17, about 3% of adolescents aged 15-17 have entered into first union compared to 7% of their counterparts aged 18-22 who report being married by age 17.

Adolescents born in the slum areas enter into marriage later than those born in rural places or in other places, with the two latter groups showing similar probabilities of entering into union. At age 18, 8% of those born in the slums have made the transition into first union compared to 11% and 13% of those born in rural and other places, respectively. With respect

to socio-economic status, results show significant differences in the probability of entering into union, between adolescents in the most wealthy group and those in the middle category, with the former being more likely to get married.

<Figure 2 about here>

Timing of entry into parenthood: Probabilities of entry into parenthood, by age, according to birth cohort, sex, place of birth and socio-economic status are presented in Figure 3. As expected, female adolescents enter into parenthood earlier than their male counterparts. For example, by age 18, 16% of girls have given birth compared to only 2% of similarly aged boys who reported having fathered a child. The gender difference in entry into parenthood increases by age; by age 22, 60% of girls compared to 13% of boys have become parents. These trends are confirmed by median age at first birth which is only obtained for girls (20.7 years). Gender differences are statistically significant (1% level).

As with the transition to first sex, there is some evidence of increasing delay in entry into childbearing among younger adolescents. Less than 1% of those aged below 18 had already fathered or mothered a child. In contrast, by age 18, 10% of those aged 18-22 years had already had their first child. Overall, a quarter of adolescents aged 18-22 have had their first child by age 18.7.

Adolescents born in the slum areas enter into parenthood much later than those who where born elsewhere. By age 18, 8%, 9% and 12% of adolescents born in slum settlements, in rural places and in other places, respectively, have already had their first child. Differences between adolescents born in the slum settlements and those born elsewhere are statistically

significant (1 % level). The results also indicate differences by wealth status with adolescents living in households falling in the highest socio-economic status category showing higher chances of making the transition to parenthood earlier. By age 20, 26% of those in the most wealthy households had had their first child compared to 20% of those in the middle group and 23% of those in the least wealthy households.

<Figure 3 about here>

Timing of first independent housing: Figure 4 displays the probabilities of moving into first independent housing among adolescents, by age, according to birth cohort, sex, place of birth and socio-economic status. With respect to gender differences, males acquire their first independent housing earlier than their female counterparts. About 7% males and 3% females acquired their first independent residence by age 16. By age 22, 61% of males and 35% of females were renting or living in their own houses. Median age at first independent housing was only attained for boys, with half of them being residentially independent at age 20.7. These gender differences are observed across age groups. Age at first independent housing does not significantly vary across birth cohorts.

Adolescents born outside the slum areas tend to make the transition into independent housing earlier than those born in the slums, although the results are not statistically significant. Similarly, differences based on socio-economic status are not statistically significant.

<Figure 4 about here>

Sequencing of the events

The sequencing of key transitions was determined using measures of the timing of the different events studied. Two orderings are constructed; one with marriage, parenthood and own housing (Table 2) and the other with sexual intercourse, marriage and own housing as events (Table 3). The first sequencing was determined based on those who have experienced at least one of the three events considered (marriage, parenthood and own housing). Seventy-eight percent of adolescents (78% males vs. 74% females) had not experienced any of the three events and are excluded from the first sequencing analysis. Similarly, the second ordering was done on only those for whom first sexual intercourse, marriage or own housing had occurred. About 64% of adolescents (63% males vs. 64% females) had not experienced any of these events and are thus excluded from the sequencing analyses.

Sequencing of marriage, parenthood and independent housing: Overall, for about 90% of male adolescents, the first event experienced is residential independence. For the vast majority (79%) residential independence is the only transition experienced by the time of survey. Five percent achieved residential independence first, followed in order by first marriage and first child. About 4% got independent housing and then got married, and 3% got independent housing first followed by the first child.

<Table 2 about here>

The sequencing is more diverse among females. In total, 48% of female adolescents enter into union first, 28% first have a child, and 24% initially move into their own home. For 7%, first marriage was the only event experienced. For about a quarter, first union was followed by parenthood. Overall, 14% only experienced parenthood, 7% first had a child then got

married, and 5% moved to own housing following parenthood. Seven percent first moved into their own home and then got married and subsequently had a child.

Sequencing of marriage, sexual intercourse and independent housing: In total, for 69% of boys, the initial transition is engaging in first sexual intercourse. For about 41% of boys, only first sex has been experienced while for 22%, first sex was followed by establishing first independent housing. Three percent of boys first transitioned into first sex, then establish an independent residence and subsequently enter into union. About thirty percent of boys established independent residence first. Eighteen percent did not experience any other event later after acquiring the first independent housing while 9% subsequently engage in first sexual intercourse.

<Table 3 about here>

Among females, first sexual intercourse occurred first for 77%. After the sexual debut, forty-one percent did not experience any other event, 21% enter into union, 10% entered into union and then got their own housing, and 6% got their own housing. About 12% first get their own housing, and a similar percentage (10%) first experienced marriage.

DISCUSSION

Young people living in poor urban informal settlements face unique challenges as they transition to adulthood. This exploratory paper uses retrospective information from the baseline survey of a three-year prospective study, to examine the timing and sequencing of four key markers of the transition to adulthood among adolescents in two informal

settlements in Nairobi. According to our knowledge, a combination of these issues have not been examined among poor urban youth, and the findings of this study add to the growing body of literature on the transition process among adolescents living in various contexts in sub-Saharan Africa.

Results indicate that there is no significant gender difference with regard to first sexual debut among adolescents in Korogocho and Viwandani. This is not consistent with other studies[14] which show that first sexual intercourse occurs later among females than among males in Nairobi city. In many parts of sub-Saharan Africa, girls' premarital sexual experience is stigmatized and socially prohibited whereas boys' sexual activity is often seen as an act of pride/honor.[15-17] Findings also show that younger adolescents living in the two slum settlements tend to postpone their first sexual experience, with 9% of adolescents aged 15-17 and 16% of those aged 18-22 being sexually active by age 15. This corroborates the delay in first sex among young people observed in the 2003 KDHS. However, results indicate that a significant proportion of adolescents are sexually experienced in their early ages. Other studies[19, 35] argue that the typical living arrangement in the slum settlements -- entire families living in single-room houses -- contributes to early transition to first sex because children are purportedly exposed to parental sexual activity at an early age. This residential reality also necessarily pushes a lot of young people to leave their parental homes prematurely as soon as they can start generating their own money to pay rent since they can not live in the same room with their parents when they are grown. Given that the two study sites are characterized by high HIV/AIDS prevalence[36], there is need to ensure that young people who engage earlier in sex have access to sexual and reproductive health services.

For 69% of boys and 77% of girls, the first sexual experience occurs outside of marriage or other union. This is consistent with previous research showing that first sex typically occurs outside of marriage [37] As first marriage is increasingly delayed, young people are more likely to experience premarital sexual activity and subsequently, premarital birth given their low level of contraception use and insufficient knowledge of reproduction.[9, 38] In some cases, these premarital pregnancies are unplanned and the young parents (and often the young mother) have little or no financial and/or social support. Among adolescents living in similar conditions in the Kibera slums in Nairobi, evidence show that for the vast majority of teenager mothers, the first birth was unwanted and the first pregnancy was unintended.[21]

As expected, findings show that young girls transition to parenthood earlier than boys. Median age at first birth was 20.7 years for young women and 16% are already parents by age 18. This suggests that some females get their first births while they are still young and thus, face special risks during pregnancy and delivery due to their level of physical maturity. In the poor slum settings where access to obstetric services is hindered by the lack of basic health facilities and the high cost of care,[39] young parenthood becomes a health threat not only for the young women but also their children. These risks are heightened in the context of the relatively high prevalence of HIV/AIDS in slum settlements. In Nigeria, Omololu (cited by the National Research Council and Institute of Medicine)[9] reported that female Yoruba adults who had their first birth during their adolescent years are more likely to have higher fertility by the time of survey, more likely to be in polygamous unions and more likely to rely on parents' assistance for their subsistence. Also, in most developing countries, early childbearing often triggers school dropout, reduces the opportunities of future employment, and leads to poor living conditions.[9] For those who are able to continue school, academic performance is likely to worsen, given the very possible conflict between child care

responsibilities and school work. As such, it is expected that young mothers in slum settlements are at high risk of getting into worsened living conditions. In a context where educational and employment opportunities are already scarce, early childbearing is therefore more likely to contribute to difficulties in completing school and finding gainful employment; thus, preventing the young people from 'successfully' making the transition to adulthood.

With respect to union, results confirm that young girls enter into union or marriage earlier than boys. Consistent with evidence on increasing age at marriage in sub-Saharan Africa,[40] we found that younger adolescents living in slum areas tend also to delay their entry into union as compared to their older counterparts. Postponing marriage increases the window of opportunity for premarital sexual activity with multiple sexual partners and is likely to expose adolescents to HIV and other sexually transmitted diseases. A significant number of young females enter into marriage relatively young. For some girls, unfortunately, early marriage means early childbearing which entails potential health risks for the young mother and the child. Early marriage may also limit educational opportunities and may occur when the young person is not fully prepared to take over marital and parental responsibilities.

As expected, our findings show that boys get their first independent residence earlier than girls. This is consistent with the fact that, in many societies in sub-Saharan Africa, women are rarely residentially independent since they usually leave their parental home to be housed by their partner. Also, in some ethnic groups in Kenya, boys are expected to leave their parental home at young ages to live independently once they undergo initiation rites. However, in the slum context, living independently may lead young people to risky and delinquent behaviors such as early sexual intercourse, multi sexual partnerships, substance and alcohol use.[19]

While this study examines the timing and sequences of markers of the transition to adulthood, it is critical to acknowledge that the process of becoming an adult is complex and young people place different meanings on what it means to be an adult [5]. Disentangling these meanings would require systematic investigations on subjective meanings of adulthood that sheds light on less salient, psychological and individual markers that define adulthood such as bearing responsibility for one's actions and independent decision making.[22] In addition, this study focuses on young people living in informal settlements who are not representative of all young people living in Nairobi. A more nuanced investigation of the role poverty plays in the transition from adolescence to young adulthood would require extension of the study population to include wide representation of young people. Our data do not allow investigations of educational transitions and entry to the labor market. Changes in education have significantly impacted the transition to adulthood.[41, 42] In general, there are greater educational opportunities available, and as a result, entry into employment, marriage, and parenthood is increasingly being delayed. Data from future waves will allow us to examine these key events.

ACKNOWLEDGEMENTS

The Transitions-To-Adulthood study is part of a larger project on Urbanization, Poverty and Health Dynamics, that is funded by the Wellcome Trust (Grant Number GR 07830M). This project is nested in the Nairobi Urban Health and Demographic Surveillance System (NUHDSS) which is part of the INDEPTH Network. Analysis and writing time is supported by funding from the Wellcome Trust (Grant Number GR 07830M), the William and Flora Hewlett Foundation (Grant Number 2006-8376) and the Rockefeller Foundation (Grant Number 2008 AR 001). We are grateful to Philippe Bocquier, Richard Jessor, John Cleland

and colleagues at APHRC for their contributions and to the youth in Korogocho and Viwandani for their participation in the study.

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