Orphan Status and Age at Sexual Debut in Kisumu, Kenya

Rachel Goldberg
Department of Sociology
Brown University
Box 1916
Providence, RI 02912

Short Abstract:
This paper investigates the relationship between parental death and age at sexual debut in a setting of high HIV prevalence, drawing on unique life history calendar and survey data from a study of youth in urban Kenya. I explore differences between orphans and non-orphans, disaggregating by gender, type of parental death, and age at orphanhood. Additionally, I investigate mediating factors, drawing from the US literature on "instability effects" to examine the role played by disruption in primary caregiver, residence, and schooling. Preliminary analyses find that 36% of respondents aged 18-24 were orphaned by age 18 and suggest that maternal orphans, but not paternal orphans, are significantly more likely to begin sexual activity in early adolescence. In addition, age at orphanhood matters, with maternal orphans whose mother died before their teenage years the most likely to debut sexually before age 16. Finally, disruption in caregiver may mediate the relationship between orphan status and sexual onset.

Introduction

This paper investigates the relationship between orphan status and the sexual behavior of youth as they transition to adulthood in a setting of high HIV/AIDS prevalence. It draws on unique life history calendar and survey data from a 2007 study of young people in urban Kenya.

Negative effects of orphanhood on child school attendance, health, nutrition, and emotional wellbeing have been documented across a large number of studies in sub-Saharan Africa (Ainsworth and Semali 2000; Atwine, Cantor-Graae, and Bajunirwe 2005; Case and Ardington 2006; Case, Paxson, and Ableidinger 2004; Evans and Miguel 2007; Miller et al. 2007; Mishra et al. 2007; Nyamukapa and Gregson 2005; Yamano and Jayne 2005; Wood, Chase, and Aggleton 2006). Though far less research has focused on orphans as they transition to adulthood, several recent studies have provided evidence that orphan adolescents in sub-Saharan Africa may not only have lower levels of school enrollment and attainment than non-orphans (Gregson et al. 2005; Yamano, Shimamura, and Sserunkuuma 2006), but may also be at higher risk of poor sexual and reproductive health. This emergent evidence links orphan status with HIV and other sexually transmitted infections as well as adolescent pregnancy (Gregson et al. 2005; Kang et al. 2008; Operario et al. 2007). It also links orphan status with an increased likelihood of sexual intercourse (Gregson et al. 2005; Operario et al. 2007; Thurman et al. 2006), of becoming sexually active at younger ages (Hallman 2006; Thurman et al. 2006), of unprotected sex (Operario et al. 2007), and of early marriage (Beegle and Krutikova 2007; Gregson et al. 2005).

The current paper examines the relationship between parental death and age at sexual debut for youth in Kisumu, Kenya. This paper goes beyond orphan/non-orphan dichotomies to investigate differentials by orphan gender and by type of parental death (maternal, paternal, dual). It also explores the effect of age at parental death, as the effects of parental death on adolescent outcomes plausibly differ by timing of orphanhood in the life course. Most significantly, the current analysis also takes advantage of detailed data on changes in caregiver, residence, and schooling to investigate the factors mediating the relationship between parental death and age at sexual debut. This approach is motivated by the US literature on "instability effects" (Cavanagh and Huston 2006; Fomby and Cherlin 2007; Osborne and McLanhan 2007; Wu 1996; Wu and Thomson 2001) which suggests the importance of *changes* in family and household structures and the transitions that accompany them to the outcomes of young people. Though many of the studies to date on orphan sexual and reproductive health suggest a need to identify pathways (e.g., Hallman 2006; Operario et al. 2007; Thurman et al. 2006), only one (Gregson et al. 2005) has formally examined any mechanisms for the observed relationships (in particular, secondary education).

It can be hypothesized that in sub-Saharan Africa, parental death may result in greater or lesser levels of disruption to a young person's life trajectory. For example, due to child fostering for reasons such as familial socio-economic need, children's education, and parental labor migration (Grant and Yeatman 2008; Isiugo-Abanihe 1985; Madhavan 2004; Parker et al. 2007), in many parts of the region a sizeable number of young people do not reside with living parents. Parental death in this context may thus not influence sexual behavior through disruption in family structure and/or primary caregiver in the way it might in other contexts, since non-orphans may also experience high levels of such

disruption, and young people may not experience a major change in primary caregiver or in residence upon parental death. Type of parental death may also influence whether changes in residence and caregiver occur: for example, paternal orphans have been found to be more likely to continue residing with their surviving parent than maternal orphans (Hallman 2006; Nyamukapa and Gregson 2005; UNICEF 2003). Orphanhood may also affect the socio-economic status of orphans—and hence things like school attendance—differently depending on whether the parent(s) that died were the primary breadwinners of the household (Nyamukapa and Gregson 2005). The timing of parental death in a young person's life course will also likely affect both the number of disruptions experienced and the effects of disruptions. The current paper, due to the unique and detailed longitudinal data upon which it is based, is able to explore the importance of such factors to early sexual debut, which has been associated with increased risk of HIV infection (Brockerhoff and Biddlecom 1999; Ferry et al. 2001; Gregson et al. 2005; Pettifor et al. 2004).

Data

This paper uses data from the 2007 Urban Life among Youth in Kisumu study. The study sample includes approximately 1,300 18-24-year-olds in Kisumu town, the capital of Nyanza Province in Western Kenya. Kisumu has one of the highest HIV prevalence rates in the country, estimated at 26% in 1997 (Glynn et al. 2001). A full 40% of females 20-24 in Kisumu (and 13% of males of the same age) were estimated to be HIV-positive in 1997 (Glynn et al. 2001).

Participants in the Urban Life among Youth in Kisumu Study were randomly assigned to be administered either a Relationship History Calendar (RHC) or a standard Sexual Partnership Questionnaire (SPQ). The RHC enables a detailed look at the trajectories and transitions of these young people as they move from childhood into adulthood, and at the ordering of events around transitions of interest. It contains detail on respondents' relationship and sexual histories by month over the 10 years previous to the survey. It was also designed to gather monthly information on young people's primary caregiver, place of residence, schooling, and work throughout this period. The SPQ, which is modeled after large-scale surveys like the Demographic and Health Surveys (DHS), records less detailed histories, though it does still contain basic—albeit not monthly—information on the variables of interest, including detailed indicators related to parental death.

In analyses of orphanhood and sexual debut, I pool data from the RHC and SPQ samples. To investigate in more detail issues related to parental death and disruption, I rely on the RHC sample only.

Preliminary Results

Table 1 displays selected descriptive statistics for the pooled RHC and SPQ sample. A full 36% of the 18-24-year-olds surveyed had been orphaned[1] by the age of 18. Twenty percent had lost a father only, 7% had lost a mother only, and 9% had lost both parents. Parental death was almost as likely to have occurred before the teenage years as after: 14% of respondents had experienced a paternal death before age 13, while 15% had

[1] Consistent with standard practice, orphans are defined here as children who have lost one or both parents (UNAIDS & UNICEF, 2003; WHO 2004).

experienced a paternal death between ages 13 and 18. Similarly, 7% had experienced a maternal death before age 13, and 9% between ages 13 and 18.

Bivariate statistics in the table show that 52% of respondents orphaned by age 16 reported having first sexual intercourse before age 16, compared with 35% of respondents not orphaned by that age ($p<0.001$). Mean age at first sex was also significantly lower for orphans. The table also provides evidence of significantly lower levels of completed education, lower current socio-economic status, and greater likelihood of ever marriage for orphans compared with non-orphans.

Table 2 shows a set of simple logistic regression models predicting the likelihood of first sexual intercourse before age 16. In these regressions, orphans were defined as respondents who had lost at least one parent before the age of 16, to assure that parental death occurred before the outcome of interest. The first specification demonstrates the positive effect of orphan status on early sexual debut: orphans were about 1.6 times as likely to report sexual debut below age 16 than non-orphans, over and above current socio-economic status, gender, marital history, ethnicity, current age, and completed schooling ($p<0.001$). The second specification begins to examine heterogeneity within the orphan category, showing that, net of the other predictors in the equation, while maternal orphans were significantly more likely than other respondents to report first sex below age 16 ($OR=1.6$; $p<0.05$), paternal orphans were not. Finally, the third specification explores whether age at parental death matters within the maternal and paternal orphanhood categories. It appears that maternal death before age 13 is significantly related to early sexual debut ($OR=1.8$; $p<0.05$), while maternal death during the early teenage years is not. Interestingly, for paternal death the trend appears to be the opposite. Future analyses will explore this further.

Other models (not displayed) showed that interactions between gender and orphan status were not significant across any of the specifications and that their inclusion did not improve model fit. Also not significant nor improving of model fit were interactions between maternal and paternal orphan status, suggesting that the effect of maternal death on age at sexual onset is not dependent on the father's vital status.

Finally, I investigate how disruptions in primary caregiver, residence, and schooling elaborate our understanding of the relationships observed in Table 2. Using event history techniques, I estimate the monthly risk of sexual debut taking into account changes in the young person's relationship to primary caregiver, place of residence, and schooling status. As in the models presented in Table 2, I include detailed measures of orphan status. Analysis is ongoing. Preliminary results with time-invariant covariates (not shown) suggest the importance of change in primary caregiver to sexual debut. Specifically, experiencing a change in primary caregiver before age 16 is positively associated with sexual debut before age 16. Moreover, the effects of orphan status on sexual debut before age 16 disappear once change in caregiver is included. These findings provide the first empirical evidence that disruptions in care may help to explain the growing evidence linking orphan status to risky sexual behavior in adolescence. Given this result, in on-going analyses I will explore further the importance of the timing and number of caregiver transitions, as well as the importance of residential and schooling transitions.

Table 1. Descriptive Statistics
(Relationship History Calendar and Standard Sexual Partner Questionnaire)

Characteristic	All		Orphaned by age 18		Not orphaned by age 18		Sig.
	Mean/%	SD	Mean/%	SD	Mean/%	SD	
Orphan Status							
Orphan (orphaned before age 18)	35.5						
Paternal only orphan	19.9						
Maternal only orphan	6.8						
Dual orphan	8.8						
Paternal orphan	28.7						
Paternal death before age 13	13.9						
Paternal death age 13-18	14.8						
Paternal death age 13-16	9.2						
Maternal orphan	15.6						
Maternal death before age 13	6.6						
Maternal death age 13-18	9.2						
Maternal death age 13-16	5.2						
Sexual Behavior							
First sex before age 16	40.1		51.6^		35.4		***
Mean age at first sex	15.7	2.6	15.3	2.5	15.9	2.7	***
Ever had sex	87.1		90.4		85.3		**
Education							
None or incomplete primary	12.7		19.9		8.7		***
Complete primary	18.7		21.5		17.1		
Incomplete secondary	15.8		17.1		15.1		
Complete secondary +	37.2		30.6		40.9		***
Vocational or other	15.7		11.0		18.2		***
Marital status							
Ever-married	25.0		28.3		23.1		*
Never-married	75.0		71.7		76.9		*
Socioeconomic status							
Lowest	20.4		25.8		17.2		***
Low	19.9		24.4		17.4		**
Medium	19.1		18.9		19.3		
High	19.7		16.4		21.9		*
Highest	20.8		14.5		24.3		***
Ethnicity							
Luo	74.6		80.4		71.4		***
Luhya	13.4		11.9		14.2		
Kikuyu	3.4		0.7		4.9		***
Kisii	4.1		3		4.7		
Other	4.6		4.1		4.9		
Mean age	20.7	1.9	20.5	1.8	20.8	1.9	*
N	**1234**		**438**		**796**		

* p≤.05; ** p≤ .01; *** p≤.001 for difference between orphans and non-orphans

^ For "first sex before age 16," an orphan is defined as having lost a parent before the age of 16.

Source: Urban Life Among Youth in Kisumu study, 2007

Table 2. Logistic Regression Results Predicting the Likelihood of First Sexual Intercourse Before Age 16 (Relationship History Calendar and Standard Sexual Partner Questionnaire)

n=1,204	Model I β		OR	Model II β		OR	Model III β		OR
Orphan Status									
Orphaned before age 16	0.460	***	1.585						
Maternal orphan (by age 16)				0.468	*	1.598			
Paternal orphan (by age 16)				0.242		1.274			
Mother died before age 13							0.583	*	1.792
Mother died age 13-16							0.397		1.488
Father died before age 13							0.124		1.132
Father died age 13-18							0.408	†	1.504
Sex									
Female	-0.882	***	0.414	-0.873	***	0.418	-0.873	***	0.418
Current Socio-economic Status									
Lowest	0.643	**	1.903	0.655	**	1.924	0.647	**	1.91
Low	0.444	*	1.558	0.463	*	1.589	0.455	*	1.576
Medium	0.178		1.195	0.186		1.205	0.180		1.197
High	0.190		1.209	0.202		1.224	0.200		1.221
(Omit Highest)									
Marital History									
Ever-married	0.568	***	1.765	0.561	***	1.752	0.570	***	1.767
(Omit Never-married)									
Ethnicity									
Luo	0.342	*	1.408	0.348	*	1.416	0.347	*	1.414
(Omit not Luo)									
Completed Schooling									
Complete primary	-0.415	†	0.661	-0.422	†	0.656	-0.420	†	0.657
Incomplete secondary	-0.651	**	0.521	-0.662	**	0.516	-0.665	**	0.514
Secondary or higher	-0.753	***	0.471	-0.761	***	0.467	-0.752	***	0.471
Vocational/Other	-1.038	***	0.354	-1.063	***	0.345	-1.049	***	0.350
(Omit None/Incomplete primary)									
Current Age (years)[#]	-0.009		0.991	-0.009		0.991	-0.010		0.990
Constant	-0.201			-0.185			-0.190		
Likelihood Ratio X^2	152.31	***		151.57	***		152.92	***	
Degrees of freedom	13			14			16		

† ≤.1; * p≤.05; ** p≤ .01; *** p≤.001

[#] Age is centered on the mean

Source: Urban Life Among Youth in Kisumu Study, 2007