Childhood Risk of Parental Absence in Rural Tanzania

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Abstract

Children's outcomes are influenced by the family structures to which they are exposed during childhood, yet we know little about the childhood experience of different family forms. Using demographic surveillance data from three regions of rural Tanzania, this paper explores the living arrangements of children, with a particular emphasis on experiences of parental absence. This paper estimates the childhood risk of parental absence until age 15, and decomposes this risk into parental death and parental migration. The paper presents estimates for proportion of childhood spent residing without the parent. Finally, using Cox's proportional hazards regression analysis, this paper investigates the child, parental, and household level predictors of parental absence. This paper finds that parental absence due to migration is more common than due to death, and that paternal absence is more common than maternal. Together these estimates provide a detailed picture Tanzanian children's experience of parental absence.

Introduction

From the literature on child wellbeing, we know that family structure influences a range of outcomes for children in widely varying contexts, including mental and physical health and education (Case, Paxson and Ableidinger 2004; McLanahan, Tach and Schneider forthcoming). Furthermore, the influence of family extends into adulthood, shaping income, sexual behavior and family formation later in life (Birdthistle et al. 2008; Pallermo and Peterman 2009). We know from the literature in other contexts that it is important to examine various causes of parental absence (Graefe and Lichter 1999; Heuveline, Timberlake and Furstenberg 2003). While there is a rich literature on traditional practices of fostering and kinship obligations in sub-Saharan Africa, this is largely divorced from the more recent literature that has been preoccupied with an almost singular focus on orphanhood, particularly as a result of AIDS mortality (Goody 1982; Page 1989; Case and Paxson 2004; Adato et al. 2005). While certainly an important problem, a narrow focus on orphanhood to the exclusion of alternative family structures obscures children's experiences of instability and parental absence. In this paper I argue that, in order to more fully understand children's outcomes we need a broader understanding of the living arrangements and episodes of parental absence to which they are exposed. This paper contributes to a fuller understanding of children's living arrangements by looking simultaneously at various family forms and causes of parental absence.

Background

The literature on children and family structure in sub-Saharan Africa can be organized broadly into two bodies of work. First, the extensive literature on kinship and social reproduction in sub-Saharan Africa focuses on the cultural elements of childrearing and the use of fostering as a tool for redistribution and reciprocity (Goody 1973, 1982). This primarily qualitative literature does offer cross-sectional descriptive measures of fostering, but does not provide a longitudinal account of experiences of parent absence from the perspective of the child. Second, the more recent literature examines the negative consequences of orphanhood on children as a result of the AIDS epidemic. Orphanhood is associated with a host of negative outcomes, including increased morbidity, higher mortality, lower educational attainment, and earlier sexual debut (Lindblade et al. 2003; Nakiyingi et al. 2005; Case, Paxson and Ableidinger 2004; Birdthistle et

al. 2008; Pallermo and Peterman 2009). Unfortunately, few of the more recent projects are in serious dialogue with the preceding fostering literature.

One notable exception is Urassa et al. who focus on orphanhood but contextualize the phenomenon within the broader context of fostering in Tanzania. In the early stages of the epidemic, Urassa et al. found that 7.6% of children under age 15 had lost at least one parent, and 14% of households had at least one resident orphan; 34.2% of children under age 15 were not living with both biological parents (1997). Nevertheless, studies of children's living arrangements, Urassa et al. included, often present cross-sectional prevalence measures of orphanhood (1997; Monasch and Boerma 2004; Hosegood et al. 2007). Again, these studies lack a life-course perspective, and, in addition, focus only on orphanhood (Hosegood et al. 2007; Grassly et al. 2004). This is a problematic weakness because, as Graefe and Lichter explain, "Prevalence measures based on cross-sectional data may seriously misrepresent the dynamic nature of family life course experiences…Indeed, the use of snapshot measures of family structure obscures the extent and nature of family instability in children's lives" (1999). Such measures of childhood experience with absent parents do not tell us anything about duration of exposure or timing of the event, or about children with parents absent for other reasons.

Rather than calculating such cross-sectional measures of family structure, this paper uses longitudinal data to estimate the childhood risk of parental absence, addressing the weaknesses of existing measures. This paper provides a description of the level of parental absence through death and migration, examining changes over time from 1998-2011 in three rural sites in Tanzania. With high levels of adult mortality due primarily to AIDS and tuberculosis, families are often subject to the death of an adult member, causing household reorganization or dissolution. In addition, increasing levels of development and urbanization make migration of individual family members for labor purposes more common. When one or both adults in the household migrate, children are often left in the care of another family member. Finally, while levels of divorce are low, the AIDS epidemic and modernization may have contributed to an increasing acceptability of divorce, as demonstrated through rising divorce rates. In the event of remarriage, it is common for children to be sent out of the biological household to live with other, non-parental relatives. While it is accepted that these events occur, there is no existing quantification of their prevalence, leading to an inability to fully understand the importance of parental absence.

Data and Methods

This paper calculates the childhood risk of parental absence through death and migration to age 15. Such risk calculations require longitudinal or national registration data, both of which are in short supply in Africa. Demographic surveillance site (DSS) data are an exception. This project uses longitudinal data from the Rufiji, Ifakara and Kigoma DSS in Tanzania. Designed to enable the calculation of vital statistics, these sites record all births, deaths, migrations and marital events that occur within a given catchment area, including a verbal autopsy to attribute cause of death. In addition, they collect yearly data on income, education and health indicators. With over ten years of surveillance of a population of over 150,000, the three sites from which I draw my data provide quarterly updates on the survival and residency status of each household member. The size of the population enables me to observe a sufficient number of disruption events in order to calculate stable estimates of rates and risks.

Using household and individual level data I conduct four analyses separately for maternal and paternal absence. The first analysis estimates the childhood risk of experiencing parental

absence and the proportion of childhood spent residing with parent to age 15. In the second analysis, I estimate the expected amount of time a child will spend residing with the parent continuously from birth. Third, this overall risk is decomposed into cause-specific risks, quantifying the probability of having an absent parent due to death (AIDS and non-AIDS deaths) or migration (labor and marriage related). Finally, I conduct a Cox proportional hazards regression analysis, examining the individual, parental and household level predictors of experiencing different kinds of absence. Together these estimates provide a detailed picture Tanzanian children's experience of parental absence.

For the first analysis, the population under study must meet three eligibility requirements: 1) reside in the DSS catchment area, 2) be aged 0 to 15, and 3) have identifiable parents[1]. An event occurs in three ways: 1) when the parent dies, 2) when the parent migrates out of the site without the child, and 3) when the child migrates out of the site without the parent. A child is considered right-censored in four circumstances: when the child no longer meets the eligibility criteria due to, 1) the child turning 15, or 2) the child moving out of the site with the parent; 3) when the child dies; and 4) at the end of observation, which is defined as December 31, 2011. As migration may occur multiple times, interval censoring is permitted. As such, when a child or parent migrates out, either an event occurs or censoring occurs, and the exposure clock stops. When they return, exposure starts again. In this way I estimate the risk of experiencing parental absence by age, and the amount of time children spend residing with their parent from birth to age 15. As discussed in the proceeding limitations section, this risk is dependent on child survival and residence in the site, and right censoring is assumed to be independent.

The second analysis is similar to the first, but rather than allowing for multiple absences, I estimate the amount of time spent continually residing with the parent from birth. For this reason, the analysis is restricted to children who are born in the site, because it is only for them that we can be certain that the parent has been present since birth. In addition, an event is considered as the first occurrence of parental absence; multiple events are not permitted.

The third analysis uses data from the verbal autopsy to attribute cause of death, and data from the migration file to attribute reason for migration. In this way, events are classified as parental absence due to one of four causes: AIDS death, non-AIDS death, labor migration, and marriage related migration. The total risk of parental absence, as captured in analyses 1 and 2, is thereby decomposed into cause-specific risk.

Finally, the fourth analysis investigates the predictors of experiencing parental absence using Cox's proportional hazards regression. Specifically, this analysis examines the time-varying influence of household income, number of co-resident non-parental adults, maternal parity, parental age and education, and child birth order and gender. One complication that must be addressed in this analysis is the presence of siblings in the dataset whose experience of parental absence is completely dependent. In order to accommodate this dependence, I randomly select one sibling from each household and weight by the total number of siblings in the household.

Preliminary Results

The preliminary results presented here consider data from the Rufiji DSS. Preliminary analysis of the data demonstrates the magnitude of the experience of parental absence and alleviates concerns about the rarity of such events. Considering only the 2000 birth cohort and maternal absence in Table 1, 4.6% of children experience maternal death by age 10, and an additional

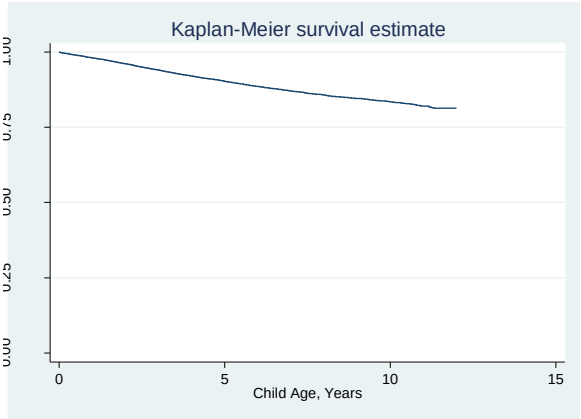
[1] Parents must be in the DSS database and have an id number in order to be identifiable and linked to the child.

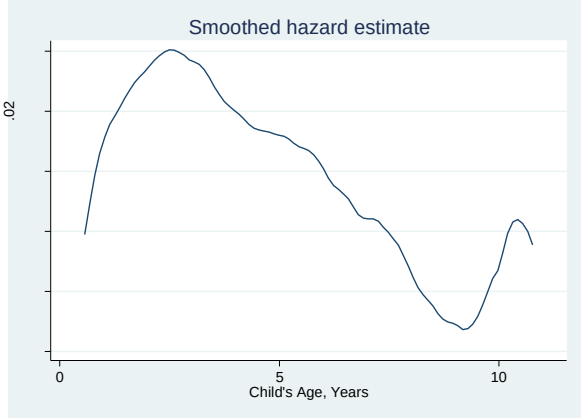
18.9% experience at least one event of maternal migration. Experience of maternal absence through death is much less common than through migration.

Table 1. Cumulative percent experiencing maternal absence by exact age, 2000 birth cohort

	Age 1	**Age 5**	**Age 10**
Maternal Death	0.69%	2.36%	4.64%
Maternal Migration	0.92%	7.02%	18.96%

The cohort measures presented in Table 1 are consistent with the Kaplan-Meier survival estimate presented below. These graphs present results from analysis 2 estimating the risk of first experience of maternal absence for children born in the DSS. We can see that the risk of maternal absence increases from birth and is greatest between ages 3 and 4. The hazard subsequently declines until age 9 when it begins to increase again. This pattern may be due to high maternal mortality, a possibility that will be investigated through the decomposition in analysis 3.





Limitations

There are several data limitations that must be addressed in this analysis. First, information on parent identity is incomplete, and therefore parental absence cannot be determined. If parents did not reside with children at the start of data collection, we do not know why or for how long they have been absent. Furthermore, if children move into the catchment area alone, we do not have information on the whereabouts of their parents. Data on fathers are especially likely to be missing. If the father is not a resident of the catchment area, he does not have an identification number in the data and cannot be linked to the child. For the analytic sample considered in analysis 2, 28% of children born in the DSS have an unknown father identification number. We can assume, then, that the father is non-resident at birth, but we cannot identify subsequent return migrations following birth. Such difficulties with data regarding fathers in sub-Saharan Africa have been discussed elsewhere, and should not preclude our analysis (Hosegood and Madhavan 2010).

A further data limitation is that we are unable to observe individuals when they leave the site. For the analyses discussed above, we must make the assumption that right censoring is independent. However, there is some evidence of anticipatory out migration whereby a child's move may precede a parental death. In order to accommodate this possibility, I construct bounds

on the estimates by assuming that all children who migrate out of the site with a parent experience an event of parental absence in 1 year. To construct the opposite bound, I assume that all children who migrate out with a parent remain with that parent for the duration of childhood, until age 15.

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