

THE EFFECTS OF HIV/AIDS ON RURAL COMMUNITIES IN EAST AFRICA: A TWENTY YEAR PERSPECTIVE

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Abstract

This paper examines the long-term effects of HIV and AIDS on rural society in North Western Tanzania and South Western Uganda. We begin by describing work carried out in the 1980s and early 1990s that looked at the implications of the epidemic for individual households and broader rural economies. Much of that research predicted progressive declines in agricultural production, with dire consequences for rural livelihoods. We then present findings from restudies in sites in Tanzania and Uganda where research was carried out on the impact of the epidemic 10-15 years before. The results show that over the period from 1986 to the present in Uganda and in Tanzania HIV and AIDS have sometimes thrown households into disarray and poverty, but more often has reduced development. However, the progressive and systematic decline predicted in earlier work has not come to pass. Looked at from 2009, the AIDS epidemic seems not to have had the profound long-term impact predicted twenty years ago. Evidence surveyed in this paper suggests resilience, continuity and no profound adverse effects. However, poverty remains, as does endemic HIV disease. The health status of the population in both areas remains poor and life remains hard. In the face of such resilience the challenge for development policy and implementation continues to be addressing the persistent poverty and deprivation which in part contributed to the particular manifestation of the AIDS epidemic in this region.

Keywords: HIV and AIDS, impact, rural societies, Tanzania, Uganda

Introduction

In the mid-1980s, south western Uganda and North western Tanzania, adjacent and closely related societies in central Africa, were often referred to as “the epicentre of the African AIDS epidemic”. Seroprevalence in some communities approached 30 per cent of the population (Serwadda et al. 1985, Hudson et al. 1988) and dire outcomes were foreseen (Gregson et al. 1994). In this paper, we focus on this particular area to examine the long term effects of a pandemic of a disease which, as is well known, combined a high infection rate in susceptible population cohorts with high case fatality where mortality was preceded by a long period of resource dissolving illness. All of this was so until the advent of effective anti-retroviral treatments in the 1990s and the increasing availability of treatment to the affected population in developing as well as developed countries in the last ten years.

Globally, HIV was first identified in 1981 among gay men in the USA (Friedman-Kien et al. 1981). The first documented identifications in Africa were in the early 1980s (Serwadda et al. 1985, Van de Perre et al. 1984) although retrospective testing of samples showed the presence of the virus in the region may have predated these reports by several years (Nahmias et al. 1986). In this region, HIV/AIDS presented as a heterosexual infection with potentially serious implications for the general population and thus was of concern as a possible adverse factor in social and economic development because of its specific demographic impact in the 15-50 age cohorts. Some early modelling of its possible implications at the level of the macro economy was undertaken by the World Bank (Over 1992).

Research in the 1980s and early 1990s

Given the predominantly rural nature of African society and dependence on agricultural livelihoods, a major panel study of the epidemic’s actual and potential effects was initiated by the World Bank in Kagera, Tanzania, in 1989 with fieldwork starting from 1991 (Over & Ainsworth 1989). In addition, the Food and Agriculture Organisation of the United Nations commissioned a small scale desk simulation study of the potential impact on an African rural society using an unrelated agricultural economic dataset from Rwanda (Gillespie 1989). More detailed speculation about the potential effects of HIV on rural society appeared in 1988 (Abel et al. 1988). In 1989 a small scale detailed study of the effects of HIV/AIDS in Uganda was undertaken with funding from the government of the United Kingdom (Barnett et al. 1990) and subsequently published in book form (Barnett & Blaikie 1992). These early attempts to understand a radically new problem have to be understood in the context of those times with the following factors shaping that context: (a) the then current understanding of the demographic consequences of AIDS in Africa (Anderson et al. 1988); (b) stigmatising interpretations of HIV/AIDS, in particular identification of the epidemic with African people’s sexual behaviours (Hrdy 1986) and debates about the African origins of HIV (Chirumuuta & Chirumuuta 1989); (c) the difficulty of persuading funders that this problem was anything other than a purely medical/clinical issue; (d) reluctance on the part of many African politicians to accept that the problem was as serious as outsiders were claiming.

In 1986 it was proposed that researchers and policy makers should look beyond immediate medical responses to the implications of the epidemic for food production and rural livelihoods in Africa. It was argued that the demographic impact of excess morbidity and mortality would result in labour shortages. In short, AIDS would affect the most economically active segments of rural populations. The result would be a

further decline in food and cash crop production on a continent where these had already been in decline for 20 years (Over 1992; Abel et al. 1988).

These ideas were tested in small scale field studies in 1989-90 in a number of settlements in Rakai District in Uganda with comparative material collected around Kisoro in Kigezi District. In both these sites, survey data were collected on contemporary farming practices together with recall data over the previous ten years. These data were supplemented by qualitative data drawn from interviews and focus group discussions as well as from a small statistically random sample survey.

The conceptual framework for these studies was drawn from previous work by Blaikie and his collaborators on the effects of large scale road developments in Nepal (Seddon et al. 1979). Thus, in this case AIDS was considered as an “impact” upon a pre-existing system and that impact was traced through a complex conceptual model of rural society. The adaptation of this model to Ugandan circumstances and the impact of AIDS appeared as Figure 4.2 in Barnett and Blaikie (1992). Within this model, the empirical findings suggested that a general process was at work in these Ugandan communities whereby depletion of households as a result of AIDS led to progressive decline in the quantity and quality of production. In the most extreme cases, the end result was dissolution of households, in some cases preceded by the death of all adults leaving behind orphaned children to fend for themselves, with limited assistance from relatives and others in the community. At the broader level of analysis, it was hypothesised that some Ugandan farming systems would be more resilient than others through the epidemic and that farming systems in general could be classified as more or less robust in the face of what was described as a “long wave disaster”, events such as an AIDS epidemic or climate change which would last over many decades. The process of household depletion was represented graphically in Figure 6.1 in Barnett and Blaikie's book which was described in the text as “...a composite description (although not an extreme one) of the varied experiences of families in the District.” (1992: 88). This figure is mentioned because to some degree it together with some of the other assumptions and hypotheses of this first study of the problem became organising ideas for later work by researchers and policy makers in Africa and beyond.¹

At the same time as Barnett and Blaikie were undertaking their research, other researchers were providing insights into the impact of the epidemic, and as a result provide us with a ‘baseline’ from which to now reflect on the influence HIV and AIDS have had on rural societies in East Africa.

The Kagera Health and Development Survey, conducted in Kagera between 1991 and 1994 with World Bank support used extensive survey instruments allowing the quantitative study of poverty and livelihoods among 816 households over a four year period. Its location and its statistical design had ensured that impacts of adult mortality could be studied using statically robust methods. It was found that in terms of consumption expenditure or standard poverty measures, households experiencing adult mortality recovered rather quickly from the shock, suggesting rather effective coping mechanisms (World Bank 1993). Lundberg, Over, and Mujinja (2000) studied the various coping strategies that households employ and found evidence of a variety of mechanisms used relatively effectively, including replacement of lost household members, remittances and other private transfers, credit, and public assistance.

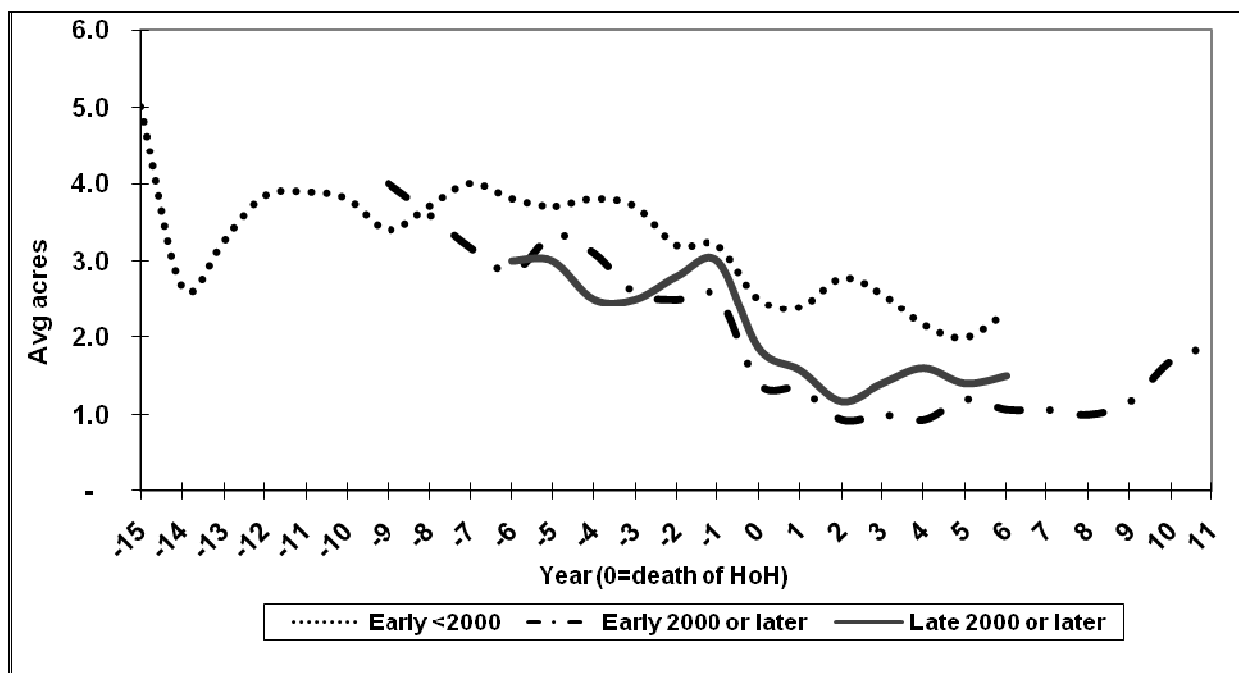
At the same time, 1991/1992, ethnographic research with 27 households in Masaka District, Uganda, by Seeley and colleagues (Seeley 1993) focused on indicators to identify 'coping mechanisms' which might be bolstered to provide support for households undermined by AIDS-related deaths. Using factors such as household size and composition, land size, household possessions, and the presence or absence of a familial supportive network, they built a framework for identifying households which may not be able to cope at times of crisis. This framework was made up of three stages: the first when needy households use welfare mechanisms for support and make claims on reciprocity with kin; the second in which welfare mechanisms are no longer available or fail which leads to the disposal of assets; and the third involving the dissolution of the household. While it was acknowledged that this framework did not predict an inevitable progression from one stage to the next, or that households may not move back and forth between them, the evidence at the time suggested that the socio-economic indicators together with information on the sero-status of household members could provide a way of identifying coping strategies of families affected by HIV and AIDS. Baylies (2002) drew on this framework, and a similar one devised by Donahue (1998) to highlight the breakdown of traditional coping mechanisms under the weight of AIDS-related deaths. She concluded, like Barnett and Blaikie ten years before, that HIV and AIDS 'undermines communities and compromises their ability to recover' (Baylies 2002: 629) making it a very particular kind of shock, requiring specific mitigation strategies. This analysis was supported by detailed ethnographic research undertaken by Rugalema, a researcher with his roots in Kagera (Rugalema 1999).

We can now consider the question: what has actually happened to rural societies as a result of more than two decades of HIV and AIDS in this particular part of East Africa, where this early research was carried out?

The findings from two restudies

In 2006/2007 Seeley and colleagues followed up on what had happened to 26 of the 27 households in her earlier study and assessed the predictive value of her framework. They found that 12 of the households had remained under the same head, five were under a different head and nine, (35 percent), had dissolved including the households of two elderly female heads who had been relocated to be cared for by relatives. AIDS-related deaths in immediate or extended families affected 24 (92 percent) of households but was blamed for dissolution in only three of the nine cases. Only one of these three was among the five households she had predicted by the framework, described above, as being likely to dissolve and disappear because of AIDS. However, of eight households affected by AIDS-related illness and death within their household unit, half experienced a deterioration of their socio-economic status. Other households had been seriously affected by the death of supportive relatives outside their households. However, when, as a part of this restudy, Seeley and colleagues looked at the impact of AIDS deaths on a larger sample of 144 households they noticed that while the death of a household head had a measurable impact on cultivation, and in some cases the household did indeed dissolve and move away, if some members of the household remained in the homestead it could take quite a long time (up to a decade) for the previous levels of cultivation to be regained (see figure 1). However, there were signs that recovery did take place; often as a new generation took on the land (Seeley et al. 2008, Seeley et al. 2009).

Figure 1. The Impact of the death of the household head on cultivation



Note: The sample of 144 households was made up of 72 HIV-infected households and 72 uninfected control households. Index households and matched controls were equally divided between 'early' and 'late' infection, defined respectively as households where HIV infection was identified in 1989/90, the early sub-sample, and those where HIV infection occurred after 2000/2001, the late sub-sample.. The figure above shows the impact on cultivation for three groups; first, 25 households from the early sub-sample whose heads died prior to 2000 (n=14); those from the early sub-sample where heads died after 2000 (n=11); and 7 households from the late sub-sample whose heads died from 2000 to the end of data collection in 2006 (see Seeley et al. forthcoming for details).

Other changes could not be solely attributed to the AIDS epidemic. While the amount of land owned by households where the household head or spouse was or had been infected with HIV had declined (from 3.4 to 3.1 acres), there had also been a slight fall in land size for households where there was no one infected with HIV. Land pressure, with a youthful and rapidly growing population in the area, has been affecting the size of plots for everyone. Changes in crop mixes, with households growing increasing amounts of maize and beans in preference to matooke (plantain, the traditional staple) and coffee, can be linked to crop diseases (banana and coffee wilt), changes in rainfall and also changing dietary preferences (with younger people preferring maize meal, for example) and market prices (particularly for coffee). There was no clear link between any of these changes and the impact of HIV.

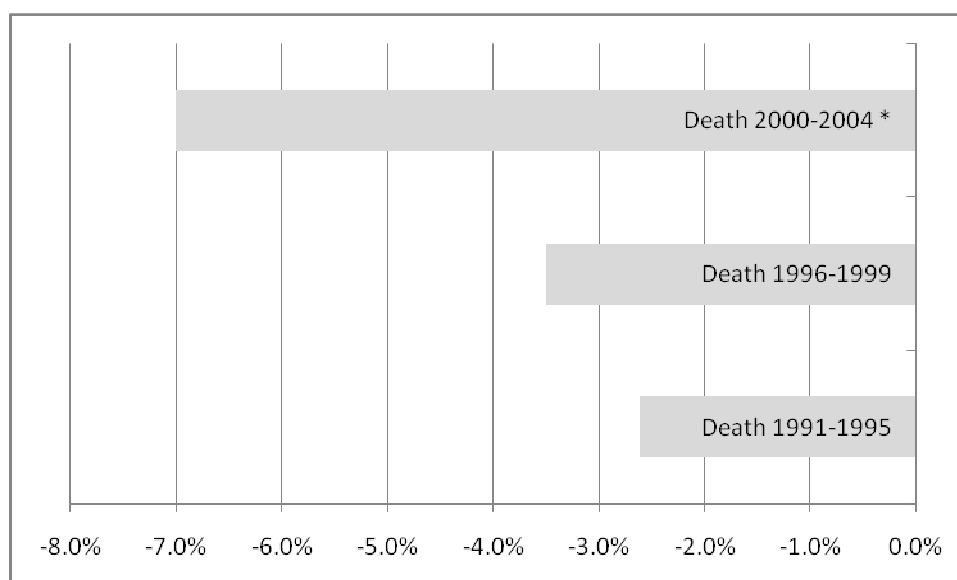
Fostering children is often linked to the AIDS epidemic because of concerns about the welfare of orphans. Yet, fostering patterns among this population in Uganda were not clearly linked to the epidemic because fostering was a common practice in this society long before AIDS. Approximately 30-40% of households reported taking in foster children in 2006/2007. As may be expected, more households where no one was living with HIV received children for fostering than in HIV-positive households. However, households where an adult was living with HIV and subsequently died also took in foster children. The difference has become less marked in households where the household head or spouse had become HIV-positive between 2000 and 2007 and there was also an increase in taking children into households where the head or spouse is HIV positive; this may be the corollary of the reconstitution of the households under a new generation of household head, reflecting a similar situation to the cultivation of land mentioned

above. Improved treatment of opportunistic infection and the availability of anti-retroviral therapy in the area since 2004, prolonging the lives of those infected with HIV, may also have played a part.

The 1991-94 Kagera study was followed up in 2004. This study had the explicit purpose of tracing the long-term consequences of adult mortality in this HIV-AIDS affected area (Beegle et al. 2006). The short term nature of the earlier longitudinal study which covered a few years after adult mortality took place in the household could not give an accurate picture of the longer-term impacts. For example, even if short-run poverty impacts were shown to be relatively limited, there may be a considerable long term effect. The 2004 survey helped to address this, and was methodologically innovative in comparison to most longitudinal surveys by tracking all originally interviewed individuals, even the large number who had migrated out of their communities (nearly 43 percent). The long-term impacts of having faced an adult death could thus be quantified (Figure 2).

Interpreting the findings in Table 1 (appendix) in terms of percentages of consumption, it was found that in this area an affected household will have seen consumption drop by seven percent within the first five years after the adult death (Beegle et al. 2008). However, in the longer term this effect did not persist: those families that experienced adult mortality more than six years ago were indistinguishable in terms of consumption or poverty from those that did not experience such an event: as can be seen in Figure 2, the effects of these shocks are both smaller in absolute value and statistically insignificantly different from zero.

Figure 2: Impact on consumption in 2004 of a prime-aged death (20-55 yrs.) on survivors in Western Tanzania (based on [26], n=2281)

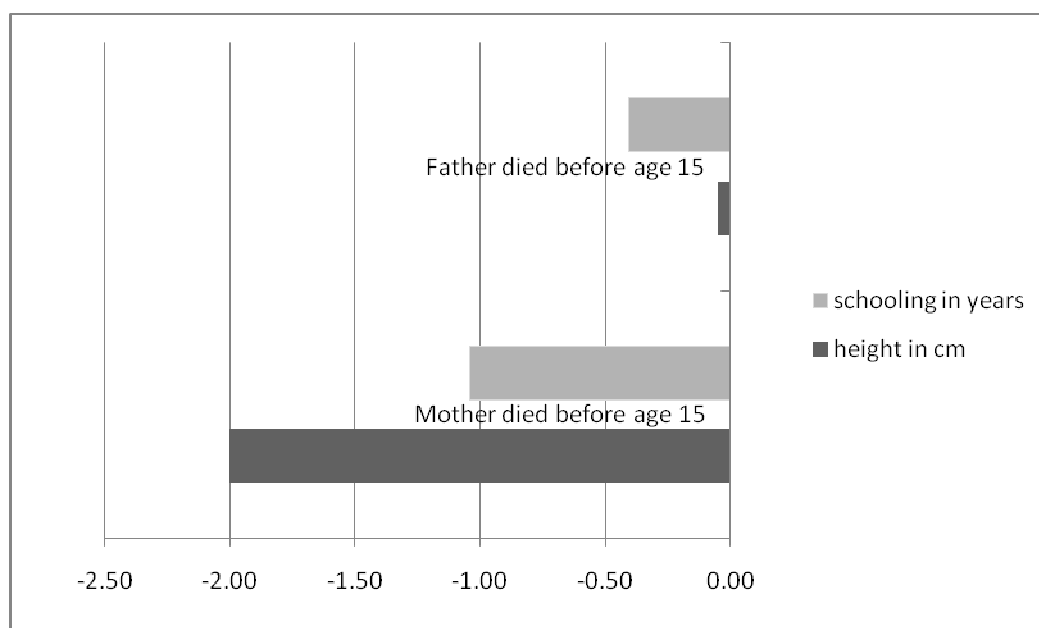


Note: each block gives the percentage impact on consumption in 2004 of a death in a particular period. Only the effect of recent death (2000-04) is statistically significant from zero (*=significant at 5%).

Nevertheless, other evidence from the same data suggests that increased adult mortality does impose a cost – but this is a cost on the succeeding generation. It was found that children who lost their mothers since the start of the survey faced an adverse impact of loss of two centimetres of final height attainment by the time they reached adulthood (or

1.2 percent, see Figure 3, based on Table 2, in appendix, and [Beegle et al. 2009]); maternal orphans also had one year less education by that time, after accounting for a wide variety of socio-economic characteristics (Figure 3 based on [Beegle et al. 2009]). Paternal orphaning had no effect on children's nutrition or education attainment. However, Beegle and Krutikov (2006) show that paternal orphan girls marry significantly earlier than non-orphaned girls.

Figure 3: Impact of orphanhood on final attained height and schooling in Western Tanzania (n=718), based on [27].



Note: each block gives the loss in education in years or height in cm associated with orphanhood based on a multivariate analysis, controlling of child, family and location characteristics. Only the effect of maternal orphanhood is significantly different from zero for both education and height (effects significant at 1%). No additional double orphan effect (losing both parents) could be detected given the small sample size of this type.

Conclusion

So, what can we conclude from these findings? Clearly, over the period from 1986 to the present in Uganda and in Tanzania, HIV and AIDS have sometimes thrown households into disarray and poverty, but more often the epidemic has reduced development and kept some households poor. Both the Tanzanian and Ugandan data show there have been long term effects on the wellbeing of children and older people left behind after an adult death. . However, the progressive and systematic decline predicted in our earlier work, and in the work of others, has not come to pass. People have undoubtedly suffered terrible personal loss and distress; but those who have survived have got by, they have drawn on support from family, friends, and from local organisations to rebuild livelihoods. Resilience is an over-used word, but when one reflects on the personal stories of many of the people included in the recent studies we describe briefly above, it seems an appropriate way to describe the way women and men have faced the problems brought by drought, pests, and other human diseases as well as the AIDS epidemic.

Looked at from 2009, the AIDS epidemic seems not to have had the profound long-term impact in this part of East Africa that was predicted twenty years ago. To a degree this

depends on perspective. At the height of the epidemic in Uganda and Tanzania in the 1980s, when many rural homesteads contained one or two or several graves of family members who had died of AIDS related illness, the situation was devastating and looked as though its effects would mark those societies for decades to come. In some senses this has been the case. Many children growing up today do not have their parents or grandparents. Anecdotal evidence tells of individuals marked by the experience of multiple hardships associated with growing up as an orphan in dire poverty and deprivation (Barnett 2006) while long term modelling of the effects of the epidemic on human capital suggest societal level losses (Bell et al. 2004). And yet the evidence surveyed in this paper suggests resilience, continuity and no profound adverse effects of the most serious single infectious disease event to affect any human population since the Black Death.² We should not forget that the estimate of AIDS related mortality tops 25 million people world-wide most of whom have been in Africa. As Chapoto and Jayne (2008) have recently observed, this points to the need to separate the short-term impacts of HIV and AIDS morbidity and mortality at the household level, which can be severe, from the longer-term impacts aggregated over larger populations, which are generally less dramatic.

In an interview with one of the authors in 1993, a Tanzanian politician said “the African extended family will cope with this as with much else in our history”. In Tanzania and in Uganda, people have coped: they had no choice. It was this resilience which was responsible for the “social vaccine” effect reported by Barnett and Blaikie (1992), Low-Beer et al. (2000) and Stoneburner and Low-Beer (2000) and it was this resilience which was at times supported by external resources. However, poverty remains, as does endemic HIV disease which can for the moment be controlled and treated by ART programmes. The health status of the population in both areas remains poor and life remains hard. In the face of such resilience the challenge for development policy and implementation continues to be to find ways of addressing the persistent poverty and deprivation which in part contributed to the particular manifestation of the AIDS epidemic in this region (Barnett & Parkhurst 2005).

Notes

1. A poster based on the 1992 figure from Barnett and Blaikie’s book was produced for an HIV awareness campaign in 2006 by the oil palm industry in Papua New Guinea, for example.
2. We do not include the continuing and continuous morbidity and mortality due to endemic malaria in the category of an “infectious disease event”.

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Appendix

**Table 1: Consumption growth 1991-2004:
Effect of a prime-aged death (20-55 yrs.) of a baseline respondent on survivors**

	Consumption growth 1991-2004
Death 1991-1995	-0.111 [0.171]
Death 1996-1999	-0.149 [0.157]
Death 2000-2004	-0.298 [0.130]*
Observations	2,281

Notes: Unit of observation are households in 2004. Least Squares regressions include age fixed effects (i.e. a spline function allowing for different slope for each year), controls for agricultural shocks, children living elsewhere, education, and estimated using initial household fixed effects. Standard errors in brackets. * 5%. Details in Beegle et al 2006.

Table 2: Impact of orphanhood on final attained height and schooling

	OLS controlling for pre-orphanhood socio-economic and genetic characteristics	
	(1) height: ln cm	(2) schooling: years
Mother died before age 15	-0.012** [0.006]	-1.039*** [0.359]
Father died before age 15	-0.001 [0.005]	-0.406 [0.323]
Observations	718	718

Notes: Unit of observation are individuals in 2004. Regression using Ordinary Least Square linear regression, with control variables including age fixed effects (i.e. a spline function allowing for different slope for each year), and pre-orphanhood socio-economic, parental and genetic characteristics. Standard errors in brackets. ** significant at 5%; *** significant at 1%. Details in Beegle et al. 2008.