

Orphan crisis in Zimbabwe: rising incidence and magnitude

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Abstract

13,740 children aged under 15 years were enumerated in an initial household census conducted in the Manicaland HIV/STD Prevention Project, 1998-2000, and 10,308 (75.0%) were followed up 3 years later in a second census, 2001-2003. The rate of non-orphans becoming an orphan in this period was 23.0 per 1000py (95% CI 21.4-24.7). Incidence of maternal orphanhood and double orphanhood amongst paternal orphans increased at 21% per annum (IRR 1.21; 95% CI 1.06-1.38) and 51% per annum (IRR 1.51; 95% CI 1.10-2.06), respectively, between the two census rounds. There was no evidence for increased paternal orphanhood or double orphanhood amongst maternal orphans during this period. The overall level of orphanhood increased from 12.2% to 17.2%. The largest increase occurred in double orphans which have more than doubled in 3 years. Analysis of the dimensions of orphan populations enables a better understanding of the impact of HIV/AIDS on communities.

Extended Abstract

Objectives

Extensive data have been collected in many countries on levels and trends in orphan prevalence over time. However, little is known about the patterns of orphan incidence. Such data are needed to inform support programmes on when and where assistance may need to be initiated. The objectives of this paper are:

- To analyse the trends in the prevalence of different forms of orphanhood and to quantify the rates of orphan incidence in Manicaland, Zimbabwe.
- To describe the socio-demographic and background family and household circumstances of children who become orphaned.

Methods

The analysis uses data from the ongoing Manicaland HIV/STD Prevention Project. A total of 13740 children under 15 years of age were enumerated during the baseline household census in 1998-2000. A second census was carried out in 2001-03, where 10308 (75.0%) children were followed up. The survey covered 2 small towns, 4 estates, 2 roadside settlements and 4 subsistence farming areas in Zimbabwe's Manicaland province.

Each census collected information about households in the area and household members' characteristics, including parent's survival status. The household respondent was asked: "Is [NAME]'s natural mother still alive?" and "Is [NAME]'s natural father still alive"? Where a parent had died, respondents were asked in which year the death occurred.

Orphan incidence amongst children under 15 years of age was calculated as the rate of non-orphans at baseline who lost a mother (maternal orphans), a father (paternal orphans), both parents (double orphans) or either parent during the inter-censal period. To calculate the incidence rates, non-orphans were selected at the baseline survey. For children who had lost a parent(s) between the baseline and follow-up surveys, the year in which that parent died minus the date that child was interviewed at baseline was used to calculate the exposure period at which a child was at risk of losing a parent. If both the child's parents were still alive at follow-up, then the difference between the two interview dates was used to calculate the exposure period at which the child was at risk. For children who lost both parents during the inter-censal period, the duration of time between the first parent dying and the second parent dying was used as the exposure period for children at risk of becoming double orphans. The double orphan incidence calculations were divided between children who had lost their father first and children who had lost their mother first. Incidence rates were analysed by calendar time, age of child at time of orphanhood, location and certain socio-economic indicators for the household. All the incidence calculations were performed using Stata Version 8.0.

Prevalence of paternal, maternal and double orphanhood was calculated as the proportion of children under the age of 15 for which the father only, mother only or both parents were reported to be dead, respectively.

Results

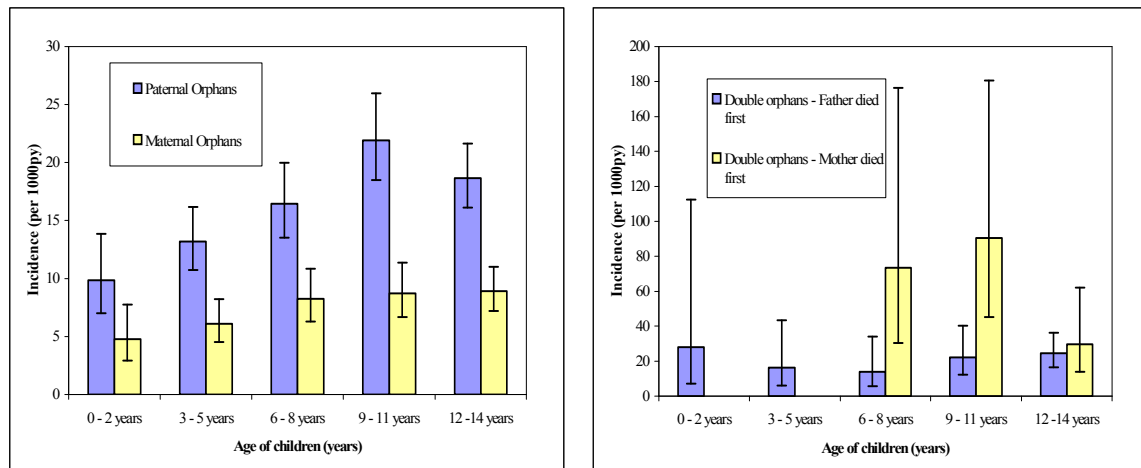
The overall risk of losing a parent amongst non-orphans was 22.97 per 100 person-years (Table 1). Paternal orphan incidence was much higher than maternal orphan incidence and maternal orphans were much more likely to lose their fathers than paternal orphans were to lose their mothers.

Table 1. Incidence rates of orphanhood (per 1000 person-years) in children under 15 years of age

Baseline status	Paternal Death Rate (95% CI)	Maternal Death Rate (95% CI)	Rate of either parent dying (95% CI)
Non-orphans	16.73 (15.38-18.21)	7.71 (6.82-8.73)	22.97 (21.36-24.70)
Maternal orphans	47.17 (30.43-73.11)		
Paternal orphans		21.52 (16.17-28.64)	

In figure 1 we show the age-pattern of incidence of different forms of orphanhood.

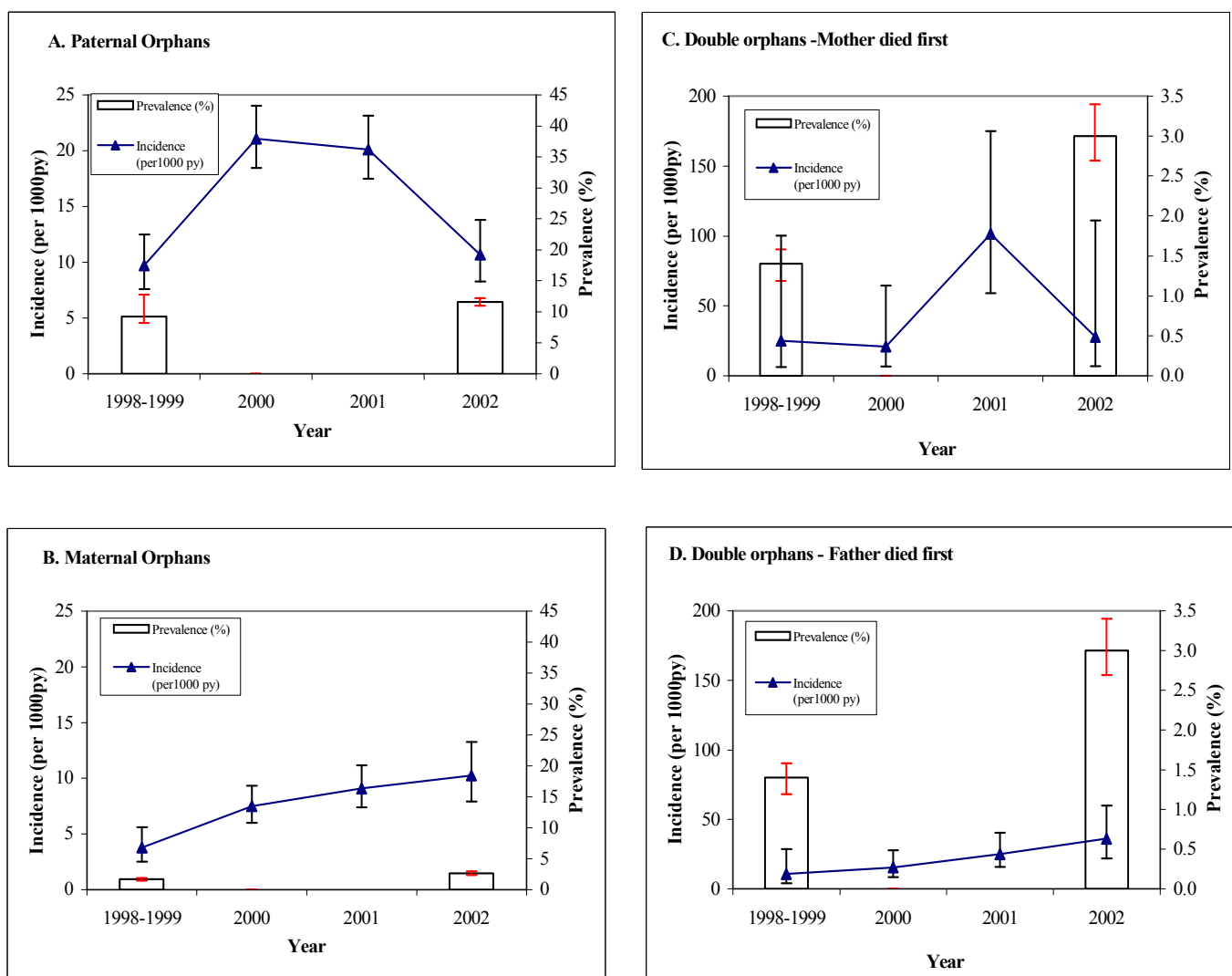
Figure 1. Age-pattern of orphan incidence rates (per 1000 person-years)



Incidence of both paternal and maternal orphanhood was found to increase with age. For children under 15 years old, 6% of newly orphaned paternal orphans were aged 0-2 years, 17% were aged 3-5 years, 19% were aged 6-8 years, 25% were aged 9-11 years and 33% were aged 12-14 years. Newly orphaned maternal orphans also showed a similar age distribution; 6% were aged 0-2 years old, 17% were aged 3-5 years old, 21% were aged 6-8 years old, 22% were aged 9-11 years old and 34% were aged 12-14 years old. Incidence of double orphanhood amongst maternal orphans also appears to be greatest at older ages but there is no evidence for this among paternal orphans.

Incidence of maternal orphanhood and double orphanhood amongst paternal orphans has been rising at 21% per annum (IRR 1.21; 95% CI 1.06-1.38) and 51% per annum (IRR 1.51; 95% CI 1.10-2.06), respectively, since 1998 (Figure 2). However, there was no evidence of an upward trend in incidence of paternal orphanhood or double orphanhood amongst maternal orphans.

Figure 2. Orphan incidence by type of orphan and time (in years) and orphan prevalence from the baseline survey (1998-2000) and the follow-up survey (2001-2002) by type of orphan



It was also found that children from households with higher socio-economic status such as owning a radio and having a finished floor are more likely to become orphaned (Table 2) although the difference only reached statistical significance in the case of children being more likely to lose their mothers when they live in a household that owned a radio.

Table 2. Orphan incidence rate ratios by socio-economic indicators of the household

Household Type	Paternal Orphan Incidence (per 1000 py)		Maternal Orphan Incidence (per 1000 py)	
	Rate Ratio	95% CI	Rate Ratio	95% CI
Do not own a radio	0.91	(0.76-1.08)	0.67	(0.52-0.88)
No finished floor	0.91	(0.73-1.12)	0.94	(0.69-1.29)

In table 3 we show the incidence rate ratios for maternal and paternal orphanhood by the location of the household.

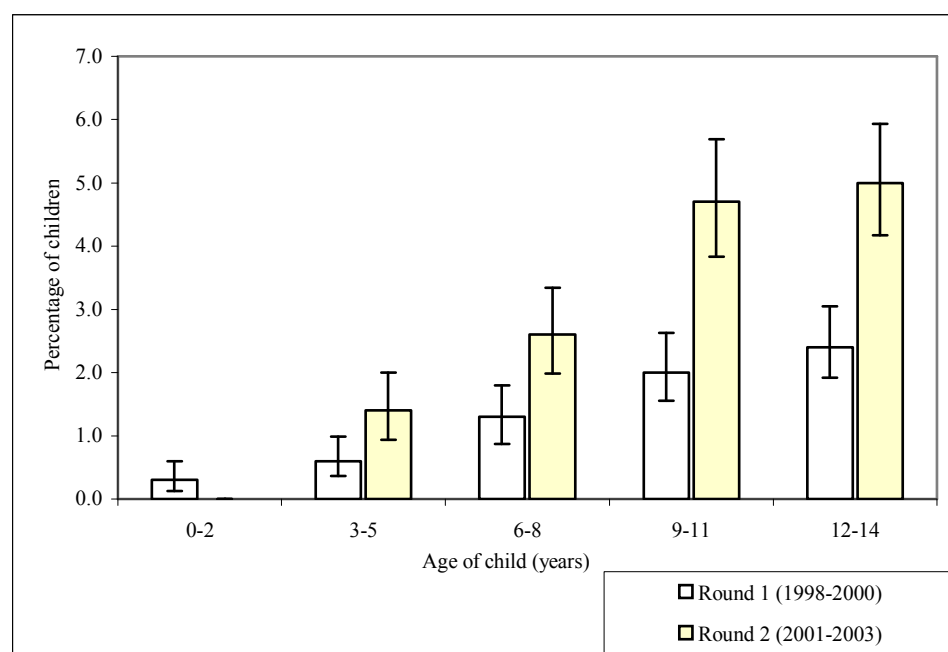
Table 3. Orphan incidence rate ratios by household location

Household Location	Paternal Orphan Incidence (per 1000 py)		Maternal Orphan Incidence (per 1000 py)	
	Rate Ratio	95% CI	Rate Ratio	95% CI
Subsistence Farming Area	1	-	1	-
Small Town	0.91	0.69-1.21	0.74	0.49-1.13
Roadside Business Centre	1.32	1.06-1.63	1.25	0.93-1.69
Estate	0.81	0.65-1.01	0.53	0.37-0.75

Relative to subsistence farming areas, orphan incidence was higher in roadside settlements and lower in estates. No differences in risk were recorded between children living in small towns and those living in subsistence farming areas.

Overall prevalence of orphanhood among children aged under 15 increased from 12.2% in 1998-2000 to 17.2% in 2001-2003. Prevalence of orphans increased between the two survey rounds from 10.7% (95% CI 9.2-12.2) to 16.9% (95% CI 14.9-19.1) in small towns, from 10.2% (95% CI 9.27-11.21) to 13.7% (95% CI 12.5-15.0) in estates, from 15.9% (95% CI 14.5-17.3) to 22.3% (95% CI 20.4-24.2) in roadside settlements and from 12.3% (95% CI 11.4-13.2) to 17.5% (95% CI 16.4-18.7) in subsistence farming areas. The largest increase occurred in double orphans which have more than doubled in 3 years (Figure 3). However, increases in all forms of orphanhood were recorded in each of the four types of area covered by the study and in all age groups except 0-2 year olds. Paternal orphans remain the most common type of orphan (11.6% in 2001-2003) compared to maternal orphans (2.6%) and double orphans (3.0%).

Figure 3. Double orphan prevalence by age of child in Zimbabwe



Discussion

In Manicaland, Zimbabwe around 2001-2003, 17% of all children under 15 years of age had lost at least one parent. The orphan incidence results indicate that children are losing their fathers at a faster rate than their mothers. However, the analysis of incidence rates over calendar time suggests that maternal orphan incidence has been increasing steadily in recent years and may soon be higher than paternal orphan incidence.

The rising orphan incidence and prevalence in Zimbabwe is most likely to be attributable to the severe HIV/AIDS epidemic which is currently having a devastating cumulative impact of a prolonged phase of high adult mortality rates [1]. This interpretation is also consistent with recent findings from an analysis of national surveys from 40 countries on orphanhood [2], which showed increases in orphanhood in countries more severely affected by HIV/AIDS and a decrease in orphanhood prevalence in countries with low HIV prevalence.

Our results show that not only prevalence but also incidence of orphanhood increases with age of child - more than half of newly orphaned children were over 9 years of age and just over one-in-twenty were aged under 3 years. This is likely to reflect higher adult mortality at older childbearing ages and acute sub-fertility amongst people with AIDS. Orphan incidence is also highest in roadside settlements even though HIV prevalence is higher in towns and estates.

References

1. Gregson, S., et al., *Recent upturn in mortality in rural Zimbabwe: evidence for an early demographic impact of HIV-1 infection?* *Aids*, 1997. **11**(10): p. 1269-80.
2. Monasch, R. and J.T. Boerma, *Orphanhood and childcare patterns in sub-Saharan Africa: an analysis of national surveys from 40 countries.* *Aids*, 2004. **18 Suppl 2**: p. S55-65.