

Orphanhood, child fostering and the AIDS epidemic in rural Tanzania*



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Abstract

The AIDS epidemic has caused an increase in adult mortality and consequently an increase in the numbers of orphaned children. Data were used from the Kisesa Community Study in northwest Tanzania, to assess the prevalence and consequences of orphanhood in the context of existing child care practices in a rural area with moderately high HIV-prevalence. This study was carried out in a ward with about 20,000 people with HIV prevalence of 6.2 per cent among adults 15-44 years and slightly over one-third of adult deaths associated with HIV/AIDS.

Seven point six per cent of children under 15 and 8.9 per cent of children under 18 had lost one or both parents. Child fostering was very common. Virtually all orphans and foster-children were cared for by members of the extended family, often the maternal grandparents: 14 per cent of households had at least one orphan. Such households did not have a lower economic status, but had a less favourable dependency ratio. Households with orphans were also more likely to be female-headed. Follow-up mortality rates were similar among orphans, foster-children and other children, for both sexes. Mobility was much higher among orphans and foster-children, and orphans and foster-children had somewhat lower school attendance rates: lower enrolment and higher dropout rates.

The problem of rapidly increasing numbers of orphans needs to be considered in the context of previously high levels of adult mortality, child-fostering practices and general poverty. The extended family seems to be able to absorb the increase in orphans, because caring for children of other members of the family is widespread, whether the parents are alive or dead. This study yields no evidence that orphans as a group are disadvantaged, although certain subgroups of orphans or orphan households may be more vulnerable and in need of support.

Adult mortality in sub-Saharan Africa is expected to increase rapidly during the 1990s and beyond, owing to the AIDS epidemic. As AIDS mortality primarily affects adults in the reproductive ages, this will lead to a rapid increase in the number of orphaned children. Empirical data from Uganda (Kamali et al. 1996) and Zimbabwe (Foster et al. 1995), and simulations (Gregson, Garnett and Anderson 1994) have indicated the magnitude of the

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problem of orphanhood in association with the AIDS epidemic. Projections showed that there could be as many as one orphan for every two healthy economically active women about ten years after HIV prevalence has reached its peak in areas severely affected by the epidemic (Gregson et al. 1994). In 1995, WHO estimated that about 10 million children had been orphaned through AIDS since the beginning of the epidemic in Africa.

The most detailed studies on orphanhood in association with AIDS have been conducted in Mutare, Zimbabwe, in an area with high HIV-prevalence (Foster et al. 1995, 1996). About half of parental deaths in the five years preceding a survey in 1992 were thought to be associated with HIV/AIDS and 13 per cent of all children under 15 years were orphans. The extended family continued to be the main source of care for orphans. The quality of care for orphans by the extended family was generally considered satisfactory and comparable to care for other children. However, some traditional patterns of care for orphans were changing. Maternal relatives were now the main carers, while in the past the paternal extended family was the main source of orphan care.

Similar conclusions were reached in a study in rural Uganda (Kamali et al. 1996). No significant differences in schooling and mortality could be observed between orphans and other children. It was concluded that the family system was still coping with the more than 40 per cent increase in orphans due to the AIDS epidemic.

This study presents data on orphanhood and child care patterns from a rural area in Tanzania, where HIV prevalence is moderately high, but overall adult mortality is likely to have been high in the decades preceding the AIDS epidemic. The orphan problem is analysed in the context of pre-existing child care patterns, particularly the practice of child fostering.

Data and methods

The study was conducted in Kisesa ward in Mwanza Region, northwest Tanzania. The ward has a population of 20,000 and lies 20 kilometres east of the regional capital Mwanza, along the main road to Kenya. Kisesa ward includes six villages, with about 40 per cent of its population located in a trading centre along the road. More than 90 per cent of the population belong to the Sukuma tribe, which is also the largest ethnic group in Tanzania.

In Tanzania, the national AIDS program defines an orphan as a child under the age of 18 years whose mother (maternal orphan) or father (paternal orphan) or both parents (double orphan) have died. Other children can likewise be divided into children living with both biological parents, children living away from their mother (maternal foster-child), from their father (paternal foster-child) and from both parents (double foster-child). Different definitions of child fostering have been used in studies from mainly West Africa. Some have defined a foster-child as a child not living with the mother (Bledsoe, Ewbank and Isiugo-Abanihe 1988), but others used local definitions rather than location of the biological parents (Renne 1993; Castle 1995). We used demographic rather than socio-cultural criteria to define foster-children. An important difference from all other studies is that we excluded orphans from the category of foster-children. In other words, foster-children in our study have living parents. This distinction was not made because of local concepts, but because we were interested in comparing orphans with children who were brought up by other people than the biological parents.

In this study several data sources were used. Data on the prevalence of orphanhood and fostering were obtained from a baseline census. In 1994 all households in Kisesa ward were visited by local field workers who listed all persons, with their sex, age (and birth date), schooling, and relationship to the head of the household. For each household member it was asked whether their father and mother were still alive and, if alive, whether they were living in the same household. If the latter was the case the line number of the parent had to be recorded. Finally, questions were asked about household sources of income (trade, off-farm

employment), household assets (radio, bicycle and motorized vehicle) and structure of the house (roof, floor). Households with no external source of income, no household assets and the cheapest house structure were classified as very poor.

An in-depth survey on orphans and foster-children was carried out among care-takers during 1995-1996. One rural village was initially selected for interviews using precoded and open-ended questions on child care and support in households with orphans or foster-children under the age of 15 years. In total 169 households were interviewed out of 216 listed households in this village, resulting in data on 300 orphans and foster-children (non-response rate 22%). In addition, 158 interviews were held with care-takers of double orphans and double foster-children in the whole ward. Information was obtained on 21 of 43 listed double orphans (non-response rate 51%) and 137 of 240 listed double foster-children (non-response rate 43%). The main reasons for non-response were that the child had moved since the baseline census or the care-takers were not available for interview. There were also cases of misclassification: children listed as orphan or foster-child during the census had living parents or were living with their parents (see discussion).

During 1994-95 a sero-survey was conducted among 5721 adults 15-44 years. Overall HIV prevalence in the ward was 6.2 per cent, but it was 10.3 per cent in the roadside village and 4.2 per cent in the five rural villages (Kisesa Sero-survey Team 1996).

Data from a demographic surveillance system were used to assess mortality and mobility among orphans and other children. Following the baseline census, four-monthly visits were made to each household and vital events were registered. If a death had occurred, an assistant medical officer visited the household for a verbal autopsy interview with the relative of the deceased. HIV serology was available from the sero-survey for 28 per cent of deaths. These data are used to compare the household conditions among HIV- and non-HIV-associated deaths (for details see Boerma et al. 1997).

Results

Prevalence of orphanhood and child fostering

Table 1 presents the prevalence of orphanhood by age of the child among 10,015 children in the baseline census. Overall, 8.9 per cent of children under 18 years and 7.6 per cent under 15 were orphans. There was a rapid increase in the proportion orphaned by age: from three per cent under five years to 18.1 per cent at 15-17 years. Of children under 18 years 5.5 per cent were paternal orphans, 2.5 per cent were maternal orphans and 0.9 per cent had no living parents.

Table 1
Orphanhood and child fostering by age of the child (%)

Parents' status	0-4	5-9	10-14	15-17	All
Mother died	0.7	2.1	4.3	4.4	2.5
Father died	2.3	5.1	7.3	11.3	5.5
Both died	0.1	0.5	1.8	2.5	0.9
Mother away	1.8	5.8	7.2	8.1	5.1
Father away	23.4	15.2	13.0	11.1	16.8
Both away	6.9	14.0	15.0	16.4	12.2
Both present	64.9	57.3	51.4	46.2	56.9
Number	3310	2927	2537	1241	10015

Among single-parent orphans it was common for the remaining parent to live elsewhere. About 58 per cent of the fathers of 246 maternal orphans and 32 per cent of the 371 mothers of paternal orphans were not living with their child. Thus, 40 per cent of the single-parent orphans did not have their surviving parent living with them.

Child fostering was very common. Among all children under 18 years 34.2 per cent were not living with one or both biological parents: 5.1 per cent did not live with their mother; 16.8 per cent did not live with their father and 12.2 per cent lived with neither parent. In other words, 17.3 per cent of children under 18 did not live with their mother. There were no differences in fostering and orphan rates between boys and girls.

Reasons for absence of a parent were obtained from the in-depth survey. The main reasons for the father not being with the child were: premarital child (37.1%), divorce (29.1%) and living with another wife (14.8%). The main reasons for the mother not being with the child were divorce (64.5%) and premarital child (11.4%). Work was seldom a reason for the parent not being present. The reasons were similar for single and double foster-children.

Household comparison

In Table 2 three types of household are compared: households with orphans, households with children under 18 but no orphans, and households with no children under 18 years. Among the 3353 households in Kisesa there were 470 households with at least one orphan (14% of all households). In such households there were on average 1.9 orphans. Forty-two per cent of all households had foster-children. One in five of these households with foster-children also had orphans. Orphan households had more children than other households with children (4.4 and 3.5 children respectively), but not more children under five years (1.2 in both).

Orphan households were larger than other households (7.9 and 6.3 persons respectively) and had a less favourable dependency ratio, which was defined as the sum of children under 18 and persons 60 years or older divided by the number of persons 18-59 years. The dependency ratio for all households was 1.33, for households with children 1.43 and for households with orphans 1.64. Only one household was headed by a child under 18 years. There were 110 households with no adult 18-59 years: 11.4 per cent of households without children, 1.3 per cent of households with children and 2.6 per cent of households with orphans had no adults.

Table 2
Composition and economic status of households (HH) with orphans, with children but no orphans and without children under 18, Kisesa, 1994

	HH with orphans	HH with children	HH no children	Total
Number and percentage of households	470 (14%)	2280 (68%)	603 (18%)	3353 (100%)
Mean N of orphans	1.9	0	0	0.3
Mean N of foster-children	1.5	1.2	0	1.0
Mean N of children	4.4	3.5	0	3.0
Mean N of adults 18-59	3.0	2.6	1.6	2.5
Mean N aged 60+	0.5	0.3	0.4	0.3
Total N of people	7.9	6.3	1.9	5.8
Dependency ratio	1.6	1.5	0.3	1.3
Per cent female headed	36.8	15.1	25.2	20.0
Per cent N adults 18-59	2.6	1.3	11.4	3.3

In one in every five households a female was considered the head of the household by its members. Among 36.8 per cent of the orphan households the head was a woman, compared to 15.1 per cent among other households with children. Among maternal orphans 16.3 per cent lived in a female-headed household, among paternal orphans 54.6 per cent and among double orphans 38.3 per cent.

There were no significant differences in economic status according to an index based on off-farm income, household assets, and structure of the house (data not shown in Table 2). Both the mean score and the proportion classified as very poor were similar in all three types of households.

Table 3
Care-takers for orphans and foster-children: percentage distribution by type of orphan/foster-child, Kisesa, 1995

	Other parent	Grand-parents	Aunt/uncle	Brother/sister	Other relative	Other	N
Maternal orphan	40.9	40.9	4.6	-	4.1	4.6	22
Paternal orphan	34.2	39.0	2.4	17.1	2.4	4.9	41
Double orphan	-	53.8	23.8	23.8	23.8	4.8	21
Maternal foster-child	77.4	22.6	-	-	-	-	31
Paternal foster-child	57.7	31.7	-	0.8	4.9	4.9	123
Double foster-child	-	71.0	10.8	5.1	11.7	1.4	214

Care-takers

Among the 21 double orphans in the in-depth survey the grandparents, older siblings, aunts, uncles and other relatives were all possible care-takers (Table 3). If the grandparents were the care-takers of double orphans, they were mostly from the mother's side (5/6). Among 63 single-parent orphans the surviving parent or the grandparents were the most frequent care-takers. Most grandparents were from the mother's side (68%). Also among 214 double foster-children (both parents living elsewhere) the grandparents were the most common care-takers (71 per cent). Most grandparents were from the mother's side (52% of all double foster-

children). Even for maternal and paternal foster-children grandparents were an important source of care. More than 95 per cent of all orphans and foster-children were taken care of by relatives.

Orphan care-taker patterns were examined by age and sex of the child, including whether the child was cared for by maternal or paternal family. No differences could be observed in type of child care-taker by age and sex.

A minority of care-takers of orphans received support from the surviving parent (if living elsewhere) or other relatives (Table 4). Foster-children more frequently received support from the parents living elsewhere. In particular, if both parents were living elsewhere, 70 per cent received some support from the parents. This was mostly assistance in obtaining clothes, school support and food, and financial support. No child in Kisesa received support from an organization.

Table 4
Support for orphan and foster-children from outside the household by parents and other relatives

	Number	Parental support (%)	Other support (%)
Maternal orphan	22	25.0 ^a	9.1
Paternal orphan	41	20.0 ^b	7.3
Double orphan	21	-	9.5
Maternal foster-child	31	22.6	6.5
Paternal foster-child	123	13.0	5.7
Double foster-child	214	69.6	10.3

^a Among 12 maternal orphans whose father is living elsewhere

^b Among 20 paternal orphans whose mother is living elsewhere.

Care-takers were asked whether the child had been sick in the last month and what had been done. A high proportion of both orphans (39.3 %) and foster-children (33.7 %) had reportedly been ill, and most children had been taken for some type of treatment. The proportions of children taken for treatment were somewhat higher among foster-children than among orphans (97% and 88% respectively, $p < .05$).

AIDS mortality

To assess the role of HIV/AIDS associated mortality the longitudinal data were used. During two years of follow-up 160 adult deaths occurred in the age group 15-59 years. Verbal autopsy interviews were conducted for 141 deaths and HIV/AIDS was considered a probable cause for 35 per cent of deaths (for details see Boerma et al. 1997). Forty-nine per cent of deaths were of women, and 56 per cent of HIV-associated deaths concerned women.

Table 5
Characteristics of deceased adult and household dependency ratio before death, Kisesa, 1994-95

Sex	HIV	Number	Mean age at death	Dependency ratio
Male death	HIV-related	20	38.7	1.7
	Non-HIV	50	32.4	1.0
Female death	HIV-related	28	32.6	1.2
	Non-HIV	43	39.5	1.6

Note: numbers in italics - difference significant at 5 per cent level using t-test.

The overall mean age at death for men was 34.2 years and for women 36.8 years. Table 5 compares the age at death and household composition by HIV status and sex of the deceased. Men's HIV-related deaths were at a later age than non-HIV-related deaths: 38.7 and 32.4 years respectively. Among women the opposite was observed: 32.6 and 39.5 years among HIV and non-HIV-related deaths respectively.

There were differences in the household dependency ratio before the adult death. During the baseline census the dependency ratio was higher in households with male HIV deaths than in households with non-HIV deaths (1.7 and 1.0 respectively). In households with female deaths due to HIV the dependency ratio was lower than in the households with deaths not related to HIV (1.2 and 1.6 respectively). These differences appear to reflect age differences of the deceased. Death of an older person, often a head of a household, leaves a household with a higher dependency ratio.

The proportion of new orphans due to HIV/AIDS mortality could not be computed because of the high proportion of children not living with their parents: not all children of the deceased parent can be identified.

Table 6
School attendance by age and sex

Age	Orphans		Foster-children		With both parents		Total	
	N	%	N	%	N	%	N	%
Boys								
6-8	69	8.7	325	7.1	503	5.0	897	6.0
9-11	94	53.2	278	46.8	412	51.0	784	49.7
12-14	107	71.0	255	69.8	382	83.5	744	77.0
15-17	113	54.9	242	60.3	306	69.0	661	63.4
Girls								
6-8	64	12.5	294	8.8	522	8.2	880	8.8
9-11	86	53.5	254	51.6	423	55.3	763	53.9
12-14	101	78.2	267	76.0	362	82.6	730	79.6
15-17	112	44.6	201	40.8	267	55.4	580	48.3

Note: percentages in italics - significantly different at 5 per cent level from children living with both parents (chi-square test).

Schooling

Table 6 examines school attendance among orphans, foster-children and children living with their parents, by age and sex. Two indicators were chosen: proportion of children aged 13-17 years who never attended school and proportion who dropped out of school before completing seven years of education. The age at school entry in Tanzania is seven years, although the median age at school entry was nine years in Kisesa. Education is free though costs of uniforms, school materials and sometimes tuition have to borne by the care-takers. The schooling rates were very similar among the three groups. Among boys 13-17 years there were no differences between orphans and foster-children, but both had significantly lower enrolment and higher dropout rates than children living with both parents. Among girls enrolment was lower among orphans and foster-children compared to other children, but no significant differences could be observed for dropout rates.

In the in-depth survey the reasons for not being in school were explored. Among 41 children eight years and over the main reason given by the care-takers was that the child was considered too young (56%). Other reasons were health problems (10%), no place in school (10%), and no money (5%).

Mortality and migration

Table 7 presents mortality rates among orphans, foster-children and other children listed during the baseline census. In general, there were no significant differences in mortality between the three groups of children, but numbers in the orphan group were small.

Table 7
Annual mortality rates among orphans, foster-children and children living with both parents during two-year follow-up by age, Kisesa 1994-96.

	N	Deaths	PYO	Mortality rate
1-4 years				
Orphans	97	1	132	7.6
Foster-children	941	23	1301	17.7
Other	1858	48	2883	16.6
5-9 years				
Orphans	225	1	334	3.0
Foster-children	1025	5	1502	3.3
Other	1677	8	2695	3.0
10-17 years				
Orphans	564	2	833	2.4
Foster-children	1335	7	1932	2.3
Other	1879	4	3007	2.1

Orphans and foster-children were, however, more mobile than other children. During two years of follow-up 29.9 per cent of orphans present at the baseline census had moved to another household; 31.8 per cent of foster-children had done so; and 16.4 per cent of other children (difference of orphans and of foster-children with other children significant; $p < .001$). There were no clear differences in migration rates by age and sex of the child.

Discussion

In this rural population nine per cent of children under 18 years were orphans and 14 per cent of the households had at least one orphan. Child fostering was very common with 12 per cent

of children under 18 not living with either parent, and 17 per cent not living with their biological mother.

Underreporting of orphans and orphan households may be a problem in censuses and surveys (Foster et al. 1995). A comparison of orphan and fostering status during the baseline census and the in-depth interviews allows an assessment of the level of misclassification during the baseline census. Since the in-depth survey focused on children under 15 years the comparison was limited to these children. Among 102 children listed as orphans in the baseline census, 18 per cent were found during the in-depth interviews to have a living parent. All these children were foster-children, that is, at least one of their parents was living elsewhere. Among 396 reported foster-children whose care-takers were interviewed during the in-depth survey, seven per cent were not foster-children. Most of those who were not foster-children were found to be orphans (16 out of 22). If we assume that the baseline census was correct for children with both parents living with them in the households, the underreporting rate for orphans can be estimated from these figures. The orphan rate for children under 15 years was slightly underestimated: instead of 7.6 per cent, eight per cent of all children under 15 were orphans. The foster rate was overestimated: instead of 33.4 per cent of all children under 15, 32.3 per cent were foster-children.

The misclassification may partly be due to the use of a less knowledgeable respondent during the baseline census. Although the effects of misclassification on estimates of prevalence of orphanhood and fostering appear to be limited, the analysis of the consequences of orphanhood and child fostering may have been affected by this bias. Another bias may be caused by the high mobility of orphans which has led to low response rates in the in-depth survey. This may introduce a bias in the data on care-takers and support, as those orphans who move frequently may be in a different position from orphans who are in a more stable environment.

Paternal orphans were more common than maternal orphans. For instance, among children under 15, 4.7 per cent had lost their father, 2.2 per cent had no living mother and 0.7 per cent had lost both parents. These proportions are comparable to data from rural Uganda where 6.3 per cent were paternal orphans, 2.8 per cent maternal and 1.3 per cent double orphans (Kamali et al. 1996). There are more paternal than maternal orphans if mortality of fathers is higher than of mothers; or if fathers die at an age when they have more children under 15 than mothers have at the age when they die. Mothers in societies with high fertility have the highest number of children under 15 in their mid-thirties (first child at about 18-20 years), while fathers have the highest number of children under 15 in their early forties, assuming an age difference between marital partners of about seven years. In Kisesa paternal orphans were more common because of higher male mortality in the past, and not because deceased fathers had more children under 15 years than deceased mothers, as the mean age at death of adult women was 39 years and of adult men 33 years. The AIDS epidemic in Kisesa has reduced the mortality difference between men and women (Boerma et al. 1997) and this may increase the proportion of maternal orphans even more than paternal orphans. The age patterns of deaths due to AIDS pushed the mean age at death of women down and of men up, to the mid-thirties for both (Table 5). This implies that for both sexes more orphans per death can be expected. Two factors can mitigate the effect of AIDS on maternal orphan rates, also relative to paternal orphan rates. Fertility among women with HIV infection may be lower than that of other women (e.g. Boerma, Urassa and Isingo 1996; Gray et al. 1997). Male orphan rates will be less affected because HIV-positive men may have fathered children with women whose parity was not affected. In addition, children of HIV-infected mothers are at higher risk of mortality due to HIV than children of HIV-infected fathers, because of vertical transmission, which is less common among HIV-infected men as their wives may be discordant.

No satisfactory explanation can be given for the discrepancy between maternal and paternal orphan rates. In Uganda underreporting of maternal orphans was considered a possible explanation for the difference between maternal and paternal orphan rates (Kamali et al. 1996). This was thought to be due to divorce or separation causing the mother to return to her natal home without her children and to the tendency of men to remarry after the death of their wives, and subsequent reporting of the new wife as the biological mother. These arguments may only partly explain the difference. The Kisesa data on co-residence of children and biological parents indicate that in fact more fathers are not living with their children than mothers and underreporting of fathers' mortality may thus be at least equally probable. Data from another study in Uganda indeed show that men tend to remarry earlier and more frequently than women after the death of their spouse (Ntozi 1997), but it is still speculative whether the new wife will be reported as the biological mother. The Sukuma people, the dominant ethnic group in our study population, are known for relatively high rates of widow remarriage, although a large proportion still remains unmarried (Kirwen 1979:124). Polygyny may also play a role. Another wife may be regarded as the mother after the death of one of the wives.

The prevalence of orphanhood not only depends on the magnitude of the epidemic but also on the phase of the epidemic (Gregson et al. 1994). It appears that the AIDS epidemic in Kisesa is still in a fairly early stage and that adult mortality and, consequently, the prevalence of orphanhood are likely to increase in the next few years. In nearby Mwanza town, however, HIV prevalence has been stable at 10-12 per cent among women attending an antenatal clinic since 1989 (Ministry of Health 1995), while HIV prevalence in Kisesa roadside village is similar to that in the town. In the rural areas of Kisesa HIV prevalence may increase slightly from its current 4.2 per cent, but annual incidence in rural Mwanza Region has been estimated as less than one per cent per year (Grosskurth et al. 1995). In this context it is not likely that the HIV/AIDS epidemic and orphanhood prevalence will reach levels as observed or anticipated in Mutare, Zimbabwe (Foster et al. 1995) or Rakai, Uganda (Konde-Lule et al. 1996). It is more likely that the situation will become very similar to Masaka, Uganda, where adult HIV prevalence was about eight per cent and orphan prevalence 10.4 per cent (Kamali et al. 1996). The relatively low rate of double orphans may also rise as the epidemic progresses.

Care-takers were more commonly from the maternal side. Traditionally, the Sukuma are patrilineal and the children belong to the father's lineage. Anthropological studies in the 1950s and 1960s, however, already showed that the Sukuma maintained considerable flexibility in their marriage system (Lang and Lang 1973; Varkevisser 1973). Several forms of marriage co-existed to allow flexibility in the payment of the brideprice. From our in-depth survey it became clear that payments of brideprice are often postponed and that children only belong to the father's lineage if the payment of the brideprice has been completed. Some respondents mentioned that a payment can be made for each child separately and that payments differ between sons and daughters. Similar findings were reported by Kirwen (1979) in the 1970s. A man may agree to the marriage of his daughter based on the promise of the payment of a brideprice, but if the husband dies before making these payments his lineage will have no legal claim to the children of the marriage.

It is very common to bring up children that are not own children, even though outside support is generally lacking or very limited. Only the majority of double foster-children, with both parents living elsewhere, received support from one or both parents. In general, respondents said that support is only given during funerals (often according to fixed tariffs) and calamities such as fire, a practice called *nzengo*. The concept that children belong to and are reared by the larger extended family still appears to be very important.

Reasons for fostering were only sketchily addressed in our study. Work predominantly from West Africa has shown the great variety of reasons for fostering (Isiugo-Abanihe 1985;

Bledsoe et al. 1988; Renne 1993; Castle 1995). These include marital dissolution, learning a trade or skill, assistance with household tasks, education, support during weaning, and desire for a child in the case of fertility problems. Several studies have shown adverse nutritional consequences of fostering (Oni 1995; Castle 1995), but there was generally considerable variation in health status among fostered children, which can partly be explained by differences in the reasons for fostering (Castle 1995). Children 'pulled' to another household, for example desired by an infertile woman, may be better off than children 'pushed' to another household, for example because of marital instability. Obviously orphans mostly belong to the latter category, and are thus more vulnerable. In the Kisesa study marital instability appears to be an important reason for children not being with their parents.

About one in seven households had orphans. The orphans appear to be added on to a household with children, making the households larger and the dependency ratio less favourable. Even though the economic status did not differ according to economic index, this may make these households more vulnerable. Furthermore, orphan households were much more likely to be headed by women, which may further increase their vulnerability. Further research in Kisesa is investigating the causes and consequences of women-headed households.

Mortality risks did not differ between orphans, foster-children and children living with their parents, but numbers were small for orphans: an increase in mortality at 1-4 years due to vertical transmission of HIV was anticipated but could not be observed. Also in Uganda mortality rates among orphans and other children were similar after excluding HIV-negative children (Kamali et al. 1996).

With regard to schooling, enrolment of boys and girls appeared to be lower among orphans and foster-children than among children living with both parents. School dropout rates were higher for boys, but not for girls. Orphans and foster-children were much more mobile than other children. This is perhaps not surprising, but still is important as it may increase the vulnerability of such children, while at the same time they are much harder to reach than non-mobile children. It is notable that no differences were found between boys and girls in schooling, mortality, use of health services, mobility or other indicators, in contrast with the results of some studies in West Africa (Bledsoe et al. 1988; Oni 1995; Castle 1995).

Discussions about the possible consequences of the millions of orphans in Africa can benefit from a careful consideration of the historical and socio-cultural context. This study indicates that the orphanhood problem in the era of AIDS needs to be considered in the context of previous high adult mortality, child fostering practices and poverty. Adult mortality rates and fertility are likely to have been high in the past and orphans have been a common consequence. The increased mortality due to the AIDS epidemic will now lead to a rapid increase in the numbers of orphans but occur in a context of well-established traditional coping mechanisms. Our study does not show major disadvantages for orphans and is in agreement with reports from Zimbabwe (Foster et al. 1995) and Uganda (Kamali et al. 1996). In all studies the extended family system appears to be able to absorb and care for the orphans with minor adaptations, such as more involvement of the maternal side of the family in a patrilineal system.

One of the main reasons for the relatively smooth absorption of large numbers of orphans by the extended families is the practice of child fostering. About one in three children in the Kisesa population did not live with at least one of their biological parents; 47.5 per cent of households had at least one foster-child or orphan (58% of all households with children). In such a society an orphan child is likely to be less special than in a context where virtually all children live with their biological parents. Almost five times more foster-children than orphans were brought up by grandparents. Schooling rates among older orphans were lower than among children living with their parents but not lower than among foster-children. A significant proportion of orphans were already not living with the deceased parent before the

death of the parent: the consequences of such parental deaths may be limited for the child. The Kisesa data however showed that chances of receiving some external support were lower for orphans than for foster-children.

The orphan problem also needs to be considered in the context of poverty. High dependency ratio and low income were common in many households. Households with orphans may be worse off than other households, but in support programs it will be difficult to focus on all households with orphans (apart from the large number of such households), because a larger number of children in other households will be worse off. For example, in Kisesa of the 3253 children living in households classified as very poor by our economic index only ten per cent were orphans, 37 per cent were foster-children and 53 per cent were children living in the same household as both parents.

Therefore, even though a considerable increase in orphans can be anticipated during the next decade, it is not probable that this population will have to develop radically different coping mechanisms, particularly in most rural areas where peak HIV prevalence among adults remains below ten per cent. The challenge, and probably the only feasible intervention, is to develop community-based support systems which focus on the most vulnerable households and extended families, using only limited external support.

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