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**Social and Economic Risk Factors
for
HIV/AIDS-Affected Families in
Zambia**

(Some Research Findings)

by

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Abstract

Zambia is among the countries in sub-Saharan Africa most seriously affected by the HIV/AIDS pandemic. An estimated 40,000-90,000 AIDS-related deaths would have occurred by the end of 2000. At the beginning of the epidemic in the mid-80s and early 90s, the majority of AIDS-related deaths in the adult population occurred among men in the age group 20- 45 years. A period when they were at their most productive. Loss of the breadwinners had an immense economic and financial impact on widows, their children and other dependants from the extended family. This study of the economic impact of the AIDS pandemic at household level in Zambia investigated risk and protective factors in rural and urban communities associated with the impact of premature death of the breadwinner on the livelihood of their surviving spouses, dependent children, as well as wider circle of their extended family. Retrospective data were collected from households in which one or both parents died from AIDS between 1991 and 1995. Structured interviews were conducted with 223 urban and 101 rural families in low-income neighborhoods. In the urban sample, family displacement from original home which had been provided through the job of the breadwinner, was highly predictive of a shift for the surviving family to poorer housing with most families losing electricity or piped water supply and experiencing food shortages. In the rural sample, the loss of adult labor forced families to withdraw older children from school to help maintain current levels of food production. Educational continuity was most severely jeopardized in the urban sample for children of low-income families and girls. In both urban and rural zones, age was the principal factor predictive of nutritional and health status in AIDS-affected families, with younger children the most vulnerable. Implications are discussed for the design of services to reach children and families with the greatest needs. Intervention strategies should be carefully adjusted to respond to the rural and urban differences and to the ecological, social and economic conditions of each community.

Key words: HIV/AIDS-affected families, risk factors, protective factors, breadwinner.

Introduction

AIDS has killed more than 16 million people since the disease was first recognized in 1981. Furthermore, an estimated 5.6 million adults and children became infected with the virus in 1999, bringing the current worldwide total to an estimated 50 million (UNAIDS, 1999). The global and ecological catastrophe of this pandemic has given rise to personal tragedies for many individuals and families facing prolonged illness and premature deaths.

The epidemiology of HIV/AIDS in Zambia

Epidemiological data on HIV/AIDS in Zambia has been collected since the early 90s using a Sentinel Surveillance System (SSS) established in 1989. The SSS uses a method of unlinked, anonymous testing on pregnant women attending antenatal clinics, outpatients attending sexually transmitted disease clinics, and blood donors. Data from the SSS showed wide variations in HIV infection rates within the country, ranging from 8% to 32% (in the age group 15-39) at different sites. An epidemiological model developed by WHO utilizing data from the SSS projected that in the year 2000 the total number of HIV infected adults in the whole country is between 600,000 and 700,000, i.e., between 14.4% and 16.5% of the adult population. (Fylkenes et al, 1993).

Social and economic consequences of the AIDS pandemic

Research in Sub-Saharan Africa has documented severe economic consequences of the AIDS pandemic at the household level, showing that adults with HIV/AIDS severely compromise household/family resources, as their functional capacity to work and earn a living for their families is reduced, and their illness generates new financial demands to cover medical treatment, and funeral expenses, threatening food supply, health care and education for surviving members of the family.

One of the striking features of the economic impact of AIDS on affected families in Zambia is the rapid transition from relative wealth to relative poverty. Haworth's (1991) survey of AIDS-affected families found that the shift into poverty was most visible in families in which

the deceased father was both bread winner and tenant of a house provided through his job. Many such families were forced to move after the death of the father with a majority of those families reporting economic difficulties.

In addition, customary laws may exacerbate the economic and financial vulnerability of AIDS affected families. In Zambia, as is true of some other parts of Africa, when productive family members die, the survivors face innumerable disadvantages. For example, if a father dies first, the tradition of inheritance might deny the mother's and children's right to occupy the premises that they lived in before his death. This family displacement and loss of income may lead to a steady decline of family resources and progression into poverty for the survivors. If both parents die, the children might be taken in by the extended family.

One of the effects of sudden poverty cited by affected families was the impact on schooling. Although education is supposed to be free in Zambia, expenses such as school uniforms, books, and transport money are borne by the parents. Children in HIV/AIDS affected families in the wake of the family's transition into poverty often experienced discontinuity of school enrolment, due to a combination of resource constraints intensified by medical and funeral expenses, demands for participation in home care for ailing family members, in subsistence farming, and reluctance of substitute caregivers to invest in the children's schooling.

Objectives of the study

The present research represents one of the first systematic attempts to quantify the scale and type of socio-economic problems faced by AIDS-affected families and their children in individual families/households in Zambia. It examines the economic, educational, health, nutritional outcomes for AIDS affected families when one or both breadwinners for those families dies, the immediate risks they face, and mitigating factors, with a view to deriving policy implications for governments and agencies interested in providing services to AIDS-affected families and their children.

Theoretical conceptual framework

A theoretical conceptual framework was constructed to guide the design of this

exploratory investigation, with a view to identifying predictors that might vary across outcomes. It is hoped that the results will in turn inform the refinement and elaboration of the framework as a basis for more tightly structured research designs in future research. The logic of the framework traces the immediate problems faced by surviving family members upon the death of one or both parents from AIDS and formed the basis upon which objectives, research questions and variables were defined (see Fig.1).

The framework postulates that when families encounter premature parental death the most immediate risk factors in their lives associated with that event are as follows: a strong probability that the family will be displaced from their original home(s)/shelter; these families will transition into poverty if one or both of the deceased parents was the breadwinner for the family; and children will be dispersed to different homes within the extended family networks.

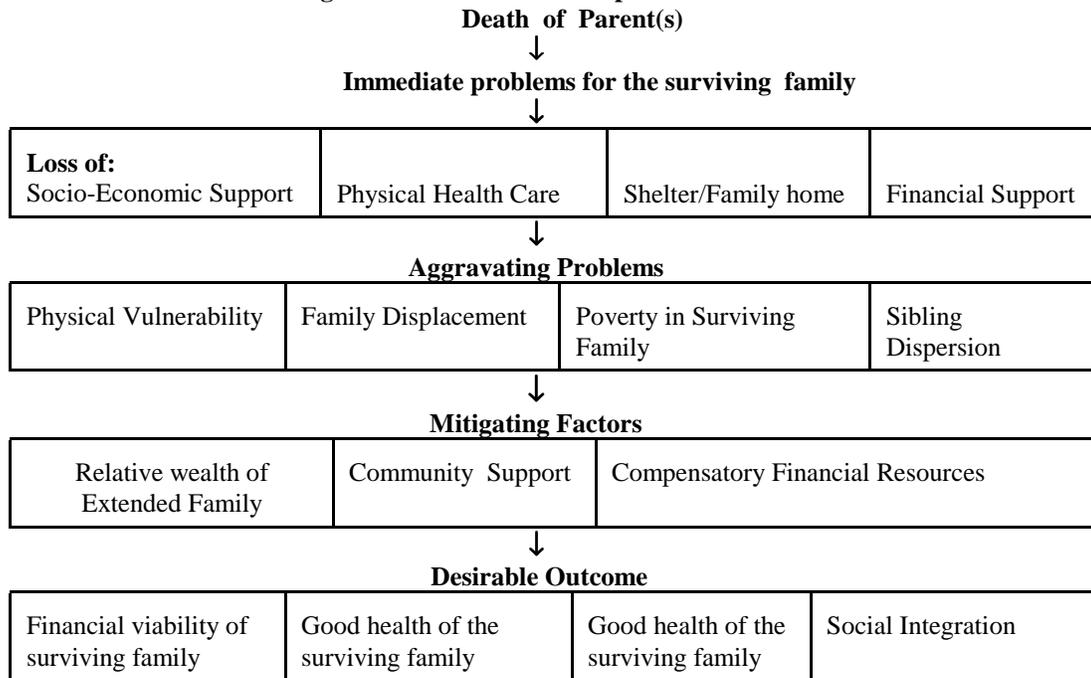
All of these risk factors, on their own or together, tend to increase the economic, social, physical vulnerability of these families. The framework also postulates mitigating factors that might reduce the adverse effects. These mitigating factors include relative wealth and financial viability of the AIDS affected family and their extended family network. i.e., those families with a working surviving parent (who lose only one bread winner) are better off financially and will be protected by greater availability of food, shelter, and funds to pay for their children's health care and education. Other potential mitigating factors postulated are community support and availability of compensatory financial/material resources. In this preliminary study, not all the variables postulated in the conceptual framework were included in the survey due to considerations of feasibility, practicality and time constraints.

Research Question

The present investigation was designed to address, in each of the two ecological settings, the following specific research question: What is the effect of the following independent variables on the economic, educational, health, and nutritional outcomes for HIV/AIDS-affected families and their children: socioeconomic status of the family, family displacement, age, gender, health status of the head of household, and family size. Specific hypotheses were formulated to guide statistical analysis, regarding risk and protective factors that might affect the economic viability of the HIV/AIDS-affected family, the prospects of educational continuity for the

orphaned children, and their health and nutritional status. These will be discussed in the results section below.

Figure 1: Theoretical Conceptual Framework



METHOD

The research design was a five year retrospective study of AIDS-affected families. Structured interviews were conducted in a sample of 232 urban and 101 rural AIDS affected families. AIDS-affected families, were defined as those in which one or both parents and/or major breadwinner died due to AIDS in the 5 year period from January 1991 to December 1995.

The rural sample was drawn from the Chikankata area of Southern Province which is inhabited by the Tonga tribe. The Tonga, whose traditional kinship system is matrilineal, live in village clusters called "homesteads", with a headman, or head of the homestead, who may have more than one wife. The urban sample in the capital city of Lusaka comprised a more heterogeneous population emanating from several different tribes, provinces, and rural areas, but all residing in low-income peri-urban settlements. While there is some variation within them, both the rural area and all of the urban areas sampled comprise primarily low-income residential

communities.

A purposive sampling of AIDS-affected families was conducted in the city with the cooperation of Non Governmental Organizations (NGOs) involved in the provision of services to HIV/AIDS - affected families, and in the rural area with the cooperation of the Community AIDS Management and Counseling Team based at a mission hospital. The urban sample of families was drawn from seven peri-urban residential areas of Lusaka (Chawama, Chilenje South, Kabanana, Matero, Mandevu, Marrapodi, and Mutendere) which are served by the University Teaching Hospital (UTH). The rural population sample was drawn from villages in Mazabuka District within the catchment area served by Chikankata Salvation Army Mission Hospital (CSAMH). Biological lineage as well as social and economic dependency were used to define family and/or household membership.

Structured interviews were conducted in selected families by trained interviewers. The section on outcomes was confined to the adults and children found at each dwelling complex. Information was also collected at the site regarding the location and survival of any other children from the same AIDS affected families not currently resident in that particular dwelling in order to document family fragmentation and/or child dispersion. Household demographic information collected included household level of income, material resources, gender, age, and level of education of all the adults and children living in that household; the identity and age of the substitute primary caregiver; date when the parent(s) died; and whether this was the family's original home.

Variables and their Measurements

Outcome (dependent variables)

Four dependent variables were measured: a) **Economic outcomes** for the HIV/AIDS-affected families and their children - indexed by relative change in the financial and economic status of the affected families and family displacement from original home; b) **Educational outcomes** for the children-indexed by whether they dropped out of school or continued school after their parent(s) died; c) **Health outcomes** - indexed by caregiver reports of the perceived health status

of orphans during the last two weeks and past one year, as well as the orphans' service utilization patterns reported by care giving families; d) **Nutritional status** of children under five years of age in AIDS-affected families, indexed by Weight For Age (WFA) and Mid-Upper- Arm-Circumference (MUAC) measurements made by the research team during interview visits.

Explanatory (Independent) Variables

Socio-economic Status (SES) of the HIV/AIDS-affected Family

Proxy measures were used to determine the socio-economic status of the caregiving families. Two different scales were designed, one for the rural and one for the urban site. The categories used to define these scales of socioeconomic status are as follows:

Socio-economic Status of the HIV/AIDS-affected family (Urban Sample)

- 1 = Owner-occupier of large modern house/commercial farm, private car, professional salary/substantial business
- 2 = Para-professional/white collar income and/or small business, secure tenancy rented accommodation
- 3 = Blue-collar or casual labor, informal sector economic activity with housing in self-help settlement schemes.
- 4 = Households selling small quantities of vegetables, fish, eggs, chickens, bread and scones at the market or by their houses.
- 5 = Families having difficulties feeding themselves

Socio-economic Status of the HIV/AIDS-affected Family (Rural Sample)

- 1 = Subsistence farmers with surplus for sale (owns a large herd of cattle and/or small livestock)
- 2 = Para-professionals/those in formal employment
- 3 = Farmers with sufficient food for own consumption but none for sale
- 4 = Peasant farmers with enough food to last until the next rain season
- 5 = Peasant farmers and/or households with insufficient food to last until the next rain season.

Scores on these scales were assigned based on consensus between the two interviewers immediately following each home visit.

RESULTS

The results of the study are presented in two sections. The first section is a descriptive overview of the sample population surveyed, with respect to socioeconomic status of the family, family displacement, and schooling status of children in AIDS affected families. This is followed by multivariate analysis of how those characteristics were related to *economic, educational, nutritional, and health* outcomes for the affected families and their children.

Relative change in the Socioeconomic status of HIV/AIDS- affected families.

In the urban sample, 70% of deaths reported in AIDS affected families were paternal, the majority of those were also the major breadwinners for those families as well as having been tenants of job related housing (see Table 1). These families were more likely to suffer economically than those households in which mothers died first. A review of the financial status of 60 families revealed a common pattern in which there was a considerable drop in the income level and/or family assets following the death of the father. The magnitude of this drop was dramatic, constituting a reduction of monthly disposable income by more than 80% for more than two thirds of the families, and apparently rapid, such that the relative poverty profile of families within 6 months of the death of the bread-winner was very similar to that of families bereaved of their breadwinner as much as 4 years ago.

Family Displacement

In the urban sample, the majority of HIV/AIDS-affected families (approximately 61%) had moved from their original home (which was provided by the deceased parents' employers) to cheaper housing on the outskirts of Lusaka. Most of them had also moved from relatively wealthy neighborhoods with good schools, electricity and piped water supply to poorer site and service housing/compounds, sometimes without electricity and/or piped water. Thus, of the 141 households who had moved 31 (approximately 22%) had lost electricity when they moved; 55 (approximately 39%) of the households had lost piped water in their homes, i.e., they had to draw water from the shared stand pipes outside their houses. Some families didn't have to move, either because their breadwinner (usually a father) was still alive, and/or the family had built/bought their own home before the breadwinner died. Of the 22 families who didn't move, 11 were now living in 2 rooms and renting out the rest of their rooms to earn some income. This resulted in crowding as many as five children into one room.

Although family displacement was not a major issue in the rural sample since most of the families stayed in their original home steads, labor loss was a critical issue. Most of the deceased fathers were subsistence farmers, such that upon their death, the food security of their surviving families became threatened particularly since most of the heads of households were elderly

maternal grandparents who lacked the energy or the resources to grow more food. Thus, 35% of the caregivers/heads of households were in category 5 of the SES scale i.e., those families with insufficient food to last until the next rain season.

Educational continuity

Two thirds of the children aged 6-15 were currently enrolled in school in both the urban and rural samples, with the proportion of boys (70-71%) slightly higher than of girls (67-68%). Most of the school age children not enrolled in the rural sample had never been enrolled, whereas in the urban sample most of those out of school children had dropped out following the death of a parent. Approximately 21% of females and 17% of males in the urban sample had dropped out of school, while over 8% of the girls and 6% of the boys in the rural sample dropped out of school after parental death.

Multivariate analysis

Effect of HIV/AIDS on the educational continuity of the children

Logistical regression analyses were conducted for the urban and rural samples, respectively, in order to investigate the relationship between the probability of dropping out of school and level of poverty in the caregiving family, gender, age of the orphans, and current health status of the primary caregiver.

Results from the urban sample, indicate that socioeconomic status of the caregiving families was significantly protective. SES category 5 (i.e., the poorest families who were unable to feed themselves adequately) was the reference category, while 1 the highest SES category had a very small sample size. SES categories four, three, and two were protective (*coefficient*= -.824, *SE*=.353 *P*=.0196; *coefficient*=-1.656, *SE*=.413, *P*=.0001; *coefficient*=-1.172, *SE*=.502, *P*=.0196), respectively, with the frequency of dropping out lower for those children being taken care of in wealthier categories of households. Gender of the orphans had a marginal effect (*coefficient*=-.413, *SE*=.237, *P*=.082) in the predicted direction, with males less likely to drop

out of school than girls. For the rural sample, SES of the caregiving family had no effect on the educational outcome of the orphans. The only significant effect in the rural sample was the age of the orphans ($coefficient = -.578$, $SE = .178$, $P = .0012$), with the older orphans more likely to drop out of school than younger children. This effect was not apparent in the urban sample. Two illustrative case studies are summarized in Table 2.

Nutritional status of children/orphans (0- 5 years old) in AIDS-affected families

Internal consistency of the indices used to measure nutritional outcomes

Mid-Upper-Arm-Circumference (MUAC), widely regarded as one of the most reliable measures of protein-calorie malnutrition in early childhood (Zerfas, 1975), was adopted in the present survey as the principal index of nutritional status for children between the ages of 0-5 years. Weight for age (WFA) scores were included for verification purposes. The zero-order correlation $r = .61$ showed that MUAC and WFA were strongly correlated with each other, which serves as evidence of both validity and reliability of these measurements in our sample.

Multiple regression results indicated that **age** was a significant factor for predicting the nutritional status of the orphans in both the urban and rural samples. In both samples the coefficient for age was positive and statistically significant for the urban sample ($coefficient = .502$, $SE = .130$, $t = 3.864$, $P < .0001$), and for the rural sample ($coefficient = .503$, $SE = .114$, $t = .699$, $P < .0001$). In both cases, this relation showed that, the younger the child, the worse their nutritional status. None of the other variables examined (**SES** of the caregiving family, health status of the primary caregiver, overcrowding in caregiving households, and identity of the caregivers) had a statistically significant effect on the nutritional status of children in the urban sample.

Although number of children in caregiving households did not have any effect on the nutritional status of the under fives in the urban sample, it did have an effect in the rural sample ($coefficient = .176$, $SE = .078$, $t = 2.264$, $P = .030$) with households where there was a larger number of children/orphans showing worse nutritional status. Furthermore, in the rural sample, SES was

also marginally related to nutritional status: the poorer the household, the worse the orphans' nutritional status. However, the identity of the caregivers did not have an effect on the nutritional status of either rural or urban based children/orphans.

General health of the orphans during the past two weeks

Multiple regression analyses were conducted for the health status of the orphans in the last two weeks prior to the interview for the urban and rural samples respectively. The results from the urban sample, indicate that the SES of the caregiving family in category 2 (para-professionals) and 3 (blue-collar workers) had a significant protective effect on the health status of the orphans (*coefficient*= -.328, *SE*= .133 *t*=-2.472, *P*=.014; *coefficient*= -.250, *SE*= .101 *t*=-2.479, *P*=.013, respectively). The results for the rural sample show that age had a significant effect (*coefficient*= -4.282E-02, *SE*=.016, *t*=-2.761, *P*=.006) on the health status of the orphans, i.e. the younger the orphans the less healthy they were.

General health of the orphans in the last one year

Broadly similar results were found for the general health of the orphans in the last one year prior to the interview to those reported above for the variable of health status in the past two weeks.

DISCUSSION

Application of the conceptual framework to the empirical data set generated a number of specific hypotheses on risk and protective factors with respect to economic, educational, health, nutritional outcomes. The study revealed that some of the risk factors for AIDS-affected families and their children were different from what had been anticipated in the theoretical framework. In addition, while some of these effects were replicated across both samples, in other cases the ecological (socio-economic) context acted as a moderator, yielding different effects of independent variables on dependent variables depending on the setting (rural or urban).

For instance, in the urban sample, the socioeconomic status of the caregiving families was predictive of educational outcomes for the orphans. But age, not SES, was found to be the most critical factor for the rural based orphans; the older they were, the more likely that they would be withdrawn from school.

Nutritional status of orphans 0-5 years old was affected more by age than by the SES of the caregiving families. The expectation would have been that the poorer the caregiving families are, the more problems they would have feeding the children and, therefore, the more wasting would be found among under-fives. However, malnutrition was found among the youngest children in economically better off families as well as poorer families.

Socioeconomic status of the family

In the case of the urban sample the worst-affected families were those in which the major breadwinner was the first parent to die. These families had experienced a sharp drop in income, and in most cases had been forced to move out of their original home. A few families had been protected against the most extreme forms of economic hardship by one or more of the following factors:

- The family owned their home and rented out part of it to earn some supplementary income
- No “property grabbing” by relatives had occurred.
- The mother was educated and employed in the formal sector before and after her husband died
- The orphans were taken in by wealthier relations

Educational outcomes

Determinants of educational outcomes after parental death were different for rural and urban orphans. In the urban sample, the *socio-economic status* of the caregiving family was a significant protective factor: the frequency of dropping out of school following parental death was

much lower for orphans in economically better-off families than for orphans in poorer households. *Gender* had a marginal effect with boys less likely to drop out of school after parental death than girls, and orphans who were dispersed within the extended family upon parental death were less likely to stay in school than those kept together as one family unit.

The gender effect was anticipated from the general demographic data in the country which shows a higher school drop-out rate for girls than boys after about the fifth grade of schooling (Kelly, 1992, 1995).

The educational outcomes for orphans in the rural sample were affected by *age* of the orphans not by *socio-economic status*, or *gender*. The data indicate a higher drop-out rate for older orphans. Although this was not anticipated at the beginning of the survey, it was consistent with information gathered in the rural interviews, where some of the caregivers expressed willingness to withdraw older children from school upon parental death to help take care of their younger siblings and to work in the fields (plowing, weeding, harvesting, etc). A similar scenario was reported in studies conducted in Thailand cited in the World Bank (1997) report, where the authors found that about 13% of older school age children in families where someone was ill and dying of AIDS were withdrawn from school to help support the family.

Detailed analysis of the decision making processes shows how the various risk and protective factors influence educational continuity for orphans. Two illustrative case studies are summarized in table 2. In the rural case study, a boy's status as the oldest son of the surviving family led to a counterproductive decision to drop out of school. In the urban case study, proactive intervention by a service agency protected the oldest surviving girl from dropping out of school, so that she was eventually able to perform a more effective role in providing for the care of her younger siblings.

Table 2 : Impact of AIDS on educational continuity : Case studies.**Case 1: a rural based orphan**

In the rural survey we learned about a young man, aged 18, whose parents had died in quick succession leaving him, two younger brothers and a grandmother (over 75 years old), too old to plow her fields or look after their livestock. She was also housed in a one room thatched hut.

In addition, the children's uncle had taken possession of the house that their parents left. Thus, this young man had the added responsibility of building a permanent dwelling for his grandmother and younger siblings. He had therefore decided in these circumstances to drop out of his final year at high school. Yet, one more year of schooling might have enabled this young man to secure a much higher earning power to support his dependents

Case 2: an urban based orphan

In the urban survey we learned of a young woman, aged 18 at the time of her parents' death.. Like the rural based orphan described above, she was in the last year of her high school when her parents died leaving her as the oldest with 5 younger siblings.

*The children were forced to vacate the house they were living in because it was their deceased father's company house. Luckily for these children, one of the Non-Governmental Organizations (**Children In Distress-CINDI**) working in their area helped them find a temporary home and paid for their oldest sibling to complete her high school, paid for her training in computer programming and gave her a job at their headquarters three years later.*

Thus, this orphaned adolescent, unlike her counterpart in the rural setting, was enabled to look after her younger siblings and keep them in school.

Health and nutritional outcomes

The impact of HIV/AIDS on the health status of *infected* adults and children and the resulting reduced life expectancy due to AIDS related deaths is the most obvious health outcome and has received the most attention worldwide since the epidemic broke out in the early 80s.

Measuring and predicting the impact of AIDS on the health status of *uninfected* but AIDS-affected family members is much more difficult, not only because of lack of quality data on this category of families and their children, but also because the relative severity of the effect of AIDS on health depends on many other factors, including the success of the health care system in addressing health problems affecting the whole population especially children, such as malnutrition, diarrhea and infectious diseases such as measles, whooping cough, and malaria.

The data regarding the health status of children during the past two weeks prior to the interview indicate that in the urban sample, as predicted, availability of at least sufficient wealth to guarantee basic nutrition is protective. However, within the rural sample the age of the orphans had an effect on their health status, whereas, socioeconomic status of the caregiving family did not have any effect. Moreover, for the general health status of the children during the past one year prior to the interview, age was significantly predictive in the rural sample and marginally so in the urban sample, whereas SES had no significant effect. Data collected on the other health indicators, such as the number of times the children were taken to the hospital, number of times they were hospitalized, and number of times they saw a doctor yielded no statistically significant correlations. The conclusion was that reports on these variables may reflect more the health seeking behavior of the caregivers than the true health status of the children. Clinical and/or hospital records would have yielded a clearer picture.

When interpreting the significance of age as a predictor of the health status among children, it is important to acknowledge that the effect may not be specific to the HIV/AIDS affected population. Attendance at under-five clinics in Zambia is reported by the Central Statistics Office (CSO) to be quite high especially in urban clinics. Indeed, a report on the "Social dimensions of adjustment," CSO (1993) indicated that the main concentration of persons who visited health centers was in the age groups 0- 4 and 50 years and above.

The starting hypothesis, that the nutritional status of orphans would be negatively related

to SES, was based on the expectation that poorer families would experience a drop in food consumption upon the death of the family's bread winner. This, in turn, was expected to result in an increase in malnutrition among children in those households. In addition, it was anticipated that this segment of the sample population of children would likely be malnourished or at risk of wasting even before the death of their parent(s) due to the incapacitating nature of the disease especially during the period of parent's transition from HIV+ to full blown AIDS. This expectation was in line with the CSO (1993) report which indicated that malnutrition in Zambia was associated with total household income, with higher rates of underweight and stunting found in lower income categories than in higher income brackets. However, the report also indicated that when it came to wasting, all socio-economic groups were affected.

Contrary to the initial expectation that SES would have a larger effect on the nutritional status of the AIDS affected children, however, the results showed that age was a significant factor regardless of the SES of the caregiving family/household. Wasting among the younger orphans in better-off families was found at the same rate as in children in poorer households. A World Bank (1997) study of the impact of AIDS in Kagera District of Tanzania reported similar results, i.e., children in better-off households were stunted at almost the same rate as those in poorer households.

Policy implications

The various risk and protective factors identified in this study are relevant to the design of policies and services to mitigate the impact of AIDS on the various outcomes reviewed above for AIDS-affected families and their children. In the case of educational discontinuity, the difference between the two case studies presented in Table 2 demonstrates the potential for strategic intervention to make a dramatic difference, enabling a family's prior investment in secondary education to yield a significant economic return. Different approaches may be required to help rural and urban based orphans to remain in school. Selective exemption or subsidy of school fees

may be an appropriate and effective strategy in urban areas that deserves priority consideration in program development. In rural communities, a more effective strategy may be to assist affected families to cope with their labor loss so that they are able to keep older orphans in school after parental death. One such coping mechanism that has been utilized in rural communities throughout Zambia's history is communal labor sharing, where the villagers form teams to help the neediest families plow and harvest fields. Traditionally, the family assisted provides food and refreshment to the men and women who come to help, a practice that could be subsidized by service agencies.

For the health and nutritional outcomes, since age seems to be a critical factor, special efforts are indicated to protect young children. The World Health Organization (WHO) has distinguished various targeting strategies for protecting the health of vulnerable populations. “Direct targeting” involves exempting low-income populations from paying user charges in order to ensure that they have access to health care, whereas in “characteristic targeting”, exemptions or subsidies are offered to people with certain attributes regardless of income levels, such as infants or elderly or people with certain illnesses such as TB or HIV/AIDS. In the case of HIV/AIDS affected families, and based on the results of this study, “characteristic targeting” appears to be the more appropriate policy option.

The finding that children who have lost one or both parents due to AIDS are at risk of wasting regardless of their SES, suggests that the decline in the nutritional status of children after the parent/primary caregiver dies is due to factors additional to, and/or unrelated to, the socio-economic status of the family. In HIV/AIDS affected families relevant factors include bereavement and psychological depression in the surviving parent/caregiver which tends to incapacitate them in child rearing, and to impair their ability to work, obtain food, and provide adequate meals to their children. Under such circumstances, the probability of younger orphans becoming wasted is higher because they are more vulnerable than older orphans, who in most

cases will be able to access some food from the families of friends and neighbors.

A proactive method of targeting this group would be to expand the service protocol for patients receiving treatment for AIDS. In the expanded protocol, patients who are parents of young children would qualify for a home visit to identify the most vulnerable or at risk children, followed by nutritional surveillance and provision of supplemental feeding where necessary and/or social and economic support to caregivers to enable them to provide adequately for the children.

Household level studies on HIV/AIDS affected families, and life outcomes for HIV/AIDS orphaned children are very limited not only in Zambia but in most parts of sub-Saharan Africa. Further research is needed to verify whether the impact of AIDS is differentiated depending on whether the families are rural or urban based. Moreover, rural populations vary greatly in their ecological, economic, social and service access characteristics even within Zambia. Hence, the need for further studies that investigate the situation in rural areas in different parts of the country, as well as community needs assessment studies to guide the delivery of services.

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