

Transactional Sex Amongst AIDS-Orphaned and AIDS-Affected Adolescents Predicted by Abuse and Extreme Poverty

Lucie Cluver, PhD,*† Mark Orkin, PhD,‡ Mark Boyes, PhD,* Frances Gardner, PhD,* and Franziska Meinck, MSc*

Objectives: Little is known about impacts of familial AIDS on abuse and sexual health outcomes amongst adolescents. Objectives were to determine whether familial AIDS is: (1) associated with severe physical, emotional, and sexual abuse; (2) associated with transactional sexual exploitation; and (3) explore whether relationships between familial AIDS and transactional sex are mediated by extreme poverty and abuse.

Design: Adolescent self-report study in deprived South African communities.

Methods: A 2009 follow-up of a 2005 study achieved 71% retention (n = 723). The 2009 sample included AIDS-orphaned (n = 236), other-orphaned (n = 231), and non-orphaned (n = 220) adolescents, whose primary caregivers were AIDS sick (n = 109), other sick (n = 147), and healthy (n = 220). Abuse and transactional sex were measured using widely used and validated self-report measures.

Results: AIDS orphanhood and parental AIDS sickness predicted emotional and physical abuse and transactional sexual exploitation. Orphanhood or parental sickness by non-AIDS causes, and having healthy caregivers, did not predict any abuse outcomes. Adolescents “dually” affected by AIDS orphanhood and sickness showed a 3-fold likelihood of severe emotional and physical abuse and, amongst girls, a 6-fold likelihood of transactional sexual exploitation, compared with those in healthy families. Heightened risk of transactional sex amongst adolescents in AIDS-affected families was mediated by

extreme poverty and abuse exposure. In combination, the effects of familial AIDS, food insecurity, and exposure to abuse raised prevalence of transactional sex amongst girls from 1% to 57%.

Conclusions: Adolescents from AIDS-affected families are highly vulnerable to severe physical and emotional abuse and transactional sex. This has implications for policy and programming in child protection and HIV prevention services.

Key Words: emotional abuse, family, orphan, physical abuse, sexual abuse, transactional sex

(*J Acquir Immune Defic Syndr* 2011;58:336–343)

“I was getting abused by my aunt. She was insulting me. She said my mother died of HIV and I will also die of HIV, even that child that I will get will die of HIV. She always beat me and shouted at me.” Girl 13.

INTRODUCTION

By 2010, the HIV/AIDS epidemic had orphaned 16 million children, with 1.9 million in South Africa alone.¹ Many more children live with surviving but AIDS-sick parents or carers, although no population estimates are available for this group. Qualitative research suggests that adolescents in AIDS-affected families may be at risk for abuse and exploitation,² but no known studies have empirically tested potential links between AIDS orphanhood, parental AIDS sickness, and risks of abuse and transactional sexual exploitation. Furthermore, no research to date has allowed for distinctions to be made between orphanhood by AIDS and non-AIDS causes, or between caregiver AIDS-related and other sickness.

Abuse and transactional sexual exploitation in adolescence has severe detrimental health impacts, both immediately and in the long term. Conclusive international evidence of effects of abuse shows heightened depression, suicidality and posttraumatic stress lasting into adulthood, and long-term negative physical health effects.³ Early abuse can increase likelihood of later intimate partner violence and HIV infection.⁴

Additionally, transactional sexual exploitation is an important driver of HIV infection amongst young people in sub-Saharan Africa⁵ due to age and power differentials

Received for publication March 17, 2011; accepted July 19, 2011.

From the *Department of Social Policy and Intervention, Centre for Evidence-Based Intervention, University of Oxford, United Kingdom; †Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, South Africa; and ‡School of Public and Development Management, University of Witwatersrand, Witwatersrand, South Africa.

Supported by grants from the Nuffield Foundation and the Economic and Social Research Council.

Presented in part to UNICEF, September 2010, Pretoria, South Africa; to the National Action Committee for Children Affected by AIDS (NACCA), October 2010, Pretoria, South Africa; to the Southern African Development Community Regional Psychosocial Support Forum, May 2011, Johannesburg, South Africa.

The authors have no conflicts of interest to disclose.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal’s Web site (www.jaids.com).

Correspondence to: Dr Lucie Cluver, PhD, Department of Social Policy and Intervention, Centre for Evidence-Based Intervention, Oxford University, 32 Wellington Square, Oxford, OX1 2ER (e-mail: lucie.cluver@spi.ox.ac.uk).

Copyright © 2011 by Lippincott Williams & Wilkins

between partners and reduced capacity to negotiate condom use.⁶ Youth aged between 15 and 24 have been shown to be at highest risk.⁷ Many qualitative studies suggest that transactional sex is a normative practice of courting, dating, and partying amongst youth,^{8–12} albeit rooted in economic and gender inequalities,¹³ peer pressure for material consumption,⁶ and sometimes pressing economic need.^{14–16} Quantitative research on correlates of transactional sex has been very limited. In South Africa, transactional sex amongst pregnant clinic-attending women is associated with intimate partner violence, substance abuse, and substandard housing¹⁶; and amongst young rural men is associated with intimate partner violence and childhood exposure to abuse.¹⁷ Thus the evidence suggests 3 potential models (which are not mutually exclusive) to explain any increased transactional sex amongst adolescents in AIDS-affected families: (1) a “normative model”, in which transactional sex is representative of generalized higher levels of sexual risk behavior amongst vulnerable groups; (2) an “abuse model”, in which transactional sex is predicted by exposure to abuse; and (3) an “extreme poverty model”, in which transactional sex is predicted by extreme poverty (food insecurity/hunger). In this already high-deprivation context, extreme poverty was defined as food insecurity/hunger, to distinguish survival needs from desire for material possessions.

This study aimed to address 3 major gaps in the research literature. First, it sought to investigate whether AIDS orphanhood (compared with other orphanhood and non-orphanhood) and caregiver AIDS sickness (compared with caregiver other sickness and healthy parents) predicted emotional, physical and sexual abuse, and transactional sexual exploitation. Second, it sought to identify whether exposure to familial AIDS had a cumulative effect; that is, whether being simultaneously AIDS orphaned and having an AIDS-sick caregiver resulted in greater risk of abuse and transactional sex than each individually. Finally, it assessed the 3 models of relationships between familial HIV/AIDS and transactional sexual exploitation defined above.

METHODS

Participants

One thousand twenty-five participants were originally recruited in 2005. Locations encompassed all of the Xhosa-speaking periurban settlements around Cape Town, locally called the “Cape Flats” and spanning 1470km². Within these settlements, participants were recruited from 18 community organizations, 9 randomly selected schools, and household door-to-door sampling in each settlement, with additional purposive sampling of street children and child-headed households. One participant per household was selected. Non-orphaned controls were matched by age, gender, and were either the next child in school or nongovernmental organization register, or neighbouring children. Longitudinal follow-up after 4 years achieved retention of 723 children (71%, 269 AIDS orphaned, 228 other orphaned, and 180 non-orphaned). For 46 children, cause of parental death was unclear, and these were excluded from analyses. There were 436 children who reported living with a healthy caregiver, 103 children with an AIDS-sick caregiver, and 146 children with an “other-sick” caregiver. For 38

children, caregiver sickness status was unclear, and these cases were excluded from analyses. In 2009, due to high mobility of children, participants were interviewed in Western Cape, Eastern Cape, Gauteng, and Free State provinces, and interviews in prison (n = 4), and youth living on the streets (n = 10). The UN definition of orphanhood was used—that is, loss of 1 or both parents,¹⁸ and “primary caregivers” were defined by youth as “the person who you live with and who looks after you most”. Proportions of primary caregivers who were biological parents were 80% amongst non-orphaned adolescents, 51% amongst other-orphaned adolescents, and 38% amongst AIDS-orphaned adolescents.

Procedure

Ethical protocols were approved in 2005 and 2009 by Oxford University, the University of Cape Town, and the Western Cape Education Department. Voluntary informed consent was obtained from all participants and their caregivers, with a response rate of 99.7% in 2005 and 98.3% of those traced in 2009. For youth in child-headed households, living on the streets or in prison, caregiver consent was obtained from an adult guardian or social worker. With interviewers, participants completed anonymous self-report questionnaires lasting 40–60 minutes. All interviewers were isiXhosa-speaking social workers or community workers, trained in working with AIDS-affected youth. Participants received refreshments and certificates. Confidentiality was maintained, except where participants were at risk of significant harm or requested assistance. Where participants reported ongoing abuse, rape, or risk of significant harm, immediate referrals were made to child protection services. Where prior abuse or rape was no longer occurring, referrals were made to support and counselling services and to HIV/AIDS testing and treatment services where appropriate.

Determining Cause of Parental Death and Caregiver Sickness

In South Africa, death certificates are unreliable regarding HIV/AIDS, and clinical data is rarely available. Cause of parental mortality was therefore determined using the “Verbal Autopsy” technique based on child reported symptoms, validated in previous studies of adult mortality in South Africa (sensitivity; 89%, specificity; 93%, positive predictive value; 76%¹⁹). Determination of AIDS-related mortality required a conservative lower threshold of 3 AIDS-defining illnesses; for example, Kaposi sarcoma or shingles. Where diagnoses were unclear, symptoms were reviewed independently by 2 medical practitioners. Where possible, youth reports were corroborated by teachers and surviving parents. Where cause of death was unclear (eg, “bewitchment” and tuberculosis with no other AIDS-related symptoms) cases were excluded from analyses (n = 81 in 2005, n = 46 in 2009).

For caregiver morbidity, self-reported current HIV status is also unreliable. South Africa has low HIV-testing rates (8% in the past year²⁰), and most people and their families are unaware of their current HIV status. Consequently, caregiver AIDS sickness was determined using a similar symptom checklist and procedures as the verbal autopsy,

again using child report. Where cause of sickness was unclear (such as cervical cancer which may or may not have been AIDS related), cases were excluded from analysis ($n = 54$ in 2005, $n = 38$ in 2009).

Measures

Sociodemographic items were selected based on systematic reviews suggesting potential differences in exposure to abuse or transactional sex by child age, gender, household size, and socioeconomic status (represented by formal/informal housing).²¹ Emotional abuse and physical abuse were measured using UNICEF scales designed for use in sub-Saharan Africa with orphaned and vulnerable children.²² “Severe emotional abuse” used a conservative cut-off of weekly or more frequent exposure to verbal abuse, threats to evict youth from home, or invoking evil spirits against youth (eg, “In the past year, how often did your carer/s say they would call ghosts or evil spirits or harmful people to hurt you?”). “Severe physical abuse” used a conservative cut-off of weekly or more frequent beating with an object or deliberate harm (eg, “In the past year, how often did your carer/s use a stick, belt, or other hard item to hit you?”). Sexual abuse was measured as unwanted contact with “private parts” of the adolescent or abusing adult (eg, “There are inappropriate ways to touch Buntu and Lindiwe. Has anyone ever made you do anything with your private parts or their private parts that you did not want to do?”). All items were pilot tested with South African social workers and with the study’s Teen Advisory Group of 14 AIDS-affected adolescents.

Transactional sexual exploitation was measured using 10 items from the “National Survey of HIV and Risk Behaviour amongst Young South Africans”²³ (eg, “Have you had any of these given to you because you had sex with someone? food/money/better marks at school/school fees”). If any of these were received in return for sex, participants were recorded as experiencing transactional sex, although it should be noted that this only detected adolescents who “received” in return for sex, rather than those who “purchased” sex.²⁴ Other sexual risk behavior was measured using 12 sexual risk items from this survey and 2 from the South African Demographic and Health Survey^{23,25} including past year casual partners (a casual partner like a one-night stand), condom use (how often did you use condoms in the past year? Always/more than half the time/half the time/less than half the time/never), age of sexual initiation, number of past-year sexual partners, and sex while using alcohol or substances (eg, “have you ever had sex when you were high on a drug like tik, dagga or anything else?”). Extreme poverty was measured using two items from the South African National Food Consumption Survey²⁶ (eg, “how many days in the last week did you not have enough food in your home?”). Questionnaire design was assisted by the Teen Advisory Group. During weekend camps, adolescents advised on item acceptability, interviewing methods, and questionnaire layout (which was in the style of a teen magazine).

Analysis Strategy

Analyses were conducted in 4 stages. First, t tests and χ^2 tests were conducted to identify any gender differences. Second, relationships between familial AIDS and physical, emotional, and sexual abuse were examined in a series of multivariate logistic

regressions. Severe physical, emotional, and sexual abuse were entered as respective outcome variables. Dummy variables representing AIDS orphanhood or other orphanhood (with the reference category of “non-orphaned”) and having an AIDS-sick caregiver or other-sick caregiver (with the reference category of healthy caregiver), were entered as independent variables in each model, controlling for sociodemographic cofactors (age, gender, household composition and formal/informal housing). To determine whether there were any cumulative effects of increasing exposure to familial AIDS with regard to abuse outcomes, a dummy variable representing “dual affected” children (ie, being both AIDS orphaned and having an AIDS-sick caregiver) was then entered into the models. To avoid multicollinearity, dummy variables for “AIDS orphaned only” and “other orphaned only” were used. Additionally, cross-tabulation and χ^2 tests of AIDS-orphaned, AIDS-sick, and “dual-affected” categories with dichotomized abuse outcomes were graphed to illustrate any cumulative effects of familial AIDS.

Third, relationships between familial AIDS and transactional sexual exploitation were examined through a series of logistic regressions amongst young people aged 15 or older. Again, potential cumulative effects of increasing exposure to familial AIDS with regard to transactional sex were analysed by entering a “dual affected” category into the model and also examining cross-tabulation and χ^2 tests.

Fourth, the normative, abuse, and extreme poverty models were analyzed. For transactional sex as a “normative” high-risk behavior, logistic regression was used to identify whether orphanhood and caregiver sickness status predicted other types of sexual risk behavior. For the “abuse” and “severe poverty” models, Sobel tests (adjusted for use with logistical regressions²⁷) were conducted to identify any mediators.

RESULTS

Demographic and Background Characteristics

The mean age of participants was 16.9 years ($SD = 2.5$). The sample was 50% female and 98% amaXhosa. Mean household size was 5.1 ($SD = 2.3$), and 33% of adolescents lived in informal housing. All areas were high violence: 75% of adolescents reported direct witnessing of a shooting or stabbing. There were no gender differences in emotional or physical abuse, but girls were moderately more likely to report transactional sexual exploitation (7.0% compared with 3.9%); χ^2 ($df1$) = 3.4, $P = 0.05$. Therefore, gender was controlled for in these analyses. Supplemental Digital Content 1 (see **Table**, <http://links.lww.com/QAI/A215>) displays sample characteristics and proportions of adolescents in each orphanhood/sickness status category reporting exposure to severe emotional, severe physical, sexual abuse, and transactional sexual exploitation.

Associations Between Familial AIDS and Physical, Emotional, and Sexual Abuse

All multivariate logistic regression models controlled for age, gender, household composition, and formal/informal housing (Fig. 1) (Table 1).

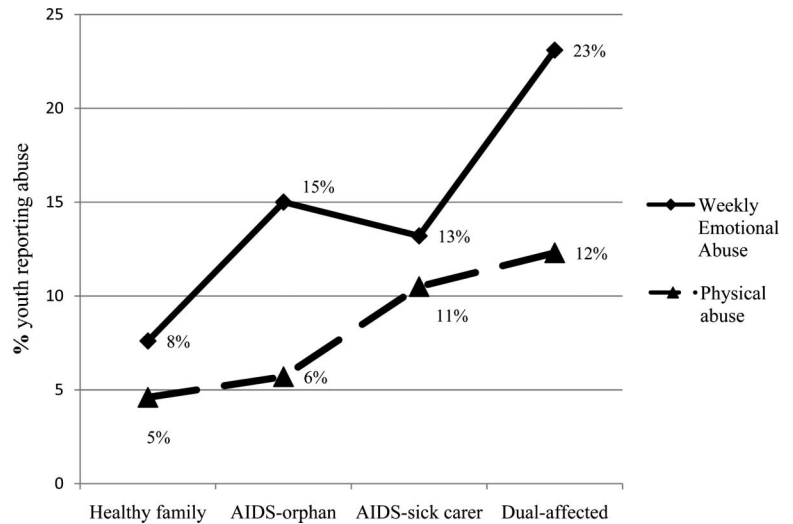


FIGURE 1. Cumulative effects of AIDS orphanhood and caregiver AIDS sickness.

Severe Emotional Abuse

Both AIDS orphanhood and caregiver AIDS sickness predicted exposure to severe emotional abuse ($B = 0.80, P = 0.006$; $B = 0.82, P = 0.008$, respectively—see Table 1 for odds ratios). Non-orphanhood or other orphanhood, and having a healthy caregiver or other-sick caregivers, did not predict exposure to severe emotional abuse. Being “dual affected” (simultaneously AIDS orphaned and living with an AIDS-sick caregiver) predicted exposure to severe emotional abuse over and above the effects of AIDS orphanhood or caregiver AIDS sickness ($B = 1.37, P < 0.001$).

Severe Physical Abuse

AIDS orphanhood did not predict exposure to severe physical abuse, but caregiver AIDS sickness did ($B = 0.81, P = 0.037$). Non-orphanhood or other orphanhood, and having a healthy caregiver or other-sick caregiver, did not predict exposure to severe physical abuse. Being “dual affected” predicted exposure to severe physical abuse over and above the

effects of AIDS orphanhood or caregiver AIDS sickness ($B = 1.21, P = 0.009$).

Sexual Abuse

No orphanhood or caregiver sickness factors predicted exposure to sexual abuse.

Associations Between Familial AIDS, Abuse, and Transactional Sexual Exploitation

All analyses were restricted to youth aged 15 and older to increase comparability with other studies of transactional sex.^{17,28} After controlling for covariates (including gender), both AIDS orphanhood and caregiver AIDS sickness predicted transactional sexual exploitation ($B = 1.65, P = 0.009$; $B = 1.12, P = 0.008$, respectively). Being dual-affected predicted transactional sex over and above the effects of AIDS orphanhood or caregiver AIDS sickness ($B = 1.46, P = 0.002$). Non-orphanhood or other orphanhood, and having a healthy caregiver or other-sick caregiver, did not predict transactional sexual exploitation. The proportions of

TABLE 1. Summary of Regression Weights and Odds Ratios for AIDS Orphanhood, Having an AIDS-Sick Caregiver, Being Dually AIDS Affected, Other Orphanhood, and Having an Other-Sick Caregiver as Associated With of Severe Emotional Abuse, Severe Physical Abuse, Sexual Abuse, and Transactional Sex

	Emotional Abuse		Physical Abuse		Sexual Abuse		Transactional Sex	
	<i>B</i>	OR (95% CI)	<i>B</i>	OR (95% CI)	<i>B</i>	OR (95% CI)	<i>B</i>	OR (95% CI)
AIDS orphanhood	0.80*	2.22 (1.25 to 3.95)	0.60	1.82 (0.83 to 4.01)	-0.50	.61 (.26 to 1.42)	1.65*	5.21 (1.50 to 18.11)
AIDS-sick caregiver	0.82*	2.26 (1.24 to 4.11)	0.81†	2.25 (1.05 to 4.82)	0.44	1.56 (0.63 to 3.83)	1.12*	3.06 (1.34 to 7.00)
Dual affected	1.37‡	3.93 (1.94 to 7.94)	1.21*	3.35 (1.36 to 8.26)	-0.20	0.82 (0.23 to 2.92)	1.46*	4.30 (1.67 to 11.06)
Orphanhood by other causes	-0.23	0.80 (0.40 to 1.60)	0.12	1.13 (0.47 to 2.73)	-0.42	0.66 (0.27 to 1.60)	1.17	3.22 (0.86 to 12.00)
Other-sick caregiver	0.15	1.17 (0.62 to 2.19)	-0.32	0.72 (0.27 to 1.96)	0.11	1.11 (0.20 to 2.69)	0.08	1.09 (0.41 to 2.90)

All analyses control for gender, age, household size, and formal/informal housing. Analyses regarding transactional sex were only conducted on children who were 15 years or older.

*Denotes significance at the 0.01 level.
 †Denotes significance at the 0.05 level.
 ‡Denotes significance at the 0.001 level.
 CI, confidence interval; OR, odds ratio.

male and female adolescents who reported engaging in transactional sex is summarized in Supplemental Digital Content 2 (see **Figure**, <http://links.lww.com/QAI/A216>).

What Mediates the Relationships Between Familial AIDS and Risk of Transactional Sex?

Analyses tested 3 competing models to explain higher rates of transactional sex amongst adolescents in AIDS-affected families. First, multivariate logistic regression was used to test the “normative model” specifying that heightened levels of transactional sex were representative of higher sexual risk-taking in general. No orphanhood or caregiver sickness factors predicted any of the following sexual risk behaviors: exposure to sexual initiation before age 15, pregnancy or impregnation of a partner, having 3 or more sexual partners in the previous year, low condom use (half the time or less), or sex while using alcohol or substances. The “abuse model” specified that the relationship between adolescents in AIDS-affected families and risk of transactional sex was mediated by exposure to abuse. The “extreme poverty model” specified that the relationship between adolescents in AIDS-affected families and risk of transactional sex was mediated by the increased levels of food insecurity/hunger in households affected by AIDS death or illness.^{29,30} Toward testing for mediation, logistic regressions reported previously confirmed relationships between abuse exposure and familial AIDS categories. Additionally, logistic regression confirmed associations in this sample between food insecurity/hunger and AIDS orphanhood ($B = 1.23$, $P < 0.001$); caregiver AIDS sickness ($B = 1.13$, $P < 0.001$), and being dual affected, $B = 2.23$, $P < 0.001$ (food insecurity/hunger was not associated with other orphanhood, other caregiver sickness, or healthy parents, controlling for sociodemographic cofactors). Table 2 summarizes the remaining logistic regressions required for tests of mediation.

The extreme poverty and abuse models were considered using a series of Sobel tests (adjusted for the context of logistic regression²⁷). Hunger fully mediated the relationship between AIDS orphanhood and transactional sex ($Z = 2.29$, $P = 0.02$) and the relationship between being dually affected and transactional sex ($Z = 2.40$, $P = 0.02$). Hunger was a significant partial mediator of the relationship between having an AIDS-sick caregiver and transactional sex ($Z = 2.34$, $P = 0.02$). Abuse exposure, that is, being either severely physically or emotionally abused, fully mediated the relationship between AIDS orphanhood and transactional sex ($Z = 2.12$, $P = 0.03$). Abuse exposure approached significance as a partial mediator of the relationships between having an AIDS-sick caregiver ($Z = 1.73$, $P = 0.08$), or being dually affected ($Z = 1.74$, $P = 0.08$), and transactional sex. Figure 2 illustrates cumulative effects of familial AIDS, severe abuse, and extreme poverty on risk of transactional sex amongst both boys and girls.

DISCUSSION

This is the first known study to examine associations of abuse or transactional sex with AIDS orphanhood or

caregiver AIDS sickness. Findings provide the first evidence to demonstrate that AIDS-affected youth are at heightened risk of severe emotional and physical abuse, but not sexual abuse, when compared with nonaffected youth and youth affected by other types of parental death and sickness. Youth who are simultaneously AIDS orphaned and have an AIDS-sick caregiver (dual-affected) are an especially vulnerable group. This is an important addition to evidence of other social and household-level risks for maltreatment, such as childhood disability, parental absence, caregiver substance abuse, poverty, and poor family relationships.^{31,32} However, it is notable that caregiver sickness or orphanhood by causes other than HIV/AIDS did not predict abuse or transactional sex outcomes. It is thus important that future research explore the effects of potential social or economic risk factors which are particularly related to HIV/AIDS, such as community-level or family-level stigma and chronic debilitating illness.

This study also adds to the evidence on risk factors for transactional sex in sub-Saharan Africa. In this sample, proportions of young people reporting receiving goods or money as part of transactional sex were broadly comparable with those found in other South African studies, such as Dunkle et al^{5,17} who found 21% lifetime prevalence amongst antenatal clinic attendees and 6.6% amongst young rural men. In this study, AIDS orphanhood and caregiver AIDS sickness were associated with heightened risk of transactional sex but not associated with any other sexual risk behaviors. This suggests that for youth in AIDS-affected families, transactional sex is driven by factors other than those driving generalized risky behaviors and challenges the model—based largely on qualitative research—of transactional sex as “normative” in Southern African contexts. Instead, the greatly heightened vulnerability of adolescents affected by caregiver AIDS sickness, and particularly AIDS-related parental death, is driven by increased levels of food insecurity and exposure to physical and emotional abuse. These findings support those of Dunkle et al⁵ where transactional sex was associated with other types of vulnerability (such as experience of violence). In short, familial AIDS makes children more likely to be hungry, abused, and thus more vulnerable to transactional sex.

A small but consistent group of studies have identified orphanhood as a risk for postnatal HIV infection in sub-Saharan Africa.^{33,34} Amongst Zimbabwean adolescents, both orphaned girls and those with AIDS-sick caregivers showed poorer reproductive health.³⁵ To date, no known studies examine pathways toward negative sexual health outcomes for adolescents in AIDS-affected families.³⁶ The present study suggests that abuse and transactional sexual exploitation may be possible links between orphanhood and HIV infection, although further research is required to test this hypothesis.

This study has a number of limitations. First, it is always important to be cautious regarding causality with cross-sectional samples; however, in this case, it is unlikely that reverse causality (eg, emotional or physical abuse of adolescents causing parental HIV infection) is relevant. However, it is always important to be aware of the potential for unmeasured confounding factors (such as adolescent HIV status, which we were unable to measure). This may be

TABLE 2. Summary of Logistic Regressions Indicating Potential Mediating Effects of Hunger and Abuse on the Relationships Between AIDS Orphanhood Having an AIDS-Sick Caregiver, or Being Dual Affected on Transactional Sexual Exploitation

	Direct Effect		Effect After Controlling for Hunger		Effect After Controlling for Abuse	
	<i>B</i>	OR (95% CI)	<i>B</i>	OR (95% CI)	<i>B</i>	OR (95% CI)
AIDS orphanhood	0.86*	2.37 (1.16 to 4.83)	0.59	1.81 (0.86 to 3.80)	0.70	2.01 (.97 to 4.19)
Having an AIDS-sick caregiver	1.09†	2.99 (1.37 to 6.56)	0.81*	2.26 (1.00 to 5.06)	0.99*	2.69 (1.22 to 5.97)
Dual affected	1.13†	3.11 (1.34 to 7.19)	0.77	2.15 (0.90 to 5.15)	1.04*	2.83 (1.20 to 6.66)

All analyses control for gender, age, household size, and formal/informal housing. Abuse refers to having experienced either severe emotional abuse or severe physical abuse. Analyses regarding transactional sex were only conducted on children who were 15 years or older. Regressions examining the mediational effects of hunger and abuse were conducted separately.

*Denotes significance at the 0.05 level.

†Denotes significance at the 0.01 level.

CI, confidence interval; OR, odds ratio.

particularly important for the transactional sex analyses, where prior research has identified factors such as intimate partner violence,¹⁷ which are not measured in this study.

Second, the 2005 sampling took place in only 1 South African province and amongst only the isiXhosa language group. Additional purposive oversampling was conducted to include groups who are often missed in community-level sampling, namely streetchildren and child-headed households. These limit the generalizability of the findings. Third,

due to low levels of HIV testing, most adolescent participants did not know their own HIV status, and this study was unable to conduct HIV antibody testing. Future research could valuably examine potential causal linkages between abuse and HIV status. Fourth, the verbal autopsy method, although validated for postmortem use, has not been validated as a symptom checklist for determining AIDS sickness. However, we used a conservative cut-off of 3+ AIDS-defining symptoms, and it is likely that any bias

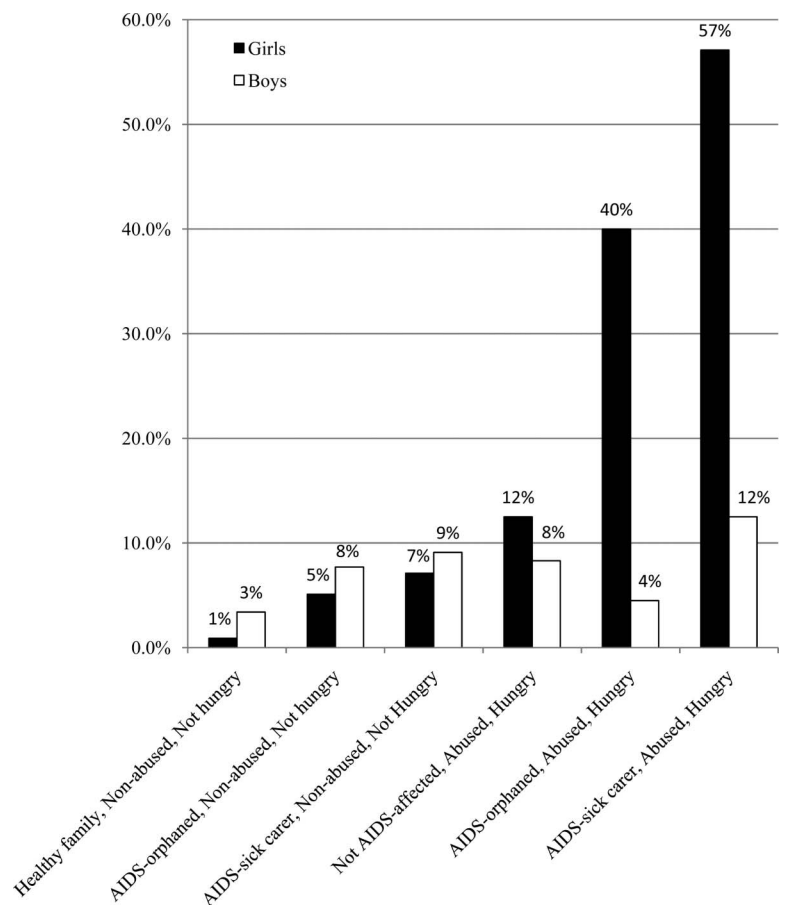


FIGURE 2. Cumulative effects on familial AIDS, severe abuse, and extreme poverty on risk of transactional sexual exploitation amongst boys and girls aged 15–24.

would be negative—that is, youth unaware of caregiver symptoms (such as vaginal tumours). Thus, “false negatives” would have had the effect of reducing group differences between those with AIDS-sick and other-sick caregivers, which in this study nevertheless remained highly significant. Fifth, we used very conservative cut-offs for “severe emotional” and “severe physical” abuse, and thus many youth who had been exposed to less frequent or extreme abuse would have been in the reference (ie, “non-abused” category). Again, the inclusion of these “false negatives” would have reduced group differences, which remained highly significant. However, it is important to note that this study may consequently underestimate rates of physical and emotional abuse in this population. Additionally, the use of cut-offs for experiences such as emotional and physical abuse does not reflect the extent of the effects on adolescents or the complexity of individual responses to maltreatment. Finally, this study took place within a very high violence, high poverty urban area. This high level of community violence is reflected in high overall levels of abuse and exploitation.³⁷ Again, we might expect that this would have reduced differences by orphanhood group, yet these remained highly significant.

This study also has some notable strengths. To our knowledge, it is the first known quantitative study to examine the impacts of living in an AIDS-affected family on adolescent abuse or transactional sexual exploitation. The study uses reliable measures of abuse, piloted for relevance to this particular context, and identifies clear linkages between familial HIV/AIDS infection and risks of abuse and exploitation for adolescents. Findings suggest implications for programing and intervention design with AIDS-affected young people. Practitioners, teachers, and child protection services should be alert to heightened risks of severe abuse and transactional sexual exploitation amongst these groups. Furthermore, these results strongly suggest that risk of transactional sex—for these adolescents—is not reflecting normative sexual risk behavior. Instead it seems to be driven by social vulnerabilities to extreme poverty and abuse. It is possible that interventions targeting these mediating factors could reduce levels of transactional sex, with its associated risks of HIV infection.

ACKNOWLEDGMENTS

The authors wish to thank our fieldwork team: Somaya Latief, Naema Latief, Joy Nikelo, Julia Limba, Nomhle Panyana, Daphne Makasi, and Thembela Molwana. We would also like to thank Robyn Cox, Cape Town Child Welfare, the Western Cape Education Department, Pollsmoor Prison, Gus De Kat, The Homestead Shelter, and South African Airways. Most importantly, we thank all the participants, and their families.

REFERENCES

1. UNAIDS. *Report on the global AIDS epidemic*. Geneva, Switzerland: UNAIDS; 2010.
2. Lindsey E, Hirschfeld M, Tlou S. Home-based care in Botswana: experiences of older women and young girls. *Health Care Women Int*. 2003; 24:486–521.

3. Anda R, Felitti V, Bremner J, et al. The enduring effects of abuse and related adverse experiences in childhood. *Eur Arch Psychiatry Clin Neurosci*. 2006;256:174–186.
4. Cohen M, Deamant C, Barkan S, et al. Domestic violence and childhood sexual abuse in HIV-infected women and women at risk for HIV. *Am J Public Health*. 2000;90:560–565.
5. Dunkle K, Jewkes R, Brown H, et al. Transactional sex among women in Soweto, South Africa: prevalence, risk factors and association with HIV infection. *Soc Sci Med*. 2004;59:1581–1592.
6. Wamoyi J, Wight D, Plummer M, et al. Transactional sex amongst young people in rural northern Tanzania: an ethnography of young women’s motivations and negotiation. *Reprod Health*. 2010;7:2.
7. Chatterji M, Dougherty L, Ventimiglia T, et al. *The Well-Being of Children Affected by HIV/AIDS in Gitarama Province, Rwanda and Lusaka, Zambia: Findings From a Study*. Washington, DC: Community REACH Working Paper No.2; 2005.
8. Sadgrove J. “Keeping up appearances”: sex and religion amongs University Students in uganda. *J Relig Af*. 2007;37:116–144.
9. Luke N, Kurz K. *Cross-Generational and Transactional Sexual Relations in sub-Saharan Africa: Prevalence of Behaviour and Implications for Negotiating Safer Sexual Practices*. Washington, DC: International Centre for Research on Women; 2002.
10. Poulin M. Sex, money, and premarital partnerships in southern Malawi. *Soc Sci Med*. 2007;65:2382–2393.
11. Moore A, Biddlecom A, Zulu E. Prevalence and meanings of exchange of money or gifts for sex in unmarried adolescent sexual relationships in sub-Saharan Africa. *Afr J Reprod Health*. 2007;11:44–61.
12. Njue C, Voeten H, Remes P. Disco funerals, a risk situation for HIV infection among youth in Kisumu Kenya. *AIDS*. 2009;23:505–509.
13. Leclerc-Madlala S. ‘We will eat when I get the grant’: negotiating AIDS, poverty and antiretroviral treatment in South Africa. *Afr J Aids Res*. 2006;5:249–256.
14. Maganja R, Maman S, Groues A, et al. Skinning the goat and pulling the load: transactional sex among youth in Dar es Salaam, Tanzania. *AIDS Care*. 2007;19:974–981.
15. Swidler A, Watkins S. Ties of dependence: AIDS and transactional sex in rural Malawi. *Stud Fam Plann*. 2007;38:147–162.
16. Swart-Kruger L, Richter L. AIDS-related knowledge, attitudes and behaviour among South African street youth: reflections on power, sexuality and the autonomous self. *Soc Sci Med*. 1997;45:957–966.
17. Dunkle K, Jewkes R, Nduna M, et al. Transactional sex with casual and main partners among young South African men in the rural Eastern Cape: prevalence, predictors, and associations with gender-based violence. *Soc Sci Med*. 2007;65:1235–1248.
18. UNAIDS. *Report on the Global AIDS Epidemic*. Geneva, Switzerland: UNAIDS; 2008.
19. Kahn K, Tollman S, Garenne M, et al. Validation and application of verbal autopsies in a rural area of South Africa. *Trop Med Int Health*. 2000;5:824–831.
20. Peltzer K, Matseke G, Mzolo T, et al. Determinants of knowledge of HIV status in South Africa: results from a population-based HIV survey. *BMC Publ Health*. 2009;9:174.
21. Stith SM, Liu T, Davies C, et al. Risk factors in child maltreatment: a meta-analytic review of the literature. *Aggress Violent Beh*. 2009;14: 13–29.
22. Snider L, Dawes A. *Psychosocial Vulnerability and Resilience Measures For National-Level Monitoring of Orphans and Other Vulnerable Children: Recommendations for Revision of the UNICEF Psychological Indicator*. Cape Town, South Africa: UNICEF; 2006.
23. Pettifor A, Rees H, Kleinschmidt I, et al. Young people’s sexual health in South Africa: HIV prevalence and sexual behaviors from a nationally representative household survey. *AIDS*. 2003;19:1525–1534.
24. Jewkes R, Dunkle K, Koss MP, et al. Rape perpetration by young, rural South African men: prevalence, patterns and risk factors. *Soc Sci Med*. 2006;63:2949–2961.
25. Department of Health, Medical Research Council. *Demographic and Health Survey 2003*. Pretoria, South Africa: Department of Health; 2007.
26. Labadarios D, Maunder E, Steyn N, et al. National food consumption survey in children aged 1–9 years: South Africa 1999. *Forum Nutr*. 2003; 56:106–109.
27. MacKinnon DP, Dwyer JH. Estimating mediated effects in prevention studies. *Evaluation Rev*. 1993;17:144–158.

28. Jewkes R, Dunkle K, Nduna M, et al. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet*. 2010;376:41–48.
29. Cluver L, Orkin M. Cumulative risk and AIDS-orphanhood: Interactions of stigma, bullying and poverty on child mental health in South Africa. *Soc Sci Med*. 2009;69:1186–1193.
30. Booyesen F, Bachmann M, Matebesi Z, et al. *The Socio-Economic Impact of HIV/AIDS on Households in South Africa: Pilot Study in Welkom and Qwaqwa, Free State Province*. University of the Free State: USAID, AusAID; 2004.
31. Dawes A, Mushwana M. Monitoring child abuse and neglect. In: Dawes A, Bray R, van der Merwe A, eds. *Monitoring Child Rights and Wellbeing. A South African Approach*. Cape Town, South Africa: HSRC Press; 2007.
32. Madu SN. The relationship between parental physical availability and child sexual, physical and emotional abuse: A study among a sample of university students in South Africa. *Scand J Psychol*. 2003;44:311–318.
33. Operario D, Pettifor A, Cluver L, et al. Prevalence of parental death among young people in South Africa and risk for HIV infection. *J Acquir Immune Defic Syndr*. 2007;44:93–98.
34. Birdthistle I, Floyd S, Machingura A, et al. From affected to infected? Orphanhood and HIV risk among female adolescents in urban Zimbabwe. *AIDS*. 2008;22:759–766.
35. Gregson S, Nyamukapa C, Garnett G, et al. HIV infection and reproductive health in teenage women orphaned and made vulnerable by AIDS in Zimbabwe. *AIDS Care*. 2005;17:785–794.
36. Cluver L, Operario D. Review: intergenerational linkages of AIDS: vulnerability of orphaned children for HIV infection. *IDS Bulletin*. 2008;39:28–35.
37. Lynch M, Cicchetti D. An ecological-transactional analysis of children and contexts: the longitudinal interplay among child maltreatment, community violence, and children's symptomatology. *Dev Psychopathol*. 1998;10:235–257.