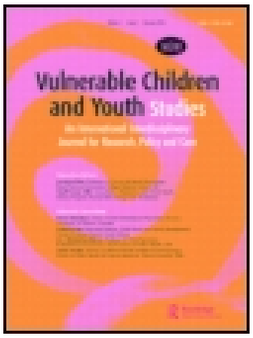

Vulnerable Children and Youth Studies

ISSN: 1745-0128 (Print) 1745-0136 (Online) Journal homepage: http://www.tandfonline.com/loi/rvch20

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To cite this article: Lucie Cluver , Don Operario & Frances Gardner (2009) Parental illness, caregiving factors and psychological distress among children orphaned by acquired immune deficiency syndrome (AIDS) in South Africa, Vulnerable Children and Youth Studies, 4:3, 185-198, DOI: 10.1080/17450120902730196

To link to this article: http://dx.doi.org/10.1080/17450120902730196

Published online: 09 Dec 2009.

Vulnerable Children and Youth Studies
Vol. 4, No. 3, September 2009, 185–198

Parental illness, caregiving factors and psychological distress among children orphaned by acquired immune deficiency syndrome (AIDS) in South Africa

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(*Received 11 April 2008; final version received 7 January 2009*)

Studies show elevated levels of psychological distress among acquired immune deficiency syndrome (AIDS)-orphaned children. Caregiving factors are critical in child mental health, but little is known about their effects among AIDS-orphaned children. This study aimed to explore whether caregiving factors (e.g. caregiver illness, monitoring and abuse) mediated between orphanhood status and psychological problems. A total of 1025 children and adolescents (aged 10–19 years), living in South African urban informal settlements, were interviewed using sociodemographic questionnaires and standardized psychological scales of depression, anxiety, post-traumatic stress disorder, peer problems, delinquency and conduct problems. AIDS-orphaned children (n = 425) were compared to control groups of other-orphans (n = 241) and non-orphans (n = 278). Results showed that child abuse, domestic violence, sibling dispersion and changes of caregiver were associated with psychological problems for all children, but did not mediate between orphanhood and psychological distress. AIDS-orphaned children reported more caregiver illness and excessive housework, and these two factors mediated the strong associations between psychological distress and AIDS-orphanhood. These findings suggest that interventions addressing caregiver ill-health and supporting young carers may have potential to ameliorate psychological distress among AIDS-orphaned children.

Keywords: HIV/AIDS; orphans; care; psychological health

Introduction

South Africa has 3.4 million parentally bereaved children, with around 65% of parental deaths attributable to human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) (Anderson & Phillips, 2006). By 2020, there will be a predicted 20 million AIDS-orphaned children worldwide (UNICEF, 2008). There is increasing evidence of negative impacts of AIDS-orphanhood on child mental health (e.g. Bhargava, 2005; Nyamukapa et al., 2006). In order to develop interventions, research must identify specific aspects of AIDS-orphanhood that determine psychological distress.

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ISSN 1745-0128 print/ISSN 1745-0136 online

DOI: 10.1080/17450120902730196
http://www.informaworld.com

One potentially important determinant of psychological distress for AIDS-orphaned children is the quality of caregiving they receive following parental death. The general psychological literature has shown that relationships with caregivers can shape children's responses to stressful and challenging life conditions (Rutter, 1979). A secure and stable caregiving bond can protect children against adversities following exposure to extreme stress (Wyman et al., 1992). However, the reverse has been found of negative caregiving environments; for example, poor family functioning can exacerbate children's reactions to stress (Pederson & Revenson, 2005). These general findings have implications for children orphaned in the context of HIV/AIDS. Following the death of their primary parental caregiver, children may receive caregiving by a number of sources, including extended family members (e.g. grandparents, aunts/uncles) and non-kin community members (Dowdney, 2000; Foster, 2000). Individuals who provide care to AIDS-orphaned children might themselves be coping with HIV or other illness, poverty, multiple child-rearing responsibilities and other stressors (Kuo & Operario, in press). The contribution of caregiving characteristics to the psychological outcomes of AIDS-orphaned children is a critical issue warranting further examination.

The present study compares AIDS-orphaned children with children orphaned by non-AIDS causes as well as non-orphans. Previous analyses have shown that, controlling for sociodemographic factors such as age, gender and dwelling type, AIDS-orphanhood (but not other-orphanhood) was associated with increased depression, post-traumatic stress disorder (PTSD), peer relationship problems, delinquency and conduct problems (Cluver, Gardner, & Operario, 2007). This study aimed to examine caregiving factors which may mediate the relationship of AIDS-orphanhood with psychological outcomes.

Previous literature reviews have drawn from theories of attachment, bereavement and family systems to identify factors that may explain psychological distress among AIDS-orphaned children (Bray, 2003; Cluver & Gardner, 2007; see Dowdney, 2000 for a more general review of child responses to parental death). Here we examine four caregiving factors that are relevant to the context of AIDS-orphanhood in South Africa. First, we examine the contribution of disrupted caregiving arrangements. AIDS-orphaned children are likely to experience changes in their primary caregiver, and research has shown that disrupted caregiving may have detrimental effects on psychological health (Dowdney, 2000; Meltzer, Corbin, Gatward, Goodman, & Ford, 2003). Secondly, we examine the role of caregiver ill-health. Due to the burden of HIV and other health problems throughout sub-Saharan Africa, adult caregivers of AIDS-orphaned children are likely, themselves, to experience compromised health (Chatterji et al., 2005; Kuo & Operario, in press), and studies have demonstrated associations between caregiver illness and child psychological distress (Nampanya-Serpell, 1998; Poulter, 1996). Thirdly, we examine caregiving style and family interactions as potential contributors to psychological functioning of AIDS-orphaned children (O'Connor, 2002; Rutter, 1999). Research has suggested that fostered children might receive lower levels of attention, monitoring and economic resources from non-parental caregivers (Case, Lin, & McLanahan, 2000). Positive adult reinforcement and caregiver–child activities have been shown to be associated with fewer problems among Tanzanian AIDS-orphaned children (Makame, Ani, & McGregor, 2002) and sense of inclusion within the family has been associated with less psychological distress among Ethiopian AIDS-orphaned children (Bhargava, 2005). Fourthly, we examine the roles of abuse and domestic violence which, at any developmental stage, are established risks for child psychological problems (Heim & Nemeroff, 2001). Research in South Africa has suggested increased domestic violence between adults in HIV-affected families (Jewkes, Levin, & Penn-Kekana, 2003).

We hypothesize that these caregiving factors may be mechanisms for increased psychological problems among AIDS-orphaned children. The determination of which factors are most relevant could assist in conceptualizing interventions. Specific aims of this paper are, first, to examine associations between orphanhood and caregiving factors (i.e. caregiver health, monitoring, abuse); secondly, to examine associations between psychological distress and caregiving factors; and thirdly, to examine whether caregiving factors mediate associations between AIDS-orphanhood and psychological distress.

Method

Participants

The sample comprised 1025 children and adolescents: 425 AIDS-orphaned, 241 other-orphaned and 278 non-orphaned. Eighty-one were orphaned by "unknown causes". All participants lived in deprived urban neighbourhoods of Cape Town, marked by high levels of crime, AIDS-related stigma and poor infrastructure. The study aimed for high generalizability by purposively sampling hard-to-reach populations: street children (via shelters and feeding schemes), child-headed and youth-headed households and non-school attendees. From 2005 to 2006, participants were recruited from nine schools (507 children), 18 community organizations (304 participants) and door-to-door sampling (214 participants). AIDS-orphaned participants were identified and matched subsequently to non-orphaned and other-orphaned controls. In schools and organizations serving both orphans and non-orphans, random samples of non-orphans in the same grade as orphans were selected. In orphan-specific projects, non-orphaned community controls were selected through random door-to-door sampling and matched to orphans by gender and age. The United Nations (UN) definition of orphanhood was used; i.e. loss of one or both parents (UNAIDS, 2004), and the World Health Organization (WHO) definition of adolescence; i.e. 10–19 years (WHO, 2003). Child-headed and youth-headed households were defined as headed by a sibling under 18 and 25 years, respectively (WHO, 2005a). Children recently orphaned (<6 months) were excluded, to reduce effects of acute bereavement reactions (Dowdney, 2000; Wild, Flisher, Laas, & Robertson, 2006).

The sample was drawn from children in a range of living arrangements (see Table 1). Due to unreliability of death-certificate data, cause of parental death was determined using the "verbal autopsy" method, validated in several sub-Saharan African countries (Hosegood,

Table 1. Primary caregivers by group.

Primary caregiver	Children orphaned by AIDS (n = 425)	Children orphaned by other causes (n = 241)	Non-orphaned children (n = 278)
Surviving biological parent	32%	56%	74%
Grandparent	21%	8%	9%
Other extended family (including siblings >25 years)	33%	20%	8%
Non-relative	2%	3%	2%
Child-headed/youth-headed household	7%	6%	1%
Street children[a]	5%	7%	6%

[a]Street-child numbers were purposively matched across groups, as no reliable data is available on this population. AIDS, acquired immune deficiency syndrome.

Vanneste, & Timaeus, 2004). In South Africa, sensitivity was 89%, specificity 93% and positive predictive value 76% (Kahn, Tollman, Garenne, & Gear, 2000). Symptoms were reviewed by two independent medical practitioners, and determination of AIDS-related death required presence of three or more AIDS-defining illnesses, e.g. oral candidiasis or Kaposi's sarcoma (WHO, 2005b). Non-AIDS deaths included non-AIDS related illnesses such as diabetes (55%), vehicle accidents (24%), homicide (28%) or suicide (3%). Eighty-one cases where cause of death was uncertain were excluded from all analyses, including deaths attributed to "bewitchment" and tuberculosis without other AIDS-defining symptoms.

Procedures

Ethical protocols were approved by Oxford University, University of Cape Town and the Western Cape Education Department. Adolescents and caregivers gave voluntary, informed consent both verbally and in writing. Where children had no caregivers (e.g. street children), consent was sought from guardians (e.g. shelter social workers). With interviewers, children completed anonymous self-report questionnaires, including games and drawing activities, lasting 40–60 minutes. All interviewers were isiXhosa-speaking psychologists, social workers or community health workers, trained in working with HIV/AIDS-affected children. Participants received refreshments and certificates, and participating organizations received staff training in child protection. In order to prevent unintended disclosure, HIV/AIDS was not mentioned in study materials or interviews. Confidentiality was maintained, except where children were at risk of significant harm or requested assistance.

Measures

Psychological distress was measured using standardized scales: the Child Depression Inventory (Kovacs, 1992), the Children's Manifest Anxiety Scale–Revised (Reynolds & Richmond, 1978), peer and conduct problems subscales of the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997), the Child PTSD Checklist (Amaya-Jackson, Newman, & Lipschitz, 2000) and delinquent behaviour subscale of the Child Behaviour Checklist (CBCL) (Achenbach, 1991). All measures show good reliability and previous use with vulnerable children in Cape Town. Further information on psychometric properties is reported in Cluver et al. (2007).

Disrupted caregiving. Children reported number of experienced caregiver changes in their lifetime, deaths of primary caregivers or moving to a new caregiver's home. This measure was coded dichotomously (two or more caregiver changes vs. others) in order to distinguish orphans who had experienced multiple deaths or breakdown of at least one fostering arrangement. Sibling dispersion was defined by currently having non-resident siblings younger than 18 years old.

Caregiver ill-health. Participants reported perceived health status of primary caregivers as never/rarely/sometimes/frequently unwell, subsequently coded dichotomously as "frequently unwell" versus others. This categorization was driven by theoretical considerations (i.e. evidence of chronic and frequent parental illness as particularly distressing to children) and local epidemiology (i.e. study areas show high levels of illness generally, and we wished to compare this extreme category with others). Child housework was measured using Survey of Activities of Young People items (Statistics SA, 2001), "Excessive child housework" was defined conservatively as "3+ hours of housework/day", based on the SA Department of Labour's definition (2003).

Caregiving style and family interactions. Caregiver monitoring used the most discriminative item for child mental health in a scale devised for SA AIDS-orphaned children (Wild et al., 2006): "How much do they *really* know what you do with your free time?", and coded as 'high' (knows a lot) and "low" (knows little/does not know) monitoring. Positive reinforcement was measured by child-reported frequency of praise from primary caregivers, and coded as "high" (often) and "low" (rarely/never). Caregiver–child activities were measured by past-month help with homework, reading or story-telling, and coded as "1+"/"none". Children reported self-perceived belonging in the household, coded as "yes"/"somewhat"/"not at all". Children reported perception of intra-household allocation of food, clothes and school fees, compared to other co-resident children; coded as "positive" (I get more/I get about the same) or "negative" (I get less).

Abuse/domestic violence. Participants reported on physical abuse, sexual abuse and domestic violence using seven items from the Child Exposure to Community Violence checklist (Richters & Martinez, 1993), adapted after consultation with local social workers. This was coded as "exposure to any abuse or domestic violence"/"none".

Except where indicated, all mediating variables measured caregiving dynamics during the previous 6 months.

Analysis

Differences between orphanhood groups on caregiving factors were assessed using χ^2 tests or one-way analyses of variance (ANOVAs) (Table 2). Associations between psychological outcomes (depression, anxiety, PTSD, peer problems, delinquency and conduct problems) and caregiving factors were then examined using *t*-tests and χ^2 tests (Table 3). Multivariate linear regression (Table 4) was used to assess associations between orphanhood-status (AIDS-orphaned and other-orphaned, compared to a base variable of non-orphans) with each psychological outcome and caregiving factors. Factors were included in regressions only if associated significantly with psychological problems and showing differences by orphanhood status ($p < 0.01$). Two models are presented for each outcome. Model 1 shows associations between orphan status, age, gender and psychological outcome. Model 2 further includes caregiver illness and child housework. Reductions in coefficients from models 1–2 were indicative of a mediational effect of caregiving factors (Baron & Kenny, 1986). The Sobel test (1982) was then used to assess mediating effects of caregiving factors for psychological outcomes where regressions showed significant change from models 1–2. Data were analysed using SPSS (version 13.0).

Results

In univariate analysis, increased age was correlated positively with scores on all scales ($p < 0.001$). Females reported more depression and anxiety than males ($p < 0.01$), whereas males reported more delinquency and conduct problems ($p < 0.01$). Maternal, as opposed to paternal, bereavement and double orphanhood were not associated with psychological distress on any outcome.

Group differences: Caregiving factors (Table 2)

One-way ANOVAs showed primary caregivers of AIDS-orphaned children were more likely to be frequently unwell than those of other-orphans or non-orphans ($p < 0.001$). Sixty per cent of frequently ill caregivers of AIDS-orphaned children were surviving

Table 2. Differences between groups on caregiving-related variables.

	Children orphaned by AIDS (n = 425)	Children orphaned by other causes (n = 241)	Non-orphaned children (n = 278)	p-value[1]
>Two changes of caregiver (%)	6.3	6.6	3.6	<0.218
Separated from siblings[3] (%)	21.1	25.3	19.9	<0.320
Caregiver very often unwell[2] (%)	13.6	7.1[b]	4.0[c]	<0.001*
High caregiver monitoring[2] (%)	84.1	91.5	82.9	<0.011
High positive reinforcement (%)	92.9	90.4	87.1	<0.035
Caregiver–child activities[2] (%)	90.4	94.0	89.5	<0.163
High sense of belonging (%)	91.5	90.0	90.6	<0.798
Intra-household resource allocation (positive, %)	86.1	88.8	89.1	<0.398
Abuse/domestic violence (%)	18.6	19.5	25.2	<0.093
Housework/day-minutes (mean, SD)	85.90 (58.39)[a]	62.54 (47.10)[b]	61.83 (57.16)[c]	<0.001*
>3 hours housework/day (%)	25.2[a]	14.7[b]	13.7[c]	<0.001*

[1]p-value associated with one-way analysis of variance or χ^2 test. Children orphaned by unknown causes were excluded from this analysis. [2]Number of cases reduced due to some children lacking primary caregiver. For acquired immune deficiency syndrome (AIDS)-orphaned children, remaining n = 416, other-orphans, n = 235, non-orphans, n = 276. [3]Number of cases reduced due to some children lacking siblings under 18. For AIDS-orphaned children, remaining n = 375, other-orphans, n = 221, non-orphans, n = 261. [a,b,c]Means with different superscripts differ significantly at $p < 0.01$, tested using Tukey's *post-hoc* comparisons. SD, standard deviation.

parents, suggesting probable HIV-related illness; of the others, 20% were aunts/uncles, 14% were grandparents and 6% were siblings or non-relatives. AIDS-orphaned children reported performing more daily housework ($p < 0.001$) and reported more excessive housework (>3 hours/day) than others ($p < 0.001$). No other caregiving factors showed group differences.

Associations between caregiving factors and psychological distress (Table 3)

Associations were examined among all groups. Children with two or more primary caregiver changes reported more anxiety, PTSD and delinquency. Sibling dispersion was associated with more delinquency. A frequently unwell caregiver and greater duration of housework/day were associated with more problems on all scales. High caregiver monitoring and carer–child activities were associated with fewer problems on all scales. Praise and equal household resource allocation were associated with less depression, anxiety, peer problems, PTSD and delinquency. Sense of family inclusion was associated with less depression, anxiety and PTSD. Experience of abuse/domestic violence was associated with more depression, delinquency and conduct problems.

Table 3. Associations between caregiving factors and mental health outcomes.[1]

	Depression	*p*	Anxiety	*p*	Peer problems	*p*	PTSD	*p*	Delinquency	*p*	Conduct problems	*p*
>Two caregiver changes		<0.083		<0.008		<0.573		<0.010		<0.003		<0.164
Yes (mean, SD)	3.78 (3.35)		13.65 (5.06)		2.72 (2.39)		23.22 (15.43)		3.78 (3.69)		1.78 (1.57)	
No (mean, SD)	3.07 (2.74)		11.56 (5.24)		2.54 (2.11)		17.67 (14.42)		2.58 (2.65)		1.45 (1.56)	
Separated from siblings		<0.286		<0.012		<0.556		<0.136		<0.001		<0.345
Yes (mean, SD)	3.32 (3.01)		12.74 (5.06)		2.58 (1.99)		19.38 (15.47)		3.35 (3.69)		1.58 (1.80)	
No (mean, SD)	3.05 (2.72)		11.50 (5.34)		2.46 (2.16)		17.37 (14.44)		2.45 (2.41)		1.44 (1.52)	
Caregiver poor physical health[3]		<0.001		<0.009		<0.001		<0.001		<0.003		<0.001
Yes (mean, SD)	4.25 (2.91)		13.07 (4.62)		3.51 (1.74)		28.68 (13.78)		3.45 (2.41)		2.12 (1.70)	
No (mean, SD)	2.93 (2.68)		11.42 (5.21)		2.44 (2.14)		16.57 (13.92)		2.50 (2.65)		1.37 (1.49)	
Caregiver monitoring[3]		<0.001		<0.001		<0.002		<0.001		<0.001		<0.001
High (mean, SD)	2.74 (2.63)		11.03 (5.21)		2.23 (2.12)		15.02 (13.77)		2.31 (2.48)		1.28 (1.50)	
Low (mean, SD)	3.67 (2.95)		13.67 (4.60)		2.81 (2.12)		22.23 (14.26)		3.35 (3.03)		1.93 (1.57)	
Positive reinforcement		<0.001		<0.001		<0.004		<0.001		<0.001		<0.022
High (mean, SD)	2.74 (2.63)		11.26 (5.29)		2.27 (2.12)		15.88 (14.1)		2.42 (2.62)		1.34 (1.52)	
Low (mean, SD)	4.68 (3.31)		14.34 (5.02)		2.96 (2.11)		20.97 (14.8)		3.51 (3.28)		1.89 (1.81)	
Caregiver–child activities[3]		<0.001		<0.001		<0.001		<0.001		<0.004		<0.001
Yes (mean, SD)	2.74 (2.65)		11.16 (5.17)		2.25 (2.09)		15.27 (13.67)		2.39 (2.56)		1.32 (1.49)	
No (mean, SD)	4.25 (2.84)		14.49 (4.73)		3.07 (2.37)		24.15 (15.28)		3.22 (2.81)		1.97 (1.75)	
Sense of belonging		<0.001		<0.001		<0.065		<0.001		<0.021		<0.014
High (mean, SD)	2.74 (2.61)		11.29 (5.22)		2.30 (2.12)		15.82 (14.06)		2.45 (2.65)		1.35 (1.52)	

(*Continued*)

Table 3. (*Continued*)

	Depression	*p*	Anxiety	*p*	Peer problems	*p*	PTSD	*p*	Delinquency	*p*	Conduct problems	*p*
Low (mean, SD)	4.64 (3.37)		13.69 (5.34)		2.73 (2.13)		21.11 (14.72)		3.13 (3.10)		1.77 (1.83)	
Intra-household resource allocation		<0.001		<0.001		<0.007		<0.001		<0.060		<0.097
positive (mean, SD)	2.70 (2.60)		11.25 (5.21)		2.27 (2.14)		15.68 (13.88)		2.46 (2.65)		1.37 (1.53)	
negative (mean, SD)	4.50 (3.23)		13.49 (5.43)		2.81 (1.95)		21.07 (15.88)		2.95 (3.01)		1.62 (1.74)	
Abuse/violence		<0.001		<0.062		<0.132		<0.145		<0.001		<0.001
Yes (mean, SD)	3.90 (3.22)		12.46 (5.58)		2.80 (2.10)		19.69 (16.41)		3.48 (3.43)		2.12 (1.70)	
No (mean, SD)	2.94 (2.65)		11.52 (5.16)		2.50 (2.13)		17.67 (14.09)		2.48 (2.53)		1.37 (1.49)	
Minutes of housework/ day												
p (*r*)	<0.001 (0.147**)		<0.001 (0.163**)		<0.001 (0.211**)		<0.001 (0.268**)		<.001 (0.173**)		<0 .004 (0.115**)	

[1]*p*-value associated with χ^2 test, except "minutes of housework", based on independent-samples *t*-test. [2]AIDS: acquired immune deficiency syndrome (AIDS)-orphaned children only: $n = 425$. [3]Number of cases reduced due to some children lacking primary caregiver. For AIDS-orphaned children, remaining $n = 416$, other-orphans, $n = 235$, non-orphans, $n = 276$. PTSD, post-traumatic stress disorder; SD, standard deviation.

Table 4. Multivariate associations between orphanhood by AIDS, orphanhood by other causes, and psychological outcomes.

	Depression		Anxiety		Peer problems		PTSD		Delinquency		Conduct problems	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Orphanhood by AIDS	0.161**	0.133*	0.094*	0.072	0.278**	0.233**	0.351**	0.269**	0.128**	0.093*	0.121**	0.085*
Orphanhood by other causes	0.006	–0.006	–0.030	–0.032	0.066	0.062	0.077*	0.057	0.005	0.003	–0.003	–0.009
Gender (female)	0.070*	0.070*	0.077*	0.073*	0.034	0.026	0.048	0.041	–0.086*	–0.092*	–0.066	–0.068
Age	0.136**	0.124**	1.06**	0.091*	0.148**	0.118**	0.137**	0.100**	0.159**	0.134**	0.093**	–0.073*
Caregiver very often ill		0.115**		0.041		0.091**		0.159**		0.056		0.117**
Child housework (minutes)		0.043		0.074*		0.149**		0.168**		0.128**		0.080*
R-square	0.049	0.063	0.028	0.033	0.089	0.119	0.129	0.183	0.047	0.065	0.025	0.044
Model *F*	11.387**	10.054**	6.638**	5.436**	20.721**	19.026**	30.570**	30.980**	10.969**	10.308**	6.121**	7.151**

*Denotes significance at the 0.05 level. **Denotes significance at the 0.01 level. Model 2 adjusted for caregiving factors which showed group differences: caregiver illness and housework. AIDS, acquired immune deficiency syndrome; PTSD, post-traumatic stress disorder.

Mediating effects of caregiver illness and child housework (Table 4; Figure 1)

Only two caregiving factors met preconditions for possible inclusion as mediators in the multivariate model (Table 4): caregiver illness and extent of child housework. Model 1 shows associations between AIDS-orphanhood and psychological outcomes; age and gender are also included in this model.

In model 1, AIDS-orphanhood is associated significantly with depression, peer problems, PTSD, delinquency and conduct problems ($p < 0.01$) and associated moderately with anxiety ($p < 0.05$). Results from model 1 also show that gender is associated significantly with anxiety ($p < 0.01$) and associated moderately with delinquency ($p < 0.05$), and that age is associated significantly with each psychological outcome ($p < 0.01$).

Model 2 further includes caregiver illness and child housework in each model. Results from model 2 show that caregiver illness is associated independently with depression, peer problems, PTSD and conduct problems ($p < 0.01$), controlling for orphan status, age and gender. Child housework is associated independently with peer problems, PTSD and delinquency ($p < 0.01$) and associated marginally with anxiety and conduct problems ($p < 0.05$). Model 2 also shows evidence for mediational effects of caregiver illness and child housework: depression, delinquency and conduct problems were associated significantly with AIDS-orphanhood in model 1 ($p < 0.01$), but reduced to a marginal association ($p < 0.05$) in model 2. Anxiety showed a marginal significance with AIDS-orphanhood in model 1, but was reduced to non-significance in model 2. PTSD and peer problems were associated significantly with AIDS-orphanhood in model 1 ($p < 0.01$) and remained so in model 2. Notably, associations of gender and age with psychological outcomes were largely unchanged between models 1 and 2.

Sobel tests directly tested mediational associations (Figure 1), and showed caregiver illness and child housework mediating significantly the relationship of AIDS-orphanhood with depression, anxiety, delinquency and conduct problems ($p < 0.01$).

Discussion

Findings demonstrate that heightened psychological problems among AIDS-orphaned children are accounted for by specific caregiving factors. Theoretical frameworks of child attachment and bereavement identified a range of potential mediators (Dowdney, 2000). Two factors – caregiver illness and child housework – were associated with both orphanhood-status and psychological distress. Three factors – caregiver changes, sibling dispersion and intra-household resource allocation – were not associated with child psychological problems. Five factors – caregiver monitoring, positive reinforcement, caregiver – child activities, family inclusion and abuse/domestic violence – were associated with child psychological problems generally, but showed no differences by orphanhood status, and consequently could not be mediating relationships between orphanhood and psychological distress.

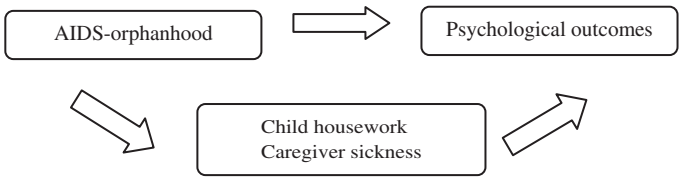

Figure 1. Mediation model.

The past decade has seen fears of AIDS-orphaned children without parental guidance, describing a potentially unsocialized generation (Barnett & Whiteside, 2002); however, this study suggests that it is not "disrupted caregiving" which is mediating orphans' distress – perhaps reflecting established sub-Saharan African practices of multiple caregivers and child migration (Young & Ansell, 2003). Caregiving style and family interactions – e.g. caregiver monitoring and abuse – were associated clearly with general child wellbeing, but showed no differences by orphanhood status, so were not mechanisms for heightened distress among AIDS-orphaned children.

The mediational model, which seems to explain most clearly the role of caregiving in determining psychological outcomes for AIDS-orphaned children, is that which specifies caregiver ill-health – i.e. caregiver illness and increased child responsibilities (Rochat et al., 2006). AIDS-orphaned children in this sample reported significantly higher levels of caregiver illness. Parental AIDS is highly likely to result in infection of surviving parents, and in high-prevalence areas it is increasingly likely that other caregivers, such as aunts, will also be HIV+. Many caretakers are elderly grandparents, who report physical illness and stress in qualitative studies (Ferreira, Keikelame, & Mosaval, 2001).

A quarter of AIDS-orphaned children reported >3 hours of housework per day, and this was correlated highly with severity of caregiver illness. This probably reflects children taking on greater household and care responsibilities in situations of financial strain and illness (Bauman et al., 2006). Few empirical studies explore impacts of young caring on child mental health, but qualitative data suggest reduced capacity for schoolwork or socializing and excessive sense of burden (Dearden & Becker, 2004; Thurman et al., 2006).

Findings of this study support a family systems approach to addressing psychological problems among AIDS-orphaned children, and highlight the need for interventions to improve caregiver health and support children who assume additional household burdens. Currently, state and non-governmental organization (NGO) services include access to HIV testing and rollout of antiretroviral therapy for HIV+ surviving parents, support for families providing home-based care and child support groups such as the "SoulBuddyz" programme. Increased access to health care for elderly caregivers, assistance with permanency planning and other sources of community support for children with unwell caregivers may also be helpful.

The limitations of this study must be recognized. First, there are no psychological instruments validated among this age group in South Africa, although all measures were standardized, showed good psychometric properties, and had been used previously in Cape Town. Secondly, due to the retrospective study design, findings cannot distinguish psychological distress experienced after versus before orphanhood, or in different stages of orphanhood (Stein et al., 2005). This is especially pertinent in contexts of chronic illnesses and multiple bereavements. Thirdly, the study did not collect data from caregivers themselves, as this would have resulted in selection bias against children who lacked any caregivers (i.e. child-headed households) or whose caregivers were too unwell to participate. Fourthly, the cross-sectional design limits the capacity of this study to infer causality between risk factors and psychological outcomes. For example, child or family characteristics may affect caregiving styles. Fifthly, findings might not be generalizable due to use of non-representative sampling methods. Sampling did attempt to control for potentially relevant factors, e.g. poverty, suggesting that caregiving may be an independently important environmental risk (Rutter, 2005). Further research is required to explore effects of caregiving on additional outcomes, e.g. education and physical health, and to examine the specific relationship between the non-parental caregiver (e.g. whether grandparent, other kin relative or non-kin relative) and child outcomes.

Strengths of study design and sampling should also be noted. This is the largest study known to date exploring psychological outcomes for AIDS-orphaned children, compared to both other-orphans and non-orphans. The study used standardized instruments and included difficult-to-reach groups of street children and child-headed households.

Interventions aiming to reduce child vulnerability should be informed by evidence. This study suggests that reducing caregiver illness and child housework through programmes such as antiretroviral provision for AIDS-unwell caregivers and increased support for young carers may have positive consequences beyond their intrinsic value. It is important that such interventions are evaluated rigorously to determine effects on child wellbeing.

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