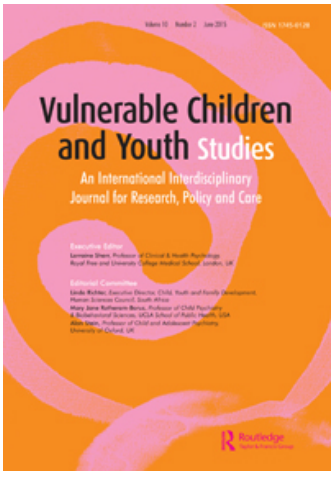

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Mental health of youth orphaned due to AIDS in South Africa: biological and supportive links to caregivers

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Mental health of youth orphaned due to AIDS in South Africa: biological and supportive links to caregivers

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This research explored the biological and social support relationship between youth orphaned due to AIDS and his/her caregiver to identify protective factors that are related to positive mental health outcomes. These youth have significantly higher levels of depression, anxiety, and post-traumatic stress (PTS) symptoms compared to those orphaned due to other causes and non-orphans. Using a 2009 cross-sectional data-set from South Africa, 254 youth orphaned due to AIDS were purposively selected from the overall sample of 732 to further examine this caregiver relationship. Caregiver relation was analyzed in several combinations to determine if it was significantly related to mental health outcomes, with only anxiety showing significance. Those living with a biological parent had significantly higher anxiety symptoms than those living with a grandparent, other kin, or non-kin. Anxiety was also significantly related to an increased age, lower levels of emotional support, and lower levels of instrumental/financial support (R^2 = .153). Age was the only significant variable from the model that was related to depression symptoms (R^2 = .111). PTS symptoms were related to increases in age, lower levels of emotional support, instrumental/financial support, and satisfaction with the caregiver (R^2 = .194). Gender and age were related to suicidal tendencies, specifically boys were 2.26 times more likely to exhibit suicidal tendencies compared to girls, and every yearly increase in age results in the youth being 1.22 times more likely to exhibit suicidal tendencies. Strengthening the caregiver's ability to provide social support for the child is critical, irrespective of any biological kin relationship.

Keywords: orphans; HIV; AIDS; mental health; caregivers; social support

South Africa has over 5 million people living with HIV with 2.1 million children having lost one or more parents due to AIDS (UNAIDS, 2012). Many children experienced orphanhood at an early age, and during adolescence (10–19 years), they may lack parental guidance that supports optimal psychosocial adjustment (Cluver, Operario, & Gardner, 2009; King, De Silva, Stien, & Patel, 2009). This loss can impact the child's well-being throughout their lifetime (Atwine, Cantor-Graae, & Bajunirwe, 2005; Li et al., 2008).

A study by Cluver, Gardner, and Operario (2007) examined the mental health of over 900 children who were matched in three comparison groups: those orphaned due to AIDS, those orphaned from other causes, and non-orphaned children. Results showed those orphaned due to AIDS had significantly higher levels of depression, anxiety, and post-traumatic stress (PTS) symptoms compared to the other groups. Longitudinal follow-up in

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2009 showed significantly worse mental health among those orphaned due to AIDS, compared to the other groups (Cluver, Orkin, Gardner, & Boyes, 2012). Due to persistent mental health problems among these youth orphaned due to AIDS, this study purposively chose to further investigate this population using the 2009 cross-sectional data. Isolating this population may lead to a better understanding of protective and risk factors associated with caregiver social support, caregiver relation, and mental health outcomes. Bronfenbrenner's ecological theory is a useful framework for studying children affected by HIV, as a child's primary relationship in their environment is with his/her caregiver (Betancourt, Meyers-Ohki, Charrow, & Hansen, 2013; Bronfenbrenner, 1986). This relationship is both biological and social, and further understanding how blood relations and social support may lead to protective interventions.

Mental health and psychosocial adjustment

Although children orphaned due to AIDS have much higher rates of psychological stress compared to those orphaned by other causes (Cluver et al., 2012; Makame, Ani, & Grantham-McGregor, 2002), many studies on orphans and vulnerable children focus on how to best meet financial and educational needs. Only recently have studies emerged examining psychological well-being (Allison, 2012). Additionally, children orphaned due to AIDS experience additional issues that may complicate the process of individuation and psychosocial adjustment associated with adolescence (Atwine et al., 2005; Cluver et al., 2009; King et al., 2009). How a child behaves in grief fluctuates, making it difficult for caregivers to recognize symptoms and to provide appropriate support (Foster, 2002). A trusting, positive relationship with a caregiver can be protective for a child orphaned due to AIDS (Chi & Li, 2013). Having one caring adult who provides support is associated with stronger well-being among youth affected by HIV (Chi & Li, 2013; Daniel, Apila, BjØrgo, & Lie, 2007).

Caregiver social support to youth

Caring for children who are orphaned continues to be a family concern in sub-Saharan Africa with kinship care being preferred (Freeman & Nkomo, 2006; Richter et al., 2009). Bronfenbrenner's ecological theory identifies how social support functions in a child's microsystem (Betancourt et al., 2013). Bronfenbrenner (1979) notes: "the availability of supportive settings is, in turn, a function of their existence and frequency in a given culture or subculture" (p. 7). Close relationships with caregivers are known to promote resiliency among children (Betancourt & Khan, 2008; Daniel et al., 2007). A child's development emerges via interactions with their environment (Bronfenbrenner, 1986) and ecological theory provides a framework to better understand the importance of caregiver social support.

Caregiver biological relationship with youth

Caregivers are primarily biological kin (a remaining parent, grandparents, or other extended family) or non-kin, which may include a foster parent or institution (Allison, 2012; Littrell, Boris, Brown, Hill, & Macintyre, 2011). In South Africa, approximately 90% of children orphaned due to AIDS are cared for by biological kin (Allison, 2012; Karimli, Ssewamala, & Ismayilova, 2012). The kinship system is the primary safety net that can become overextended emotionally and financially in high HIV

prevalence settings (Heymannn & Kidman, 2009; Richter et al., 2009). Few studies examine the correlation between the biological relations of caregivers and a youth's mental health (Cluver et al., 2009; Zhao et al., 2010). This information is useful as new caregiving models are emerging in response to HIV (Chirwa, 2002; Freeman & Nkomo, 2006; Karimli et al., 2012; Nyamukapa et al., 2010). Despite numerous programs focused on psychosocial well-being, there is little evidence to inform programmers and policy makers about the specific variables related to improved mental health of those orphaned due to AIDS (Schenk, 2009).

Little is known about potential protective links between the caregiver's delivery of social support to the youth and the caregiver's biological relationship. Understanding the interplay between the caregiver's relationship (social and biological) with the child can inform interventions that strengthen the resiliency of children (Atilola, 2014; Betancourt et al., 2013; Bronfenbrenner, 1994). This research had two aims: first, to examine how caregiver social support relates to mental health of children orphaned due to AIDS and, second, to examine how the caregiver's specific relationship (biological or non-biological) to the child relates to his/her mental health.

Methods

Study participants

In 2005, 1025 youth were recruited into a study designed to examine psychological distress in peri-urban communities surrounding Cape Town, South Africa. Participants were recruited from household door-to-door visits in 10 settlements, 9 schools, and 18 community organizations. The study purposively sampled those orphaned due to AIDS ($N = 425$) and compared them to other orphans ($N = 241$) and non-orphaned controls ($N = 278$) to examine in depth the particular vulnerabilities and resilience factors associated with each population (Cluver et al., 2009). In 2009, 71% of the original youth were located and reinterviewed ($N = 723$). Orphan status was reassessed in 2009 with 266 reporting they were orphaned due to AIDS, 228 other-orphaned, 180 non-orphaned, and 49 excluded from analysis due to uncertainty of orphan status. Of those 266 youth, 254 reported they had a caregiver. Challenges related to locating children from the 2005 data included the high levels of mobility experienced by the youth (Cluver et al., 2012). This research used the 2009 cross-sectional data-set, examining in depth the caregiver relationship among those 254 youth orphaned due to AIDS from the overall. All 254 youth were living in neighborhoods formerly designated for Black Africans under apartheid, with high rates of violence, unemployment, population density, HIV prevalence (23–30%), and poverty. Ethical approval was obtained by Oxford University, University of Cape Town, and the Western Cape Education Department. Adolescents and caregivers gave voluntary informed consent and assent verbally and in writing.

Measures

Determining parental death

In South Africa, death certificates and clinical data are unreliable regarding AIDS; therefore, the "Verbal Autopsy" technique was used to determine parental death. This technique was validated in previous studies of adult mortality in South Africa (Kahn, Tollman, Garenne, & Gear, 2000). Stage 4 AIDS illness was identified using a conservative threshold of youth identifying three or more AIDS-defining illnesses. When diagnoses were unclear, symptoms

were reviewed independently by two medical professionals and substantiated by teachers and surviving parents where possible. A total of 46 orphaned children were excluded from the 2009 data because cause of death could not be determined.

Mental health measures

Depression, anxiety, and PTS symptoms as well as suicidal tendencies were measured using standardized scales all previously used with vulnerable children in Cape Town (Wild, Flisher, Laas, & Robertson, 2006). The 10-item Child Depression Inventory (CDI) short form (Kovacs, 1992) has been frequently used in South Africa (Cluver et al., 2012). The short form exhibits good psychometric properties and has comparable results with the full CDI (Kovacs, 1992). Internal consistency was .78. Anxiety was measured by Children's Manifest Anxiety Scale-Revised (Reynolds & Richmond, 1978). The 28-item scale shows good reliability and validity (Gerard & Reynolds, 1999) and has been used in South Africa (Wild et al., 2006). Internal consistency was .83. PTS was measured by Child PTSD Checklist, a 29-item scale developed from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria and has been used extensively in South Africa (Seedat, Nyamai, Njenga, Vythilingum, & Stein, 2004). This scale was accompanied by drawings from the Levonn/Andile PTSD scale (Richters, Martinez, & Valla, 1990), to improve accessibility for Xhosa speaking adolescents (Cluver et al., 2007). Internal consistency was .94. The scales were totaled and cutoffs avoided as there are no clinical cutoffs validated in Africa (Cluver et al., 2012). All analyses used the total continuous scores these three scales. Suicidal tendencies were measured by Mini-International Psychiatric Interview for Children and Adolescents (Sheehan, Shytle, & Milo, 2004) with internal consistency of .64 as a continuous variable in the current sample. In this article, the five-question scale was dichotomized with youth who answered yes to one or more of these questions being identified as having suicidal tendencies.

Caregiver social support measures

Caregiver social support was measured using the Social Support Scale (Adolescent Pathways Project, 1992), which was developed to (1) measure social support within microsystems; (2) be appropriate for poor, inner-city adolescents; and (3) be brief (Seidman et al., 1995). The scale identifies six sources of social support identified and has been used in Cape Town (Van Der Merwe & Dawes, 2000). The internal consistency was .80 for the caregiver social support subscale. Youth reported caregiver social support in three domains (emotional, instrumental/financial, and satisfaction).

Caregiver relation

Youth were asked if they had a parent, guardian, or caregiver staying with and taking care of them at home, which resulted in 25 descriptors that were collapsed into four categorical variables (parent, grandparent, other-kin, and non-kin), which in multivariate analysis will be summarized into domains with the non-kin variable as the reference category.

Statistical analyses plan

Data were analyzed using SPSS with gender differences being assessed using independent sample *t*-tests for continuous variables and chi-square for categorical background characteristics. Data analyses included stepwise multiple regression analyses (MRA), using

the enter block method, to estimate the regression models that relate to depression, anxiety, and PTS symptoms among the 254 youth. Logistic regression was conducted to estimate a regression model to show the probability of reporting suicidal tendencies among these 254 youth. In all, 10 factors were entered using enter block method: block one entered age, gender, age of first orphanhood, type of orphan (double or mother only), parent caregiver, grandparent caregiver, other kin caregiver, and block two entered the remaining four variables to show perceived caregiver support (having a person, emotional support, instrumental/financial support, and perceived satisfaction). Regression results are shown in Tables 1–4.

Table 1. Regression of depression symptoms.

	Step 1					Step 2				
Depression symptoms	*B*	Beta	SEB	*t*	*p*	*B*	Beta	SEB	*t*	*p*
Gender	−.595	−.084	.456	−1.307	.193	−.612	−.087	.452	−1.353	.177
Age	.273	.205	.087	3.146	**.002***	.252	.189	.087	2.892	**.004***
Orphaned (mother dead or double)	−.968	−.135	.587	−1.648	.101	−1.032	−.144	.587	−1.751	.081
Caregiver biological relationships**										
Parent	.500	.069	1.138	.439	.661	.567	.078	1.133	.501	.617
Grandparent	.204	.023	1.162	.175	.861	.399	.045	1.164	.343	.732
Other kin	.648	.089	1.105	.586	.558	.634	.087	1.115	.569	.570
Caregiver social support relationships										
Presence						−.857	−.054	1.143	−.750	.454
Emotional						.146	.019	.704	.207	.836
Instrument/financial						.233	.032	.656	.355	.723
Satisfaction						−1.539	−.181	.774	−1.988	**.048***
R Squared					.078					.111

Notes: *$p < .05$; **reference category is non-kin; SEB = standard error of beta; The bold values indicate the significant variables.

Table 2. Regression of anxiety symptoms.

	Step 1					Step 2				
Anxiety symptoms	*B*	Beta	SEB	*t*	*p*	*B*	Beta	SEB	*t*	*p*
Gender	.087	.012	.474	.184	.854	.044	.006	.460	.096	.924
Age	.254	.183	.090	2.818	**.005***	.213	.153	.089	2.400	**.017***
Orphaned (mother dead or double)	−.494	−.066	.611	−.808	.420	−.452	−.060	.600	−.754	.452
Caregiver biological relationships**										
Parent	2.620	.347	1.184	2.213	**.028***	2.559	.339	1.153	2.219	**.028***
Grandparent	1.665	.179	1.209	1.377	.170	1.706	.183	1.185	1.439	.151
Other kin	1.896	.249	1.150	1.649	.101	1.554	.204	1.135	1.369	.172
Caregiver social support relationships										
Presence						−2.102	−.127	1.164	−1.806	.072
Emotional						.739	.094	.717	1.032	.303
Instrument/financial						−.533	−.070	.668	−.798	.426
Satisfaction						−1.772	−.200	.788	−2.248	**.026***
R^2					.083					.153

Notes: *$p < .05$; **reference category is non-kin; SEB = standard error of beta; The bold values indicate the significant variables.

Table 3. Regression of PTS symptoms.

	Step 1					Step 2				
PTS symptoms	*B*	Beta	SEB	*t*	*p*	*B*	Beta	SEB	*t*	*p*
Gender	1.560	.045	2.288	.682	.496	1.060	.031	2.175	.487	.627
Age	1.296	.201	.430	3.010	**.003***	1.030	.160	.414	2.485	**.014***
Orphaned (mother dead or double)	−2.262	−.064	2.914	−.776	.438	−1.725	−.049	2.797	−.617	.538
Caregiver biological relationships**										
Parent	1.616	.046	5.558	.291	.771	1.170	.033	5.292	.221	.825
Grandparent	−4.902	−.112	5.696	−.861	.390	−4.458	−.102	5.456	−.817	.415
Other kin	−.856	−.024	5.399	−.159	.874	−2.824	−.079	5.220	−.541	.589
Caregiver social support relationships										
Presence						−7.995	−.101	5.596	−1.429	.155
Emotional						8.059	.214	3.383	2.382	**.018***
Instrument/financial						−4.745	−.130	3.140	−1.511	.132
Satisfaction						−12.773	−.304	3.788	−3.372	**.001***
R^2					.087					.194

Notes: *$p < .05$; **reference category is non-kin; SEB = standard error of beta; The bold values indicate the significant variables.

Table 4. Logistic regression relations to suicidal tendencies.

Factor	*B*	Wald	*p*	Odds ratio
Gender	.814	6.267	**.012***	**2.256**
Age	.201	10.289	**.001***	**1.223**
Orphaned (mother dead or double)	.287	.487	.485	1.333
Caregiver biological relationships				
Parent	.303	.163	.686	1.354
Grandparent	.775	.926	.336	2.170
Other kin	−.218	.088	.766	.805
Caregiver social support relationships				
Presence	.624	.714	.398	1.867
Emotional	.596	1.634	.201	1.815
Instrument/financial	.032	.005	.943	1.033
Satisfaction	.625	1.591	.207	1.869

Note: *$p < .05$; The bold values indicate the significant variables.

Findings

Descriptive characteristics

The mean age of male and female participants was 17.0 years, with an age range of 11–24 years. The mean age of first orphanhood was 9.1 years for girls and 9.6 years for boys. The mean household size was 5 and the majority of males (64%) and females (55%) lived in a home of brick/concrete. Less than half lived with a parental caregiver (female = 41%, male = 38%). About 31% females and 35% males reported losing their mother to AIDS. About 33% females and 42% males reported losing their father to AIDS. Additionally, 36% of the females and 17% of the males reported losing both parents to AIDS. The results of the descriptive analyses are shown in Table 5 and revealed a significantly higher

Table 5. Description of participants.

Youth orphaned due to AIDS (N = 254)	Female	Male	λ^2 p	t-Test p
Gender N (%)	131 (52)	121 (48)		
Age M (SD)	17.0 (2.7)	17.0 (2.6)		.87
Age of first orphanhood M (SD)	9.1 (4.0)	9.6 (4.3)		.42
Under 15 N (%)	23 (17)	22 (18)	.96	
15–19	68 (52)	64 (52)		
20–25	40 (31)	35 (29)		
Household size M (SD)	5.0 (2.2)	5.5 (2.4)		.14
Home is brick or concrete N (%)	72 (55)	77 (64)	.20	
Mother deceased	41 (31)	42 (35)	.21	
Father deceased	44 (33)	51 (42)		
Both deceased	34 (36)	20 (17)		
Unknown	12 (9)	8 (7)		
Parent caregiver N (%)	53 (41)	46 (38)	.77	
Grandparent caregiver	27 (21)	22 (18)		
Kin caregiver	44 (34)	48 (40)		
Non-kin caregiver	7 (5)	5 (4)		
Depression symptoms M (SD)	4.1 (3.5)	3.7 (3.4)		.37
Anxiety symptoms M (SD)	5.8 (3.7)	6.0 (3.7)		.69
PTS symptoms M (SD)	23.8 (15.3)	25.9 (19.3)		.35
Suicidal tendencies N (%)	47 (36%)	28 (23%)	.04*	

Note: *$p < .05$.

rate of suicidal tendencies among girls (36%) compared to boys (23%). No other background characteristics were significantly different.

Mental health outcomes

Depression symptoms

MRA showed a significant relationship between age, perceived satisfaction with caregiver support, and depression symptoms. Older youth and those who were less satisfied with their caregiver social support were more likely to report depression symptoms ($F(10, 231) = 2.760$, $p < .01$). Increased age ($B = .205$, $p < .05$) and lower levels of caregiver satisfaction ($B = -.181$, $p < .05$) related to depression symptoms. Both accounted for 11.1% of the variance in depression symptoms ($R^2 = .111$).

Anxiety symptoms

Regressions showed three variables significantly related to anxiety symptoms: these were increased age ($B = .153$, $p < .05$), having a biological parent as the caregiver ($B = .339$, $p < .05$), and lower levels of caregiver satisfaction ($B = -.200$, $p < .05$). Increased age, having a biological parental caregiver, and low levels of satisfaction with the support the caregiver provides were significantly related to anxiety symptoms ($F(10, 231) = 3.994$, $p < .001$) in this model. These three variables accounted for 15.3% of the variance in anxiety ($R^2 = .153$). Additionally, an independent t-test showed that those with a caregiver who was sick with AIDS was significantly related to higher anxiety symptoms among youth ($t = -3.259$, $p < .01$).

Post-traumatic stress symptoms

MRA showed that increased age, higher levels of emotional support, and lower levels of satisfaction with caregiver support related to PTS symptoms ($F(10, 219) = 5.038$, $p < .001$). As youth age, they are more likely to be reported with PTS symptoms ($B = .160$, $p < .05$). Higher levels of caregiver emotional support ($B = .214$, $p < .05$) and lower levels of satisfaction with caregiver support ($B = -.304$, $p < .05$) were related to higher PTS symptoms. All three variables accounted for 19.4% of the variance in PTS symptoms ($R^2 = .194$).

Suicidal tendencies

The results of the logistic regression (Table 4) revealed two factors significantly related to suicidal tendencies. These factors were age (Wald (df = 1) = 10.289, $p < .01$) and gender (Wald (df = 1) = 6.267, $p < .05$). Boys were 2.25 times more likely to exhibit suicidal tendencies compared to girls. Additionally, every yearly increase in age resulted in the youth being 1.22 times more likely to exhibit suicidal tendencies. Bivariate analysis showed girls had significantly higher number of reported suicidal tendencies; however, in the multivariate analysis, the impact of gender is reversed. This indicates an interaction effect may be operating, which may suggest gender is a moderator in the regression model and further research is needed.

Caregiver relation

With each group, MRA were run to identify significance in biological/nonbiological relationships to the youth's mental health. This allowed for a full examination between the biological relation to the primary caregiver and mental health. Anxiety was the only outcome that showed a significant difference when the caregiver was analyzed as four groups, specifically the anxiety score was significantly higher for those living with a biological parent compared to those living with a grandparent, other kin, or non-kin. All other mental health outcomes (suicidal tendencies, depression, and PTS symptoms) did not show any significance when analyzed with caregiver relationship regardless of how the caregiver relation variable was analyzed (e.g., four groups, three groups, or two groups).

Discussion and implications

Biological caregiver relationships were not related to the mental health in the majority of these analyses. The transfer of social support from caregiver to the child is important and not necessarily linked to a biological relationship. All caregivers occupy a central and critical role, and programs should recognize that reality and reinforce the caregiver relationship in all family strengthening efforts (Richter et al., 2009). However, it is important to note that youth in this study who were living with a parent had significantly higher anxiety symptoms than those not living with a parent. Further analysis uncovered a significant relation between anxiety symptoms and having a parent sick with AIDS, reinforcing findings from a South African study where 60% of adult caregivers were experiencing moderate-to-high anxiety, which may influence the child as she/he cares for the remaining parent; however, further analysis is needed (Casale, Wild, Cluver, &

Kuo, 2014; Kuo & Operario, 2009). These results indicate the need for stronger supportive services to target those youth who are living with their remaining parent.

Additionally, these data strongly indicate that access to regular mental health assessment and support is critical for all youth orphaned due to AIDS, and this need increases as the youth ages. A stepped care approach (1. screen, 2. intervene, and 3. refer) can identify the need for further mental health support/referrals (Beaglehole et al., 2008). Stepped care provides screening at the lowest appropriate service level with linkages to more specialized services (Thornicroft, 2004). As older youth are less likely to be in school, programs should use health and community care workers at health facilities and/or community service organizations to implement rapid screening/referrals. Additionally, health/community workers could provide basic therapeutic interventions with limited training/support (Beaglehole et al., 2008). This may improve access among youth at the community level, as mental health services in South Africa are available but not widely accessible. There is a very limited number of trained psychiatric nurses practicing (Atwine et al., 2005), and this cadre could be identified to provide higher-level care after a community screen. Improving access to services is important as HIV and depression are leading causes of morbidity among youth ages 10–24 globally (Tylee, Haller, Graham, Churchill, & Sanci, 2007).

While this information can help programs and policy makers, there are also important limitations that must be recognized. First, although the scales have been used with this population previously, they lack validated clinical cutoff for youth in Africa. Secondly, cross-sectional data limit any references to causality between the variables. Thirdly, the findings may not be generalizable due to nonrepresentative sampling methods; however, the large number of youth orphaned due to AIDS helps to control for background characteristics. Fourthly, the data were collected retrospectively and findings do not distinguish when mental health distress was experienced in relation to orphanhood, important in the context of the multiple losses associated with HIV (Cluver et al., 2009). Fifthly, the study did not collect data from the caregivers about their relationships, which would be useful to compare with the child's perception. Future research should collect information from the child and his/her caregiver to more deeply understand the relationship's protective nature on mental health.

Findings from this study show that satisfaction with caregiver support was significant for positive mental health, and interventions should continue to focus on strengthening caregiver's ability to provide positive support to youth orphaned due to AIDS irrespective of the caregiver's blood relation. This research supports the international policy and programmatic continued shift toward strengthening families and caregivers so that they are able to care for youth orphaned due to AIDS (UNICEF, UNAIDS, WHO, UNFPA, & UNESCO, 2010; United States Government, 2012). Educating caregivers about the importance of protective and supportive care should continue to be a focus of all international policies and programs. Strengthening families to care for orphaned children and adolescents should continue to reach beyond biological parents to include other relatives and community caregivers.

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References

Adolescent Pathways Project. (1992). *Social support scale: Psychometric development summary.* New York, NY: New York University.

Allison, S. (2012). The role of families among orphans and vulnerable children in confronting HIV/AIDS in sub-Saharan Africa. In W. Pequegnat & C. C. Bell (Eds.), *Family and HIV/AIDS: Cultural and contextual issues in prevention and treatment* (pp. 173–194). New York, NY: Springer Science, Business Media.

Atilola, O. (2014). Where lies the risk? An ecological approach to understanding child mental health risk and vulnerabilities in sub-Saharan Africa. *Psychiatry Journal*, *V2014*, 1–11.

Atwine, B., Cantor-Graae, E., & Bajunirwe, F. (2005). Psychological distress among AIDS orphans in rural Uganda. *Social Science & Medicine*, *61*(3), 555–564. doi:10.1016/j.socscimed.2004.12.018

Beaglehole, R., Epping-Jordan, J., Patel, V., Chopra, M., Ebrahim, S., Kidd, M., & Haines, A. (2008). Improving the prevention and management of chronic disease in low-income and middle-income countries: A priority for primary health care. *The Lancet*, *372*(9642), 940–949. doi:10.1016/S0140-6736(08)61404-X

Betancourt, T. S., & Khan, K. (2008). The mental health of children affected by armed conflict: Protective processes and pathways to resilience. *International Review of Psychiatry*, *20*(3), 317–328. doi:10.1080/09540260802090363

Betancourt, T. S., Meyers-Ohki, S. E., Charrow, A., & Hansen, N. (2013). Annual research review: Mental health and resilience in HIV/AIDS-affected children – A review of the literature and recommendations for future research. *Journal of Child Psychology and Psychiatry*, *54*, 423–444. doi:10.1111/j.1469-7610.2012.02613.x

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, *22*(6), 723–742. doi:10.1037/0012-1649.22.6.723

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *International encyclopedia of education* (2nd ed., Vol. 3, pp. 1643–1647). Oxford: Pergamon Press.

Casale, M., Wild, L., Cluver, L., & Kuo, C. (2014). The relationship between social support and anxiety among caregivers of children in HIV-endemic South Africa. *Psychology, Health, & Medicine*, *19*(4), 490–503. doi:10.1080/13548506.2013.832780

Chi, P., & Li, X. (2013). Impact of parental HIV/AIDS on children's psychological well-being: A systematic review of global literature. *AIDS Behavior*, *17*, 2554–2574. doi:10.1007/s10461-012-0290-2

Chirwa, W. C. (2002). Social exclusion and inclusion: Challenges to orphan care in Malawi. *Nordic Journal of African Studies*, *11*(1), 93–113.

Cluver, L., Gardner, F., & Operario, D. (2007). Psychological distress amongst AIDS-orphaned children in urban South Africa. *Journal of Child Psychology and Psychiatry*, *48*, 755–763. doi:10.1111/j.1469-7610.2007.01757.x

Cluver, L., Operario, D., & Gardner, F. (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

Cluver, L. D., Orkin, M., Gardner, F., & Boyes, M. (2012). Persisting mental health problems among AIDS-orphaned children in South Africa. *Journal of Child Psychology and Psychiatry*, *53*(4), 363–370. doi:10.1111/j.1469-7610.2011.02459.x

Daniel, M., Apila, H., BjØrgo, R., & Lie, G. T. (2007). Breaching cultural silence: Enhancing resilience among Ugandan orphans. *African Journal of Aids Research*, *6*(2), 109–120. doi:10.2989/16085900709490405

Foster, G. (2002). Beyond education and food: Psychosocial well-being of orphans in Africa. *Acta Paediatrica*, *91*, 502–504. doi:10.1111/j.1651-2227.2002.tb03266.x

Freeman, M., & Nkomo, N. (2006). Guardianship of orphans and vulnerable children. A survey of current and prospective South African caregivers. *AIDS Care*, *18*(4), 302–310. doi:10.1080/09540120500359009

Gerard, A., & Reynolds, C. (1999). Characteristics and application of the Revised Children's Manifest Anxiety Scale. In M. Maruish (Ed.), *The use of psychological testing for treatment and planning and outcomes assessment* (2nd ed., pp. 323–340). Mahwah, NJ: Lawrence Erlbaum.

Heymannn, J., & Kidman, R. (2009). HIV/AIDS, declining family resources and the community safety net. *AIDS Care*, *21*(S1), 34–42. doi:10.1080/09540120902927593

Kahn, K., Tollman, S., Garenne, M., & Gear, J. S. S. (2000). Validation and application of verbal autopsies in a rural area of South Africa. *Tropical Medicine and International Health*, *5*(11), 824–831. doi:10.1046/j.1365-3156.2000.00638.x

Karimli, L., Ssewamala, F., & Ismayilova, L. (2012). Extended families and perceived caregiver support to AIDS orphans in Rakai district of Uganda. *Children and Youth Services Review*, *34*(7), 1351–1358. doi:10.1016/j.childyouth.2012.03.015

King, E., De Silva, M., Stein, A., & Patel, V. (2009). Interventions for improving the psychosocial well-being of children affected by HIV and AIDS. (Review). *Cochrane Database of Systematic Reviews*, *3*, Retrieved from Cochrane Library database. doi:10.1002/14651858.CD006733.pub2

Kovacs, M. (1992). *Children's depression inventory*. Niagara Falls, NY: Multi Health Systems.

Kuo, C., & Operario, D. (2009). Caring for AIDS-orphaned children: A systematic review of studies on caregivers. *Vulnerable Children and Youth Studies*, *4*, 1–12. doi:10.1080/17450120802270418

Li, X., Naar-King, S., Barnett, D., Stanton, B., Fang, X., & Thurston, C. (2008). A developmental psychopathology framework of the psychosocial needs of children orphaned by HIV. *Journal of the Association of Nurses in AIDS Care*, *19*(2), 147–157. doi:10.1016/j.jana.2007.08.004

Littrell, M., Boris, N. W., Brown, L., Hill, M., & Macintyre, K. (2011) The influence of orphan care and other household shocks on health status over time: A longitudinal study of children's caregivers in rural Malawi. *AIDS Care*, *23*(12), 1551–156. doi:10.1080/09540121.2011.582079

Makame, V., Ani, C., & Grantham-McGregor, S. (2002). Psychological well-being of orphans in Dar El Salaam, Tanzania. *Acta Paediatrica*, *91*, 459–465. doi:10.1111/j.1651-2227.2002.tb01671.x

Nyamukapa, C. A., Gregson, S., Wambe, M., Mushore, P., Lopman, B., Mupambireyi, Z. … Jukes, M. C. H. (2010). Causes and consequences of psychological distress among orphans in eastern Zimbabwe. *AIDS Care*, *22*(8), 988–996. doi:10.1080/09540121003615061

Reynolds, C., & Richmond, B. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Child Psychology*, *6*, 271–280. doi:10.1007/BF00919131

Richter, L. M., Sherr, L., Adato, M., Belsey, M., Chandan, U., Desmond, C. … Wakhweya, A. (2009). Strengthening families to support children affected by HIV and AIDS. *AIDS Care*, *21*(S1), 3–12. doi:10.1080/09540120902923121

Richters, J., Martinez, P., & Valla, J. (1990). *Levonn: A cartoon-based interview for assessing children's distress symptoms*. College Park: NIMH, University of Maryland.

Schenk, K. D. (2009). Community interventions providing care and support to orphans and vulnerable children: A review of evaluation evidence. *AIDS Care*, *21*(7), 918–942. doi:10.1080/09540120802537831

Seedat, S., Nyamai, C., Njenga, F., Vythilingum, B. C., & Stein, D. (2004). Trauma exposure and post-traumatic stress symptoms in urban African schools: Survey in CapeTown and Nairobi. *British Journal of Psychiatry*, *184*, 169–175. doi:10.1192/bjp.184.2.169

Seidman, E., Allen, L., Aber, J. L., Mitchell, C., Feinman, J., Yoshikawa, H. … Roper, G. C. (1995). Development and validation of adolescent perceived microsystem scales: Social support, daily hassles, and involvement. *American Journal of Community Psychology*, *23*(3), 355–388. doi:10.1007/BF02506949

Sheehan, D., Shytle, D., & Milo, K. (2004). *MINI KID: Mini international neuropsychiatric interview for children and adolescents* (English Version 4.0). Paris: University of South Florida, Tampa and Hopital de la Salpetriere.

Thornicroft, G. (2004). Components of a modern mental health service: A pragmatic balance of community and hospital care: Overview of systematic evidence. *The British Journal of Psychiatry*, *185*, 283–290. doi:10.1192/bjp.185.4.283

Tylee, A., Haller, D. M., Graham, T., Churchill, R., & Sanci, L. A. (2007). Youth-friendly primary-care services: How are we doing and what more needs to be done? *The Lancet*, *369*, 1565–1573. doi:10.1016/S0140-6736(07)60371-7

UNAIDS. (2012). *Global fact sheet*. Retrieved from: http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2012/gr2012/20121120_FactSheet_Global_en.pdf

UNICEF, UNAIDS, WHO, UNFPA, & UNESCO. (2010). *Children and AIDS*: *Fifth stocktaking report*. New York, NY: UN. Retrieved from http://www.unicef.org/publications/files/Children_and_AIDS-Fifth_Stocktaking_Report_2010_EN.pdf

United States Government. (2012). *United States Government action plan on children in adversity: A framework for international assistance: 2012–2017*. Washington, DC: U.S: Government Printing Office. Retrieved from http://transition.usaid.gov/our_work/global_health/pdf/apca.pdf

Van Der Merwe, A., & Dawes, A. (2000). Prosocial and antisocial tendencies in children exposed to community violence. *Southern African Journal of Child and Adolescent Mental Health*, *12*, 19–37. doi:10.1080/16826108.2000.9632365

Wild, L., Flisher, A., Laas, S., & Robertson, B. (2006). *Psychosocial adjustment of adolescents orphaned in the context of HIV/AIDS*. Poster presented at the International Society for the Study of Behavioral Development Biennial Meeting, Melbourne.

Zhao, G., Zhao, Q., Li, X., Fang, X., Zhao, J., & Zhang, L. (2010). Family-based care and psychological problems of AIDS orphans: Does it matter who was the care-giver? *Psychology, Health & Medicine*, *15*(3), 326–335. doi:10.1080/13548501003623989