

Negative Mental Health Factors in Children Orphaned by AIDS: Natural Mentoring as a Palliative Care

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Abstract The study examined the psychosocial mental health of some children whose parents died of AIDS ($n = 373$) in Uganda and South Africa. The design had 2 control groups: other-causes orphaned ($n = 287$), and non-orphaned ($n = 290$) children (grand mean age = 13.59, $SD = 2.34$). We utilized a battery of standardized psychosocial measures to estimate mental health in the groups. Natural mentoring relationship was estimated with the Ragins and McFarlin (J Vocat Behav 37:321–339, 1990) Mentor Role Instrument. Results indicated that AIDS-orphaned children showed highest negative, and lowest positive mental health factors in the 3 groups. Children in a mentoring relationship showed better mental health factors than those without a mentor. We ascribed the AIDS-orphaned children's highest negative mental health condition to the incidence of higher double parental loss in the group, and suggested natural mentorship as a palliative care against negative mental health.

Keywords Mental health · AIDS-orphaned children · Non-orphaned children · Natural mentoring

Introduction

Studies of childhood parental loss suggest that orphans tend to experience social depression (Furukawa et al. 1999), personality disorders (Paris et al. 1994), and anxiety/insomnia (Tweed et al. 1989). Parents are arguably the most fundamental agent of social stabilization in the lives of children. They have the inalienable primary responsibility to provide for the material, intellectual, and psychosocial support needs of their offspring (Maxwell 1998). As role models, counselors, and educators, parents make significant impacts on the belief systems, hopes, and aspirations of their infants. However, as children make the inevitable transition to adolescence they come in contact with a broad array of non-parent adults, who may exert strong influences on the children (Beam et al. 2002).

Childhood parental acculturation tends to persist into early adulthood (Flaherty and Richman 1986). Children who are groomed into reciprocity as a way of life may internalize and apply the social skill in later life to build own social support network. But children without parents may miss out in this important social networking skill training. Support from parents during childhood may have enduring physical and psychosocial health benefits (Scroufe et al. 1999). Parental support, tangible (monetary, social participation, material care) or intangible (emotional care, cognitive guidance) is desirable to fulfill the affective and economic functions of the family (Turnbull and Turnbull 2001). Yet the direct consequence of orphanhood is the reduced availability of parental support (UNICEF 2004).

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Orphan children seem socially deprived. They tend to encounter higher emotional distress, hopelessness, and frustration (Mbozi et al. 2006) than non-orphans. Most orphans may be distressed by their new circumstance that may require them to cater for themselves and/or assume care-giving responsibility for their younger ones. Sexual abuse (Pridmore and Yates 2005) and social discrimination (Cluver et al. 2008; Nyblade et al. 2003) against orphans have been reported. Abebe and Aase (2007), however, disagree with the symptomatic perceptions of orphans. They argue that the symptomatic constructs of orphans are media-induced stereotyping, orchestrated by academic scholars of the traditionalist persuasion. Most orphans have the resilience and agency (Abebe and Aase 2007) to get on with the challenges of life following parental death.

Chitiyo et al. (2007) suggest that AIDS-orphaned children may be unique orphans. Unlike other orphans, they may begin to grieve long before parental death(s), owing to the protracted human “wasting” AIDS-defining illnesses that may precede death. According to UNAIDS et al. (2004, p. 11), “an especially important and distinctive characteristic of HIV/AIDS in regards to orphaning is that AIDS is more likely than other causes of death to create double orphans.” In the sub-Saharan African countries of South Africa and Uganda, double orphanhood (the loss of both parents) is four times more likely in AIDS-affected homes (UNAIDS et al. 2004) than in other households, where civil war, vehicular accident (Cluver et al. 2008), feminine and disease (Abebe and Aase 2007) may account for double parental loss.

Subbarao et al. (2001) identified 7 care options for orphan children in most African countries. Atop these options is fostering, adjudged to be attuned to the support culture of the African extended family system. Foster children, however, tend to experience discrimination in food allocation, domestic exploitation and abuse (Deininger et al. 2003) that may negatively impact on their psychological health. Furthermore, the magnitude of the AIDS-orphan crisis in sub-Saharan Africa seems to so overstretch the fostering capacity of most families that the collapse of fostering seems imminent (UNICEF 2003), fueling the need for a complementary/alternative care model. In a national US representative survey of adults, spontaneous ties with children accounted for two-thirds of the reported adult-child relationships (MENTOR 2002). The children experienced guidance, counseling, role model, and ego ideal functions (Barrera and Prelow 2000) from the adult mentors. Nonparent adults or natural mentors may be an overlooked resource for the positive psychological adjustment of vulnerable children (Rhodes et al. 1992).

The purpose of the present study is to examine the psychosocial mental health of children orphaned by AIDS,

and to estimate the association of natural mentoring relationship with mental health in the children. Natural (informal) mentoring is different from organizational (formal) mentorship (Sipe 2002). The latter (formal mentoring) is given at the workplace by senior personnel to junior colleagues; the former is provided outside the workplace, in homes and communities (DuBois and Silverthorn 2005) by nonparent support figures (Rhodes et al. 1992)—such as local school teachers, neighbors, elders and religious leaders, grandmothers/fathers, and other significant family/nonfamily adult members.

Method

Procedure

We applied and received approval for the study protocol from the Uganda National Council for Science and Technology (UNCST), and the School of Economics & Decision Sciences, North-West University, Mafikeng, South Africa. So did the Department of Human Care Science, Graduate School of Human Sciences, University of Tsukuba, Japan, the host institution for the study, approve the protocol. The study participants were recruited at 9 community schools, and 6 NGO child support centers at Mafikeng and Klerksdorp (North-West Province, South Africa) and Kampala (Kampala District, Uganda). Better generalizability of the study outcome informed our choice of the international sample. The UN definition of orphanhood as the loss of one or both parents (UNAIDS et al. 2004) was adopted. We also utilized the UN definition of a child as persons aged 0–17 years, following which 88 children were dropped from the prospective sample ($N = 1,040$) in the data analysis. We explained the study objectives to the community school and child support center heads/staff, who solicited the voluntary participation of the children. To the children, the fact that the study was about orphans was not disclosed in order to check response biases. Interviewers were Luganda (Uganda) and Setswana/Afrikaans (South Africa) speaking research collaborators. When expedient the interviewer-administered questionnaire method was adopted, particularly for the tender-aged or low education children; otherwise the self-report method was dominantly used. The interview duration lasted approximately 45 min per session, at the end of which the child received a ball pen.

Participants

Nine hundred and fifty-two (952) children of Ugandan ($n = 459$) and South African ($n = 492$) origins validly participated in the study. The design has 3 groups: AIDS-

orphaned, other-causes orphaned, and non-orphaned children. To determine orphan status, we asked the participant: “Is your father living? (Yes/No); is your mother living? (Yes/No).” Children who checked “No”, were asked: “If father or/and mother not living, what was the cause of death?” Response choices were: “1. HIV/AIDS, 2. War, 3. Others, 4. Don’t know.” Children who checked HIV/AIDS were assigned to the AIDS-orphaned group ($n = 373$).

Owing to the shame associated with HIV infection, children may feign ignorance of HIV-related cause of parental death (Chitiyo et al. 2007; Gillespie et al. 2005). We assigned to the AIDS-orphaned group, children who answered “Don’t Know” to the cause of parental death, if their both parents were deceased. The criterion is in consonance with the UN defined essential characteristic of AIDS-induced orphanhood. A negligible few children were also assigned to this group utilizing the “verbal autopsy” (Hosegood et al. 2004) accounts of the community school and child support center heads, as explained elsewhere. Children who checked “War/Others” as the cause of father or/and mother death were assigned to the orphaned by other causes group ($n = 289$), and children whose father and mother were living were assigned to the non-orphaned group ($n = 290$).

Measures

To assess *anxiety*, we used the Anxiety subscale of the renowned General Health Questionnaire (GHQ-28, Goldberg and Hillier 1979). The 6-item subscale ($\alpha = .81$) negatively ($r = -.34, P < .01$) correlated with Rosenberg’s Self Esteem, and positively ($r = .40, P < .01$) with the Weissman et al. (1980) CES-DC (Center for Epidemiological Studies Depression Scale for Children) as adapted.

We assessed *depression* with the Weissman et al. (1980) CES-DC, which test-retest reliability and concurrent validity are adequate (Faulstich et al. 1986). We utilized the first 10 items (somatic complaints, 5 items; negative affects, 3 items; and positive affects, 2 items) of the 20-item CES-DC. To strengthen the internal stability of the measure ($\alpha = .77$), we excluded the two positive affect items during analysis. Sample items on the 8-item CES-DC include: “I was bothered by things that usually don’t bother me; I didn’t feel like eating, I wasn’t very hungry; I wasn’t able to feel happy, even when friends tried to make me feel good; I felt like I was too tired to do things.”

To estimate *perceived social support*, we adapted 6-items ($\alpha = .83$) from the 15-item Schwarzer and Schulz (2000) Received Support Scale. The measure positively associated with the Rosenberg’s Self-esteem ($r = .36, P < .01$), and negatively with anxiety ($r = -.38, P < .01$). The measure requires the respondent to “think

about person(s) that is closest to you—your friend(s), guardian(s) or parent(s)/foster parent(s)—how does this person treat you?” Sample items are: S/he “is there when I need him/her; shows love to me; takes care of my financial needs; in general, I am satisfied with the way s/he treats me.”

We measured *self-esteem* with the Rosenberg (1965) Self-Esteem Scale (RSE), the most utilized measure of self-esteem (Blascovich and Tomaka 1991) that estimates favorable/unfavorable attitude toward the self. The Cronbach alpha for the Scale in the present study is .60, which compares with the value found by Lorenzo-Hernandez and Ouellette (1998). The measure showed admissible discriminant validity against anxiety ($r = -.34, P < .01$), and social discrimination ($r = -.40, P < .01$).

To estimate *social discrimination*, we utilized the modified Detroit Area Study Measure of Discrimination (1995) ($\alpha = .78$). Typical questions are: In your daily life, compared to other people around you, do you: Feel differently treated? Feel unfairly treated? Made to feel inferior? Prevented from doing things others are allowed to do? People behave as though they are afraid of you? The measure appreciably correlated with depression ($r = .38, P < .01$), child abuse ($r = .30, P < .01$), but negatively with social support ($r = -.25, P < .01$).

To assess *child abuse*, we asked 4 questions, each of which estimates the physical, verbal, sexual, and labor dimensions of child abuse (Bagley and King 1990): Are you—physically beaten in a manner you consider unfair; verbally abused in a manner you consider unfair; forced to “sleep”/have sex with anyone; forced against your wish to work on the farm for someone? The alpha reliability of the measure, which discriminated depression ($r = .21, P < .01$) and perceived social support ($r = -.36, P < .01$) is .76.

We assessed *parental/foster care* with the Parker et al. (1979) Parental Bonding Instrument (PBI). The 25-item PBI assesses both parental care and parental over-protection. The “care” dimension estimates empathy, affection, warmth, and independence. “Over-protection” comprises parental intrusion, infantilism, and control. Support for the reliability and validity of the PBI as a measure of both actual and perceived parenting has been reported (Neale et al. 1994). We utilized 8 items in the “care” subscale ($\alpha = .86$) in the present study. Typical items include parents/foster parents: are affectionate to me; understand my problems and worries; let me do things I enjoy doing; enjoy discussing things with me; give me as much freedom as I want.

Negative mental health factors (24 items, $\alpha = .87$) are the summation of child abuse, depression, social discrimination, and anxiety scores. *Positive mental health factors* (23 items, $\alpha = .86$) are the sum of parental/foster care, perceived social support, and self-esteem

scores. Responses to all items on the study measures were scored from 0 (never) to 3 (always) in which high scores denoted high presence of the construct under examination.

In consonance with the operational definition of *natural mentoring relationship* (Rhodes et al. 1992; Zimmerman et al. 2002), we asked the participants: Other than your parent(s) or foster parent(s) is there any adult person(s) in the neighborhood you go to for support and guidance for most things you do (Yes/No)? If “Yes,” how often do you meet this person (0. Rarely, 1. Sometimes, 2. Often, 3. Very often)? Children who answered “Yes”, and checked any of the 1–3 meeting frequencies were classified to be in a mentoring relationship. These children ($n = 714$) rated the Ragins’ Mentor Role Instrument (MRI) that estimates parental, modeling, counseling, friendship, and support roles of the mentor to the mentee. The 33-item MRI (Ragins and McFarlin 1990) has 3 items per its 11 mentor roles measured on a 7-point likert scale of 1 (strongly disagree) to 7 (strongly agree). We excluded the 6 workplace-related *formal* mentor roles (i.e., job sponsorship, coaching, protection, challenge, exposure and socialization), and utilized the 5 *informal* mentor roles (i.e., parental, counseling, modeling, acceptance, and friendship) each of which was estimated with 2 items on a 4-point likert response score of 0 (never) to 3 (always). The internal stability of the adapted MRI ($\alpha = .91$) is comparable to the value found by Ragins and Cotton (1999). The instrument, which showed discriminant validity against anxiety ($r = -.16, P < .01$) and social support ($r = .38, P < .01$), has the following sample items: Treats me as a son/daughter (parental role); represents who I want to be (modeling role); guides me to choose the career I want (counseling role); provides me support and encouragement (friendship); acts as a leader to me (acceptance). Expected mentoring score range is 0–30, higher scores represent higher impact of the mentor’s roles on the psychological health of the children.

Analysis

To estimate mental health in the AIDS-orphaned children, we performed the *posthoc* ANOVA of multiple mean comparison of mental health for the 3 groups (Table 1). To test whether double orphans are more psychologically disadvantaged than single orphans (UNAIDS et al. 2004), we isolated the double-orphaned from the single-orphaned children and examined the association of double-orphanhood with mental health in the two orphan statuses (AIDS-orphaned and other-causes orphaned children, Table 2). To estimate the association of natural mentoring relationship with the mental health of the children, we undertook two analyses. First, we segregated into two all children (orphans and non-orphans), who reportedly are in mentoring relationship ($n = 714$) from those not in such relationship ($n = 234$), and examined mental health outcomes between them. Next, we separated children having a mentor from those not-having and performed the ANOVA between them for each of the 3 groups (Table 3). To further estimate the probability of natural mentoring relationship to ameliorate negative mental health, we ranked the impact of mentoring relationship scores as *low* (0–10), *medium* (11–20), and *high* (21–30) and examined the negative mental health performance of each rank for the 3 groups (Table 4).

Results

Demographic Outcomes

373 AIDS-orphaned (males = 167, females = 206), 285 other-causes orphaned (males = 130, females = 155) and 290 non-orphaned (males = 113, females = 177) children participated in the study. The majority (94%) of the

Table 1 ANOVA showing mental health differences in the 3 groups

Variables	Children orphaned by AIDS			Children orphaned by other causes			Non-orphaned children			Posthoc
	<i>n</i>	<i>M^a</i>	<i>SD</i>	<i>n</i>	<i>M^b</i>	<i>SD</i>	<i>n</i>	<i>M^c</i>	<i>SD</i>	
1. Child abuse	371	2.86	2.78	283	2.71	2.91	290	2.02	2.50	a > b ^d , a > c*
2. Depression	373	10.49	4.91	285	9.69	4.95	289	9.20	5.14	a > b ^d , a > c*
3. Social discrimination	371	6.18	3.95	284	5.24	3.81	290	5.92	4.38	a > b*, a > c ^d
4. Anxiety	371	7.76	4.78	283	6.15	4.14	289	5.47	3.75	a > b*, a > c*
5. Parental/foster care	371	11.31	5.11	284	12.57	5.97	290	13.67	5.84	a < b*, a < c*
6. Self-esteem	373	15.30	4.83	285	16.27	4.72	290	17.27	4.61	a < b*, a < c*
7. Social support	371	8.12	4.41	282	9.52	4.12	289	10.01	4.11	a < b*, a < c*
8. Negative mental health factors	373	28.71	11.80	285	25.16	11.8	290	23.96	11.18	a > b*, a > c*
9. Positive mental health factors	373	34.51	12.30	285	38.09	11.6	290	40.78	11.01	a < b*, a < c*

^d not significant

* $P < .05$

Table 2 ANOVA of mental health between AIDS-orphaned and other-causes orphaned children who are double-orphaned or single-orphaned

Variables	Group	Double-orphaned children			<i>F</i>	Single-orphaned children			<i>F</i>
		<i>n</i>	<i>M</i>	<i>SD</i>		<i>n</i>	<i>M</i>	<i>SD</i>	
1. Child abuse	1	267	2.91	2.84	0.01 ^d	102	2.75	2.62	0.54 ^d
	2	52	2.94	2.88		229	2.68	2.93	
2. Depression	1	268	10.22	5.03	0.82 ^d	103	11.15	4.56	5.99**
	2	53	9.53	5.15		230	9.75	4.93	
3. Social discrimination	1	267	6.03	3.97	0.03 ^d	102	6.61	3.91	10.40**
	2	52	5.92	3.43		230	5.11	3.89	
4. Anxiety	1	267	7.64	4.81	2.33 ^d	102	8.05	4.74	14.50**
	2	52	6.56	4.04		229	6.07	4.18	
5. Parental/foster care	1	267	11.35	6.24	0.42 ^d	102	11.24	5.85	4.40*
	2	52	11.96	6.27		230	12.71	5.93	
6. Self-esteem	1	268	15.40	4.73	3.37 ^d	103	15.10	5.13	8.36**
	2	53	14.13	3.92		230	16.77	4.76	
7. Social support	1	267	8.19	4.47	0.02 ^d	102	7.94	4.29	14.43**
	2	52	8.29	4.22		228	9.81	4.06	
8. Negative mental health factors	1	268	28.18	11.88	1.32 ^d	103	30.05	11.62	12.97**
	2	53	26.13	11.74		230	25.00	11.89	
9. Positive mental health factord	1	268	34.78	12.45	0.08 ^d	103	33.94	12.15	13.20**
	2	53	34.26	11.54		230	38.98	12.45	

^d not significant* $P < .05$ ** $P < .01$

Group: 1 = AIDS-orphaned, 2 = other-causes orphaned children

children are aged 10–17 years, a few (6%) are aged 5–9 years; grand mean age = 13.59 years ($SD = 2.34$). Orphans comprised 70% and non-orphans 30% of the children. Among the orphans ($n = 658$), 53% lost one parent (single orphans), 47% lost both parents (double orphans). There was no significant differences ($F = .259(2)$, $P = .77$) of age in the 3 groups: Mean = 13.54 ($SD = 2.52$), 13.55 ($SD = 2.11$), 13.67 ($SD = 2.32$), respectively, for AIDS-orphaned, other-causes orphaned, and non-orphaned children. Also no significant difference ($F = 1.96(2)$, $P = .14$) of educational levels in the 3 groups was observed. There were significant more female than male participants in both the AIDS-orphaned ($\chi^2 = 4.08$, $P < .05$) and non-orphaned ($\chi^2 = 14.12$, $P < .01$) groups. However, significant gender difference on almost all variables of the mental health measures was not observed. These demographic outcomes suggest no undue interference of gender, age, or educational level on mental health outcomes in the 3 groups.

Psychosocial Mental Health

Children orphaned by AIDS showed significant ($P < .05$) highest negative mental health factors in the 3 groups (Table 1), evidenced by highest child abuse, depression,

social discrimination, and anxiety scores in the group. Also AIDS-orphaned children showed significant ($P < .05$) least positive mental health factors. Parental/foster care, social support, and self-esteem scores were significantly ($P < .05$) lower in the AIDS-orphaned group than in the 2 control groups. Most (83%) of the double orphans were AIDS-orphaned. Double orphans scored significant higher anxiety ($F = 3.88$, $P < .05$), lower self-esteem ($F = 7.04$, $P < .01$), lower social support ($F = 6.03$, $P < .05$), and lower positive mental health factors ($F = 6.04$, $P < .05$) than did single orphans. However (Table 2), double orphans (whether AIDS or other-causes orphaned) showed similar levels of psychosocial mental health. No significant statistical difference was observed between both groups of orphans on all domains of the mental health measures. Among single orphans, who lost only one of their parents, however, significant mental health differences were found between AIDS and other-causes orphaned children.

Children who reported having a natural mentor ($n = 714$), showed significant lesser negative ($t = 2.61$, $P < .01$) and higher positive ($t = 5.37$, $P < .01$) mental health factors than did those who reportedly have no natural mentor ($n = 234$). Significant lower child abuse ($P < .01$), lower social discrimination ($P < .05$), lower anxiety ($P < .05$), higher social support, and higher self-esteem ($P < .01$)

Table 3 *t*-test showing mental health differences between children having and children not-having a mentor in the 3 groups

Variables	G	Children orphaned by AIDS		<i>t</i>	Children orphaned by other causes		<i>t</i>	Non-orphaned children		<i>t</i>
		<i>n</i>	<i>M</i> (<i>SD</i>)		<i>n</i>	<i>M</i> (<i>SD</i>)		<i>n</i>	<i>M</i> (<i>SD</i>)	
1. Child abuse	H	289	2.69(2.68)	2.15*	207	2.45(2.75)	2.40*	210	1.81(2.43)	2.06*
	NH	81	3.49(3.04)		75	3.45(3.22)		78	2.51(2.60)	
2. Depression	H	291	10.30(4.73)	1.3 ^d	209	9.58(4.87)	0.77 ^d	209	9.26(5.31)	0.43 ^d
	NH	81	11.10(5.48)		75	10.09(5.14)		78	8.96(4.73)	
3. Social discrimination	H	289	5.92(3.64)	2.05*	208	5.13(3.85)	0.97 ^d	210	5.88(4.55)	0.06 ^d
	NH	81	7.10(4.83)		75	5.63(3.70)		78	5.91(3.87)	
4. Anxiety	H	289	7.33(4.51)	2.98**	207	6.09(4.06)	0.48 ^d	209	5.37(3.61)	0.60 ^d
	NH	81	9.28(5.41)		75	6.36(4.38)		78	5.67(4.14)	
5. Parental/foster care	H	289	11.92(6.08)	3.86**	208	12.72(5.66)	0.78 ^d	210	14.43(5.43)	3.43**
	NH	81	9.01(5.66)		75	12.04(6.75)		78	11.60(6.50)	
6. Self-esteem	H	291	15.68(4.71)	2.84**	209	16.39(4.65)	0.91 ^d	210	17.68(4.57)	2.36*
	NH	81	13.98(5.06)		75	15.81(4.81)		78	16.24(4.60)	
7. Social support	H	289	8.56(4.39)	3.67**	206	9.93(3.94)	2.70*	209	10.56(3.75)	3.23*
	NH	81	6.56(4.16)		75	8.36(4.44)		78	8.67(4.66)	
8. Negative mental health factors	H	291	27.58(10.90)	3.00**	209	24.57(11.57)	1.59 ^d	210	23.63(10.91)	0.58 ^d
	NH	81	32.64(14.04)		75	27.08(12.29)		78	24.49(11.84)	
9. Positive mental health factors	H	291	35.88(12.32)	4.19**	209	38.76(11.23)	1.84 ^d	210	42.47(10.08)	3.85**
	NH	81	29.53(11.16)		75	35.92(12.13)		78	36.49(12.27)	

^d not significant* $P < .05$ ** $P < .01$

G = Group: H = reported having a mentor, NH = reported not-having a mentor

were observed in the group than in children who reportedly have no natural mentor ($n = 234$). In the 3 groups (Table 3), AIDS-orphaned children, who have mentors, showed significant lower ($t = 3.00$, $P < .05$) negative mental health factors than did AIDS-orphaned children without mentors. In the control groups, although children having mentors showed lower negative mental health factors than those not-having, the variance was not significant. Furthermore, in the ranked perceived positive impact of the mentor's role on the psychological health of the children (Table 4), AIDS-orphaned children who scored high impact, showed significant ($P < .05$) lower negative mental health factors than did those who scored medium and low impacts. Similar significant effects were not observed in the control groups. These outcomes suggest that the natural mentoring care may ameliorate negative mental health factors among AIDS-orphaned children, most of whom are without their two biological parents.

Discussion

A preponderance of interpersonal relation studies agrees that social support is a potent factor for the psychological

well-being of individuals (Uchino et al. 1996). AIDS-orphaned children, in the present study, showed lowest scores on all domains of the social support measure. Friends and family members showed them the least love, least comforted them when they felt bad, least took care of their financial needs or helped them do things they could not do. Compared with children in the control groups, AIDS-orphaned children were, in general, significantly least satisfied with the social support from their environment. Two factors may precipitate low social support—social discrimination (Cluver et al. 2008) and parental loss (UNAIDS et al. 2004). Cluver et al. (2008) had reported highest levels of stigma/social discrimination among AIDS-orphaned than among non-AIDS and non-orphaned children. In the present study, however, we are less inclined for two reasons to point at social discrimination for the highest negative mental health factors observed in the AIDS-orphaned group. First, between all orphaned and non-orphaned children in the study, social discrimination experience was not significantly different. Second, in the 3 groups, although AIDS-orphaned children experienced higher social discrimination than did children in the control groups, their experience was not significantly different from that of non-orphaned children. Specifically, AIDS-

Table 4 ANOVA of ranked mentoring relationship and mental health in the 3 groups

Variables	MR	Children orphaned by AIDS		Children orphaned by other causes		Non-orphaned children	
		n	M(SD)	n	M(SD)	n	M(SD)
1. Negative mental health factors	a	113	32.73(13.40)	98	26.40(12.58)	13	21.31(8.77)
	b	102	28.51(10.20)	69	25.90(11.66)	54	23.13(8.58)
	c	158	25.96(10.80)	118	23.70(11.21)	141	24.23(11.80)
2. Positive mental health factors	a	113	32.73(13.40)	98	26.40(12.58)	13	21.31(8.77)
	b	102	33.16(11.50)	69	35.80(10.17)	54	37.31(10.30)
	c	158	39.77(11.70)	118	42.10(10.26)	141	44.78(8.83)

^d not significant

* $P < .05$

MR = ranked mentoring relationship: a = low, b = medium, c = high

orphaned children felt *more* differently treated, compared to other persons around them; felt *more* unfairly treated compared to others around; made to feel *more* inferior compared to others around; people behaved as though they were afraid of them *more*; and people tended to insult/abuse them *more* compared to others. But their encounters were only statistically difference from those of children orphaned by other causes. Against non-orphaned children, the social discrimination experience of the AIDS-orphaned children was similar—suggesting no sharp case of purposeful discrimination against AIDS-orphaned children because of their orphan status. The capacity, therefore, of social discrimination to account for the negative mental health factors in the AIDS-orphaned children may be peripheral rather than substantive.

The majority of the AIDS-orphaned children are double orphans (having no biological parents); few double orphans are in the other-causes orphaned group. Needless to say there is no parental loss in the non-orphaned group. Double orphans ($n = 319$), irrespective of orphan status, scored significant higher anxiety, lower social support, lower self-esteem, and lower positive mental health factors than did single orphans ($n = 343$), whose one parent is living. Also double orphans, whether AIDS or other-causes orphaned, showed similar levels of negative and/or positive mental health factors. Child abuse, depression, social discrimination, anxiety, foster parental care, self-esteem, social support levels were similar between the two groups (Table 2), suggesting shared effect of double orphanhood on mental health between children orphaned by AIDS and children orphaned by other causes. In the single orphans group, mental health variances were observed between the two orphan statuses (AIDS and other-causes orphaned children), suggesting the possible differential effects of being a maternal (mother deceased) or paternal (father deceased) orphan.

If double orphans are *consistently* (UNAIDS et al. 2004) more psychologically deprived than single orphans, and the majority of the AIDS-orphaned children in the present study are double orphans, then it seems plausible to adduce that double parental loss may account for the higher psychopathic mental health factors in the AIDS-orphaned children. What palliative care, therefore, may be required to ameliorate the effects of double parental loss and/or negative mental health factors in AIDS-orphaned children? We suggest the natural mentoring care.

In the present study, children who reported having a natural mentor showed better positive mental health factors than did those without mentors. The association of having a natural mentor with mental health seemed gender bias-free as no significant gender mental health difference was observed on all domains of the mental health tools. In the 3 groups (Table 3), the weight of having or not having a

natural mentor on negative mental health factors was significant in the AIDS-orphaned group. Similar significant association was not observed in the control groups. Furthermore (Table 4), in the AIDS-orphaned group, low mentoring relationship scores elicited significant higher negative and lower positive mental health factors than did medium and high mentoring relationship scores. Similar significant trend was not observed in the control groups, suggesting that the converse association of natural mentoring relationship with negative mental health factors may be stronger among AIDS-orphaned children than among other groups.

The perceived palliative effect of natural mentoring relationship on negative mental health factors (Table 4) seemed likely among orphaned than among non-orphaned children. For example, in the two orphan groups, whereas high mentoring relationship scores elicited lower negative mental health factors than did medium and low mentoring relationship scores, the reverse was the case in the non-orphaned group. In the non-orphaned group, high mentoring provoked higher negative mental health factors than did medium and low mentoring. Although the reason for the converse negative mental health outcome is not clear, we are inclined to suspect parental interference. Non-orphans are more likely than orphans to live with biological parents who may be averse to the children's involvement in a mentoring relationship. To these parents, the mentor may be an unwelcome "intruder" in the family bond. Non-orphaned children, in this situation, may encounter social dissonance (conflict) with parents that may distort the positive potentials of natural mentoring relationship.

Limitations of the Study

First, the study is a cross-sectional experiment, not a longitudinal one. Thus the study outcomes are relational rather than causal. A study that may longitudinally examine mental health outcomes in AIDS-orphaned children before AIDS-defined parental illnesses, during AIDS-defined illnesses, and after parental death may be academically stimulating.

Second, we wished we were absolutely certain of the cause of parental death in the AIDS-orphaned group. Death certificates are unreliable medical data (Cluver et al. 2008) in most AIDS-stigmatizing African countries. Cluver et al. (2008) utilized the "verbal autopsy" method validated in several sub-Saharan African studies (Hosegood et al. 2004) to determine cause of parental death. The method required the presence of observable AIDS-defining illnesses such as oral candidiasis, Kaposi's sarcoma and the HIV wasting syndrome (World Health Organization 2005). In this study, 23% of the orphans self-reported AIDS as cause of father's

death, and 35% reported it as cause of mother's death. About half (50.4%) stated "don't know" for father's death, and a lower rate (40.6%) stated so for mother's death. However, "an especially important and distinctive characteristic of HIV/AIDS in regard to orphaning is that AIDS is more likely than other causes of death to create double orphans" (UNAIDS et al. 2004, p. 11). We combined the UNAIDS criterion, orphans' self-report, and verbal autopsy from school and child support center heads to assign children to the AIDS-orphaned group.

Finally, 64% of the natural mentors are extended family members, only 36% are non-family members. Authors of organizational mentoring argue that a mentor should ideally be a non-family member. In natural mentoring, however, the participation of extended family members in child mentorship is culturally expedient (Rhodes et al. 1992). While we appreciate that some of these observations may strengthen the study outcomes, they do not, in our view, substantially negate them.

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