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Research Paper

Parental HIV/AIDS and psychological health of younger children in South Africa

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Objective: **We examined several indicators of psychological health in a sample of orphans and vulnerable children (OVC) to determine if there were significant differences between those orphaned by AIDS and those orphaned by other causes, and if there were gender differences. Method: Our sample consisted of 119 young children (ages 6–10 years) who participated in a non-governmental organisation (NGO)-supported social services programme in a low-resource, non-urban community in South Africa. We collected data on three groups: non-orphans (OVC1; *n* = 45); orphans due to AIDS (OVC2; *n* = 43); and other orphans (OVC3; *n* = 31). Parents of non-orphans and legal guardians of orphans rated their children on a 112-item, age appropriate Child Behaviour Checklist (CBCL), South Africa version.**
Results: **Children in the OVC2 group were significantly different from their peers on Internalising Problems and Somatic Complaints, while OVC3 group had a higher proportion of children in the at-risk range on Social Problems compared to OVC2. Females had elevated scores on the anxious/depressed, internalising problems, total problems, and sluggish cognitive tempo scales compared to males. There was an interaction between factors, such that boys in OVC2 had elevated mean scores on Somatic Complaints. These findings suggest increased vulnerability for girls on emotional issues and for boys on somatic problems.**

Introduction

The magnitude of the HIV/AIDS crisis in Africa has orphaned a large number of children, and many children have also become vulnerable to physical and mental health issues as a result of parental illness due to the disease. These children are often referred to as orphans and vulnerable children (OVC) (Betancourt, Meyers-Ohki, Charrow, & Hansen, 2013). According to the UNAIDS reports published in 2014 (UNAIDS, 2014), South Africa had an estimated 6.8 million people living with AIDS, of whom 340 000 were children aged 0–14 years, and 2.3 million AIDS orphans between the ages of 0 and 17 years. The overall impact of this epidemic on the family and community poses threats to children's mental health and wellbeing (Cluver, Orkin, Gardner, & Boyes., 2012). While parental illness affects a child in a variety of ways, parental death places a child at risk for emotional issues because it means losing the love, security and stability that a parent would generally provide (Beegle, De Weerdt, & Dercon, 2006). Accumulating research indicates that children who have lost parents to AIDS face a more difficult future because, in addition to the general grief-related issues, these children have unique problems such as increased stigma and social exclusion that appear to be different from that in other orphans (Atwine, Cantor-Graae, &

Bajunirwe, 2005; Cluver & Orkin, 2009). Published studies also indicate that a significant proportion of these children are being cared for by their extended families (Jamieson et al., 2011). What seems to further exacerbate the plight of AIDS orphans is that, in many cases, the epidemic has weakened the extended family system, as a significant number of adults in these families are also HIV-positive or have AIDS (Andrews, Skinner, & Zuma, 2006). The combination of stigmatisation, social exclusion and stretched family care capacity puts these children at increased risk for psychological problems. While some researchers have reported higher risks for internalising/ emotional and behavioural problems among orphans due to AIDS compared to non-orphans and orphans due to other causes (Atwine et al. 2005; Cluver et al., 2012; Cluver & Gardner, 2007a), Wild, Flisher and Robertson (2013) found that comparatively, children who are orphaned by other causes have increased vulnerability to depression and anxiety. More empirical data is required to better understand the psychological health of these children.

The concept of orphan and vulnerable children

The literal definition of an orphan is a child whose parents are deceased. However, in the context of HIV/AIDS, the United Nations (UN) expanded the definition of orphanhood to include single parent (maternal or paternal) and double (both parents) orphan (UNAIDS, 2004). In line with current OVC literature, we adhere to the UN definition and include children who have lost one or both parents before their 17th birthday. For vulnerability, the concept implies that there are degrees and types, and what constitutes vulnerability depends on the situation of the child. Although the HIV/AIDS factor is a prominent feature in the lives of vulnerable children, the literature suggests that multiple adversities are present including poverty, maltreatment, and living in low-resource, high crime communities (Betancourt et al., 2013; Cluver & Orkin, 2009). In this context, a child can still be vulnerable without being an orphan, and a child who is orphaned may be less vulnerable if there is a significant support system that minimises the disruption to the child's life (Cluver & Gardner, 2007b). This study focused on children who have been made vulnerable by the death of a parent or parents due to AIDS. Our sample included: non-orphans (OVC1), orphans due to AIDS (OVC2) and orphans by other causes (OVC3). OVC1 and OVC3 were comparison groups.

Leading the effort in our understanding of this population in South Africa is Cluver and her research team (Cluver, Gardner, & Operario, 2007). In one of the most comprehensive OVC studies to date, Cluver et al. (2007) compared three groups of children and youths (ages 10–19 years): non-orphans; orphans due to AIDS; and orphans by other causes from urban and peri-urban areas around Cape Town. Data were collected through socio-demographic questionnaires and standardised scales. The researchers reported more post-traumatic stress, depression, peer relationship problems, delinquency, and behaviour problems among orphans due to AIDS when compared to orphans by other causes and non-orphans. In their follow-up study, Cluver et al. (2012, 2013) found persisting and increased negative mental health outcomes and an indirect association of orphanhood by AIDS with educational and sexual problems. They also reported intervening effects of poverty, community violence, AIDS stigma and child abuse.

To date, most OVC studies have focused on youths and adolescents (10–19 years) from urban and peri-urban communities (Cluver et al., 2007, 2012; Wild et al., 2013), but the literature on child development indicates that the impact of parental loss varies across age demographics (Sossin, Bromberg, & Haddad, 2014). One study (Nickerson, Bryant, Aderka, Hinton, & Hofmann, 2013) analysed data from 2 823 adults who had suffered the death of a parent during childhood. The researchers found that the younger a child was, at the time of parental death, the higher the risk of developing internalising (anxiety, depression) or substance abuse problems, however, family situations after the death also influence the level of risk. They added that earlier developmental age at the time of parental death could increase the child's vulnerability to serious mental health consequences later in life. It is also evident that younger children are more dependent on their parents for their daily care than adolescents are. In addition, developmental psychopathology (DPP) emphasises that problems that occur early are likely to be more severe, and knowing about these problems in younger children can facilitate early intervention that can help reduce the severity and persistence of the problems (McGorry, Purcell, Goldstone, & Amminger, 2011). Furthermore,

information gained from adolescent studies may not generalise to younger age groups. To the best of our knowledge, at the time of our data collection, published quantitative studies were non-existent on the mental health of the OVC below the 10-year-old age group, in this region. The unique aspect of our study is that the children were all under the age of 11 years, in contrast to other research in Africa. More studies must be conducted that span younger age demographics and diverse communities to fill the gap in the literature.

With specific reference to rural/non-urban communities, Hall and Wright (2011) reported that 42% of South African children live in these areas, and in many households, a handful of adults take care of many children. Minimal access to social service programmes tends to put rural communities at uneven level with the urban areas because government resources are often not equitably distributed. Hall and Wright (2011) zeroed in on poverty as an endemic characteristic, since many of these communities lack basic amenities (water, sanitation) and opportunities to improve the quality of their lives. In one of the limited studies of OVC in rural/non-urban areas, Henderson (2006) found that these children often come from resource-poor communities and they are subjected to increased stigma and social exclusion through association with parental AIDS. These characteristics may put this population at increased risk for psychological problems, especially, emotional difficulties.

In terms of gender, there is a dearth of quantitative data in the literature differentiating the psychosocial consequences of OVC status between boys and girls, especially in rural areas. Although, a recent published study from peri-urban communities in the Eastern Cape found increased rates of internalising problems in girls than in boys (Wild et al., 2013), more studies are needed to help us understand the gender dynamic in the rural areas in the context of parental HIV/AIDS. Looking at this from a cultural angle, patterns of inequality by gender are associated with cultural belief systems which are often more pronounced in the rural than in urban areas (Henderson, 2006). According to Rao Gupta (2000) who has studied and written extensively about gender inequality, cultural expectations in many parts of the world, including Southern Africa, shape women's vulnerability. Among other things, the traditional ideas about womanhood expect girls to do household chores and to be caregivers. These deeply rooted and entrenched cultural ideologies oftentimes lower the status and power of females in the hierarchy of their families. Gupta asserts that with the HIV/AIDS crisis, these cultural and historical legacies further constrain and disempower the female gender. With this background, it is logical to expect that conforming to cultural norms and gender roles ascribed to girls could increase their vulnerability to psychological issues. Based on all the rationale discussed above, our study consisted of younger children (6–10 years) from a non-urban community, and focused attention on gender. We believe the inclusions to our study provide a better understanding of the issues associated with the OVC population in this age group and environment, and our findings can contribute to the literature and inform evidence-based interventions.

Study goal

Although the OVC literature is growing, empirical data on the psychological outcome for these children are not at par with the scope of the problem (Cluver & Gardner, 2007a). In addition, while it is relatively clear that orphanhood by AIDS is associated with psychological issues, it is less clear whether orphans due to AIDS are different from other orphans on these issues as the findings have been mixed. The major assumptions guiding our study were that the psychological health of orphans due to AIDS (OVC2) is different from orphans by other causes (OVC3), and there are gender differences because of cultural norms. Our specific goal was to assess the psychological functioning of an OVC sample to understand the nature of the assumed differences between the two orphan groups and between genders. To accomplish this goal, our research team began with these hypotheses:

1. (H1) When compared with OVC3, children in OCV2 group will show elevated scores on the broad-band groupings of Internalizing and Externalizing scales of the Child Behaviour Checklist (CBCL).
2. (H2) There will be significant gender differences on the CBCL scales, and an interaction of gender and OVC group.
3. (H3) A higher proportion of OVC2 will have scores in the at-risk range on the CBCL scales, when compared with OVC1 and OVC3 groups.

Method

Lefika OVC Program

The sample for the study was recruited from a non-governmental organisation (NGO)-supported programme known as *Lefika*. This non-clinical intervention programme serves over 500 orphans and vulnerable children and youths from a population that is socio-economically deprived to potentially qualify for governmental grants that are awarded to families with significant low income. It is estimated that these families live below the food poverty line, which is less than R321 (about $32) per capita per month (Statistics South Africa, 2014). The programme is located in a non-urban, resource-poor community that is about 90 minutes' drive outside of Pretoria, and the participants fit the description of the rural population where poverty is an endemic characteristic. The *Lefika* Program offers social support services that include: lunch three times a week, assistance with homework, supervised after school recreational activities, and occasional church-funded field trips for the children. The programme has some records on demographic information, health status, the living situation of each child and the cause of death of parents who died of AIDS.

Study design and participants

The study used a single-site design with a selective sample. With statistics power of 95% at 0.05 alpha, an a-priori analysis estimated a sample size of 108 participants as necessary to detect an effect size of 0.10. Our participants comprised 119 Black South African children between the ages of 6 and 10 years (= 8.5 years), who are part of a larger study of children aged 3–18 years. At the time of our study, 362 (71%) met our eligibility criteria for the larger study, and their parents/legal guardians agreed to participate in the study. Based on the review of *Lefika* records by the director of the programme, we recruited participants and organised them into 3 categories by their orphanhood status: non-orphans (OVC1; $n = 45$); orphans due to AIDS (OVC2; $n = 43$); and orphans by other causes (OVC3; $n = 31$). The fact that the children participated in an NGO-supported programme was a major confounding factor (see Table 1 for demographic characteristics).

Study eligibility criteria

The inclusion criteria for the orphan groups were as follows: (1) the child is a participant at the *Lefika* programme; (2) parental death is due to AIDS or other causes; (3) the child is living with a family member (often a grandmother or aunt) and not with a foster parent; and (4) parental death occurred at least six months before the study to minimise acute bereavement symptoms. For the non-orphan group (OVC1), the children had to meet criterion #1 and live with biological parent(s). These children were from poor families, accounting for their vulnerability and OVC designation. Children who had been diagnosed as HIV-positive were excluded to minimise a major confounding variable of medical health status. We did not include children with HIV-positive parents because they were too few at *Lefika* to constitute a group. Based on information from *Lefika's* records, and to the best of our knowledge, our sample consisted of children who were not HIV-positive.

Table 1: Demographic characteristics of OVC participants

Variables	OVC1	OVC2	OVC3	Total (*n* %)
Participants	45 (35.4%)	43 (33.9%)	31 (24.4%)	119 (100%)
Mean age	8.29	8.56	8.65	8.5
Male	28 (48.3%)	19 (32.8%)	11 (19%)	58 (48.7%)
Female	17 (27.9%)	24 (39.3%)	20 (32.8%)	61 (51.3%)
6-year-old	4 (40%)	4 (40%)	2 (20%)	10 (8.4%)
7-year-old	8 (40%)	7 (35%)	5 (25%)	20 (16.8%)
8-year-old	13 (48.1%)	7 (26%)	7 (26%)	27 (22.7%)
9-year-old	11 (40.7%)	11 (40.7%)	5 (18.5%)	27 (22.7%)
10-year-old	9 (25.7%)	14 (40%)	12 (34.3%)	35 (29.4%)

Assessment measure

The Child Behaviour Checklist (CBCL; Achenbach & Rescorla, 2001) published by the Achenbach System of Empirically Based Assessment (ASEBA), is a self-administered questionnaire, validated to assess various aspects of children's psychological health. The CBCL has a South African English version and translated versions in local languages (Afrikaans, Northern and Southern Sotho, isiXhosa and isiZulu), for participants who do not speak English. The first section of the questionnaire (pp. 1–2) assesses a child's competence and adaptive functioning and the second section (pp. 3–4) consists of 112 specific problem items plus an open-ended item that provide scores for a child's psychological functioning. Sample items include: "Acts too young for his/her age", "Cries a lot", and "Worries". For younger children each parent/legal guardian rates the behaviour of the focal child on a 3-point response format: "*Not True"*, "*Sometimes or Somewhat True"*, and "*Very True or Often True"*. Parent/guardian report is standardly done in assessment of young children using the CBCL. Scores on the CBCL provide broad-band groupings of externalising (acting out) and internalising (feelings and emotional) problems, and the sum of the items on both make up the Total Problems scale (general psychological health). ASEBA provides the Assessment Data Manager (ADM) computer scoring software to obtain standardised *T* scores for empirically based and 6 DSM-oriented scales. For these scales, *T* scores from 65 to 69 (93rd to 97th percentile) are considered to be in the borderline/at-risk range and *T* scores ≥ 70 (98th percentile) indicate problems that need attention. These scores have been established from extensive research. The bibliography of published studies using the ASEBA indicates that the CBCL is widely used for research purposes with children worldwide (Bérubé & Achenbach, 2007). The ASEBA manual reports alpha coefficients that range between 0.78 and 0.97 for the empirically based scales, 0.72 to 0.92 for the 6 DSM-oriented scales, and test-retest reliability co-efficient in the 1980s and 1990s for most of the scales. The broad-band scales correlate fairly well (0.74 to 0.89) with corresponding scales on the Behavioural Assessment Systems for Children (BASC; Reynolds & Kamphaus, 1998).

Procedure

The study protocol and consent forms were approved by the Research Ethics Committee of the University of Pretoria, South Africa. Our research team first approached the leadership of *Lefika's* OVC Program with the proposal to conduct this study. With their support, the director of *Lefika* identified the parents/legal guardians of children who met the study inclusion criteria and our team approached them during one of *Lefika's* scheduled activities. At the initial meeting, we explained the purpose and nature of the study, answered their questions, and solicited their participation. Childcare workers at the OVC Centre facilitated getting the participants to the site. We collected data in 2013 on weekends, so as not to disrupt the children's school schedules. Before data collection, signed informed consent was obtained from the parents/legal guardians of each child and signed assent forms from the children who could print their names. For data collection, two members of our team who are native Northern Sotho speakers helped with explaining the rating instructions to those who could not read, write or complete the CBCL questionnaire. The team conducted individual interviews with parent/guardian respondents during the administration of section 1. Biological mothers of non-orphans and grandmothers and aunts who were the legal guardians of the orphans rated the behaviour of each child using the CBCL/6-18 SA version. We administered the CBCL-Northern Sotho version to 21 respondents who did not speak English. There was no compensation for participation in the study, but we provided lunch for all participants during the data collection exercise. The principal investigator (PI), who has research and clinical expertise in child psychopathology, supervised the data collection.

Many studies have used abbreviated or selected scales from the CBCL. However, we administered the entire questionnaire to obtain comprehensive information on each child. We scored participants' responses using the ADM9.1 software to convert raw scores to standardised *T* scores. This allowed us to examine the problem scale scores in relation to norms for different cultures. Although CBCL has not been normed or validated on South African children, it has been used in a longitudinal study of Black South African children (Barbarin & Richter, 2001). In addition, ASEBA has normative data for Ethiopia, a country in sub-Saharan Africa. We converted the raw scores to *T* scores using

the Ethiopian norm because it is the closest and the most culturally relevant to our participants. Instrumentation was an important issue for this study and is further addressed in this paper.

Data analyses

We entered participants' CBCL responses and conducted all data analyses using SPSS-21. We analysed data on three OVC groups (OVC1, OVC2 and OVC3). Chi-square tests were conducted to assess if age or gender differed by group. We calculated descriptive statistics to summarise demographic variables and multivariate analyses of variance (MANOVA) to compare the three groups on the CBCL scales to address the first hypothesis. Differences among the groups were assessed using univariate analyses of variance (ANOVA), with significance set at 0.05 alpha. For the second hypothesis, we ran factorial ANOVAs to test the main effect of gender and OVC group on the CBCL scales, and the interaction among these factors. We conducted further analyses to compare the number of children in each group with scores in the borderline (*T* score 65-69) to clinical cut-off (*T* score $\geq$ 70) range on each scale to address the third hypothesis.

Results

Results of the chi-square test revealed that no significant differences exist on age between OVC group participants, $\chi^2(2) = 4.995$, $p > 0.05$ and on gender by age, $\chi^2(2) = 4.101$, $p > 0.05$, indicating the groups are comparable. MANOVA analyses on the broad-band grouping scales revealed a significant group difference (F (2,116) = 5.842, $p = 0.05$ (ç2 = 0.09, Power = 0.86). Post-hoc comparisons showed statistically significant differences exist between OVC1 and OVC2 on internalising problems, but not between OVC2 and OVC3. The data also indicated a significant group difference on somatic complaints F (2,116) = 3.602, $p = 0.05$ (ç2 = 0.05, Power = 0.65), with Tukey's showing statistically significant differences exist between OVC1 and OVC2. Table 2 presents comprehensive data that show the mean scores by group for all the scales.

Table 2 also shows the cases (by group) exceeding the borderline cut-off point. Our calculations revealed that between 20% and 37% of the OVC2 group had scores that exceeded the borderline cut-off (65+) on seven scales. In comparison, the OVC3 group exceeded the borderline cut-off on 2 scales, and the OVC1 group on 1 scale. On internalising problems, 23% of the OVC2 compared to 11% in the OVC1 and 9.7% in the OVC3 groups exceeded the cut-off point. On the Social Problems scale, OVC3 had a higher proportion of children in the at-risk range compared to OVC2. For each of the 3 groups, over 20% had elevated scores above the at-risk range on somatic complaints.

Gender difference and factors (gender by OVC group) interaction effect

The second objective of the study was to determine gender differences on the CBCL scales and interaction of factors. Table 3 presents the means and standard deviations for CBCL scales by gender. Significant gender differences exist on anxious/depressed, internalising problems, total problems, and sluggish cognitive tempo (Table 3). The F ratio and p values also indicate significant interaction between factors on somatic complaints [$F(2, 113) = 8.00$, $p < 0.001$, $\eta^2 = 0.124$]. ANOVA results showed a significant main effect for OVC group [$F(2, 113) = 4.79$, $p < 0.05$, $\eta^2 = 0.078$], but not for gender [$F(1, 113) = 0.06$, $p = 0.802$, $\eta^2 = 0.001$]. A follow-up simple effects test showed that boys in OVC2 had elevated mean scores on somatic complaints (= 63.79, SD = 1.88) than those in OVC1 (= 55.21, SD = 1.55), and OVC3 (= 54.82, SD = 2.48). Females in OVC3 had elevated mean scores (= 61.40, SD = 1.83) than those in OVC2 (= 57.25, SD = 1.68), and OVC1 (= 57.12, SD = 1.99). The effect size is moderate.

Main effects of gender

There were significant main effects for gender on internalising problems [$F(1,113) = 4.66$, $p < 0.05$, $\eta^2 = 0.040$], such that girls (= 53.94, SD = 1.29) had elevated scores compared to boys (= 49.83, SD = 1.40); on affective problems [$F(1,113) = 4.41$, $p < 0.05$, $\eta^2 = 0.038$], with girls ($M = 57.03$, SD = 0.955) showing elevated scores than boys (= 54.07, SD = 1.04); and on sluggish cognitive

Table 2: Means of CBCL scales and cases exceeding borderline cut-off by group

Scale	Mean			ANOVA			Clinical cases* *N* (%)		
	OVC1	OVC2	OVC3	*F*	*P*	η^2	OVC1	OVC2	OVC3
Anxious/depressed	52.73	55.13	54.19	2.054	0.133	0.034	4.4	16.2	6.4
Withdrawn/depressed	52.73	53.67	52.70	1.148	0.321	0.019	2.2	4.6	0
								21%	
Somatic complaints	56.2	61.60	58.45	3.602	0.030*	0.058	20	37.2	25.8
Social problems	53.02	54.55	54.54	0.569	0.568	0.010	4.4	9.2	16
Thoughts problems	56.8	58.00	56.48	0.510	0.602	0.009	13.3	21	19.3
Attention problems	51.68	52.67	53.03	1.012	0.367	0.017	0	2.3	6.4
Rule-breaking behaviour	55.11	55.02	54.54	0.062	0.940	0.001	13.3	11.6	9.6
Aggressive behaviours	54.02	53.37	52.25	1.065	0.348	0.018	2.9	9.3	0
Internalising problems	47.84	55.00	53.19	5.842	0.004*	0.092	11	23.5	9.6
Externalising problems	51.31	48.02	49.45	1.220	0.299	0.021	6.6	11.6	6.4
Total problems	49.55	51.58	51.77	0.674	0.512	0.011	2.2	20	6.5
Affective problems	54.8	57.04	55.09	1.095	0.338	0.019	15.5	20	13
Anxiety problems	51.93	53.90	52.32	2.596	0.079	0.043	0	2.3	0
Somatic problems	55.93	60.13	59.06	2.856	0.062	0.047	11	34.8	32.2
Attention deficit problems	51.48	52.51	51.93	0.916	0.403	0.016	0	4.6	8
Oppositional defiant problems	53.95	52.62	51.64	1.865	0.159	0.031	2.2	4.6	3.2
Conduct problems	57.11	55.65	55.87	0.461	0.632	0.008	13.3	16.2	9.6
Sluggish cognitive tempo	52.73	54.32	54.93	1.942	0.148	0.032	0	8	12.9
Obsessive-compulsive	55.00	57.65	56.25	1.447	0.239	0.024	13.3	21	12.9
Post-traumatic stress	52.68	52.68	53.45	2.076	0.130	0.035	4.4	7	3.2

Note: *T* scores > 65–69 (borderline/at-risk range); *T* scores ≥ 70 (clinical range)
*Significant group difference with corresponding effect sizes

tempo [$F(1,113) = 6.00$, $p < 0.05$, $\eta^2 = 0.050$], showing girls (= 55.07, SD = 0.655) with elevated

Table 3: Means and standard deviations of CBCL scales by gender

Scale	Male	SD	Female	SD	*F*	*P*	η^2
Anxious/depressed	52.94	4.97	55.08	6.21	5.43	0.042*	0.035
Withdrawn/depressed	52.50	4.27	53.32	4.10	1.163	0.283	0.010
Somatic complaints	58.65	11.09	58.81	8.19	0.009	0.927	0.000
Social problems	53.08	5.08	54.81	9.30	1.568	0.213	0.013
Thought problems	56.63	7.39	57.49	7.62	0.384	0.537	0.003
Attention problems	53.84	4.71	53.54	5.06	0.603	0.736	0.001
Rule-breaking behaviour	53.79	6.22	56.01	7.74	2.960	0.088	0.025
Aggressive behaviour	53.75	5.58	52.91	4.78	0.779	0.379	0.007
Internalising problems	49.43	11.38	54.09	9.24	6.055	0.015*	0.049
Externalising problems	49.31	9.48	49.95	10.38	0.123	0.726	0.001
Total problems	49.01	9.38	52.62	9.53	4.316	0.040*	0.036
Affective problems	54.32	7.78	57.00	7.09	3.838	0.052	0.032
Anxiety problems	52.03	3.49	53.42	4.86	3.180	0.077	0.026
Somatic problems	57.94	9.57	58.57	7.75	0.154	0.696	0.001
Attention deficit problems	51.72	3.08	52.83	5.38	2.560	0.112	0.021
Oppositional defiant problems	53.10	5.17	52.65	5.38	0.213	0.645	0.002
Conduct problems	55.62	7.12	56.86	7.96	0.809	0.370	0.007
Sluggish cognitive tempo	52.56	4.40	55.13	5.56	7.712	0.006*	0.062
Obsessive-compulsive	54.96	6.93	57.54	7.53	3.750	0.055	0.031
Post-traumatic stress	52.77	4.03	54.60	6.30	3.517	0.063	0.029

scores than boys (= 52.69, SD = 0.715). The effect sizes are small.

Main effect of OVC group

There was no interactive effect between factors (gender and OVC group) on internalising problems [$F(2, 113) = 2.14$, $p = 0.122$, $\eta^2 = 0.036$]. However, ANOVA results show a significant main effect for OVC group [$F(2, 113) = 4.59$, $p < 0.05$, $\eta^2 = 0.075$], such that OVC2 (= 55.07, SD = 1.53) had elevated mean scores than OVC3 (= 52.05, SD = 1.87) and OVC1 (= 48.53, SD = 1.53). Post-hoc test results revealed that the OVC2 group significantly differed in internalising problems from the OVC1 group. The effect size is moderate.

Discussion

Internalising and social problems in the context of orphanhood

Addressing our first hypothesis, the children who are orphaned by AIDS are significantly different from non-orphans on internalising problems, but contrary to our prediction, the two orphan groups are not significantly different on emotional and behavioural problems. However, they are different on social problems, as the proportion of children with scores in the at-risk range almost doubled for non-AIDS orphans (16%) compared to those orphaned by AIDS (9%). This is an important finding that is worth paying attention to because elevated scores on social problems in children aged 4–16 years have been reported as one of the best predictors of internalising problems in late adolescence and young adulthood (Hofstra, van der Ende, & Verhulst, 2000). The non-AIDS orphans might have unresolved negative emotions resulting from their bereavement that are manifesting in social problems. In Southern Africa, HIV/AIDS-related issues continue to receive media coverage. It is plausible that children who have lost parent(s) to non-AIDS causes are negatively affected by the fact that their bereavement is not receiving the media attention and the growing public empathy shown to those whose parent(s) died of AIDS.

Our data on younger children also support findings from adolescent studies that children orphaned by AIDS show more emotional problems than non-orphans (Cluver et al., 2007, 2012). This indicates that orphanhood by AIDS has significant distressing impact, irrespective of age. It is reasonable to expect that the death of a parent is a traumatic experience for a child or youth. AIDS is a prolonged illness, which means that these children have to deal with seeing parents' health deteriorate, often, over a long period of time, and then deal with their death. Unfortunately, in many rural and non-urban communities, such as where our data were collected, mental health support for orphans is extremely limited. The combination of these factors offers a plausible explanation for the increased risk for emotional difficulties found among our sample.

Gender differences on psychological issues among the OVC

Supporting our second hypothesis, we found gender differential outcomes among our sample. The girls showed increased vulnerability to: emotional issues, variable alertness and orientation, and general psychological health issues. Our data also revealed that boys who were orphaned by AIDS and girls who were orphaned by other causes have increased vulnerability to somatisation. While our team was surprised at the scope of the female gender-based findings, there are logical explanations that could be framed around cultural beliefs and consistent with gender differential socialisation. One possibility is that the girls in our sample, even though they were young, were more involved than the boys with the caretaking aspect of their parents' illness. In general, females are socialised to take care of relationships and household duties, and are allowed to admit to emotional difficulties and expressions more often than males. It is also plausible that ascribed gender roles and patterns of gender inequality contributed to girls experiencing increased vulnerability to emotional and general psychological health problems. In addition, Goodman and Gotlib (2002) suggested that girls may be at increased risk for depression and emotional difficulties because of greater sensitivity to family problems and higher involvement during family crises.

Somatisation among the OVC population

On the third hypothesis, our findings support our prediction, as a high proportion of orphans due to AIDS showed higher vulnerability for emotional and general psychological health problems, and all groups were at risk for somatic problems. According to published reports, childhood somatisation often co-occurs with other psychiatric symptoms, such that the frequency of somatic complaints increases with the severity of anxiety and depressive symptoms (Dhossche, Ferdinand, van der Ende, & Verhulst, 2001). In line with the literature, these findings are not surprising, given the background of our sample that has been described previously. On the male gender main effect, boys who are orphaned by AIDS might perceive more threats and dangers in their home life/environment, and therefore, are more likely to use somatic complaints to signal help from caregivers to cope with stress. Given the socialisation of boys in this culture, somatic complaints would be more (masculine) acceptable than admitting to psychological/emotional distress, since the traditional ideas about manhood do not expect males to express their emotions and vulnerability. In essence, the boys show these emotions through somatisation. These behaviours might have been maintained by the family instability, and the effects might have been stronger because these children are from disadvantaged homes with few financial resources. In general, many of the items on the somatisation scale also tend to overlap with common issues that are linked with children from poor socio-economic backgrounds (Palin et al., 2009).

Conclusion

Findings from our study add important contributions to the OVC literature. We utilised an established and comprehensive instrument (CBCL), rather than other abbreviated measures, to compare both orphan groups to each other and to non-orphans, on several indicators of psychological health. Our study also provides new information on a younger sample of the OVC from a non-urban community. In addition, we provide evidence that parental HIV/AIDS has differential impact by gender and orphanhood status; with female gender and orphanhood by AIDS associated with increased risk for emotional problems and male gender for somatisation.

Overall, the children in our sample seem to fare relatively better than some in the literature. For example, Cluver et al. (2007) reported post-traumatic stress disorder (PTSD) and behaviour problems while Atwine et al. (2005) found high risks for anger and suicidal ideation among their samples. Our data show less vulnerability to these problems and suggest that living with grandparents/relatives might have contributed to the outcome and could be a protective factor for the OVC population. Wild et al. (2013) reported that being cared for by biological relatives is associated with higher emotional resilience. Within the traditional African culture, the extended family is prominently present, and with the HIV/AIDS epidemic, many orphans are being raised by their grandparents and other relatives (Jamieson et al., 2011). Our sample also participated in an NGO-supported programme that could be supporting the children in such a way as to offset the psychological difficulties found in other OVC samples; this may limit generalisation of the findings. Although, the programme provides only social support services, in a resource-restricted community, that could contribute to increased wellbeing in some children.

Limitations

Based on information from the *Lefika* records, our sample consisted of children who were not HIV-positive, however, we acknowledge that we could not medically verify this information. Closely related is the possibility that misclassification of children into the two orphan groups could have occurred in Lefika's records. We also recognise that although the assessment is based on parent/guardian report, as is the standard with the assessment of young children using the CBCL, this only gives the child's experiences from a parent/guardian's perception. While it would have been preferable to corroborate certain information, it was not practical to do so because of the nature and sensitivity of the subject matter, which made it difficult to sample this population. Finally, we recognise the concerns with using assessment instruments like the CBCL that have not been standardised on the South African population. The dearth of well-standardised scales to assess

African children is a major issue that needs to be addressed. We agree with Cluver and Gardner (2007a) that in the absence of validated instruments, assessment measures like the CBCL have relevance until test developers invest in this worthy cause to provide established scales for African children. These limitations notwithstanding, many of our findings are consistent with those in the literature, suggesting that these findings are valid and the clinical information is meaningful.

In summary, our data provide evidence that girls in the OVC population are at increased risk for several psychological issues, and our sample in general, is highly vulnerable to somatisation. The potential for somatic complaints to co-occur with other psychiatric problems and to increase the severity of the symptoms warrants attention. If these issues are not addressed, they may increase the risk for future mental health problems in these children. We suggest that future studies include multi-sites in non-urban communities and develop models to explain the mechanism behind gender differential vulnerability to psychological problems and somatisation in the OVC population. A better understanding would advance our knowledge and inform interventions. This study also highlights the importance of adding psychosocial services to the existing physical care for these children because there are psychological consequences of being an orphan and a vulnerable child in these communities.

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