

Does investment in home visitors lead to better psychological health for HIV-affected families? Results from a quasi-experimental evaluation in South Africa

Tonya R. Thurman^{a*}, Rachel Kidman^b and Tory M. Taylor^c

^a*School of Social Work, Tulane University, New Orleans, LA, USA;* ^b*Program in Public Health, Preventive Medicine, Stony Brook University, Stony Brook, NY, USA;* ^c*Department of Global Health Systems and Development, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, USA*

(Received 4 November 2013; accepted 13 March 2014)

Children and families affected by HIV are at considerable risk for psychological distress. Community-based home visiting is a common mechanism for providing basic counseling and other services to HIV-affected families. While programs emphasize home visitor training and compensation as means to promote high-quality service delivery, whether these efforts result in measurable gains in beneficiaries' well-being remains largely unanswered. This study employs a longitudinal quasi-experimental design to explore whether these kinds of investments yield concomitant gains in psychological outcomes among beneficiaries. Baseline and follow-up data were collected over a two-year period from children aged 10–17 at the time of program enrollment and their caregivers, with 80% retention. In this sample of 1487 children and 918 caregivers, the psychological health outcomes of those enrolled in programs with home visitors who receive intensive training, organizational support, and regular compensation (termed “paraprofessional”) were compared to those enrolled in programs offering limited home visiting services from lay volunteers. Applying multilevel logistic regression, no measurable improvements were found among paraprofessional enrollees, and three outcomes were significantly worse at follow-up regardless of program model. Children's behavior problems became more prevalent even after adjusting for other factors, increasing from 29% to 35% in girls and from 28% to 43% in boys. Nearly one-quarter of girl and boys reported high levels of depression at follow-up, and this was a significant rise over time for boys. Rates of poor family functioning also significantly worsened over time, rising from 30% to 59%. About one-third of caregivers reported high levels of negative feelings at follow-up, with no improvements observed in the paraprofessional group. Results highlight that children's and caregivers' psychological outcomes may be relatively impervious to change even in paraprofessional home visiting models. Findings underscore the need for programs serving HIV-affected families to add focused evidence-based psychological interventions to supplement traditional home visiting.

Keywords: orphans and vulnerable children; HIV and AIDS; South Africa; home visiting; evaluation

Introduction

HIV-affected families are at risk for a host of psychological problems. Children with chronically ill parents must grapple with their parents' impending death, coupled with the stress of caregiving, increased economic responsibility, and frequent educational interruptions (Skovdal, 2010). The loss of one or both parents brings further hardship: reduced parental care, loss of residential stability, sibling and familial separation, and worsening impoverishment (Dowdney et al., 1999; Richter, Foster, & Sherr, 2006; Tremblay & Israel, 1998). A review of 23 studies established a strong association between AIDS orphanhood and compromised mental health (Cluver & Gardner, 2007). There is also growing evidence of increased risk for mental health problems among the children of people living with HIV (Bauman, Silver, Draimin, & Hudis, 2007; Forehand et al.,

1998). These children's caregivers also face considerable risk of depression, anxiety, stress, and family tension (Breuer, Myer, Struthers, & Joska, 2011; Govender, Penning, George, & Quinlan, 2012; Hlabyago & Ogunbanjo, 2009; Kuo & Operario, 2011).

Home visiting is a popular family-centered program approach for HIV-affected families in which care workers provide a range of support services during regular visits (Schenk, 2009; United Nations Children's Fund [UNICEF], 2010). Home visiting programs tend to be multifaceted, aiming to impact many aspects of well-being. In addition to facilitating linkages with external service providers and offering material assistance directly, home visits are purported to offer culturally appropriate mental health support including basic counseling (PEPFAR, 2012). However, evidence is lacking as to whether these programs are able to mitigate the psychological challenges that HIV-affected children and

*Corresponding author. Email: tthurma@tulane.edu

their caregivers face. Results from one longitudinal study indicated positive psychosocial outcomes among children in youth-headed households in Rwanda who had received regular visits from trained mentors (Brown et al., 2009); however, both the intervention and the target population were narrow in scope. Most studies investigating the psychological impact of generalized home visiting services for HIV-affected and other vulnerable families in sub-Saharan Africa rely on posttest-only designs and have produced mixed results (Bryant et al., 2012; Nyangara, Thurman, Hutchinson, & Obiero, 2009).

Home visiting programs vary substantially in both their design and their implementation (Howard & Brooks-Gunn, 2009). Formal training and greater frequency and duration of visits have been suggested as key factors that characterize the highest quality programs (Naidu, Aguilera, de Beer, Netshipale, & Harris, 2008). Similarly, prior studies have highlighted the potential importance of home visitor compensation, training, and organizational support on beneficiary outcomes (Nyangara et al., 2009; Sherr & Zoll, 2011). In response, donors have prioritized efforts to strengthen the social service workforce, including support for training and regular compensation to home visitors (Nyberg et al., 2012). However, little is known about the results of these resource investments. Indeed, a recent review of programs for orphaned and vulnerable children emphasizes the urgent need for research that investigates quality issues in community-based care and support initiatives (Schenk & Michaelis, 2010).

This study employs a longitudinal quasi-experimental design to evaluate the relative impact of two home visiting program models on the psychological health of HIV-affected children and their caregivers in KwaZulu-Natal (KZN), South Africa over two years. Models studied include: (1) home visiting programs that use a trained and compensated paraprofessional workforce and (2) programs that rely on volunteers, who most often receive limited training and nominal incentives for their efforts. Initial findings illustrate that investment in training and compensation is associated with higher quality service delivery, as measured by visit frequency and duration, as well as greater prevalence of discussion with beneficiaries about psychological issues (Thurman, Kidman, & Taylor, 2013). This analysis explores the hypothesis that professionalizing home visiting programs can yield concomitant gains in psychological outcomes among children and their primary caregivers.

Methods

Program models

This study evaluated home visiting programs for orphans and vulnerable children and their families operating in

distinct communities within predominately rural areas of KZN province, the most HIV-affected province in South Africa (Department of Health, 2011). For the purposes of this study, home visiting programs are classified as utilizing a paraprofessional model (those that offer training and compensation for the care workers who perform home visits) or a volunteer-driven model (those that rely primarily on lay volunteers). To enhance generalizability, this study included two unrelated paraprofessional models operating across 14 sites and a range of volunteer-driven approaches being implemented at 16 different sites. Two South African nongovernmental organizations implement the paraprofessional model programs: Heartbeat International and the National Association of Child Care Workers. These organizations' home visitors receive at least 80 hours of training and compensation starting at 1250 Rand per month (approximately \$140 at the time of this study). Volunteer-based programs in the study are implemented by community-based organizations supported by Heartbeat's Tswelopele initiative or the Children in Distress Network; these programs rely primarily on home visitors with limited to no training or compensation. All of the home visiting programs had multifaceted goals, aiming to provide emotional, informational, and tangible support to both children and their caregivers. One-third of children and caregivers in volunteer-driven programs reported ever receiving a home visit, in contrast to three-quarters of those served by paraprofessionals (Thurman et al., 2013). Additional program details are available in separate case studies (Neudorf, Taylor, & Thurman, 2011; Njaramba, Byenkya, Pillay, Oti, & Ntsala, 2008; Thurman, Yu, & Taylor, 2009).

Study design and sample

Home-visiting programs were assessed on their ability to impact psychological outcomes using a longitudinal quasi-experimental design. Children aged 10–17 who were newly enrolled in a study program and their primary caregivers (i.e., the parent or guardian who accepts primary responsibility for the child's care) were eligible for inclusion. Program eligibility criteria varied slightly between programs, but were generally focused on reaching HIV-affected children, including orphans, children living with chronically ill caregivers, and child-headed households. Up to two randomly selected age-eligible children per household were included in the study, resulting in a higher number of children than caregivers in the sample. Information was collected in two survey rounds: baseline data were collected at the time of program enrollment (April–June 2010) and the same children were followed up after approximately two years of program engagement (May–June 2012).

Face-to-face interviews were conducted in isiZulu at respondents' residences. Caregivers reported on their own well-being and household characteristics and provided individual background and behavioral data on each age-eligible child included in the sample; children were interviewed separately about their own well-being. Informed consent/assent was obtained from all participants prior to interview, and the study received ethical approval from institutional review boards at Tulane University in the USA and the Human Science Research Council in South Africa.

Up to three attempts were made to interview children in the study, including efforts to find children who had moved within KZN between survey rounds. The study was able to retain 80% of the 1856 children interviewed at baseline ($n = 1456$). Only 1% of losses to follow-up were due to participant refusal; the rest were most commonly either unavailable for interview after three attempts, had relocated outside KZN, or were not able to be traced. Bivariate analyses explored whether there were differences in the characteristics of children lost to follow-up versus those who participated in both rounds: no differences were found with respect to children's age, orphan status, whether they lived with a biological parent, had an ill household member, or type of community (rural, peri-urban). The loss was also similar across program models. If the caregiver changed between survey rounds, the new caregiver was interviewed, resulting in a cohort of 918 caregivers followed over time.

Measures

Children's psychological health indicators

Children's self-reported depressive symptomology was assessed using an adapted version of the Center for Epidemiological Studies' Depression Scale for Children (CES-DC; Weissman, Orvaschel, & Padian, 1980); the CES-DC has been used previously in South Africa (Onuoha, Munakata, Serumaga-Zake, Nyonyintono, & Bogere, 2009). The scale includes questions designed to reflect the respondent's current emotional state such as "In the last week, how often did you feel down and unhappy?" The modified scale (Cronbach's $\alpha = .71$) included five questions and was scored from 0 to 10; scores over five were considered indicative of high levels of depressive symptomology (this was a conservative adjustment based on the recommended threshold of 15 for the full 20-item scale; Weissman et al., 1980).

Caregivers were also asked about behavioral problems exhibited by the child using 19 items reflecting difficulties from the Strengths and Difficulties Questionnaire (Cronbach's $\alpha = .67$; Goodman, 1997). In cases where there were two children under their care included in the sample, they completed an individual assessment

for each child. The scale covers emotional symptoms, conduct problems, hyperactivity, and peer relationship problems; total scores range from 0 to 36 and scores above 11 were considered indicative of behavioral difficulties, in accordance with scoring norms for the full scale (<http://sdqinfo.com/>).

Caregiver psychological health indicators

Caregiver negative feelings (e.g., sadness, depression and worry) were measured using the four-item World Health Organization Quality of Life subscale (Cronbach's $\alpha = .82$); caregivers scoring less than 3 points on a 5-point scale were considered to have high levels of negative feelings (WHOQOL-HIV Group, 2003). Respondents' overall level of family functioning was measured using the eight-item subscale of the Family Assessment Device (Cronbach's $\alpha = .85$) which includes questions about the extent to which members of the household confide in one another, are adept at making decisions together, and accept one another for who they are (Kabacoff, Miller, Bishop, Epstein, & Keitner, 1990). Mean scores above a 2-point cut-off on a 4-point scale were considered indicative of poor family functioning (Miller, Bishop, Herman, & Stein, 2007). Both scales have been applied in African populations elsewhere (Nyangara et al., 2009; WHO-QOL HIV Group, 2004).

Analyses

Analyses included the 1487 children and 918 caregivers with survey data from both rounds. Frequencies and bivariate tests of significance (t tests and chi-square) were used to identify potential differences in baseline characteristics for beneficiaries enrolled in paraprofessional and volunteer-driven home visiting program models. The impact of home visiting quality on psychological indicators was assessed using multilevel logistic regression. The interaction term, Paraprofessional* Round, indicates the added impact of enrollment in a paraprofessional program over a volunteer-based program. Covariates were selected based on their theoretical importance to psychological health outcomes, and were included in all models regardless of the level of difference between groups at baseline or their significance to the outcomes. For caregiver-level outcomes, all models controlled for caregiver's age, gender, marital status, and education; the household's inclusion of chronically ill members (defined as having chronic weakness/illness for at least three months in the preceding year), dependency ratio, income category, and peri-urban versus rural community. For child-level outcomes, models additionally controlled for the child's age, orphanhood status, and relationship to the caregiver. Child-level analyses were stratified by gender and

adjusted for household-level clustering. Analyses are based on an intent-to-treat approach, with children analyzed based on their enrollment in a given program model.

Results

Sample description

Baseline sample characteristics of the children in the study are summarized in Table 1. Participants' average age was 13.6 years and children were fairly evenly divided by gender. Children enrolled in the two programs models differed significantly on one key demographic measure: orphanhood. Those enrolled in the paraprofessional program model were more likely to be double orphans, compared with children in the volunteer-driven program model (67% versus 49%). As a result, fewer children in the paraprofessional programs were cared for by their parents; most were instead under the primary care of a grandparent, aunt, or uncle. Correspondingly, slight but significant differences in caregiver age and gender were apparent and there was an insignificant trend ($p = .099$) for children's caregivers enrolled in the paraprofessional model to be less likely to be married. The two groups were similar with respect to

caregiver education levels, household poverty, dependency ratio, and presence of an ill household member. The majority of the sample lived in rural environments, however, significantly more children in the volunteer-driven group resided in peri-urban communities (18% versus 6%).

Psychological health outcomes

None of the psychological health indicators improved significantly over the course of the study period; moreover, three were demonstrably worse by follow-up (see Table 2). Approximately one-sixth of children reported depressive symptomology at baseline, regardless of gender. While there was a slight increase in depression prevalence by follow-up for both genders, this change was statistically significant in the adjusted models for boys (see Table 3, AOR = 1.58, $p \leq 0.05$). The prevalence of children's behavioral problems, as reported by their caregivers, increased significantly over time for both genders. For girls, total difficulties rose from 29% to 35% (AOR = 1.63, $p \leq 0.01$). The corresponding rise among boys was even greater: from 28% to 43% (AOR = 2.17, $p \leq 0.001$). However, these increases were not sensitive to the program model.

Table 1. Baseline characteristics of the children aged 10–17 by program model.

	Total sample	Volunteer driven	Paraprofessional	<i>p</i> -Value of <i>t</i> statistic or χ^2
<i>Child</i>				
Age (mean)	13.60	13.59	13.61	.866
Female (%)	52	51	52	
Orphan status				.000***
Maternal orphan	11	10	14	
Paternal orphan	26	33	16	
Double orphan	49	37	67	
Relationship to caregiver				.000***
Parent	29	39	13	
Grandparent/aunt/uncle	58	59	72	
Sibling	11	9	13	
Other	3	3	2	
<i>Caregiver</i>				
Age (mean)	48.63	46.78	51.34	.000***
Female (%)	93	92	95	.014**
Married or living as married (%)	20	21	17	.099
Has some education (%)	69	70	66	.164
<i>Household</i>				
Ill household member (%)	43	44	42	.408
Dependency ratio (mean)				
Poverty [†] (%)				.194
Less than 1000R a month	81	82	79	
1000–2500R a month	17	15	19	
>2500R a month	2	2	2	
Peri-urban (%)	13	18	6	.000***
<i>N</i>	1487	894	593	

** $p \leq 0.01$; *** $p \leq 0.001$; [†]Exchange rate was approximately \$1 = 7.5 Rand (R) at the time of this study, 1000R = \$130.

Table 2. Psychological health of children and caregivers by round and program model.

	Total		Volunteer driven		Paraprofessional	
	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)
Child – girls						
Depressive symptomology	18	23	20	25	14	22
Behavioral problems	29	35	31	39	26	29
Child – boys						
Depressive symptomology	16	22	18	24	13	19
Behavioral problems	28	43	31	43	24	42
Caregiver						
Negative feelings	41	35	44	33	36	37
Poor family functioning	30	59	37	64	20	52

The prevalence of negative feelings dropped slightly among caregivers in the volunteer-driven model (from 44% to 33%; AOR = 0.67, $p \leq 0.05$; see Tables 3 and 4). No change in the level of negative feelings was evident among paraprofessional program enrollees. Moreover, poor family functioning doubled at

follow-up (from 30% to 59%; AOR = 3.80, $p \leq 0.001$) regardless of program model. With exception of girls' depression, having an ill household member was significantly associated with increased risk for adverse psychological outcomes across both child- and caregiver-level models.

Table 3. Multivariate models of high levels of psychological problems among children.

	Girls		Boys	
	Depressive symptomology OR (CI)	Behavioral problems OR (CI)	Depressive symptomology OR (CI)	Behavioral problems OR (CI)
Paraprofessional model	0.76 (0.49–1.18)	0.75 (0.51–1.12)	0.83 (0.52–1.34)	0.73 (0.50–1.15)
Round	1.01 (0.70–1.48)	1.63** (1.14–2.31)	1.58* (1.07–2.33)	2.17*** (1.49–3.15)
Paraprofessional*Round	1.33 (0.75–2.35)	0.96 (0.58–1.60)	0.98 (0.54–1.80)	1.38 (0.80–2.37)
Age of child	1.07* (1.00–1.15)	1.01 (0.95–1.08)	1.03 (0.95–1.11)	0.99 (0.92–1.06)
Orphan status				
Maternal orphan	0.87 (0.48–1.59)	0.81 (0.46–1.43)	0.85 (0.44–1.66)	0.65 (0.33–1.29)
Paternal orphan	1.39 (0.85–2.27)	0.86 (0.54–1.38)	1.07 (0.63–1.83)	0.98 (0.57–1.68)
Double orphan	0.96 (0.55–1.66)	1.04 (0.62–1.75)	0.93 (0.50–1.74)	0.70 (0.37–1.32)
Relationship to caregiver				
Grandparent/aunt/uncle	1.13 (0.69–1.87)	1.05 (0.64–1.72)	1.03 (0.60–1.76)	1.70 (0.98–2.95)
Sibling	0.94 (0.51–1.76)	0.78 (0.43–1.42)	0.90 (0.44–1.82)	1.83 (0.91–3.71)
Other	0.94 (0.43–2.09)	0.60 (0.28–1.30)	1.10 (0.49–2.45)	1.01 (0.45–2.28)
Female caregiver	0.61 (0.35–1.06)	1.58 (0.86–2.93)	0.58* (0.35–0.97)	1.00 (0.59–1.72)
Age of caregiver	1.00 (0.99–1.01)	0.99* (0.98–1.00)	1.00 (0.98–1.01)	0.98** (0.98–1.00)
Married caregiver	1.05 (0.76–1.46)	0.76 (0.56–1.04)	1.12 (0.79–1.55)	1.21 (0.87–1.68)
Caregiver has some education	1.32 (0.93–1.85)	0.87 (0.64–1.19)	0.76 (0.53–1.08)	0.73 (0.51–1.03)
Ill household member	1.21 (0.91–1.61)	1.31* (1.00–1.72)	1.77*** (1.31–2.41)	1.44* (1.07–1.93)
Dependency ratio	1.05 (0.90–1.23)	0.86 (0.73–1.02)	1.01 (0.89–1.15)	0.90 (0.78–1.03)
Poverty				
1000–2500 rand/month	0.88 (0.60–1.28)	1.35 (0.95–1.90)	0.76 (0.49–1.17)	1.14 (0.77–1.70)
>2500 rand/month	0.83 (0.41–1.69)	1.14 (0.60–2.20)	0.54 (0.23–1.28)	0.94 (0.47–1.89)
Peri-urban	2.14*** (1.46–3.15)	1.48 (0.99–2.22)	2.27*** (1.51–3.41)	1.42 (0.91–2.24)

OR, odds ratio; CI, confidence interval.

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

Table 4. Multivariate models of high levels of psychological problems among caregivers.

	Negative feelings OR (CI)	Poor family functioning OR (CI)
Paraprofessional model	0.67* (0.49–0.93)	0.42*** (0.29–0.59)
Round	0.71* (0.54–0.94)	3.80*** (2.82–5.13)
Paraprofessional*Round	1.60* (1.05–2.46)	1.44 (0.93–2.24)
Female	0.90 (0.55–1.46)	1.32 (0.80–2.15)
Age	1.00 (1.00–1.01)	0.99*** (0.98–0.99)
Married	0.66** (0.51–0.85)	0.98 (0.76–1.26)
Some education	0.77* (0.60–1.00)	0.95 (0.73–1.24)
Ill household member	2.47*** (1.96–3.10)	1.81*** (1.44–2.29)
Dependency ratio	1.04 (0.94–1.15)	1.01 (0.90–1.12)
Poverty		
1000–2500 rand/month	0.82 (0.61–1.12)	1.05 (0.78–1.43)
>2500 rand/month	0.09*** (0.03–0.26)	0.46** (0.26–0.81)
Peri-urban	0.89 (0.63–1.25)	1.54* (1.10–2.17)

OR: odds ratio; CI: confidence interval.

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

Discussion

This study examined the impact of home visiting on four indicators of psychological well-being: children's behavioral problems and depressive symptomatology, intra-household conflict, and caregivers' negative feelings. After two years of program enrollment, beneficiaries in programs with trained and compensated paraprofessional home visitors were compared to those served by volunteers with limited to no training or compensation. Despite better service delivery quality, there was no measurable reduction in psychological distress among children or caregivers served by paraprofessionals compared to volunteers. Moreover, child behavioral problems, depression among boys, and family functioning were demonstrably worse by follow-up regardless of program model.

Negative mental health outcomes have been previously found to persist and worsen among HIV-affected children in South Africa over time (Cluver, Orkin, Gardner, & Boyes, 2012), and results from this study suggest that basic counseling delivered through even high-quality home visiting programs is unable to change this trajectory. Moreover, findings highlight the persistence of negative psychological health among caregivers in spite of best-practice home visiting models. Past research has offered limited support for home visiting as a contributor to improved child psychosocial outcomes (Sherr & Zoll, 2011); however, depression levels in particular resisted change, even by the most intensive program model (Brown et al., 2009). Similarly, across three separate evaluations in East Africa, home visiting did not appear to improve the psychological health of caregivers (Nyangara et al., 2009).

While home visitors may develop close relationships with beneficiaries and serve as a trusted confidant and

source of much-appreciated social support, their normally limited counseling skills and even their own psychological challenges may inhibit their ability to address beneficiaries' emotional needs (Brown et al., 2007; Sherr & Zoll, 2011). As past research also suggests, it may be unrealistic to hope that basic psychosocial support alone can alleviate severe psychological distress (Brown et al., 2009; Gilborn et al., 2006; Sherr, Clucas, Harding, Sibley, & Catalan, 2011). Results from this study reiterate the urgent need for effective psychological health interventions for HIV-affected children and caregivers, particularly those coping with household illness.

Feasibility and ethical considerations placed important limitations on the research design; the study lacks a control group unexposed to services, and families were not randomly assigned to a program model. The potential for bias from these factors is reduced substantially through the use of longitudinal data and multivariate models that control for differences in observable characteristics across sites and study participants. Moreover, enrollees in the volunteer-driven group ultimately reported low intervention exposure. As a consequence, they more closely approximate an untreated control group in terms of intervention experience.

The lack of universally accepted outcome measures is also a key limiting factor in studies of psychological effects. To date, there is no consensus on what domains or measures of psychological health are most appropriate in African contexts, and disparate measures and language variation make drawing comparisons across studies difficult (Sherr et al., 2011; Sweetland, Belkin, & Verdelli, 2014). While the study applied measures with a history of testing and successful use in similar populations, alternative measures may have yielded different

results. Finally, the program may have produced measurable change on any number of psychological outcomes other than the four included in this study, and these effects remain unknown. Regardless, there remains a clear need for alternative evidence-based interventions that can more effectively address high levels of psychological distress and conduct problems, which are common among HIV-affected children and their caregivers.

While scaling-up quality mental health services in low resource contexts is daunting; prior research demonstrates the feasibility of increasing the capacity of community workers to implement theory-driven psychological health interventions (Murray et al., 2011; Patel, Chowdhary, Rahman, & Verdelli, 2011; Petersen, Bhana, & Baillie, 2011). Correspondingly, available research from sub-Saharan Africa highlights the potential for structured time-limited interventions such as interpersonal group therapy, cognitive behavioral therapy, and other curriculum-based support groups to effectively alleviate psychological distress in children and caregivers, including those affected by HIV and AIDS (Bass et al., 2006; Kumakech, Cantor-Graae, Maling, & Bajunirwe, 2009; Murray et al., 2013; Thurman, Jarabi, & Rice, 2012). There is a clear need for further testing and scale-up of these and other evidence-based psychological interventions to supplement home visiting. The authors hope that the results of this study can be used to guide resource allocation and program design to support psychological health among HIV-affected children and their families. Priorities should include identifying sources of funding, providing specialized training to a cadre of workers, and incorporating monitoring and evaluation in every program implementation plan. As these efforts are conceptualized, tested, and brought to scale, home visitors can continue facilitating service access. Trained to conduct initial screenings for depression and behavior problems, they can link families in need with psychological interventions.

Acknowledgments

The study team is particularly grateful for the insight, support, and review of study materials provided from USAID Southern Africa Agreement Officers Anita Sampson and Naletsana Masango. This study is also made possible by the exemplary fieldwork of Impact Research International in South Africa; in addition to the quality interview and data entry team, the study particularly benefited from the strong leadership of Patrick Chiroro and Tronny Mawadzwa. Additionally, Johanna Nice of Tulane University provided instrumental support for managing the project. We further extend our appreciation to staff and volunteers from the partner organizations and participating community-based organizations in South Africa who supported the realization of this study. Importantly, we are particularly grateful for the participating children and caregivers who generously shared intimate details of their lives with the research team in order to increase our understanding of their circumstances and the impact programs can have on

their lives; we sincerely hope they and others in similar circumstances will be the ultimate beneficiaries of these research efforts.

Funding

Support for this project is provided by the United States Agency for International Development (USAID) Southern Africa under the President's Emergency Plan for AIDS Relief (PEPFAR) through a Cooperative Agreement [grant number AID-674-A-12-00002] awarded to Tulane University. The views expressed in this document do not necessarily reflect those of USAID or the United States Government.

References

- Bass, J., Neugebauer, R., Clougherty, K. F., Verdelli, H., Speelman, L., Ndogoni, L., ... Bolton, P. (2006). Group interpersonal *psychotherapy* for depressed in rural Uganda: 6-month follow-up of a randomized controlled trial. *British Journal of Psychiatry*, *188*, 567–573. doi:10.1192/bjp.188.6.567
- Bauman, L. J., Silver, E. J., Draimin, B. H., & Hudis, J. (2007). Children of mothers with HIV/AIDS: Unmet needs for mental health services. *Pediatrics*, *120*, e1141–e1147. doi:10.1542/peds.2005-2680
- Breuer, E., Myer, L., Struthers, H., & Joska, J. A. (2011). HIV/AIDS and mental health research in sub-Saharan Africa: A systematic review. *African Journal of AIDS Research*, *10*(2), 101–122. doi:10.2989/16085906.2011.593373
- Brown, L., Thurman, T. R., Kalisa, E., Rice, J., Bizimana, J., Boris, N., Snider, L., & Ntaganira, J. (2007). *Supporting volunteer mentors: Insights from a mentorship program for youth-headed households in Rwanda*. Washington, DC: Horizons.
- Brown, L., Thurman, T. R., Rice, J., Boris, N. W., Ntaganira, J., Nyirazinyoye, L., ... Snider, L. (2009). Impact of a mentoring program on psychosocial wellbeing of youth in Rwanda: Results of a quasi-experimental study. *Vulnerable Children and Youth Studies*, *4*, 288–299. doi:10.1080/17450120903193915
- Bryant, M., Beard, J., Sabin, L., Brooks, M. I., Scott, N., Larson, B. A., ... Simon, J. (2012). PEPFAR's support for orphans and vulnerable children: Some beneficial effects, but too little data, and programs spread thin. *Health Affairs*, *31*, 1508–1518. doi:10.1377/hlthaff.2012.0230
- Cluver, L., & Gardner, F. (2007). The mental health of children orphaned by AIDS: A review of international and southern African research. *Journal of Child & Adolescent Mental Health*, *19*(1), 1–17. doi:10.2989/17280580709486631
- Cluver, L. D., Orkin, M., Gardner, F., & Boyes, M. E. (2012). Persisting mental health problems among AIDS-orphaned children in South Africa. *Journal of Child Psychology and Psychiatry*, *53*, 363–370. doi:10.1111/j.1469-7610.2011.02459.x
- Department of Health. (2011). *The 2010 National Antenatal Sentinel HIV & Syphilis Prevalence Survey in South Africa*. Pretoria: National Department of Health.
- Dowdney, L., Wilson, R., Maughan, B., Allerton, M., Schofield, P., & Skuse, D. (1999). Psychological disturbance

- and service provision in parentally bereaved children: Prospective case-control study. *British Medical Journal*, 319, 354–357. doi:10.1136/bmj.319.7206.354
- Forehand, R., Steele, R., Armistead, L., Morse, E., Simon, P., & Clark, L. (1998). The Family Health Project: An investigation of children whose mothers are HIV-infected. *Journal of Consulting and Clinical Psychology*, 66, 513–520. doi:10.1037/0022-006X.66.3.513
- Gilborn, L., Apicella, L., Brakarsh, J., Dube, L., Jemison, K., Kluckow, M., ... Snider, L. (2006). *Orphans and vulnerable youth in Bulawayo, Zimbabwe: An exploratory study of psychosocial well-being and psychosocial support programs*. Washington, DC: Horizons.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586. doi:10.1111/j.1469-7610.1997.tb01545.x
- Govender, K., Penning, S., George, G., & Quinlan, T. (2012). Weighing up the burden of care on caregivers of orphan children: The Amajuba District Child Health and Well-being Project, South Africa. *AIDS Care*, 24, 712–721. doi:10.1080/09540121.2011.630455
- Hlabiyago, K. E., & Ogunbanjo, G. A. (2009). The experiences of family caregivers concerning their care of HIV/AIDS orphans: Original research. *South African Family Practice*, 51, 506–511.
- Howard, K. S., & Brooks-Gunn, J. (2009). The role of home-visiting programs in preventing child abuse and neglect. *The Future of Children*, 19(2), 119–146. doi:10.1353/foc.0.0032
- Kabacoff, R. I., Miller, I. W., Bishop, D. S., Epstein, N. B., & Keitner, G. I. (1990). A psychometric study of McMaster Family Assessment Device in psychiatric, medical, and nonclinical samples. *Journal of Family Psychology*, 3, 431–439. doi:10.1037/h0080547
- Kumakech, E., Cantor-Graae, E., Maling, S., & Bajunirwe, F. (2009). Peer-group support intervention improves the psychosocial well-being of AIDS orphans: Cluster randomized trial. *Social Science & Medicine*, 68, 1038–1043. doi:10.1016/j.socscimed.2008.10.033
- Kuo, C., & Operario, D. (2011). Health of adults caring for orphaned children in an HIV-endemic community in South Africa. *AIDS Care*, 23, 1128–1135. doi:10.1080/09540121.2011.554527
- Miller, I. W., Bishop, D. S., Herman, D. S., & Stein, M. D. (2007). Relationship quality among HIV patients and their caregivers. *AIDS Care*, 19, 203–211. doi:10.1080/09540120600624278
- Murray, L. K., Dorsey, S., Bolton, P., Jordans, M. J., Rahman, A., Bass, J., & Verdelli, H. (2011). Building capacity in mental health interventions in low resource countries: An apprenticeship model for training local providers. *International Journal of Mental Health Systems*, 5(30), 1–12.
- Murray, L. K., Familiar, I., Skavenski, S., Jere, E., Cohen, J., Imasiku, M., ... Bolton, P. (2013). An evaluation of trauma focused cognitive behavioral therapy for children in Zambia. *Child Abuse & Neglect*, 37(12), 1175–1185.
- Naidu, V., Aguilera, J. F., de beer, J., Netshipale, P., & Harris, G. (2008). Cost and quality performance indicators for home community-based care services to orphans and vulnerable children. *South African Journal of Economics*, 76, S28–S33. doi:10.1111/j.1813-6982.2008.00167.x
- Neudorf, K., Taylor, T. M., & Thurman, T. R. (2011). *Tswelopele: Partnerships for reaching orphans and vulnerable children in South Africa with the heartbeat model of care*. New Orleans, LA: Tulane University.
- Njaramba, P., Byenkya, T., Pillay, S., Oti, S., & Ntsala, M. (2008). *Heartbeat: A case study*. Johannesburg: Khulisa Management.
- Nyangara, F., Thurman, T. R., Hutchinson, P., & Obiero, W. (2009). *Effects of programs supporting orphans and vulnerable children: Key findings, emerging issues, and future directions from evaluations of four projects in Kenya and Tanzania*. Chapel Hill, NC: MEASURE Evaluation.
- Nyberg, B. J., Yates, D. D., Lovich, R., Coulibaly-Traore, D., Sherr, L., Thurman, T. R., ... Howard, B. (2012). Saving lives for a lifetime: Supporting orphans and vulnerable children impacted by HIV/AIDS. *Journal of Acquired Immune Deficiency Syndromes*, 60, S127–S135. doi:10.1097/QAI.0b013e31825da836
- Onuoha, F. N., Munakata, T., Serumaga-Zake, P. A. E., Nyonyintono, R. M., & Bogere, S. M. (2009). Negative mental health factors in children orphaned by AIDS: Natural mentoring as palliative care. *AIDS and Behavior*, 13, 980–988. doi:10.1007/s10461-008-9459-0
- Patel, V., Chowdhary, N., Rahman, A., & Verdelli, H. (2011). Improving access to psychological treatments: Lessons from developing countries. *Behaviour Research and Therapy*, 49, 523–528. doi:10.1016/j.brat.2011.06.012
- PEPFAR. (2012). *Guidance for orphans and vulnerable children programming*. Washington, DC: Author.
- Petersen, I., Bhana, A., & Baillie, K. (2011). The feasibility of adapted group-based interpersonal therapy (IPT) for the treatment of depression by community health workers within the context of task shifting in South Africa. *Community Mental Health Journal*, 48(3), 336–341.
- Richter, L., Foster, G., & Sherr, L. (2006). *Where the heart is: Meeting the psychosocial needs of young children in the context of HIV/AIDS*. Durban: Human Sciences Research Council.
- Schenk, K. D. (2009). Community interventions providing care and support to orphans and vulnerable children: A review of evaluation evidence. *AIDS Care*, 21, 918–942. doi:10.1080/09540120802537831
- Schenk, K., & Michaelis, A. (2010). Community interventions supporting children affected by HIV in sub-Saharan Africa: A review to derive evidence-based principles for programming. *Vulnerable Children & Youth Studies*, 5(2), 40–54. doi:10.1080/17450121003605261
- Sherr, L., Clucas, C., Harding, R., Sibley, E., & Catalan, J. (2011). HIV and depression – A systematic review of interventions. *Psychology, Health & Medicine*, 16, 493–527. doi:10.1080/13548506.2011.579990
- Sherr, L., & Zoll, M. (2011). *PEPFAR OVC evaluation: How good at doing good?* Washington, DC: United States Agency for International Development.
- Skovdal, M. (2010). Children caring for their “caregivers”: Exploring the caring arrangements in households affected by AIDS in Western Kenya. *AIDS Care*, 22(1), 96–103. doi:10.1080/09540120903016537

- Sweetland, A. C., Belkin, G. S., & Verdeli, H. (2014). Measuring depression and anxiety in sub-Saharan Africa. *Depression and Anxiety, 31*(3), 223–232.
- Thurman, T. R., Jarabi, B., & Rice, J. (2012). Caring for the caregiver: Evaluation of support groups for guardians of orphans and vulnerable children in Kenya. *AIDS Care, 24*, 811–819. doi:10.1080/09540121.2011.644229
- Thurman, T. R., Kidman, R., & Taylor, T. (2013). *The impact of paraprofessional versus volunteer-driven home visiting programs on the wellbeing of orphans and vulnerable children: Evidence from a longitudinal evaluation in KwaZulu-Natal, South Africa*. New Orleans, LA: Tulane University.
- Thurman, T. R., Yu, S., & Taylor, T. M. (2009). *A case study: Care for caregivers. A psychosocial support model for Child and Youth Care Workers serving orphans and vulnerable children in South Africa: A program implemented by the National Association of Child Care Workers*. New Orleans, LA: Tulane University.
- Tremblay, G. C., & Israel, A. C. (1998). Children's adjustment to parental death. *Clinical Psychology: Science and Practice, 5*, 424–438. doi:10.1111/j.1468-2850.1998.tb00165.x
- United Nations Children's Fund (UNICEF). (2010). *Children and AIDS: Fifth Stocktaking Report, 2010*. New York, NY: Author.
- Weissman, M. M., Orvaschel, H., & Padian, N. (1980). Children's symptom and social functioning self-report scales: Comparison of mothers' and children's reports. *The Journal of Nervous and Mental Disease, 168*, 736–740. doi:10.1097/00005053-198012000-00005
- WHOQOL-HIV Group. (2003). Preliminary development of the World Health Organization's Quality of Life HIV instrument (WHOQOL-HIV): Analysis of the pilot version. *Social Science & Medicine, 57*, 1259–1275. doi:10.1016/S0277-9536(02)00506-3
- WHOQOL HIV Group. (2004). WHOQOL-HIV for quality of life assessment among people living with HIV and AIDS: Results from the field test. *AIDS Care, 16*, 882–889. doi:10.1080/09540120412331290194