An Evaluation

The Difference Interventions for Guardians Can Make: Evaluation of the Kilifi Orphans and Vulnerable Children Project in Kenya

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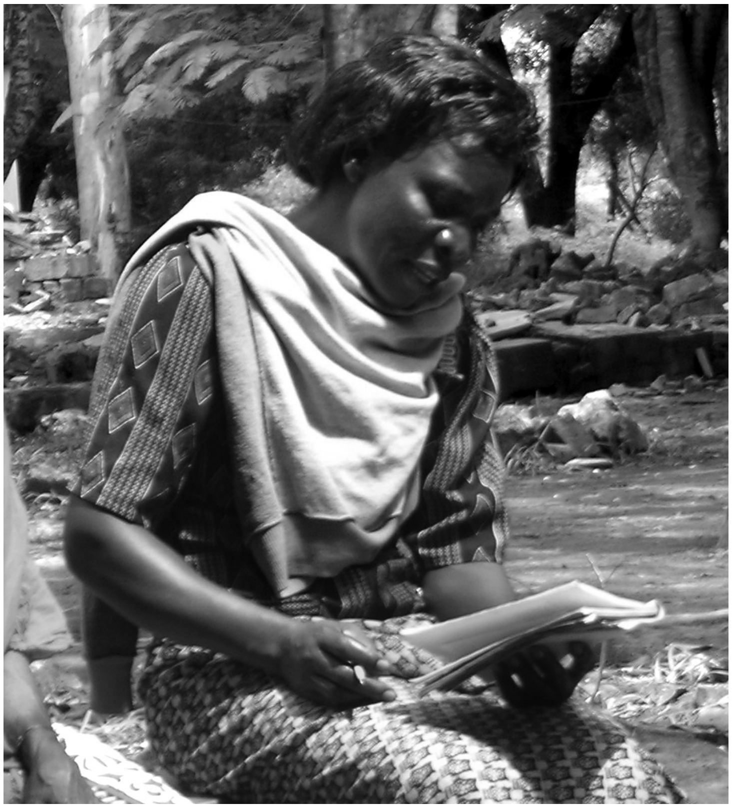
Acronyms

AIDS	acquired immune deficiency syndrome
CHW	community health worker
CRS	Catholic Relief Services
HIV	human immunodeficiency virus
OVC	orphans and vulnerable children
PLWHA	people living with HIV or AIDS
SD	standard deviation
SILC	savings and internal lending committee
SIPP	Survey of Income and Program Participation
UNICEF	United Nations Children’s Fund
USAID	U.S. Agency for International Development
VMC	village management committee

Introduction



A community health worker conducts a home visit in Kilifi district.

MEASURE Evaluation photo by Anna Hoffman

In sub-Saharan Africa, an estimated 12 million children 17 years of age and younger have lost one or both parents to AIDS, and many more live with a chronically ill parent or guardian.[1] Children affected by HIV and AIDS often face intensified poverty; inadequate food, shelter, and medical care; stigma and discrimination; mental distress; and other challenges. Despite recognition of the magnitude and negative consequences of these problems, there is a dearth of evidence as to what types of programs best improve the well-being of orphans and vulnerable children (OVC).

To address this evidence gap, MEASURE Evaluation received funding from the U.S. President's Emergency Plan for AIDS Relief to conduct evaluations of four different, multifaceted programs for OVC (two in Kenya and two in Tanzania). Each evaluation examines the effectiveness of specific program strategies on improving the lives of OVC aged 8-14 and their guardians. This paper presents the findings from the 2007 outcome evaluation of the Catholic Relief Services (CRS) Kilifi OVC project operating within Kenya. The evaluation explored the impact of interventions that aim to support and build the capacity of OVC guardians.

CRS
CATHOLIC RELIEF SERVICES

Intervention Model

Since 2004, the Kilifi OVC project has been implemented in all six parishes of Kilifi district. The overall goal of the project is "to improve the quality of life of OVC affected by HIV and AIDS." To achieve this aim, one project strategy is to increase the capacity of families to respond to the needs of OVC through implementation of two key interventions:

- **Volunteer community health workers** (CHWs) conduct home visits to provide social support and guidance on topics such as household management and OVC care. They also give guardians official referrals that allow them or their children to access free medical care as needed. Each CHW is assigned an average of 10 households and is asked to visit each household at least once a month. CHW recruitment was based on nominations from OVC guardian beneficiaries, and many CHW are also OVC guardian beneficiaries.
- **Guardian support groups** provide social support, counseling, and group therapy to OVC caregivers. Facilitated by a project social worker, these groups meet on a weekly basis; each has average of 25 members. In 2006, some of these groups were trained in savings and internal lending committee (SILC) loans, and income-generation was expected to be an increased focus of group activities in forthcoming years.

Although the evaluation focuses on these core components, the project also includes a wide range of other activities: paying fees for children enrolled in early childhood development centers; providing school equipment and uniforms for primary school age children; offering free medical care to treat and prevent ailments; education concerning nutrition; and HIV prevention school-based clubs. Vocational training, shelter renovation, and individual counseling are also provided for a small number of beneficiaries. Guardians are also supported in gaining linkages with government and other care and support community services and also receive education related to HIV and AIDS. To help identify OVC households and determine those that need services the most, the project supports the formation of volunteer groups called village management committees (VMCs).

The project also has another key strategy, which includes activities designed to increase the institutional capacity of partners to deliver high quality and sustainable interventions for OVC. CRS provides technical and financial support to the the local Archdiocese of Mombasa, which leads the project. The archdiocese establishes partnerships with local community institutions, such as health centers and schools, and employs community-based social workers who provide direct support to OVC, their families and volunteers. Readers are encouraged to see the program case study, which has details about the program model and the lessons learned during implementation.[2]

Methods

Study Setting

Kilifi district is in the Coast Province of Kenya. It is a heavily populated but largely rural district. In 1998, it contained 744,010 households.[3] The United Nations Children's Fund projected 21,249 orphans in the district by 2008.[4] Kilifi's HIV prevalence is relatively low, at 2.5%.[5] However, many children in Kilifi are vulnerable because of food insecurity, poverty, and high illiteracy rates. In 2005, Kilifi was the second-most impoverished district in Kenya, with 72% of residents living below the poverty line.[6]

Quantitative Data

Data were collected from April 2007 to August 2007. The outcome evaluation used a post-test study design with an intervention group and a wait group. The intervention group consisted of households with OVC identified by the program in the summer of 2004 that had received services since that time. The wait group consisted of "to-be-served" OVC households from the same communities, identified in 2007 one month prior to the research, and were offered services that were scheduled to begin after data collection. Households in both groups were identified by VMCs, whose members made home visits to determine which children were most in need. Thus, the intervention group consisted of those OVC households identified as most vulnerable in 2004 and the wait group included new OVC within the community in 2007; as well as, perhaps, those whose situation had worsened since 2004.

The study took place across two parishes within Kilifi district — Kikambala and Mariakani. These parishes were selected because the program intended to expand the number of children served there, ensuring eventual service provision for the wait group. The intervention and wait groups were dispersed equally across all of the sub-locations within these two parishes (thus, each sub-location included households from both the intervention and wait groups).

The study concentrated on children age 8-14 at the time of data collection, so the community-identified lists were narrowed to include only households with a child in this age range. The wait group list consisted of 536 households with a child in this age range and interviews were attempted among all of these households. Of the estimated 2,400 households that comprised the possible intervention group across the two parishes, approximately 72% had a child within this age range. Systematic sampling procedures were used to select 600 households age 8-14 within the intervention group (due to challenges in locating participants, this number was increased to 730 during fieldwork). Across the two groups, if more than one child age 8-14 lived in the household, up to two children were included in the study. In cases where there were three or more children within this age range, the research team prior to fieldwork selected two children randomly from the beneficiary list to be included in the study. With the possibility of up to two children per household, the total sample of children was larger than the sample of guardians.

The research team attempted to locate all selected households and conduct face-to-face interviews with the child and his or her guardian. Households on the beneficiary lists were located with assistance from project CHW volunteers, who worked with the research field team, accompanying them to the specific household. The research team relied on a list of beneficiaries provided from CRS program staff that typically included the full name of the child and guardian, age of the child, and their village of residence (in addition to larger geographical region, such as Parish and sub-location). In instances where CHWs could not find the selected households, they along with the research team engaged local authorities to help them locate the household. When these efforts were not successful, the research team returned to CRS staff to request follow-up information and support in locating selected participants.

The final sample included 771 guardians and 1,036 children. Among the original 1,266 households selected to participate, less than 1% refused to do so. However, 20% could not be located. The inability to locate participants was higher among households with a history with the program (intervention group) than the newly-identified children (wait group). Specifically, 29% of households in the intervention group could not be located relative to 9% in the wait group. An additional 7% of the original sample was considered ineligible because the listed child was found not to be within the target age range, 3% were repeats of a household previously visited, and 1% were not home after three attempts.

As discussed further within the analysis section, in spite of the original formation of intervention and wait groups, the study ultimately combined the sample and compared those exposed and unexposed to specific intervention components.

Qualitative Data

To supplement the survey findings, 10 focus groups were held among children, guardians, and CHWs; five within each of the study parishes. In total, there were four focus groups with children, three with guardians, and three with CHWs. Groups were stratified by gender; and, in the case of the children's groups, by age of participant. Table 1 presents details on the composition of the focus groups. Participants had been directly involved with the program for at least one year. To the extent possible, they were randomly selected from beneficiary or program volunteer lists. All focus groups were transcribed verbatim in the language they occurred (Swahili), and then translated into English for analysis.

Table 1. Composition of Focus Groups

Children Age 8-10 (Two Groups)	Children Age 12-14 (Two Groups)	Guardians (Three Groups)	CHWs (Three Groups)
9 boys	9 boys	7 women	10 women
6 girls	8 girls	9 women	6 women
		11 men	9 men
Total 15	17	27	25

Ethical Considerations

Before data collection, the research protocol and all instruments were approved by intitutional review boards at Tulane University in the United States and at Kenyatta National Hospital in Kenya. All potential respondents were informed at the study's outset that their participation was voluntary and did not affect their eligibility to receive services from the program. Additionally, participants were informed orally of the purpose and nature of the study, as well as its expected risks and benefits. Because of the high illiteracy rate, verbal consent was requested of participants. Adults provided consent for themselves and the children under their care. Consent was also acquired from children, using child-friendly language to ensure their understanding. If consent was given, the interviewer signed the consent form for the participant. To maintain confidentiality, the survey cover sheet, which included identifying information, was removed prior to data entry and only unique numerical identifiers were used. Focus group participants' names were not collected, and the transcripts identified respondents only by number.

Analyses

Analyses were conducted to assess the independent and joint effects of guardian support group participation and having a CHW. Only 44% of the 396 guardians in the intervention group reported having a CHW, and 65% reported participating in support groups; although 16% of the 290 guardians in the wait group reported having a CHW, and 12% reported participating in support groups. For this reason, the study compares guardians and their children who have and have not received specific intervention components, rather than strictly comparing guardians and children from the intervention and wait groups.

The impact of both interventions was assessed on 15 indicators that encapsulate the following domains: care and treatment of the child, four indicators; educational outcomes of the child, one indicator; psychosocial well-being of the child, four indicators; psychosocial well-being of the guardian, four indicators; and physical health of the guardian and child, two indicators. Many of these outcomes were scales, and Cronbach's coefficient alpha was employed to estimate their internal consistency (reliability). An alpha of 0.60 or higher was considered acceptable.

Initial descriptive analyses were conducted to calculate unadjusted means and percentages on the outcomes among those exposed and unexposed to the interventions. To test for statistical relationships between intervention exposure and the study outcomes, regression analysis (linear regression for continuous outcomes and logistic regression for categorical outcomes) was employed. Multivariable regression analyses examined whether the outcome was associated with the intervention after controlling for the alternative intervention (i.e., assessing the impact of having a CHW alone regardless of whether they were also involved in support groups, and vice versa).* Where a significant association with intervention exposure was found at $p< .05$, the regression was repeated including additional variables to assess whether these differences persisted after controlling for the samples' background characteristics. In models assessing guardian outcomes, the following demographic and household characteristics were controlled for: age, gender, marital status, whether they reported having a chronic illness, had ever attended school, a household poverty index, and number of children living in the home. Each of these guardian and household-level variables was also included in models assessing child outcomes. The child-level models further controlled for several child characteristics: age, gender, orphan status (single, double, non-orphan), relationship to caregiver (mother, grandparent, aunt/uncle, other), and number of households lived in within the last year. Background demographics of the sample, as well as the outcome indicators, are discussed in the Results section.

Limitations

There are several limitations the reader should consider when interpreting these results. First, the post-test study design does not allow for the analysis of changes. Therefore, it is not possible to definitively assume causality for any differences found between those exposed and not exposed to the intervention. Another related limitation concerns selection bias. The study was initially designed to compare the intervention and wait groups, with the assumption that most of the intervention group would have been exposed to the program components under investigation. However, as exposure was not as high as expected, the analysis compares those exposed to those unexposed. In this case, the unexposed group is potentially comprised of some individuals who chose not to participate in the intervention. As such, differences may exist between the individuals who self-selected to participate or not. For instance, the individuals who engaged in available services were

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* For each outcome, initial regression analyses were conducted including three variables, one for each intervention and another reflecting the interaction between the two interventions. A significant interaction term would illustrate that the effect of one intervention depends on participation in the other intervention (e.g., support groups are only effective if they also have a CHW). For all of the 15 outcomes, no interaction effects were evident. As such, these results are not discussed and models were conducted without the interaction term.

perhaps more inclined to positive outcomes (e.g., more interested in promoting harmonious family interactions and already more caring towards the children in their household). Alternatively, those electing such services may have had an increased need for these interventions and were initially worse off with respect to the outcomes of interest. The selection bias is likely to be greater among those who participated in support groups as compared to those who had a CHW, as support groups require active and intentional engagement (i.e., attending a meeting). While this limitation is worth considering, it should be noted that the bulk of unexposed individuals were never offered the intervention (as it was principally comprised of "to-be-served" households). In addition, analyses controlled for any potential differences in the demographic profile of the exposed and unexposed groups. Nonetheless, it is not possible to know definitively if the associations found are due to the services received or preexisting unknown differences between these groups. Retrospective data in evaluating the effects of intervention participation make attribution of program impact difficult to conclude.

Readers should also be aware that this evaluation did not cover all possible impacts of the CRS Kilifi OVC project. Not all program elements could be assessed, due to small exposure among the sample (e.g., only 8% reported participating in school-based HIV clubs) and the fact that some services are distributed based on need (e.g., it is not appropriate to compare health outcomes for children who received vitamin A to those who did not receive it, as those in the latter group may not have needed it). Therefore, this evaluation focused on strategies where reasonable equivalence of the unexposed and exposed groups could be assumed and only among interventions with high exposure levels. Further, the broader intervention approaches of involving community members in the care of OVC, such as the role of VMCs and capacity building of partners, were not evaluated with the methods employed in this study. Lastly, the study's focus on children age 8-14 leaves unknown the impact of these interventions on guardians with children of different ages and on children of different ages.

Results

Following a description of the sample of guardians and their program exposure, the sections below report whether engagement in support groups or having a CHW was associated with guardian and child-level outcomes of interest. As some families had exposure to both interventions, analyses examined whether the impact of an intervention was evident after controlling for whether they were involved in the other interventions. In this case, there is the possibility that neither one or both interventions would be associated with the outcome. If either intervention was associated with the outcome, additional analyses were conducted to see if these effects remained, after controlling for background characteristics in addition to the alternative intervention. Unless otherwise indicated, all results reported as significant were statistically significant at p<.05 in multivariable models that controlled for the alternative intervention and demographic characteristics of the sample. For statistically significant intervention effects, unadjusted means and percentages are presented to demonstrate the extent of difference between those exposed to interventions and those not exposed. When both interventions were associated with the outcome, the "additive effect" of being involved in both interventions is also displayed.

Description of the Sample

The health, demographic, and socioeconomic characteristics of the 771 guardians interviewed in Kilifi are presented in Table 2. The majority of guardians (89%) were female, with a mean age of 41.6 years. Nearly a quarter were 50 years or older. A majority (64%) had never attended school. Half were widowed, and only 34% reported living with a partner or spouse, although the majority (62%) took care of four or more children in their home. Furthermore, about one-fifth of guardians (22%) reported being ill for three months or more in the last year (a common marker for detecting HIV and AIDS[7]).

A wealth index was developed considering whether the household had the following assets: radio, television, refrigerator, or bicycle. Home conditions, such as whether they had a floor type other than mud, a latrine or flush toilet, electricity or solar power, utilization of coal or paraffin for cooking, and reliance on water from

Table 2. Description of the Guardians and Their Households

Characteristic	Percent (n =771)
Gender	
Female	89.2
Male	10.8
Age	
> 30	16.6
30-49	60.1
50+	23.3
Mean age = 41.6	
Ever attended school	
Yes	36.1
No	63.9
Relationship status	
Married/Living with Someone	34.2
Widowed	50.3
Other	15.4
Guardian ill in last year	
Yes	21.9
No	78.1
Number of children in the household	
≤ 3	38.3
> 3	61.7
Household poverty	
Poorest (No assets)	28.9
Second poorest (1-2 assets)	41.8
Middle (3-4 assets)	19.9
Wealthiest (5-11 assets)	10.3
Household food security	
Secure	1.7
Mildly secure	1.7
Moderately insecure	10.4
Severely insecure	86.2

either a public tap or in-home piping were also considered. Respondents were given one point for possession of each of the preceding assets and household features, with the exception that if they had piped water (n=7) they were given two points. This analysis suggests that most of the families face economic difficulties, with 29% in the poorest category reporting no household assets, and only 10% considered wealthy with five or more assets.

Levels of food insecurity provide further indication of the economic strains facing these households. Food security was measured by the Household Food Insecurity Access Scale, a nine-item scale to measure the prevalence and severity of household food insecurity developed by USAID's Food and Nutrition Technical Assistance Project.[8] Results indicate severe food insecurity among 86% of the sample. Less than 2% were food secure.

Characteristics of the 1,036 children, as reported by guardians interviewed in Kilifi, are presented in Table 3. Slightly more than half of the children (51%) were male, and the mean age of children in the sample was 11.3 years. Almost all of the children attended school (99.6%) at the time of the survey.

Nearly 13% of children were double orphans, with both parents deceased. The majority (62%) were single orphans, meaning that either their mother or father was deceased. Among these, most (86%) had lost their father. Children were most commonly being cared for by their natural mother (59%), and nearly 17% were cared for by a grandparent. Less than 3% had a sibling as a primary caregiver. Most children (87%) had lived in one home during the previous year, but 13% had lived in two or more homes.

Program Exposure

This evaluation concentrated on two key interventions for guardians instituted by CRS: contact with CHWs and support groups. Among the 771 guardians in this sample, 28% reported having a CHW that visits their home and 38% reported participating in support groups. Nearly 19% of the sample participated in both interventions. Participants described key features of the intervention, presented in Table 4.

Table 3. Description of the Children

Characteristic	Percent *(n =1036)*
Gender	
Female	48.8
Male	51.2
Age	
8-9	23.5
10-11	26.5
12-14	50.0
Mean age = 11.3	
Relationship to guardian	
Natural mother	59.3
Natural father	4.8
Grandmother	14.6
Grandfather	1.8
Aunt	7.1
Uncle	1.6
Brother	1.4
Sister	1.5
Other	7.9
Orphan status	
Double orphan	12.6
Single orphan	61.5
Not an orphan	25.9
Number of homes in past year	
One	86.8
Two or more	13.2
Enrolled in school at time of survey	*(n = 837)**
Yes	99.6
No	0.4

* Sample size is smaller because question was not asked of all children, due to some data collection occurring during summer break.

When asked about the common frequency of CHW visits, less than half (44%) of the guardians reported being visited at least once a month. There were some indications they would have liked more frequent visits, as only 60% felt volunteers visited enough. In addition, those visited fewer than twice a month were less likely to feel the volunteer visit frequency was sufficient as compared to those visited more often (52% versus 83%, chi-square analyses p< .001, data not shown).

Table 4. Description of Services Received by Guardians

Characteristics of CHW Support	Percent (n = 218)
Frequency of visits	
Once a week or more	11.1
Once per 2 weeks	13.8
Once a month	18.8
Once per 2 months	1.4
A few times a year or less	55.1
Perceptions concerning quality of the relationship	
Guardian agreed that	
there is enough time to talk about everything when CHW visits	72.9
CHW visits enough	59.7
CHW understands guardian's feelings	90.4
he or she trusts the volunteer	91.7
Guardians with a CHW who reported volunteering for the project	52.0
Characteristics of Support Group Meetings	*(n = 292)*
Frequency of meeting attendance	
Once a week or more	74.7
Once per 2 weeks	9.3
Once a month	8.6
A few times a year or less	7.5
Meeting activities	
Talk about problems	76.7
Visit one another	62.3
SILC training	79.1
Income-generating activities	27.4
Received money from group activities	22.2

Nonetheless, the majority of participants reported high quality and cordial relationships with the CHWs, with almost all guardians agreeing the relationships were trusting and empathetic. It is notable that 52% of those with a CHW also volunteered for the project, some of whom may either serve on VMCs or as a CHW themselves.

The majority (75%) of support group participants reported engaging in this activity at least once a week. Participants were asked an open-ended question about the activities the group conducted. Most (77%) highlighted the emotional support they received from discussing the challenges they face. Over half (62%) reported visiting one another outside of sessions. Perhaps due to the fact that SILC and other income generating activities had just been introduced into the groups at the time of the survey, only 22% reported receiving economic benefits from their participation.

Impact on the Care and Treatment of Children

Care and treament of children was assessed with three indicators: family functioning and feelings toward the children, both reported by guardians; and household child abuse, reported by children.

Family functioning was measured among guardians using the general functioning scale (alpha = .87) of McMaster's Family Assessment Device.[9] The scale included eight items assessing family dynamics (e.g., in times of crisis you can turn to each other for support; there are lots of bad feelings in the family; you feel accepted for what you are, etc.). Scores ranged from 1 to 4, with higher scores indicating worse family functioning. The mean was 1.90, with a standard deviation (SD) of .57. A cut-off of 2 or above indicates poor family functioning and 52% of the sample was within this category.

> *"Where I stay, there were families which had poor relationships and couldn't sit together. But because you bring them together to discuss, they find that it brings peace to them, as they have the same problems."*
>
> **Male CHW**

Both those with a CHW and those who participated in a support group were significantly less likely to have poor family functioning, even after controlling for engagement in the other intervention and background characteristics ($p < .01$ for both). Because each intervention was independently associated with the outcome, those exposed to both interventions had the lowest prevalence of poor family functioning (see Figure 1).

Caregiver's feelings toward the child were measured with a scale (alpha= .65) derived from the U.S. Census Bureau Survey of Income and Program Participation (SIPP).[10] The scale included four items: whether the child is much harder to care for than most children, whether the child does things that bother the caregiver, whether the child takes up more caregiver time than expected, and whether the caregiver feels angry with the child. Scores ranged was from 1 to 4, with higher scores indicating more positive feelings towards the child. The mean was 3.38 (SD = .54).

> *"It has improved the relationship between children, parents, caregivers, and family members."*
>
> **Female beneficiary, age 10**

After controlling for the alternative intervention, only guardian participation in support groups was significantly associated with their feelings towards the child (p< .05). Guardians who participated in support groups had more positive feelings toward the child under their care than those who did not participate (3.45 versus 3.34). However, after controlling for background characteristics, participation in support groups was no longer statistically significant.

Child abuse was assessed with a five-item abuse scale (alpha=.76) based on items suggested within a 2006 UNICEF report.[11] Children were asked to indicate how often an adult in the household disciplined them with a stick, belt, hairbrush, or other hard item; slapped, punched, pinched, or hit them on the head or face; whether they had been sent away or kicked out of the house; whether a meal had been withheld to punish them; or whether an adult had called them dumb, lazy, or other names. Scores ranged from 1 to 5, with higher scores indicating greater abuse. The mean was 1.60 (SD = 0.72).

There was no statistical association with CHW visits; however, support group participation was associated with a lower level of abuse, after controlling for the alternative intervention and background characteristics (p< .05). Children with a guardian who participated in a support group reported less abuse than those without a guardian in a support group (1.56 versus 1.69).

Impact on Children's Educational Outcomes

School attendance was measured through guardian reports of the number of days children missed school the previous week. To account for holidays, the survey also asked for the number of expected days of attendance. The outcome was categorized as either not missing any days or missing one or more days of school.

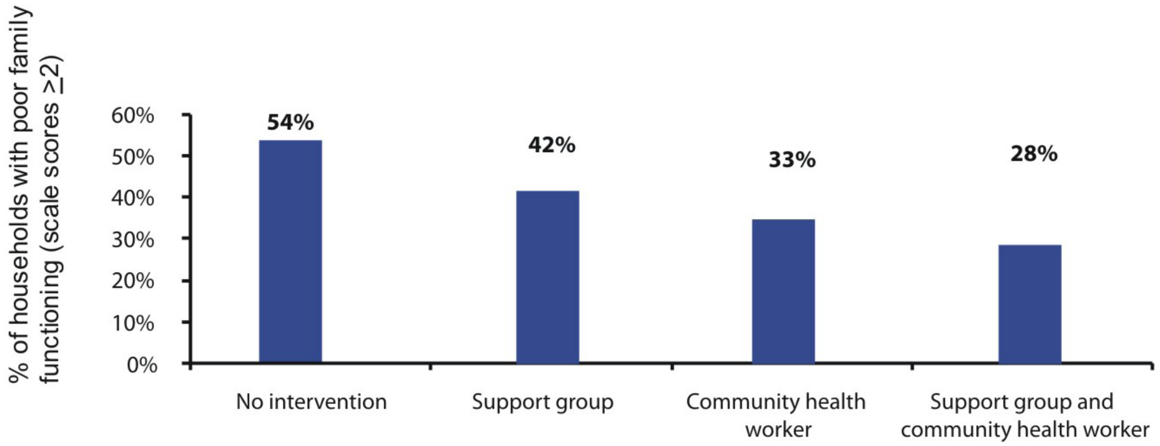

Figure 1. **Percentages of guardians who had poor family functioning, by intervention exposure.**

In multivariable analyses, CHW visits were associated with school attendance ($p< .053$), but no difference was found among children with guardians who participated in support groups. The proportion who missed one or more days of school was 26% among those with a CHW, compared to 31% among those without a CHW.

Impact on the Psychosocial Well-Being of Children

Psychosocial well-being of children was measured through five indices: two guardian-reported measures concerning child behavior; and child-reported self-esteem, social isolation, and perceived negative community attitudes concerning OVC and PLWHA.

Child behaviors were assessed through two sub-scales of the Strengths and Difficulties Questionnaire: the five-item prosocial behavior subscale (alpha = .61) and the 20-item total difficulties subscale (alpha = .75).[12,13] For prosocial behaviors, guardians were asked to rate the extent to which the child engaged in cooperative and kind behaviors (e.g., considerate of other people's feelings; shared toys, pencils, and food with other children; offers to help others, adults or children). To assess total difficulties, guardians were asked to rate the child on emotional symptoms (e.g., child seems worried; child seems unhappy), peer relationship problems (e.g., would rather be alone than with children his own age), hyperactivity/inattention (e.g., child is restless, is overactive, or cannot be still for long), and conduct problems (e.g. child lies or cheats). For each, guardians indicated whether such behaviors were usually true, sometimes true, or never true. Each individual item had a score range from 0 to 2, with cumulative scores for prosocial behaviors ranging from 0 to 10 and for total difficulties ranging from 0 to 40. Higher scores on prosocial behaviors indicated more desirable behaviors whereas higher scores on total difficulties indicated more problem behaviors. For prosocial behaviors, the mean was 7.8 (SD = 1.97). For total difficulties, the mean was 8.8 (SD = 5.21). It is noteworthy that considering the possible score was up to 40, the reports of behavioral problems overall were fairly low.

> *"Mostly, it's the advice we give them that has made them be free and mix with other kids. Other than being lonely, one has to identify themselves with something or fit in with their peers, or else they get sidelined. This is why we keep talking to them, so that they are able to socialize."*
>
> **Male CHW**

Guardian participation in a support group was significantly associated with their reports of children's prosocial behavior even when considering the alternative intervention and background characteristics ($p< .001$). Children with a guardian in support groups had increased prosocial behavior as compared to children without a guardian in support groups (7.53 versus 8.32). There was no association between CHWs and prosocial behavior when also considering whether they were involved in a support group. However, both interventions were positively associated with less behavioral difficulties even after controlling for involvement in the other intervention and background characteristics ($p< .01$ for each intervention). Since both interventions were independently associated with less behavioral difficulties, the combination of interventions had the greatest influence on lower behavioral problems (see Figure 2).

Child self-esteem was measured using the global self-esteem scale (alpha = .65) from the Self-Esteem Questionnaire.[14] The scale includes eight items assessing the child's sense of self worth and satisfaction (e.g., you sometimes think you are a failure; you are happy with yourself as a person; you often feel ashamed of yourself). The possible score range was 1 to 32, with higher scores indicating better self-esteem. The mean was 22.67 (SD = 3.88). Neither intervention was associated with child-reported self-esteem.

Social isolation among children was measured by the KIDSCREEN social acceptance scale (alpha = .77).[15] The scale includes five items assessing how often children play alone and are teased, picked-on or bullied. The score range was 1 to 5, with higher scores indicating greater social isolation. The mean was 2.26 (SD = 0.95).

There was no difference in reported social isolation among children with a guardian in a support group; however, a significant effect of CHW visits was evident even after controlling for possible support group participation and background characteristics (p< .01). Children living in households with a CHW reported significantly lower social isolation than those without a CHW (see Figure 3).

Perceived negative attitudes towards OVC and people living with HIV or AIDS (PLWHA) was measured among children by a scale generated for this study (alpha = .69). The scale includes three items: whether the community rejects orphans, whether the community rejects families affected

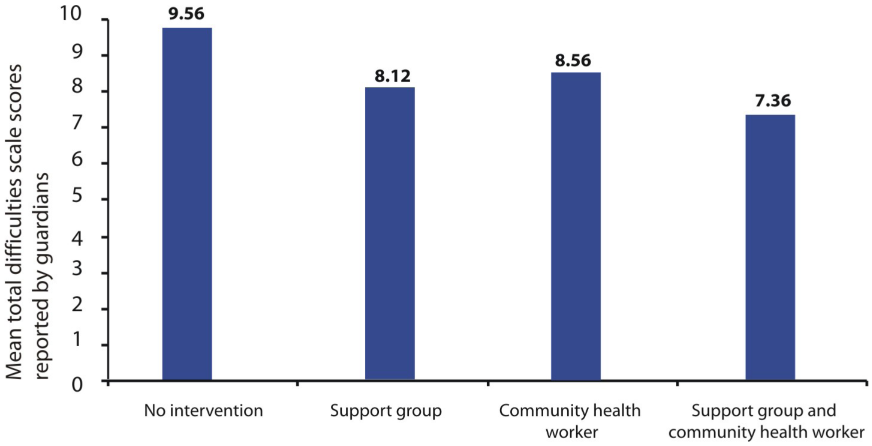

Figure 2. **Total child behavior difficulties, by intervention exposure.**

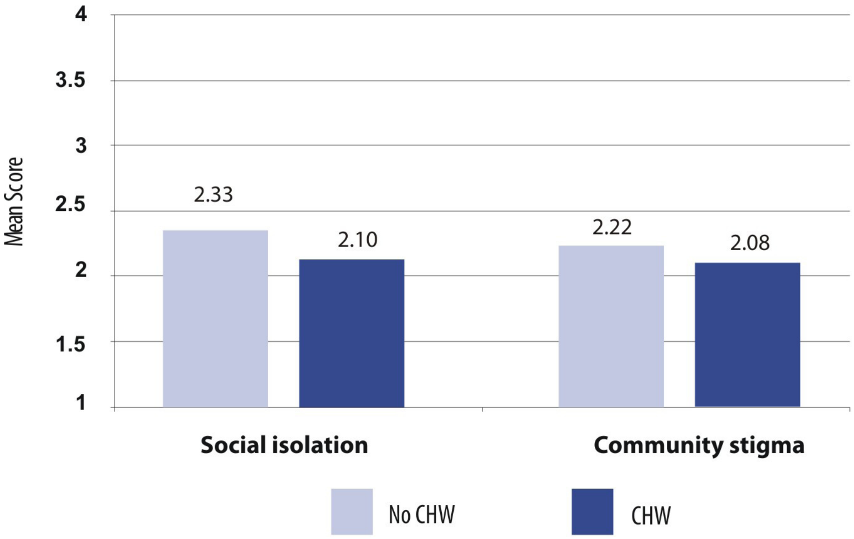

Figure 3. **Social isolation and and community stigma, by CHW status.**

by HIV and AIDS, and whether people are jealous of the services given to orphans and families affected by HIV and AIDS. The score range was 1 to 4, with higher scores indicating more perceived stigma towards HIV-affected families. The mean was 2.18 (SD = .72)

Only CHW visits were associated with this outcome in multivariable models (p< .01). Children with a CHW visiting their household reported lower perceived negative attitudes concerning OVC and PLWHA than those without a CHW (Figure 3).

Impact on the Psychosocial Well-Being of Guardians

Psychosocial well-being of guardians was assessed with four indices: guardian reports, of their positive and negative feelings; marginalization from the community; and perceived negative community attitudes concerning OVC and PLWHA.

Two four-item sub-scales were drawn from the World Health Organization's Quality of Life instrument to measure guardians' psychological health: positive feelings (alpha = .71) and negative feelings (alpha = .88).[16,17] Positive feelings were measured through questions such as the extent to which the respondent enjoys life, experiences positive feelings in life, feels positive about the future, and generally feels content. For negative feelings, guardians rated the extent to which feelings of sadness and depression interfere with their everyday functioning; feelings of depression bother them; they feel worried; and they have experienced such negative feelings as a blue mood, despair, anxiety, or depression. Both scales ranged from 1 to 5, with higher scores reflecting a better emotional state. The mean score was 2.81 (SD = 0.73) for positive feelings and 2.78 (SD = 0.94) for negative feelings. Neither interventions were associated with a significant difference on these measures of guardian psychological well-being.

> *"At first, we did not know each other before we joined the group. But now we visit each other and give little contributions to one another."*
>
> **Female guardian, support group participant**

> *"Each one of us has 10 households. When we visit, one household may not have food; we advise them to help one another."*
>
> **Female CHW**

Marginalization among guardians was measured with a scale (alpha = .86) based on one previously used among youth-headed households in Rwanda.[18] The scale includes five items assessing perceived stigma and isolation (e.g., people speak badly about you or your family, you feel isolated from others in the community). The score ranges from 1 to 4, with higher scores indicating greater marginalization. The mean was 2.25 (SD = .85).

Guardian marginalization was not significantly affected by having a CHW after controlling for whether they were involved in a support group. However, the effect of support group participation was significant after controlling for the alternative intervention and background characteristics (p< .01). Support group participants reported lower marginalization than those not involved in this intervention (2.11 versus 2.34).

Perceived negative attitudes towards OVC and PLWHA was measured among guardians as described above under the child outcomes, as the same scale was applied with guardians (alpha = .74). The score range was 1 to 4, with higher scores indicating more perceived stigma towards HIV-affected families. The mean was 2.37 (SD = .87).

In multivariable models, only support group participation was associated with this outcome (p< .05), CHW visits were not. Support group participants reported lowered perceived negative attitudes concerning OVC and PLWHA than non-participants (2.28 versus 2.42).

Impact on the Health of Guardians and Children

Health status of children and guardians was measured from self-reports provided by guardians. They reported their own health status and that of the child under their care as either "very good," "good," "neither poor nor good," "poor," or "very poor." No difference on either measure was reported among those with a CHW or those who participated in a support group. Overall, nearly a quarter of guardians (21%) and children (23%) were reported as having either poor or very poor health.

It was expected that those exposed to either or both interventions may have better health than those not exposed, as the interventions facilitated access to free medical services. CHWs and CRS social workers leading support groups were authorized to provide guardians with health-care referral forms to tend to their own health needs and those of the children in their homes. The referral forms were provided to those who seemed to need or who requested medical attention, and the forms could be used to access free health care and medicine from identified clinics in partnership with CRS. Partnering health centers had agreed to provide beneficiaries who presented a referral card with treatment and medications as needed, and to bill the project on a monthly basis for services rendered.

As indicated in Table 5, consistent uptake of these free health services was not very high. Among guardians who received a health referral for themselves (n = 138), almost one-third (29%) reported never having used that referral. Further, while 236 children were referred to a health facility, 39% of guardians indicated they never used the referral provided for the child under their care. One unknown factor is whether there are potential differences in uptake between participants who did and did not request the health referral. It is possible that referral uptakes were higher among those who requested the referral as compared to those who were offered it, though disaggregating such effects is not possible in this analysis.

When asked to identify reasons for not using health referrals, focus group participants reported supply constraints, including distance to the clinic, related transportation costs and long wait lines; and issues with service quality, including unkind treatment and discomfort communicating with hospital staff. Moreover, participants also cited reasons that were in contradiction to the agreement CRS had with health-care facilities. For example, some participants said they were turned away from clinics during normal operating hours and informed CRS beneficiaries could only be served during set times. Also, some participants reported they had to pay for medications, as the clinics indicated the needed medicines were out of stock.

Table 5. Utilization of Health-Care Referrals

	Guardian % (n = 138)	Child % (n = 236)
Always	28	20
Sometimes	42	41
Never	29	39

Conclusions

While this study does not offer conclusive evidence that the program had impact, this evaluation does suggest that efforts to support guardians can translate into positive effects for the guardian and the children under the guardian's care. Having a CHW and engagement in support groups were associated with indicators reflecting better care and treatment of children and healthier psychosocial well-being of guardians and children.

> *"We've realized that it can change. Initially, we felt that we were suffering, but now we feel our life is improving for the better and it could be much better than now."*
>
> **Male beneficiary, age 12**

Independently, both interventions were associated with better family functioning and fewer child behavioral problems. Hence, for both of these outcomes, the combined effect of having a CHW and participation in support groups was greater than the individual influence of these interventions. As such, this evaluation highlights the potential of additive effects arising from exposure to multiple interventions.

Each intervention also had independent effects not found from participation in the other intervention. For instance, lower absenteeism was found only among children with a CHW. These visits had further influence on children's social inclusion, associated with less isolation and lower perceived negative community attitudes concerning PLWHA and OVC. Among guardians, the opposite was true, as measures of social inclusion were not associated with CHW visits but by participation in support groups.

Support group participation had even more potential benefits for children. Guardians in support groups reported better feelings towards the child. Moreover, children with guardians in support groups had a higher rate of prosocial behavior and reported lower incidence of household abuse. In the long term, these benefits will improve the lives of the children even more.

In light of the post-test-only design and other study limitations, these results must be interpreted cautiously. However, the results are in the anticipated direction, as the interventions provide the opportunity for advice, support, and social engagements that are expected to contribute to better outcomes for guardians and children.

Despite the encouraging findings, some unmet needs remain. Neither intervention was associated with a difference in the psychological health of guardians or the self-esteem of children. Also, the interventions were not found to have affected the reported health status of guardians or children, and the consistent utilization of free health care services was low. Future programs should try to meet these needs while retaining this program's many benefits.

Programmatic Implications

Linking beneficiaries with one another can build support networks. Support groups provided an opportunity for guardians facing similar difficulties to meet and support one another. The connections of beneficiaries persisted after the meetings, with 62% of participants indicating they visited each other outside these sessions. Similarly, CHWs described efforts to link the families they visited, such as encouraging the families' children to play together and the guardians to assist one another. Many CHWs are also OVC guardians, so they not only give but also receive support during home visits. Focus group participants described how guardian beneficiaries also assisted each other in tangible ways, such as providing food and manpower in times of need. Thus, these interventions provide a forum for reciprocal support among beneficiaries and help them expand their support network beyond the program.

> *"I am so grateful. To say the truth, when I lost my husband, I was left with four children in a poor state. I didn't know what to do. . . . Now, I have been able to meet other widows who have shared with me various challenges and so I don't feel lonely anymore."*
>
> **Female guardian**

> *"On the negative side, it takes much time which could be used to help my family."*
>
> **Male CHW**

Reasonable expectations of volunteers are necessary. Although almost all guardians who had a CHW agreed that they were trustworthy and understanding, 40% reported feeling their volunteer did not visit them enough. Further, those visited less frequently than twice a month reported higher dissatisfaction with the frequency of visits. While volunteers were requested to visit a household at least once a month, only 44% of the sample said their CHW did so.

Ten households may overburden many volunteers, forcing them to visit infrequently, inevitably weakening the potential impact of this intervention. Indeed, a study in Rwanda reported the positive relationship between frequency of volunteer home visits and beneficiaries' perspectives concerning program impact.[19] Furthermore, studies from several African countries, including Kenya, have illustrated that OVC guardians face more severe economic difficulties than the general population.[1,20] Since many of the CHWs are also OVC guardians, the demands they face in their own lives that require their time and attention must be considered. For these reasons, it may be important to decrease the household-to-volunteer ratio. Lessening the responsibilities of volunteers may promote their retention and increase their adherence to the commitments they agreed upon as a CHW. Ultimately, setting obtainable expectations of volunteers is likely to enhance the realization of the program's vision.

Increased attention to the psychological health of guardians is needed. Although the interventions were designed to provide guardians with psychosocial support, only the social aspects were affected, as no differences were seen on the psychological measures. With scale scores ranging from 1 to 5 and higher scores reflecting a better emotional state, average scores on the two psychological scales were less than 2.8. These scores are much lower than norms found in past research. A study across five countries, including Zimbabwe, reported much better emotional well-being among healthy adults, with mean scores on the positive subscale of 3.55 and those on the negative scale of 3.74.[17] These findings suggest the psychological health of OVC guardians needs attention. Further, because neither intervention was associated with better psychological health, future programs should consider a different approach. For example, the support group meetings could take a more clinical form, or select CHWs could be trained as counselors and a referral system put into place.

Efforts to address children's self-esteem are important. Neither intervention was associated with better self-esteem among children. This may be an important domain for programs to try to influence, considering that low self-esteem has been linked with increased suicide, higher sexual risk behaviors, and substance abuse among youth in South Africa.[21,22] Self-esteem may be better addressed through program activities targeting children directly, such as recreational activities that provide leadership opportunities and curriculum-based initiatives that teach life skills. Program efforts that encourage communities to accept and integrate OVC may also be important, as stigma may contribute to poor self-esteem.

Health care barriers, beyond costs, need to be addressed. One notable finding is that beneficiaries may not always capitalize upon the services available to them. In spite of the fact that health care is paid for by the project, few reported always utilizing this service. Though supply constraints, such as distance to facility and long lines at clinics, are largely beyond the control of the program, the intervention could try to increase referral uptake by addressing barriers pertaining to quality of care. Addressing service quality may require revisiting the agreements among health care providers, to ensure they adhere to the agreed upon protocols of free medication and services during operating hours. Further, sensitization sessions designed to alter clinic staff attitudes and treatment of vulnerable clients may be needed. Increasing utilization may also involve addressing other barriers specific to guardians, such as empowering them to communicate with health care staff and alleviating transportation expenses.

"The orphans, despite how hard you try to treat them well, there comes a time when you feel that things would have been better if their mothers were alive. We thus face a lot of problems and we sometimes cry.… We sometimes feel depressed, knowing that we and they would not have as many problems if their parents were here."

Female guardian, age 60

"When they are playing with their friends, they're pointed out as children who have lost their mother or father, so it creates a bad feeling."

Female CHW

"When doctors see someone from CRS, they deny you some medicines that may be expensive; instead they send you to buy, claiming they don't have. Will you buy that drug, if at home you don't have flour?.... We would like our doctors to be encouraged to help us."

Female CHW

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