

## **An Assessment of a Home-Based Program for Children Orphaned by HIV/AIDS in Cameroon Africa**

DENIS BAMBO NDZIBIDTU, BTh, DipCommHlth

*Cameroon Baptist Convention Chosen Children Program, Nso,  
North West Region, Cameroon, Africa*

DOROTHY J. MEYER, CNM, MPH, CAPT, USPHS (Ret.)

*Flagstaff, Arizona, USA*

PIUS M. TIH, MPH, PhD

*Cameroon Baptist Convention Health Service, Bamenda,  
North West Region, Cameroon, Africa*

*More than four-fifths of all children orphaned by AIDS worldwide live in Sub-Saharan Africa. In response to the growing number of orphans, governments, civil society, and international organizations have implemented programs to provide protection, care, and support to these children. However, few of these programs have assessed their effectiveness. The Cameroon Baptist Convention Health Service Chosen Children Program provides home-based services, which include HIV screening, payment of school fees and medical care, nutritional assistance, psychosocial support and counseling, and monitoring through home visitation. Quantitative and qualitative data are provided that show that orphans served by the Chosen Children's Program stayed within their family homes, were in school longer, and achieved more school success than did orphans not receiving services.*

**KEYWORDS** *HIV/AIDS, home-based intervention, home visitors, orphans, school success*

---

Address correspondence to Denis Bambo Ndzibidtu, Bansa Baptist Hospital, P.O. Box 09, Nso, NWR, Cameroon. E-mail: denisbambo@gmail.com

## INTRODUCTION

Although new HIV/AIDS infections and deaths have stabilized (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2010), the HIV/AIDS pandemic remains a major public health challenge in Sub-Saharan Africa:

- Just over 10% of the world's population live in Sub-Saharan Africa, yet 68% of HIV-infected persons live in this region (UNAIDS, 2010).
- During 2009, 1.8 million adults and children became infected with HIV contributing to a total of 22.5 million persons living with HIV in Sub-Saharan Africa (UNAIDS, 2010).
- In Sub-Saharan Africa, women are particularly affected, making up 60% of persons living with HIV (UNAIDS, 2010).
- In 2009, 1.3 million AIDS-related deaths occurred in Sub-Saharan Africa. (UNAIDS, 2010).
- More than four-fifths of all children, orphaned by AIDS worldwide, live in Sub-Saharan Africa, where every eighth child is an orphan (Mishra & Bignami-Van Assche, 2008).

In Sub-Saharan Africa, orphaned children have been cared for by their extended family, including grandparents, uncles, aunts, and other relatives. This tradition of child fostering has become an essential coping response to the increased adult mortality due to AIDS. It is also a culturally and locally acceptable solution to the "orphan crisis," whereas institutional arrangements, such as fosterage in orphanages, are thought to be adequate only in desperate situations (Mishra & Bignami-Van Assche, 2008). However, there is growing recognition that the AIDS epidemic jeopardizes these traditional systems of child care (Howard et al., 2006; Kamali et al., 1996; Nyambedha, Wandibba, & Aagaard, 2001; Nyamukapa & Gregson, 2005; Oleke, Blystad, & Rekdal, 2005). Kamali et al. (1996) identified several possible reasons for this social impact:

- Multiple adult members of a kinship group may have died or require care because of AIDS.
- Surviving households have to care for several orphans.
- Urbanization and migration from rural communities may weaken traditional kinship networks.
- HIV/AIDS may limit income-generating abilities of households receiving fostered children.

In Sub-Saharan Africa, there has been a rapid increase in the numbers of orphans, and institutional facilities are not able to provide services to this expanding population. Additionally, while institutional care has provided some of the "nurture" to orphans, institutions are not able to provide the

holistic care that children need to acquire a well-rounded development (International Child Development Program, 2010; Phiri & Webb, 2002), including social/cultural skills and educational attainment (Davidson, 2009; Grainger, Webb, & Elliott, 2001).

In response to the growing number of orphans, governments, civil society, and international organizations have developed alternate programs to care for orphans that provide protection, care, and support to these children. Recent emphases have been placed on programs that enable orphans to remain with their family in a home environment and have included community child mentoring; grants to community schools in support of orphans in schools, nutrition, and farming; community-based care centers in support of school, nutrition for children and their caregivers; and home-based support to children and their families by home visitors (Wright & King, 2009). Yet, there exists little evidence as to how, or if, these programs are improving the lives of orphans (Strebel, 2004) and meeting key benchmarks, such as the UN Millennium Development Goals. It has been suggested that HIV/AIDS is the main obstacle to reaching national poverty reduction targets and the UN Millennium Development Goals (United Nations, 2010). Often decisions regarding the allocation of scarce resources for these orphans are made with little proof of what types of interventions are effective and without adequate evaluation and monitoring (Strebel, 2004; United Nations Children's Fund, 2005; Wright & King, 2009). Additionally, caution has been advised that the efforts of well-meaning organizations do not undermine a communities' ownership of responses, creating the impression and expectation that this is a problem that will be solved by the external agency providing the funding (Phiri & Webb, 2002).

The single unifying feature of any intervention is to assist children to exercise their right to education as guaranteed in article 28 of the UN Convention on the Rights of the Child (Wright & King, 2009). Education is critical to the future of all children, but especially to those who have been orphaned. Education gives children hope in their life and future ability to work and support themselves and their family. Education is a strong protector against HIV/AIDS, to which many of these orphans are particularly susceptible (Wright & King, 2009). In Sub-Saharan Africa, studies have shown a disparity in access to education between orphans and nonorphans (Case, Paxson, & Abledinger, 2004; Kamali et al., 1996; Konde-Luke, Sewankambo, Wawer, & Sengonzi, 1996; Mishara & Bignami-Van Assche, 2008; Muller & Abbas, 1990; Nyambedha et al., 2005; Wagt & Connolly, 2005). To access education, orphans must overcome multiple barriers, the greatest being paying school fees, which restrict the ability of families and caregivers to enroll the children in school.

Since 2000, the availability of basic education increased when 164 governments met in Dakar, Senegal, and committed to the goal of "Education For All" (Wright & King, 2009). Since then, school enrollment increased by

36%, with 14 Sub-Saharan African countries abolishing school fees and closing the educational gender gap. For example, Uganda abolished fees, which led to a 70% increase in enrollments; the United Republic of Tanzania's primary school enrollment increased from 57% to 85% in 1 year; and Kenya's abolition of primary school fees led to an enrollment increase of 104% (Wright & King, 2009). Other variables that have been shown to assist children to attend school include providing school uniforms (LaPoint, Holloman, & Alleyne, 1992; Joseph, 1986), school shoes (Nuwer, 2002; Perry, 2006), and adequate nutrition (Murphy et al., 1998; Steinberger, Moran, Hong, Jacobs, & Sinaiko, 2001; Warren, Henry, & Simonite, 2003).

## CAMEROON

Cameroon is a country in west Sub-Saharan Africa. The climate varies with the terrain, from tropical forests along the coasts to semiarid and hot in north. The population is estimated to be more than 19.5 million and consists of over 240 diverse tribal groups, each with its own language and unique culture. Cameroon is divided into 10 regions, with eight being French speaking and two being English speaking. There are an estimated 610,000 adults and children living with HIV (UNAIDS, 2010). AIDS is the most common cause of mortality, accounting for 21% of all deaths (World Health Organization, 2006). One result of this mortality has been the number of HIV/AIDS orphans increasing from 140,000 in 2001 to 330,000 in 2009 (UNAIDS, 2010).

Education is compulsory for all children 6 to 14 years old. Since 2000, there has been no tuition fee for the first 6 years of public schooling, but families must pay other school costs, including uniforms, books, and nutrition. A progress report card is given to the student at the end of each of the three terms that make up the academic year. Tuition fees must be paid at the secondary (and higher) level and remain unaffordable to many families. The literacy rate in Cameroon is 67% for women and 81% for men (World Resources Institute, 2006). The effectiveness of families, communities, and agencies to provide care to orphans, especially in terms of meeting their educational needs, is unknown. There are few evidence-based answers to the question, "What interventions are most effective in maintaining the school attendance of orphans?"

### The Cameroon Baptist Convention Health Service Chosen Children Program

The Cameroon Baptist Convention Health Service (CBCHS) is a private, faith-based health care system consisting of five hospitals, 26 integrated health centers, and 46 primary health centers. In 2000, the CBCHS initiated one of the first HIV/AIDS medical care programs in Cameroon. In July 2001, the Chosen Children Program (CCP) was begun with the mission "to assist and support

orphans to stay in their villages with caregivers who provide a safe and stable home environment.” It has a program staff of 19 with 15 being home visitors. The CCP is funded by donations from local, national, and international organizations and individuals. In 2011, these donations enabled the program to provide home-based care to 961 orphans from a listing of 3,500 eligible applicant children. The average cost per child is U.S.\$57 per year. The largest portion of the program budget (60.0%) pays for the school needs, medical care, and nutritional needs of the children served, as well as caregiver support. Staff costs account for 23% of the budget with an additional 10.2% spent on the transportation costs of children, families, and staff. The remaining 6.8% of the budget provides for training, administration, and incidental costs.

All enrolled children receive HIV screening, payment of school fees and medical care, and nutritional assistance. During monthly visits, the CCP home visitors provide counseling to and monitoring of the children and their caregivers. When the program was begun, the assumption was made that it was pivotal to program success to include caregivers in the services provided. Caregivers are under serious financial, physical, and emotional stress due to their caregiving responsibilities (Oleke et al., 2005; WHO, 2002). The CCP provides all caregivers HIV testing and education, training in the social and medical care of children, assistance in obtaining micro financing, and psychosocial counseling and support. Recently, the program has been faced with the additional challenge of requests from caregivers for assistance to pay for their own medical care. As the orphans are staying longer in their family homes, their caregivers are increasingly subject to age-associated diseases, and the family is faced with the added burden of finding funds for the caregivers’ medical care and medication(s). Of all the enrolled children, 45 (5.0%) are living with HIV. These children require additional specialized medical and psychosocial support services, resulting in an average cost of U.S.\$100 per year.

Although the CCP has been careful to collect basic program data for yearly reports, there has been difficulty in assessing the actual effect, if any, of the program on the lives of the orphans and families being served. To address this concern, it was decided to perform a study that would assess the CCP’s impact on orphans served by the program compared with orphans not receiving services.

## Study Setting

A village within the North West Region was selected to perform the study. This village is a medium-sized community with multiple government, faith-based, and private education and health facilities. The population is estimated to be approximately 23,000 and mostly made up of one tribal group speaking one local language. Although not an official language, all community members also speak Pidgin English, which is the daily language spoken in the homes, markets, and churches and in the local media in the North West

Region. English is spoken by those who have attained some formal education. The primary occupation is farming, with the main cash crops being huckleberry and carrots.

A community survey was performed in 2004, with 270 HIV/AIDS orphans identified. The CCP began providing services in this village in 2005, and no other program had previously or presently serves the orphans. At the time of this study, it was estimated that 37.0% of the orphaned children in the village were receiving CCP services.

## METHODS

The CCP's primary goal is to maintain orphaned children in their home and in school. This goal was selected to be the outcome measure of program success. Orphaned children receiving program services (intervention group) were compared with orphans not receiving program services (control group) with an assessment based on variables associated with staying with their family and in school.

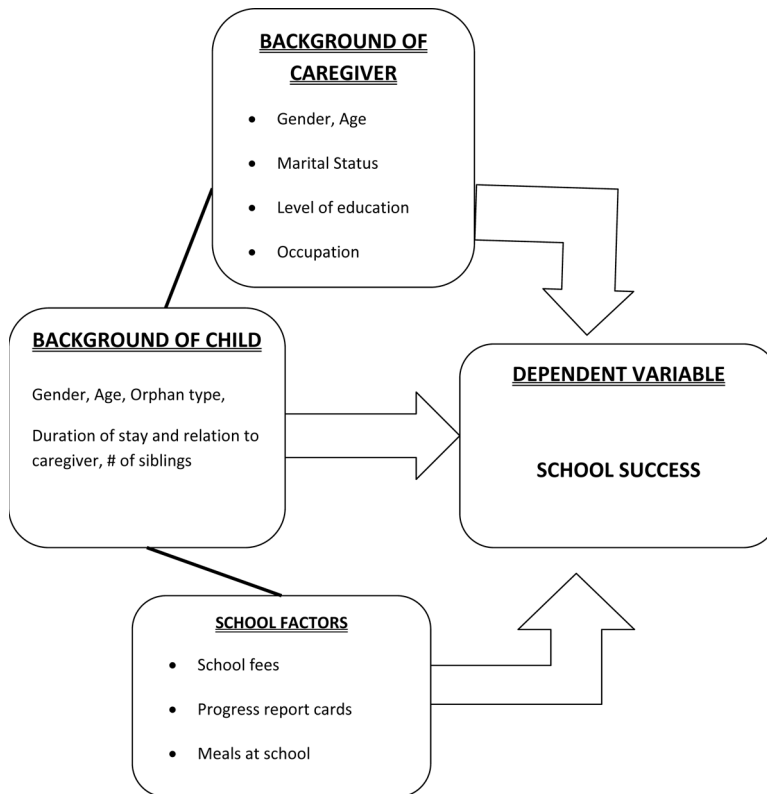
### Materials

A literature search was performed to identify any program reviews and possible instruments that could be used for an assessment. When no publications were identified, the literature was reviewed to identify variables that have been shown to be associated with a child's school success in Sub-Saharan Africa. Figure 1 presents these variables.

A questionnaire was developed that addressed the variables and included common sociodemographic data. The data collected were non-identifying, and no sensitive information was requested. To address concerns regarding questionnaire reliability, only quantitative variables were selected. The questionnaire was then reviewed and discussed both in focus groups and individually with local education and health leaders to ensure that the variables were valid and applicable in the cultural context of Cameroon.

A guide was used to enable the focus groups of caregivers and orphans to express their opinions and concerns. Their responses provided input that helped to develop the study protocol and questionnaire as well as confirming that the selected variables did impact the children's lives. In addition, their discussions also provided qualitative data for the assessment.

Once the questionnaire was completed, it was reviewed by CCP program staff for validity. The village chief and elders, religious leaders, chief of centers at health facilities, head teachers, community health volunteers, and consultants were also invited to review the questionnaire and provide input into the study protocol.



**FIGURE 1** An operational framework for the school success of orphans in Africa.

## Study Protocol

Households were divided into “intervention” households served by the CCP and “control” households where orphans did not receive services. The study families were surveyed house to house following proximity to the CBCHS Health Center. All families receiving CCP services were included within the intervention group. The control group was identified through the “nearest neighbor” approach. This approach entailed obtaining comparison households by selecting the nearest household with orphans to match those of intervention group.

Participant eligibility criteria included:

- The caregiver must reside within the village.
- The caregiver must be available for the interview and give verbal consent to participate for themselves and the orphan.
- The child must be a maternal, paternal, or complete orphan. (A maternal orphan is a child whose mother has died. A paternal orphan is a child whose father has died. A complete orphan is a child whose parents have both died.)

- The child must be school aged (6 to 18 years of age).
- The child must give verbal assent to participate.

The survey team was made up of volunteers from the CCP staff. This team field tested the questionnaire through mock interviews with each other, and further modifications were made based on their experiences and recommendations. Additionally, the team received training as to how to explain the study, obtain consent for participation, consistently ask the questions in both Pidgin and English, and record the responses. The team made every effort to locate and conduct face-to-face interviews with caregivers and children eligible to participate in the study. If the caregiver could not be located at the first visit, the team member made a second visit to the household.

Before the study was conducted, the District Delegate of Social Affairs and the local village head and elders reviewed and approved this study. The CBCHS Institutional Review Board also approved the study, including the consent process. Caregivers provided consent for themselves and their children. Children also gave their assent to participate. As part of the consent process, all participants were informed that their participation was voluntary and did not affect their eligibility to receive services from the program. No participant was given any incentive.

Participants were interviewed in private to minimize interruptions, elicit candid responses, and ensure confidentiality. Female team members interviewed female children to avoid any cultural barriers in the interview session. At the end of the interview, each caregiver was asked if it was possible to see the child's last progress report and document the child's academic performance and school attendance. All caregivers allowed the study team member to examine the most recent report card and record the information.

The study team received special training on being sensitive to the child's and caregiver's family loss and ongoing grieving. No interview was completed before providing the opportunity to discuss any emotional discomfort caused to the participant. A system was put in place for referral of any participant requesting emotional support or assistance in dealing with their grief. Fortunately, no caregiver or child showed the need for or requested emotional support.

The survey was administered August 1 to 7, 2010. Data were analyzed using SPSS version 17.0, and presented in frequencies, proportions, percentages,  $\chi^2$ , and comparative means testing.

## RESULTS

A total of 200 orphans and 124 caregivers participated in the study. Both the intervention group and control group each had 100 children and 62 caregiver participants. All (100%) of the eligible children served by the CCP



completed the questionnaire while an estimated 59% of orphans not receiving services participated. Table 1 shows the sociodemographic characteristics of the caregivers.

The average age of the caregivers in the intervention group was 42.0 years, which was significantly less than the 44.5 years in the control group ( $p \leq .001$ ). The average income of families in the North West Region is thought to be around 13,500 CFA (Communaute Financiere Africaine) francs per month (U.S.\$30.00). The intervention families average income was 12,506 CFA, which was significantly less than 15,268 CFA in the control group ( $p \leq .004$ ). In the focus group of caregivers, the families income was an issue of concern with typical responses including, "When I struggled and the child completed

**TABLE 1** Demographic Characteristics of Caregivers of HIV/AIDS Orphans in Cameroon, Africa

Characteristic	Intervention group ( $N=62$ )		Control group ( $N=62$ )		$p$ Value
	No.	Percent	No.	Percent	
Gender					
Male	5	8.1	6	9.7	
Female	57	91.9	56	90.3	
Age, yr					*
20–29	8	12.9	1	1.6	
30–39	17	27.4	19	30.6	
40+	37	59.7	42	67.7	
Marital status					
Single	5	8.1	3	4.8	
Married	21	33.9	17	27.4	
Widowed	36	58.1	42	67.7	
Occupation					
Farmer	56	90.3	56	90.3	
Other	6	9.7	6	9.7	
Religion					
Protestant	37	59.7	42	67.7	
Catholic	22	35.5	16	25.8	
Other	3	4.8	4	6.5	
Education					
None	17	27.4	22	35.5	
Primary	38	61.3	34	54.8	
Secondary	7	11.3	6	9.7	
Income (CFA)					
1,000–10,000	46	74.2	33	53.2	*
11,000–20,000	11	17.7	21	33.9	
21,000+	5	8.1	8	12.9	
Number of orphans in household					
One child	22	35.5	21	33.9	
Two children	21	33.9	20	32.3	
Three children	11	17.7	11	17.7	
Four children	8	12.9	10	16.1	

\*Significant at  $p < .01$ .

primary school, I could not continue because there was no money” and “My children dropped out because they started primary school late and found it unproductive being in primary school at the age of 14 and 15 years, thus resolved to abandon school and leave for the coastal region in search of work.”

A total of 263 orphans were being cared for by both groups of caregivers within their homes. More than two-thirds of both the intervention and control households had two or more orphaned children living in the home. The additional 63 children living in these households were not eligible to participate in the study because they were aged 5 years and under. Table 2 presents the children's demographic information.

The average age of children in the intervention group was 12 years and significantly greater than 10 years of age in the control group ( $p \leq .001$ ). Children had lived with their present caregiver from 2 months to 18 years. Children in the intervention group had an average duration stay with their caregiver of 93.5 months, which was significantly longer than then 86.1 months of the control group ( $p \leq .0005$ ). Almost all children (95.5%) had lost their father to AIDS (paternal orphans) with less than half (42.5%) of the children having lost their mother (maternal orphans).

**TABLE 2** Characteristics of HIV/AIDS Orphans in Cameroon, Africa

Characteristic	Intervention group ( $n = 100$ )		Control group ( $n = 100$ )		$p$ Value
	No.	Percent	No.	Percent	
Gender					
Male	52	52.0	49	49.0	
Female	48	48.0	51	51.0	
Age, yr					*
5–9	23	23.0	48	48.0	
10–14	50	50.0	38	38.0	
15–19	27	27.0	14	14.0	
Type of orphan					
Maternal	2	2.0	7	7.0	
Paternal	57	57.0	58	58.0	
Complete	41	41.0	35	35.0	
Caregiver relationship					
Mother	23	23.0	34	34.0	
Father	1	1.0	2	2.0	
Grandmother	20	20.0	18	18.0	
Grandfather	6	6.0	6	6.0	
Aunt	29	29.0	25	25.0	
Older sister	2	2.0	1	1.0	
Older brother	2	2.0	1	1.0	
Guardian female	17	17.0	13	13.0	
Duration of stay with caregiver, yr					*
12+	30	30.0	17	17.0	
≤11	70	70.0	83	83.0	

\*Significant at  $p < .01$ .

Ten school variables were identified in the literature review as contributors to school success and are presented in Table 3. More significant differences were evident in the school variables than in the orphan and caregiver variables.

UNICEF guidelines recommend that a child's basic material needs are met if he/she has at least one pair of shoes, two sets of clothes, and a blanket (United Nations Children's Fund, 2005). Almost all children had at least one pair of shoes (98.4%). Although not significant, more children in the

**TABLE 3** School Variables of HIV/AIDS Orphans in Cameroon, Africa

Variable	Intervention group ( <i>n</i> = 100)		Control group ( <i>n</i> = 100)		<i>p</i> Value
	No.	Percent	No.	Percent	
Presently in school					*
Yes	100	100.0	85	85.0	
No	0	0.0	15	15.0	
Level of education					*
Primary	54	54.0	78	78.0	
Secondary or above	41	41.0	20	20.0	
Apprentice	5	5.0	2	2.0	
Present school fees (CFA) <sup>a</sup>					*
3,000–14,000	54	54.0	66	77.6	
15,000–150,000	46	46.0	19	22.4	
Has school uniforms <sup>a</sup>					*
Has two uniforms	78	78.0	20	23.5	
Has one uniform	16	16.0	58	68.2	
Has no uniform	6	6.0	7	8.2	
Has shoes <sup>a</sup>					
Has two pairs	38	38.0	22	22.0	
Has one pair	61	61.0	61	61.0	
Has none	1	1.0	2	2.0	
Has a meal at school <sup>a</sup>					
Yes	42	42.0	37	43.5	
No	58	58.0	48	56.5	
Academic performance/3rd term <sup>a</sup>					
Pass	84	84.0	65	76.5	
Fail	16	16.0	20	23.5	
School attendance <sup>a</sup>					
Adequate	85	85.0	63	74.1	
Inadequate	15	15.0	22	25.9	
Highest certificate					*
None	54	54.0	61	71.8	
Secondary or above	46	46.0	24	28.2	
School dropout	0	0.0	15	17.6	
Caregiver's reason for schooling <sup>a</sup>					
Compulsory	94	94.0	71	71.0	
Other	6	6.0	22	22.0	
Doesn't know	0	0.0	7	7.0	

Note. Control group *n* = 85 (15 children not in school).

\*Significant at *p* < .01.

intervention group (38.0%) had two pairs of shoes than the control group (22.0%).

In Cameroon, school uniforms are very important and worn in almost all schools. In the children's focus group discussions, one child said, "When I dress in uniform, I read and think well." Over 90% of all orphans in school had at least one school uniform, but significantly more children in the intervention group had two sets of uniforms. In the focus groups, the adolescents identified that they wanted to be "clean and present themselves neat," which is facilitated by having more than one uniform.

An almost equal proportion (42% to 43%) of children in both groups had a meal at school. Every child did have three meals per day (before school, after school, and evening). In an interview, a head teacher mentioned that many children did not have food to eat at school and therefore tend to beg from their friends. He went further to say "some children even start crying when they are hungry."

Although the "pass" and school attendance percentages were higher in the intervention group, the numbers did not reach a significant level. During an interview, a head teacher said orphans with CCP sponsorship and those without sponsorship were performing the same. He mentioned that the only difference was that those without sponsorship were often sent back home for not paying school fees.

Many of the other school variables showed significant differences. The intervention group paid higher school fees; more were presently in school; more were at higher grade levels (secondary and above); and more had completed a grade level/received a certificate.

The intervention caregivers were more aware that school was compulsory in Cameroon and were able to identify reasons for school attendance. Finally, it was statistically significant that 15 (15%) of orphans in the control group had dropped out of school while all orphans in the intervention group were in school ( $p \leq .0001$ ). Six of these children dropped out in primary school and nine after starting secondary school. The caregivers of these children were asked to identify reasons for their dropping out. Eight caregivers said their children were unable to continue in school because of their inability to pay the school fees and/or expenses. In both caregiver and children's focus groups, it was said that without financial assistance many girls would be forced into marriage or other types of work. In the children's group, issues of maltreatment, discrimination, and poor attention to their needs were also identified as reasons for leaving homes.

## DISCUSSION

The goal of this study was to assess if the CCP assisted orphans to stay with their family caregivers and to remain in school longer than a group not

receiving services. As with many programs serving orphans, the CCP recognizes that ensuring educational opportunities for these children is critical in mitigating HIV-related vulnerability. Those children who drop out of school often are exposed to socioeconomic difficulties, including trauma and abuse. Therefore, family support and school success are essential to maximizing the potential of a child to become a fully contributing community member.

When compared with orphans not receiving services, this study has shown that the orphans receiving CCP services:

- stayed longer with their family in a family home, and
- had greater school success, including remaining in school, completing higher school grade levels, and receiving more school certificates.

Orphans in both groups had attended or were presently in primary school. But, children served by the CCP remained in school, while 15 children in the control group had dropped out of school. The primary reason for dropping out was difficulty in paying school fees/expenses.

These financial difficulties are not explained by caregiver demographics. The caregivers in both groups had similar demographics, including gender, marital status, occupation, religion, and education. As consistent with other studies, these caregivers were older, widowed, and female (Howard et al., 2006; Mishra & Bignami-Van Assche, 2008; Nyamukapa & Gregson, 2005). In a recent study comparing orphans to nonorphans, it was found that, while close to half of the caregivers of both the orphans and nonorphans were in monogamous marital relationships, more than one quarter of the orphan caregivers were widowed (Muhwazi & Mugumya, 2009). In this population, over half the caregivers were widowed, which we think is a result of the devastating effects of HIV/AIDS in this community.

As with other studies, the burden of AIDS on the families is reflected by the number of children the caregivers have taken into their home (Konde-Lute et al., 1996; Phiri & Webb, 2002; WHO, 2002). More than two-thirds of all caregivers had two or more orphans living in their home.

There were only two significant differences between the caregivers in the intervention and the control group: age of the caregiver and income. The caregivers in the intervention group were younger than those in the control group. We believe this reflects the CCP home visitor's psychosocial support of the caregivers that enables younger individuals to assume this role. The income of the intervention group of caregivers was less than the control group, which we think reflects the CCP home visitor's efforts to help those families with lower incomes, a higher burden of care, and needing the greatest assistance.

Although the study outcomes cannot be explained by differences in the caregiver's characteristics, we think the data do show that the caregiver's income

is a variable that impacts the orphan's ability to remain in the home and in school. Therefore, assisting the caregiver to pay school fees and for medical care is an important component of orphan services and successful outcomes.

Almost all these children (95.5%) had lost their father to AIDS, with just less than half losing their mother. The CBCHS HIV/AIDS program estimates that the percentage of serodiscordant couples is 1% to 2%. Therefore, this discrepancy is not explained by only one parent being HIV infected. As Wright and King (2009) identified, we believe that this reflects a higher AIDS mortality in men than in women. Although there were more complete orphans (both parents dying) in the intervention group, the number did not reach a level of significance. In Cameroon, there are culturally defined gender roles. Parental authority is shared equally by fathers and mothers. Despite this equality, the law in Cameroon provides that the father is the head of the family. Men control finances and assets, and women are responsible for home and children. Supporting these caregivers and children to bridge the cultural impact of parental loss is a major challenge to the home visitors and essential to the orphan's social adjustment.

Two children's variables showed significance differences: age and duration of stay with the present caregiver. The children in the intervention group were significantly older than those in the control group. We believe that the older age of the intervention group is due to the CCP support. In the intervention group, the children are able to continue school in the village while children in the control group were forced to go elsewhere for work or to find schooling with other relatives or family friends. Without support for school, the child would have to stay at home, which would be a further stress on the family finances. Therefore, they are forced to leave home to work to support themselves. The girls may feel forced to enter into unwanted relationships or marriage.

The children in the intervention group also had been with their present caregiver and in their present home significantly longer than those in the control group. We think that the same factors impacting the age of the child also enable the child to stay at home longer and are a result of the CCP support. In focus groups, the children raised issues of maltreatment, discrimination, and poor attention to their needs. Although, these issues were not identified in the caregiver focus groups, we think that the children are subject to them. The CCP staff is encouraged to assist the caregiver's and their family in mitigating social issues through the provision of psychosocial support. We believe that this counseling assists the families to address conflicting issues and to remain intact, which contributes to the orphans remaining in the home longer.

More significant differences were evident in the school variables than in the child and caregiver variables. Over 90% of all orphans in school had at least one school uniform, but significantly more children in the intervention group had two sets of uniforms. Although not significant, more children in the intervention group (38.0%) had two pairs of shoes than the control group (22.0%). The possession of at least one uniform shows that the community

and school system consider it important to have a uniform. The CCP considers having two uniforms important and assists the family to provide them. When one has two uniforms, it is easier to always go to school with a clean uniform and not have to wash your clothes every night (piped water is not available in homes). The association of school uniforms with improvement of academic performance and student attitudes has been often debated. A study concluded that student uniforms have no direct effect on substance use, behavioral problems, or school attendance. But, it also found that uniform policies may affect school environment and student outcomes by providing a visible and public symbol of commitment to school improvement and reform (Brumsma & Rockquemore, 1998). This finding was supported by the children's responses in the focus group discussions and seems especially important in promoting feelings of self worth, which have been shown to improve school performance. We think that this also shows a positive impact of the CCP on the lives of these children and encouragement to attend school.

It was concerning that less than half of the children did not have a meal at school. Every child did have three meals per day (before school, after school, and evening). Yet, even though food was available in this community, caregivers did not understand the importance of providing children food to eat at school. Studies have shown that, even after a good breakfast, a healthy lunch at school is required to refuel a child's body (Steinberger, Moran, Hong, Jacobs, & Sinaiko, 2001). A handful of nuts, fruit, or some vegetables are adequate to refresh a child's energy level. Providing community education regarding any child's need for regular food intake is indicated.

Although the "pass" and school attendance percentages were higher in the intervention group, the numbers did not reach a significant level. We believe that this finding supports the CCP's assumption that orphaned children have equal capability to succeed in school, as well as the desire to attend school. Therefore, the primary barrier to the school success of these children is the family's ability to pay school fees and tuition. These data show that the assisting the caregiver to pay for school fees and medical care is pivotal to the orphan's ability to remain in the home and in school. It is the most important component of CCP services and successful outcomes.

Significant differences were noted in multiple school variables. Children in the intervention group were all attending school, more were in secondary and higher grades, and more had received a school certificate. The children in the intervention group were also older and paid higher school fees. We think that these school variables are all interrelated and exhibit the positive impact of the CCP. With CCP financial and psychosocial support, children are able to stay with their family and in school. Therefore, they are older, have reached a higher grade level, and are able to complete school levels and obtain certificates.

The CCP support of the caregivers is also exhibited by the significantly increased understanding and support of schooling by the caregivers in the intervention group versus those in the control group.

## Limitations

Despite the importance of these findings, there are study limitations. A convenience sampling was used. Although all CCP enrollees were sampled, 60% of nonenrolled orphans were recruited by the “nearest neighbor” (convenience) methodology.

A quantitative methodology was used in which objective data were collected, measured, and analyzed to assess outcomes. This approach does not shed light as to which program services actually contribute to these outcomes. For instance, these data showed that the financial support provided to the families is essential to assisting the child to remain in the family home and in school. But, we also believe that the psychosocial support and counseling provided to the children and caregivers by the home visitors contribute to this success and are essential to coping with the ongoing stressors faced by these children, caregivers, their families, and the community. Although the focus groups provided insights, further qualitative assessment of the specific services would help to delineate what support services are working to assist these children and families.

Community members are aware that home visiting and support are being provided to these families as a result of HIV/AIDS. The influence and advocacy of the CCP home visitors to address HIV/AIDS stigma within this community cannot be underestimated and certainly contributes to the program effectiveness. Yet, addressing the importance of the staff's role as educators and advocates within the community was beyond the scope of this study.

Finally, this study was performed in one village served by the CCP. Although we think the same results would be found in other villages served by the CCP, generalizing these results need to be confirmed.

## ACKNOWLEDGMENTS

We wish to thank the North American Baptist Conference for their steadfast financial support of and encouragement to the Chosen Children Program. The Elizabeth Glaser Pediatric AIDS Foundation has also provided needed financial assistance in an urgent situation. We wish to especially thank Dr. Alice Lakati, Solomon Nzyuko, Nicoline Bambo, Benjamin Wanyu, Edith Yufenyuy, Divine Ngala Ndzibidtu, Ophelia Amah, and Moses Chiasieh for their assistance, which enabled this assessment to be accomplished.

## REFERENCES

- Case, A., Paxson, C., & Ableidinger, J. (2004). *Orphans in Africa: Parental death, poverty, and school enrollment*. Princeton, NJ: Center for Health and Wellbeing. Research program in Development Studies, Princeton University. Retrieved from [http://www.princeton.edu/rpds/papers/pdfs/case\\_paxson\\_orphansafrica.pdf](http://www.princeton.edu/rpds/papers/pdfs/case_paxson_orphansafrica.pdf)



- Davidson, B. (2009). *Orphan Care Model Part 2: We can do better – Traditional orphanages vs. foster care*. Palmer Lake, CO: Humanitarian International Services Group (HISG). Retrieved from <http://hisg.org/initiatives/orphan-care/ideal-program/pt-2-traditional-orphan-care/>
- Grainger, C., Webb, D., & Elliott, L. (2001). *Children affected by HIV and AIDS: Rights and responses in the developing world* (Working Paper 23). Retrieved from [http://v2.ovcsupport.net/libsys/Admin/Documents/Children\\_Affected\\_by\\_HIV\\_AIDS\\_Rights\\_and\\_Responses\\_in\\_the\\_Developing\\_World\\_1.pdf](http://v2.ovcsupport.net/libsys/Admin/Documents/Children_Affected_by_HIV_AIDS_Rights_and_Responses_in_the_Developing_World_1.pdf)
- Howard, B., Phillips, C., Matinhure, N., Goodman, K., McCurdy, S., & Johnson, C. (2006). Barriers and incentives to orphan care in a time of AIDS and economic crises: Cross-sectional survey of caregivers in rural Zimbabwe. *BMC Public Health*, 6(27).
- International Child Development Program. (2010). *Western Program Region, Report – Zimbabwe*. Oslo, Norway: Retrieved from <http://www.icdp.info/WesternRegion/reportZimbabwe.pdf>
- Joint United Nations Programme. (2010). *Global report: UNAIDS report on the global AIDS epidemic (2010)*. New York, NY: AIDSInfoOnline. Retrieved from [http://www.unaids.org/globalreport/Global\\_report.htm](http://www.unaids.org/globalreport/Global_report.htm)
- Joseph, N. (1986). Uniforms and nonuniforms: Communication through clothing. In: *Contributions in Sociology*. Santa Barbara, CA: Greenwood Press.
- Kamali, A., Seeley, J., Nunn, A., Kengeya, J., Ruberantwari, A., & Mulder, D. (1996). The orphan problem: Experience of a Sub-Saharan Africa rural population in the AIDS epidemic. *AIDS Care*, 8(5), 509–515.
- Konde-Lute, J., Sewankambo, N., Wawer, M., & Sengonzi, R. (1996). The impact of AIDS on families in Rakai district, Uganda. *Proceedings of the International Conference on AIDS* (Abstract We.D.363). Vancouver, British Columbia, Canada.
- LaPoint, V., Holloman, L., & Alleyne, S. (1992). The role of dress codes, uniforms in urban schools. *NASSP Bulletin*, 76(546), 20–26.
- Mishra, V., Arnold, F., Cross, A., & Hong, R. (2007). Education and nutritional status of orphans and children of HIV-infected parents in Kenya. *AIDS Education and Prevention*, 19(5), 383–395.
- Mishra, V., & Bignami-Van Assche, S. (2007). *Orphans and vulnerable children in High HIV prevalence countries in Sub Sahara Africa* (UNAID DHS Analytical Studies 15). Calverton, MD: Macro International. Retrieved from <http://www.measuredhs.com/pubs/pdf/AS15/AS15.pdf>
- Muhwazi, W., & Mugumya, F. (2009). *Intra-household differences in health seeking behavior for orphans and non-orphans in an NGO-supported and non-supported Sub-country of Luwero, Uganda*. Uganda: African Health Sciences, Makerere Medical School. Retrieved from [www.ncbi.nlm.nih.gov/pmc/articles/PMC2707049/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2707049/)
- Muller, O., & Abbas, N. (1990). The impact of AIDS mortality on children's education in Kampala (Uganda). *AIDS Care*, 2(1), 77–80.
- Murphy, J., Wehler, C., Pagano, M., Little, M., Kleinman, R., & Jellinek, M. (1998). Relationship between hunger and psychosocial functioning in low-income American children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37(2), 163–170.
- Nuwer, D. (2002). *The importance of wearing shoes: Hookworm disease in Mississippi*. Jackson, MS: Mississippi History Now, Mississippi Historical Society. Retrieved from <http://mshistory.k12.ms.us/articles/241/hookworm-disease-in-mississippi%3A-the-importanceof-wearing-shoes>

- Nyambedha, E., Wandibba, S., & Aagaard, J. (2001). Policy implications of the inadequate support systems for orphans in Western Kenya. *Health Policy*, 58(1), 83–96.
- Nyamukapa, C., & Gregson, S. (2005). Extended family's and women's roles in safeguarding orphans' education in AIDS-afflicted rural Zimbabwe. *Social Science & Medicine*, 60(10), 2155–2167.
- Oleke, C., Blystad, A., & Rekdal, O. (2005). When the obvious brother is not there: Political and cultural contexts of the orphan challenge in northern Uganda. *Social Science & Medicine*, 61(12), 2628–2638.
- Perry, S. (2006). *Impact of school dress on behavior of elementary school children: One school educators view* (A thesis presented in fulfillment of the requirement for the degree of master of education). Marietta, OH: Graduate School of Marietta College, Marietta College. Retrieved from <http://etd.ohiolink.edu/view/cgi/Perry%20Sara.pdf?marietta1155586193>
- Phiri, S., & Webb, D. (2002). The impact of HIV/AIDS on orphans and programme and policy responses. In G. A. Cornia (Ed.), *AIDS, public policy and child well-being* (chapter 15). Florence, Italy: UNICEF Innocenti Centre.
- Steinberger, J., Moran, A., Hong, C., Jacobs, D., & Sinaiko, A. (2001). Adiposity in childhood predicts obesity and insulin resistance in young adulthood. *Journal of Pediatrics*, 138(4), 469–473.
- Strebel, A. (2004). *The development, implementation and evaluation of interventions for the care of orphans and vulnerable children in Botswana, South Africa and Zimbabwe: A literature review of evidence-based interventions for home-based child-centred development*. Cape Town, South Africa: Human Services Research Council. Retrieved from <http://www.hsresearch.ac.za/product.php?productid=1958>
- The United Nations Children's Fund (UNICEF). (2005). *Guide to monitoring an evaluation of the national response for children orphaned and made vulnerable by HIV/AIDS*. New York, NY: UNICEF.
- United Nations, Department of Economic and Social Affairs and the United Nations Office for Partnerships. (2010). *High-level plenary meeting on the Millennium Development Goals*. New York, NY: United Nations. Retrieved from [http://www.un.org/en/mdg/summit2010/pdf/HLPM\\_Side%20events\\_CRP.pdf](http://www.un.org/en/mdg/summit2010/pdf/HLPM_Side%20events_CRP.pdf)
- Wagt, A., & Connolly, M. (2005). *Orphans and impact of HIV/AIDS in Sub-Saharan Africa*. (Food, Nutrition and Agriculture No. 34). Rome, Italy: United Nations. Retrieved from <ftp://ftp.fao.org/es/esn/nutrition/hiv/dewagt.pdf>
- Warren, J., Henry, C., & Simonite, V. (2003). Low glycemic index breakfasts and reduced food intake in preadolescent children. *Pediatrics*, 112(5), e414–e491.
- World Health Organization. (2006). *Cameroon mortality country fact sheet 2006*. Geneva, Switzerland: World Health Organization. Retrieved from [http://www.who.int/whosis/mort/profiles/mort\\_afro\\_cmr\\_cameroon.pdf](http://www.who.int/whosis/mort/profiles/mort_afro_cmr_cameroon.pdf)
- World Health Organization. (2002). *Impact of AIDS on older people in Africa: Zimbabwe case study*. Geneva, Switzerland: World Health Organization.
- World Resources Institute. (2006). *Population, health and human well-being: Country profile-Cameroon* (Earth Trends: The Environmental Information Portal). Washington, DC: World Resources Institute.
- Wright, C., & King, E. (2009). *Promoting quality education for orphans and vulnerable children: A sourcebook programme experiences in Eastern and Southern Africa*. New York, NY: United Nations Children's Fund (UNICEF).