HHS Public Access

Author manuscript

*Glob Soc Welf*. Author manuscript; available in PMC 2015 July 01.

Published in final edited form as:

*Glob Soc Welf*. 2015 June ; 2(2): 75–86. doi:10.1007/s40609-015-0027-z.

# Relationship Between Family Economic Resources, Psychosocial Well-being, and Educational Preferences of AIDS-Orphaned Children in Southern Uganda: Baseline Findings

**Fred M. Ssewamala**[1,2], **Proscovia Nabunya**[2], **Vilma Ilic**[1], **Miriam N. Mukasa**[1,3], and **Christopher Ddamulira**[1]

[1] International Center for Child Health and Asset Development, Columbia University School of Social Work, 1255 Amsterdam Avenue, Office 1122, New York, NY 10027, USA

[2] School of Social Service Administration, University of Chicago, 969 East 60th Street, Chicago, IL 60637, USA

[3] McSilver Institute for Poverty Policy & Research, New York University, 1 Washington Square North, New York, NY 10003, USA

## Abstract

This study examines the relationship between economic resources, psychosocial well-being, and educational preferences of AIDS-orphaned children in southern Uganda. We use baseline data from a sample of 1410 AIDS-orphaned children (defined as children who have lost one or both biological parents to AIDS) enrolled in the *Bridges to the Future* study, a National Institute of Child Health and Human Development (NICHD) funded study. Analyses from both bivariate and multiple regression analyses indicate the following: 1) despite the well-documented economic and psychosocial challenges AIDS-orphaned children face, many of these children have high educational plans and aspirations; 2) educational aspirations differ by orphanhood status (double orphan vs. single orphan); 3) regardless of orphanhood status, children report similar levels of psychosocial well-being; 4) high levels of family cohesion, positive perceptions of the future, school satisfaction, and lower levels of hopelessness (hopefulness) are associated with high educational aspirations; and 5) reported family economic resources at baseline, all seem to play a role in predicting children's educational preferences and psychosocial well-being. These findings suggest that the focus for care and support of orphaned children should not be limited to addressing their psychosocial needs. Addressing the economic needs of the households in which orphaned children live is equally important. Indeed, in the context of extreme poverty—in which most of the children represented in this study live—addressing structural factors, including poverty, may be a key driver in addressing their psychosocial functioning.

Fred M. Ssewamala fs2114@columbia.edu.
Proscovia Nabunya pnabunya@uchicago.edu
Vilma Ilic vpi2101@columbia.edu
Miriam N. Mukasa mnm8@nyu.edu
Christopher Ddamulira ddamchrist1@gmail.com

**Ethical Considerations** The study received Institutional Review Board (IRB) approval from Columbia University (AAAI1950) and from the Uganda National Council for Science and Technology (SS 2586). The study protocol is registered in the Clinicaltrial.gov database (ID #NCT01447615).

**Conflict of Interest** The authors declare that they have no conflicts of interest.

**Keywords**

HIV/AIDS; AIDS orphans; Suubi Uganda projects; Bridges to the Future study; Uganda; Economic strengthening; Care and support; Orphaned and vulnerable children; sub-Saharan Africa

## Introduction and Background

Orphanhood is among the major detrimental consequences of the HIV/AIDS pandemic. Worldwide, it is estimated that 17.8 million children under the age of 18 have been orphaned as a direct result of HIV/AIDS (UNICEF 2013). Over 15 million children, approximately 85 %, of all AIDS orphans live in sub-Saharan Africa, and this number may increase if people living with HIV do not access treatment and/or adhere to treatment. The prevalence of AIDS-orphaned children in sub-Saharan Africa, particularly in the southern and eastern regions of the sub-continent, is staggering. For example, in South Africa, AIDS orphans account for 63 % of all orphaned children in the country. In the three largest East African countries (Kenya, Tanzania, and Uganda), AIDS orphans comprise 37–39 % of all orphaned children. In Uganda, one of the countries hardest hit by HIV/AIDS, 44 % of the total orphan population is orphaned due to AIDS—hence, they are designated AIDS orphans (UNICEF 2013).

The loss of one or both parents to HIV/AIDS can have serious consequences on children's psychosocial, health, and economic well-being (Atwine et al. 2005; Cluver et al. 2012). In economic terms, parental loss can lead to or exacerbate existing financial difficulties due to increased household poverty, food insecurity, and sometimes unemployment among adults in the household (Cluver et al. 2009). As a result, AIDS-orphaned children may experience pressures to assume adult responsibilities including entering formal or informal labor sectors to fend for the family. This may contribute to lower levels of school enrollment and attendance (Case et al. 2004; Cluver et al. 2011; Evans and Miguel 2007; Guo et al. 2012).

AIDS-orphaned children are at a greater educational disadvantage compared to non-orphans and children orphaned due to other causes. Specifically, AIDS orphans have lower school enrollment rates and poor school performance (Case et al. 2004; Guo et al. 2012; Tu et al. 2009), they are less likely to be at an appropriate education level (Kasirye and Hisali 2010), and they are more likely to drop out of school due to household financial constraints (Bicego et al. 2003; Evans and Miguel 2007; Hunt 2008; Sherr et al. 2014; Subbarao and Coury 2004). Using Demographic and Health Survey (DHS) data from 10 sub-Saharan African countries (1992–2000), Case et al. (Case et al. 2004) estimated the impact of parental death on school enrollment and found that orphaned children were less likely to be enrolled in school than non-orphans, even among children living within the same household. Tu et al. (Tu et al. 2009) examined the impact of parental HIV/ AIDS on 1625 children ages 6–18 years enrolled in schools in China. Seven hundred and fifty-five of the children in Tu and colleagues' study were orphaned children. The reported study findings indicate that orphaned children in the sample had the lowest academic marks and educational expectations; they were more likely to demonstrate aggressive, impulsive, and anxious behaviors and were more likely to have learning difficulties than their non-orphan counterparts. In Uganda, Kasirye and Hisali (Kasirye and Hisali 2010) conducted a study to

assess AIDS orphanhood status on schooling enrollment and grade progression using a national representative sample of the 2002/2003 Uganda National Household Survey (UNHS). The reported findings indicate that death of a parent due to HIV/AIDS has an impact on the schooling gap of enrolled children. Specifically, AIDS orphans were more likely to fall 3 years behind their appropriate grade level, and this effect was much worse for children from poor households. In Kenya, a longitudinal study of over 20,000 children found a decrease in primary school participation following the death of a parent (Evans and Miguel 2007).

Moreover, as the extended kinship networks in sub-Saharan Africa assume care of AIDS-orphaned children, these networks are more likely to comprise female-headed households caring for large numbers of children with limited family-level resources (Karimli et al. 2012). In Uganda, for example, grandmothers, with no government support, care for about 45 % of children who are orphaned (Kamya and Poindexter 2009; UNICEF 2004). The lack of sufficient income and other economic resources in these households coupled with a lack of public safety nets—in the form of government support— often drives children to supplement household income, and thereby drop out of school in order to earn for the household. These phenomena contribute to the problem of child labor and the perilous informal labor market, which includes transactional sex and other high-risk activities (Ssewamala 2014).

In regard to the relationship between poverty and psychosocial outcomes of orphaned children, this relationship has been investigated, and the results are well documented. For example, using a sample of 1025 South African youths, between 10 and 19 years including AIDS orphans, other orphaned youths, and non-orphaned youths, Cluver, Gardner, and Operario (Cluver et al. 2009) found that although overall school attendance was high across all three study groups, AIDS-orphaned youths were less likely to be enrolled in school than other orphaned or non-orphaned youths. In addition, AIDS-orphaned youths were more likely to report food insecurity and household unemployment than other orphaned youths. Mediation analysis revealed that poverty measures mediated the association between AIDS orphanhood with almost all psychological distress measures— with the exception of anxiety.

Studies utilizing household surveys from northern Uganda highlight the extent to which poverty negatively affects school enrollment, attendance, and performance of orphaned children. Oleke, Blystad, Fylkesnes, and Tumwine (Oleke et al. 2007) assessed the constraints on educational opportunities of orphans cared for within the extended family system in northern Uganda. Study findings show that poverty (as indicated by shortage of food, orphan's workload/domestic labor, and shortage of school materials and financial support) is both a cause and an effect of low educational attainment (performance and attendance).

Recognizing the compounding problems that orphaned children face, particularly AIDS-orphaned children, numerous programs and interventions have been conducted in the sub-Saharan African region—and in several other developing countries outside the region—in an effort to gain a better understanding of the effects of AIDS orphanhood on children, as well as testing the most appropriate and effective programs aimed at supporting these children in

terms of psychosocial, behavioral, educational, and economic support. Some of these interventions include those aimed at improving children's overall psychosocial functioning, such as home visiting (Kidman et al. 2014; Thurman et al. 2014); peer support groups (Kumakech et al. 2009; Schenk et al. 2010) and art-therapy (Mueller et al. 2011); coping skills (Rotheram-Borus et al. 2001); and economic empowerment interventions, including cash transfers for children, families, and communities (Adato and Bassett 2009; Ayuku et al. 2014; Skovdal 2010; Ssewamala et al. 2008, 2009, 2010a, b, 2012).

The Suubi Economic Empowerment Projects (hereafter *Suubi Projects*) in Uganda are one model demonstrating a successful evidence base in linking the poorest of the poor to formal financial institutions for the purposes of saving for post-primary education, as well as developing mechanisms of asset accumulation and financial growth vis-à-vis context-specific microenterprises and income-generating projects. The Suubi Projects tested a multi-dimensional family-based economic empowerment intervention and demonstrated positive results on several outcomes, including savings and asset accumulation, educational attainment and aspirations, psychosocial functioning, reduced sexual risk-taking intentions and behavior, and overall health and well-being (Karimli et al. 2012; Ssewamala and Ismayilova 2009; Ssewamala et al. 2010a, b, 2012). Thus, not only are savings, assets, and educational performance and aspirations affected but also behavioral and health-related outcomes. As a result of the successful evidence base of the Suubi Projects, a larger project was developed to test short- and medium-term savings and asset accumulation and developmental outcomes, as well to analyze the cost-effectiveness of incentivizing saving. This project is called *Bridges to the Future*.

Utilizing baseline data from the *Bridges* study to examine the relationship between the economic, psychosocial, and educational preferences of AIDS orphans, this paper asks the following questions:

1. What are the economic, psychosocial, and educational preferences of AIDS-orphaned children?
2. Do these economic, psychosocial, and educational preferences vary according to orphanhood status?
3. What factors influence the reported psychosocial and educational preferences of AIDS-orphaned children?

The questions guiding this paper are important because they may reveal the types of multi-sectoral programs and policies needed for the care and support of AIDS-orphaned children in resource-constrained families and communities such as those in sub-Saharan Africa; and the approaches needed to change the commonly ill-fated trajectories of AIDS orphans.

## Methodology

### Data and Sample

This paper utilizes baseline data from the *Bridges to the Future* study, a 5-year (2011–2016) longitudinal randomized experimental study funded by the National Institute of Child Health and Human Development (NICHD, Grant #1R01 HD070727-01). The overall aim of the

study is to evaluate the efficacy and cost-effectiveness of an innovative family-based economic empowerment intervention for AIDS-orphaned children in Uganda. A total of 1410 participants (*n*=621 boys, *n*=789 girls), between 10 and 16 years (average age 12.7 years at study initiation) were enrolled in the study. Participants were eligible to participate if they: 1) identified as an AIDS orphans, having lost one or both parents to HIV/AIDS, 2) lived within a family, not an institution (e.g., orphanage), and 3) enrolled in grades 5 or 6 of a public government-aided primary school. Participants were recruited from 48 public primary schools in four geopolitical districts, Masaka, Rakai, Kalungu, and Lwengo Districts in southern Uganda—a region heavily affected by HIV/AIDS. Caregivers gave written consent for their children to participate in the study and children gave written assent. The study received IRB approval from Columbia University and local IRB approval from the Uganda National Council for Science and Technology (UNCST).

Data were collected using a 90-min survey administered by trained Ugandan interviewers. Measures used in the *Bridges* study were tested and adapted from earlier Suubi studies in Uganda among AIDS-orphaned children (see (Ssewamala and Ismayilova 2009; Ssewamala et al. 2010a; Ssewamala et al. 2012; Ssewamala et al. 2008; Ssewamala et al. 2009; Ssewamala et al. 2010a; Ssewamala et al. 2010b; Ssewamala et al. 2012)), supplemented by measures previously tested in other parts of sub-Saharan Africa (Bhana et al. 2004). A brief description of the measures is provided below.

## Measures

**Educational Preferences—**Educational preferences were measured on five dimensions:

1. Participants were asked to state their educational plans after completing primary school. Responses were “planning to start secondary school” and “not planning to start secondary school.”
2. Participants were then asked to indicate their level of certainty that they would achieve the selected educational plan after completing primary school. Responses ranged from 1=“not at all sure” to 5=“extremely sure.” High scores indicate high levels of certainty to achieve the selected educational plan.
3. Educational aspirations were assessed by the following question: “How far do you really believe you will go in school?” Responses included: 1) *drop out before primary 7* (*the last grade in primary school*), 2) *drop out before senior 4* (*the last grade in lower secondary*), 3) *complete senior 4 and stop*, 4) *go onto senior 6 and stop* (the last grade in upper secondary—right before university), 5) *go on to technical college*, 6) *go on to university and get a degree*, and 7) finish university and go on to graduate school and get a second degree. High scores indicate high levels of educational aspirations.
4. School satisfaction was measured using 8 items adapted from the Multidimensional Student's Life Satisfaction Scale (Huebner 1994). Participants were asked to rate how satisfied they were with their school, on a 4-point scale (with 1=“never” and 4=“almost always”). Sample items include: “I look forward to going to school each day”, “I like being in school,” and “I feel bad at school”. Two items in the inverse

direction were reverse coded to create summated scores, with high scores indicating high levels of school satisfaction. The actual range for this scale was 15–32, with a Cronbach's alpha of .64.

5. Finally, participants were asked to indicate whether they had talked to their current parent/guardian about their schoolwork. Responses were binary coded as *yes/no*.

**Psychosocial Preferences—**Several measures were utilized to assess children's psychosocial functioning. These included depression, self-concept, hopelessness, perception of future self, and family cohesion.

1. Depression was measured using 27 items adapted from the Child Depression Inventory (CDI) (Kovacs 1985). The CDI scale is used to assess children's depressive symptoms. Sample items grouped in sets of 3 include: “I am sad once in a while”, “I am sad many times”, and “I am sad all the time.” Items in the inverse direction were reverse coded to create summated scores, with high scores indicating high levels of depressive symptoms. The actual range for this scale was 0–37, with a Cronbach's alpha of .68.

2. Self-concept was measured using the Tennessee Self-Concept Scale (Fitts and Warren 1996). The 20-item scale measures children's perception of identity, self-satisfaction, and other behaviors on a 5-point scale (with 1=“ always false” and 5=“always true”). Sample questions include: “I like the way I look”, “I don't feel as well as I should”, and “I hate myself.” Items in the inverse direction were reverse coded to create summated scores. High scores indicate high levels of child self-concept. For this sample, the actual range was 41–100, with a Cronbach's alpha of . 74.

3. Hopelessness was measured using items adapted from the Beck Hopelessness Scale (BHS) (Beck et al. 1974) and pre-tested in earlier studies in the same region by Ssewamala and colleagues (see (Ssewamala et al. 2009; Ssewamala et al. 2010a; Ssewamala et al. 2012)). The 20-item scale measures hopelessness and pessimistic attitudes toward the future. Sample items include: “I look forward to the future with hope and enthusiasm,” “I have great faith in the future,” and “My future seems dark,” coded as “True” or “False.” Similar to previous scales, items in the inverse direction were reverse coded to create summated scores. High scores indicate high levels of child hopelessness. The actual range for this scale was 0–18, with a Cronbach's alpha of .66.

4. Family cohesion was measured using an 8-item scale adapted from the Family Environment Scale (Moos and Moos 1981). Participants were asked to rate how often each item occurred in their family, on a 5-point scale (1=“never” and 5=“always”). Sample items included: “Do your family members feel close to each other?” and “Do your family members ask each other for help before asking non-family members?” Summated scores were generated, with high scores indicating high levels of family cohesion. The actual scores ranged from 10 to 40, with a Cronbach's alpha of .76.

5. Participant perceptions of future self were assessed by asking the following questions: i) Rate how much you care about your future self 5 years from now? Responses were rated on a 5-point scale, with 1="not at all care" and 5="extremely care". ii) Rate how much you like about your future self 5 years from now. Responses were rated on a 5-point scale, with 1="not at all like" and 5="extremely like." High scores for each of the 2 items indicate positive perceptions of a child's future self.

**Economic Preferences—**Economic preferences were measured using items related to savings, family assets, and availability of basic needs. Participants were asked the following questions:

1. Do you currently have any money saved anywhere? Responses were binary coded as *yes/no*.
2. Are your current parent/guardian(s) saving any money for you? Responses were binary coded as *yes/no*.
3. Participants were then asked to indicate how they felt about the importance of saving money for a specific goal (for example, education, family business, job training, family use, or buying an animal). Responses ranged from 1="not important at all" to 5="extremely important" (actual range 10–30). In addition, participants were asked to rate their confidence level to save for specific goals indicated above. Responses ranged from 1="not confident at all" to 5="extremely confident" (actual range 6–30). Summated scores were created, with high scores indicating high levels of importance and confidence to save for a specific goal, respectively.
4. Family assets were measured using a 20-item index (range 0–20) assessing the availability of household assets (for example, a house, means of transportation, gardens, or means of communication). A high index score indicates a larger number of assets owned by the participant's household. The actual range for this index was 0– 20. Similarly, an index with 8 items was constructed to measure availability of basic needs (for example, sets of clothes, blanket, shoes, or number of meals per day). Summated scores were generated, with high index scores indicating high levels of basic needs available. The actual range for this index was 0–7.

**Demographic Characteristics—**Demographic characteristics included in the analyses are: participant age, gender, orphanhood status (single orphan—lost one biological parent, or double orphan—lost both biological parents), primary caregiver (biological parent, grandparents, or other relatives such as aunt, uncle, or siblings), and household composition (number of children in the household and total number of people in the household).

## Data Analysis Plan

Descriptive and bivariate analyses were conducted on key sociodemographic characteristics. To address research questions 1 and 2, bivariate analyses were conducted to determine

associations between gender, orphanhood status and participants' educational, psychosocial, and economic preferences. Hierarchical multiple regression analyses were conducted to determine the factors that influence the reported educational aspirations and psychosocial preferences: depression, hopelessness, and self-concept. Given the exploratory nature of the research questions guiding this paper, we conducted three models for each outcome. Each model controlled for a block of predictors. Specifically, model 1 controlled for demographic variables, model 2 controlled for psychosocial variables, and model 3 controlled for economic variables. Adjusted R squares were compared to determine the strength of each model.

## Results

### Sociodemographic Characteristics

Table 1 presents the sociodemographic characteristics of the study sample. Fifty-six percent (56 %) of the sample are girls. The mean age is 12.7 years. Boys are more likely to be older (mean age 12.9 years) than girls (mean age 12.4 years) ($t$= 8.77, $p$≤.001). The majority of the participants are single orphans (78.9 %). Girls are more likely to be in the single orphan category than boys ($\chi^2$=6.38, $p$≤.01). Thirty-nine percent (39 %) of the participants report a biological parent (father or mother) as their primary caregiver. The average household size is 6.4 people, with 3.2 children living in the household.

### Educational, Psychosocial, and Economic Preferences of Study Participants

Results from the bivariate analyses for children's educational, psychosocial, and economic preferences are presented in Table 2. The majority of the participants (95 %) had plans of continuing with secondary school education after completing primary schooling. Boys were more likely to report plans of continuing with secondary school education than girls ($\chi^2$= 10.2, $p$≤.001). Although more boys (38 %) than girls (25 %) reported aspirations of graduating from college, more girls (50 %) aspired to go on to graduate school to get a second degree than boys (25 %). The difference between the two groups (boys and girls) with regard to educational aspirations was statistically significant ($\chi^2$=119.9, $p$≤.001). Girls were also more likely to talk to their current guardian about school-work than boys ($t$=11.6, $p$≤.001). In terms of psychosocial functioning, boys were more likely to report higher levels of self-concept than girls ($t$=4.08, $p$≤.001). No other significant differences were observed among psychosocial variables.

Our analyses also locate statistically significant differences within economic preferences. Specifically, boys were more likely to report owning savings ($t$=50.8, $p$≤.001), value saving for a specific goal as important ($t$=8.06, $p$≤.001), have a high confidence level in saving for a specific goal ($t$=7.18, $p$≤.001), and were more likely to report availability of household assets than girls ($t$=3.19, $p$≤.001). Girls, on the other hand, were more likely to report that their caregiver was saving money for them ($t$=15.9, $p$≤.001).

In the following section, we report variations in educational, psychosocial, and economic preferences based on orphan-hood status.

## Educational, Psychosocial, and Economic Preferences by Orphanhood Status

As indicated in Table 2, both groups of children (double and single orphans) report high levels of educational plans to continue with secondary schooling after completing primary schooling (96 vs. 94 %, respectively). On the other hand, however, more single orphans (40 %) reported educational aspirations of going to graduate school than double orphans (34 %). The difference between the two groups on this measure (educational aspirations) is statistically significant ($\chi^2$= 14.4, $p \leq .05$). In addition, single orphans were more likely to report talking to their current guardians about schoolwork than double orphans ($t$=8.99, $p \leq .01$).

With regard to psychosocial functioning, double orphans were more likely to report a higher level of likeness for their future self than single orphans ($t$=2.95, $p \leq .01$). No other significant predictors were observed among psychosocial variables.

Regarding economic preferences, double orphans were more likely to view saving for a specific goal as important ($t$=1.97, $p \leq .05$) and to have a high level of confidence in saving for that particular goal ($t$=2.03, $p \leq .05$). Single orphans were more likely to have knowledge that their caregiver is saving money for them than double orphans ($t$=12.7, $p \leq .01$).

The bivariate results presented above indicate several statistical differences—across gender and orphanhood status— on the following study outcomes: children's educational, psychosocial, and economic preferences. Below, we present results from hierarchical regression analyses predicting the major factors that influence these outcomes.

## Predictors of Educational Aspirations

Table 3 presents results from the hierarchical regression analysis predicting children's educational aspirations using three blocks of predictors: children's and family sociodemographic characteristics, children's psychosocial and family processes, and economic preferences/predictors. Controlling for children's sociodemographic characteristics (model 1), we are able to explain 6.9 % of the variance in children's education aspirations. When we add children's psychosocial predictors and family processes (model 2), we observe a 6.2 percentage change from model 1, resulting into a 13.1 % variance explained in children's educational aspirations. This change is statistically significant ($p \leq .001$). Adding economic predictors/ preferences (model 3)—the final predictors to be entered—we are able to explain 13.9 % of the variance in children's educational aspirations ($R^2$=.139, Adjusted $R^2$=.128). The 0.8 percentage change between model 2 and model 3 is statistically significant ($p \leq .01$).

Within each individual model on educational aspirations (Table 4), we observe the following: age ($b$=−.18,$p \leq .001$) and gender ($b$=−.42,$p \leq .001$) are associated with reduced educational aspirations. Among psychosocial predictors, care for future self ($b$=.20,$p \leq .01$), likeness for future self ($b$=−.24, $p \leq .01$), high levels of family cohesion ($b$=−.018,$p \leq .05$), high levels of school satisfaction ($b$=.03,$p \leq .01$) and talking to the participants' current caregiver about schoolwork ($b$=.49, $p \leq .001$) were all associated with increased educational aspirations. High levels of hopelessness were associated with reduced educational aspirations (b =−.05, $p \leq .001$). Interestingly, availability of family assets ($b$=−.02,$p \leq .05$) was

associated with a reduction in educational aspirations. We are not sure why this trend—specifically, why availability of family assets would be associated with reduced educational aspirations. We can only speculate that it is probable that children in households with no resources (specifically, assets) count on education (if given a chance) as their only option out of poverty and eventual success in life.

In the following section, we present results from the hierarchical regression analyses predicting the factors that influence the following children's psychosocial outcomes: depressive symptoms, hopelessness, and self-concept. In Table 5, we present the influence of each block of predictors on children's psychosocial outcomes. The contribution of the individual variables in each model is presented in Table 6.

## Predictors of Depression

As presented in Table 5 above, the block containing children's sociodemographic characteristics accounts for less than 1 % ($R^2$=.007) of the variance explained in depressive symptoms. When we include psychosocial and family processes into the model, we are able to explain 28.2 % of the variance in depressive symptoms. The 27.5 percentage change between model 1 and model 2 is statistically significant ($p \leq .001$). This means that psychosocial and family processes play an important role in explaining AIDS-orphaned children's reported depressive symptoms. For this sample, children's demographic characteristics—represented in model 1 are less predictive. When we add economic predictors/preferences (model 3) into the regression, we are able to capture an additional 1.2 % (from 28.2 to 29.4 %) in the variance explained in children's depressive symptoms ($R^2$ = .294, Adjusted $R^2$=.286). The additional percentage change is statistically significant ($p \leq .01$).

Within each individual model predicting children's depressive symptoms (Table 6), we find that gender ($b$=.71,$p \leq .01$) and the number of children living in a household ($b$=.16, $p \leq .01$) were associated with increased depressive symptoms. Specifically, being a male child was associated with a .71-point increase in depressive symptoms and each additional child living in the household was associated with a .16-point increase in depressive symptoms of the participant. Among psychosocial variables, high levels of self-concept were associated with a reduction in depressive symptoms ($b$=−.18, $p \leq .001$). In addition, high levels of hopelessness were associated with an increase in children's depressive symptoms ($b$=.43,$p \leq .001$). Among economic variables, family assets were the only significant predictor associated with a reduction in children's depressive symptoms ($b$=−.15,$p \leq .001$).

## Predictors of Hopelessness

The block containing sociodemographic characteristics of the sample accounts for less than 1 % ($R^2$=.003) of the variance explained in children's hopelessness (Table 5). When we include psychosocial and family processes into the model, we are able to explain 22 % of the variance in hopelessness. The 21.8 percentage change between model 1 and model 2 is statistically significant ($p \leq .001$). An addition of economic predictors/preferences allows us to explain 22.5 % of the variance in hopelessness ($R^2$=.225, Adjusted $R^2$=.216).

An analysis of the individual models predicting hopelessness (Table 6) indicates the following: High levels of self- concept were associated with a reduction in hopelessness ($b$= −07,$p$≤.001). Depressive symptoms, on the other hand, were associated with a .14 increase in hopelessness ($b$=.14, $p$≤.001). Among economic predictors, availability of basic needs was associated with a reduction in hopelessness ($b$=−.14,$p$≤.001). No significant predictors were observed among children's sociodemographic characteristics.

### Predictors of Self-concept

In Table 5, the block containing sociodemographic characteristics of the sample accounts for 1.9 % of the variance explained in self-concept ($R^2$=.019). When we include psychosocial and family processes into the model, we are able to explain 34.5 % of the variance in self-concept. The 32.6 percentage change between model 1 and model 2 is statistically significant ($p$≤.001). An addition of economic predictors/ preferences allows us to explain 35.2 % of the variance in self-concept ($R^2$=.352, Adjusted $R^2$=.345). Although the additional change between model 2 and model 3 is less than a percentage point, it is statistically significant ($p$≤.001).

Within each individual model predicting self-concept (Table 6), we observe that age ($b$=−.42,$p$≤.05) and gender (b = 2.1, $p$≤.001) were associated with self-concept. Specifically, being older was associated with a .42-point reduction in self-concept and being a male child was associated with a 2.1-point increase in self-concept. Among psychosocial variables, both care about future self ($b$=1.1,$p$≤.05) and family cohesion ($b$=.37,$p$≤.001) were associated with an increase in self-concept. High levels of hopelessness ($b$=−.72,$p$≤.001) and depressive symptoms ($b$=−.60,$p$≤.001) were associated with a reduction in self-concept. Among economic variables, knowledge of caregiver's savings ($b$=.002,$p$≤.05) and high confidence level to save for a specific goal ($b$=.18,$p$≤.01) were associated with an increase in self-concept.

## Discussion

This study utilized baseline data to examine and understand the economic, psychosocial, and educational preferences of AIDS-orphaned children in Uganda. Our findings suggest the following: First, AIDS-orphaned children have high educational expectations and aspirations. From our analyses, we found that boys aspire to graduate from college and girls have even higher aspirations of going to graduate school. However, we observe that as children grow older, these educational aspirations decline. One possible explanation for this finding is that, as children grow older, they begin to understand their realities and constraints that might make it harder for them to achieve their educational goals and aspirations. In particular, boys tend to have their educational aspirations decline the most. This finding may be explained by the way boys are socialized to become the household breadwinners in the absence of their father, which reduces the number of years they are planning to spend in school. Moreover, boys were more likely to report owning savings, report high importance of saving toward a specific goal, and have a high confidence level in saving for a particular goal compared to girls, signifying the importance they place on their future economic stability.

Second, our findings suggest that educational aspirations differ by orphanhood status. Double orphans are less likely to have high educational aspirations compared to single orphans. This is not surprising because once both parents die, children are less likely to receive the same kind of support and promise for the future.

Third, all children regardless of orphanhood status report similar levels of psychosocial functioning, except self-concept, where boys report slightly higher scores than girls. We observe that positive perceptions of the future, school satisfaction, talking to the caregiver about schoolwork, high levels of family cohesion, and lower levels of hopelessness were associated with higher educational aspirations. High levels of self-concept were associated with lower depressive symptoms and children's hopelessness. Moreover, models controlling for psychosocial variables explained the most variance in all outcomes. These findings point to the importance of improving psychosocial functioning as a foundation for children's better social and overall health outcomes. The *Bridges* study was partly designed to improve children's psychosocial well-being as a pathway to better social, economic, and health outcomes. We hope that analysis of post-intervention data will reveal significant improvements in psychosocial functioning for orphaned children.

Fourth, study findings suggest that economic preferences at baseline are associated with children's educational aspirations and psychosocial well-being, but only to a small extent. Specifically, controlling for economic variables does not explain much variance in children's educational or psychosocial functioning. A possible explanation for this finding is that, at baseline, children are starting off at a disadvantage economically, with low reported family assets (mean score of 9.7 out of the possible 20), yet research evidence shows that parental assets positively influence children's educational outcomes (Elliott, Destin, & Friedline, 2011; (Kim and Sherraden 2011; Loke 2013)). In our study, only 37 % of the participants had knowledge that their caregivers had savings. However, having this knowledge did not impact children's educational aspirations or psychosocial outcomes—except for a 0.2-point increase in children's self-concept. Therefore, at baseline, children may not necessarily view household savings or assets as benefiting them individually, but rather as a household unit. The *Bridges* intervention empowers children by making them joint partners with their caregivers in asset accumulation activities, including savings and microenterprise development. Analysis of post-intervention data will reveal how strengthening children economically might impact their outcomes over time.

## Implications

There are several implications for our study, but two predominate: First, despite their negative life situation/events, AIDS-orphaned children have big dreams when still in lower primary. These children should be supported to maintain these positive dreams throughout primary and as they transition to secondary education. Second, the relatively small contribution of family economic strengthening in explaining the educational and psychosocial well-being of these children may mean that family economic strengthening by itself is not enough to overcome the challenges that AIDS-orphaned children face. Likewise, psychosocial interventions may not be enough by themselves to address the challenges

AIDS-orphaned children face. There is a need for multi-faceted interventions—combining family economic strengthening interventions with psychosocial interventions.

## Limitations

This study has three major limitations. First, our models explain small variances in educational and psychosocial outcomes. This may be due to the problem of left out variables from our models. Second, we report baseline findings from orphaned children only. We do not have a comparable group. The results may be different for non-orphans. Third, all data reported was self-reported, it may be subject to social desirability. However, participants had no reason to inflate or downplay their reports.

## Conclusion

Study findings suggest that psychosocial functioning plays an important role in influencing children's outcomes, including educational plans and aspirations. Policies and programs that support vulnerable and orphaned children need to incorporate components that promote children's psychosocial well-being in order to achieve better outcomes.

## Acknowledgments

Research reported in this publication was supported by the Eunice Kennedy Shriver National Institute of Child Health & Human Development of the National Institutes of Health under Award Number R01HD070727 (PI: Fred M. Ssewamala, PhD). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. The authors are grateful to the research team and volunteers at the International Center for Child Health and Asset Development (ICHAD) in Uganda for monitoring the study implementation process. Our special thanks go to the children, adolescents, and the caregiving families who agreed to participate in the study.

## References

Adato M, Bassett L. Social protection to support vulnerable children and families: the potential of cash transfers to protect education, health and nutrition. AIDS Care. 2009; 21(S1):60–75. [PubMed: 22380980]

Atwine B, Cantor-Graae E, Bajunirwe F. Psychological distress among AIDS orphans in rural Uganda. Social Science & Medicine. 2005; 61(3):555–564. [PubMed: 15899315]

Ayuku D, Embleton L, Koech J, Atwoli L, Hu L, Ayaya S, Braitstein P. The government of Kenya cash transfer for orphaned and vulnerable children: cross-sectional comparison of household and individual characteristics of those with and without. BMC International Health and Human Rights. 2014; 14(1):25. [PubMed: 25239449]

Beck AT, Weissman A, Lester D, Trexler L. The measurement of pessimism: the hopelessness scale. Journal of Consulting and Clinical Psychology. 1974; 42:861–865. [PubMed: 4436473]

Bhana A, Petersen I, Mason A, Mahintsho Z, Bell C, McKay M. Children and youth at risk: adaptation and pilot study of the CHAMP (Amaqhawe) programme in South Africa. African Journal of AIDS Research. 2004; 3(1):33–41. [PubMed: 25874981]

Bicego G, Rutstein S, Johnson K. Dimensions of the emerging orphan crisis in sub-Saharan Africa. Social Science & Medicine. 2003; 56(6):1235–1247. [PubMed: 12600361]

Case A, Paxson C, Ableidinger J. Orphans in Africa: parental death, poverty, and school enrollment. Demography. 2004; 41:483–508. [PubMed: 15461011]

Cluver L, Gardner F, Operario D. Poverty and psychological health among AIDS-orphaned children in Cape Town, South Africa. AIDS Care. 2009; 21(6):732–741. [PubMed: 19806489]

Cluver L, Operario D, Lane T, Kganakga M. “I can't go to school and leave her in so much pain^: educational shortfalls among adolescent ‘young carers’ in the South African AIDS epidemic. Journal of Adolescent Research. 2011; 27:581–605.

Cluver L, Orkin M, Gardner F, Boyes ME. Persisting mental health problems among AIDS-orphaned children in South Africa. Journal of Child Psychology and Psychiatry. 2012; 53(4):363–370. [PubMed: 21883206]

Elliott W, Destin M, Friedline T. Taking stock of ten years of research on the relationship between assets and children's educational outcomes: Implications for theory, policy and intervention. Children and Youth Services Review. 2011; 33(11):2312–2328.

Evans DK, Miguel E. Orphans and schooling in Africa: a longitudinal analysis. Demography. 2007; 44(1):35–57. [PubMed: 17461335]

Fitts, WH.; Warren, WL. Tennessee Self Concept Scale, TSCS- 2. Second Edition. Manual. Western Psychological Services; Torrance, CA: 1996.

Guo Y, Li X, Sherr L. The impact of HIV/AIDS on children’s educational outcome: a critical review of global literature. AIDS Care. 2012; 24(8):993–1012. [PubMed: 22519300]

Huebner ES. Preliminary development and validation of a multidimensional life satisfaction scale for children. Psychological Assessment. 1994; 6(2):149–158.

Hunt F. Dropping out from school: a cross country review of the literature. Create pathways to access. Research Monograph. 2008; (16)

Kamya H, Poindexter CC. Mama Jaja: the stresses and strengths of HIV-affected Ugandan grandmothers. Social Work in Public Health. 2009; 24(1–2):4–21. [PubMed: 19229769]

Karimli L, Ssewamala FM, Ismayilova L. Extended families and perceived caregiver support to AIDS orphans in Rakai District of Uganda. Children and Youth Services Review. 2012; 34(7):1351–1358. [PubMed: 23188930]

Kasirye I, Hisali E. The socioeconomic impact of HIV/AIDS on education outcomes in Uganda: school enrolment and the schooling gap in 2002/2003. International Journal of Educational Development. 2010; 30:12–22.

Kidman R, Nice J, Taylor T, Thurman TR. Home visiting programs for HIV-affected families: a comparison of service quality between volunteer-driven and paraprofessional models. Vulnerable Children and Youth Studies. 2014; 9(4):305–317. [PubMed: 25379052]

Kim Y, Sherraden M. Do parental assets matter for children's educational attainment? Evidence from mediation tests. Children and Youth Services Review. 2011; 33(6):969–979.

Kovacs M. The Children's Depression Inventory (CDI). Psychopharmacology Bulletin. 1985; 21:995–998. [PubMed: 4089116]

Kumakech E, Cantor-Graae E, Maling S, Bajunirwe F. Peer-group support intervention improves the psychosocial well-being of AIDS orphans: cluster randomized trial. Social Science & Medicine. 2009; 68(6):1038–1043. [PubMed: 19167144]

Loke V. Parental asset accumulation trajectories and children's college outcomes. Economics of Education Review. 2013; 33:124–133.

Moos, R.; Moos, B. Family environment scale manual. Consulting Psychologist Press; Palo Alto: 1981.

Mueller J, Alie C, Jonas B, Brown E, Sherr L. A quasi-experimental evaluation of a community-based art therapy intervention exploring the psychosocial health of children affected by HIVin South Africa. Tropical Medicine & International Health. 2011; 16(1):57–66. [PubMed: 21073640]

Oleke C, Blystad A, Fylkesnes K, Tumwine JK. Constraints to educational opportunities of orphans: a community-based study from northern Uganda. AIDS Care. 2007; 19(3):361–368. [PubMed: 17453570]

Rotheram-Borus MJ, Stein JA, Lin YY. Impact of parent death and an intervention on the adjustment of adolescents whose parents have HIV/AIDS. Journal of Consulting and Clinical Psychology. 2001; 69(5):763. [PubMed: 11680553]

Schenk KD, Michaelis A, Sapiano TN, Brown L, Weiss E. Improving the lives of vulnerable children: implications of horizons research among orphans and other children affected by AIDS. Public Health Reports. 2010; 125(2):325–336. [PubMed: 20297761]

Sherr L, Cluver LD, Betancourt TS, Kellerman SE, Richter LM, Desmond C. Evidence of impact: health, psychological and social effects of adult HIV on children. AIDS. 2014; 28:S251–S259. [PubMed: 24991898]

Skovdal M. Community relations and child-led microfinance: a case study of caregiving children in Kenya. AIDS Care. 2010; 22(S2):1652–1661. [PubMed: 21161771]

Ssewamala FM. Optimizing the Bdemographic dividend^ in young developing countries: the role of contractual savings and insurance for financing education. International Journal of Social Welfare. 2014 doi:10.1111/ijsw.12131.

Ssewamala FM, Ismayilova L. Integrating children savings accounts in the care and support of orphaned adolescents in rural Uganda. Social Service Review. 2009; 83(3):453–472. [PubMed: 20445763]

Ssewamala FM, Alicea S, Bannon W, Ismayilova L. A novel economic intervention to reduce HIV risks among school-going AIDS-orphaned children in rural Uganda. Journal of Adolescent Health. 2008; 42(1):102–104. [PubMed: 18155037]

Ssewamala FM, Han C-K, Neilands TB. Asset ownership and health and mental health functioning among AIDS-orphaned adolescents: findings from a randomized clinical trial in rural Uganda. Social Science & Medicine. 2009; 69(2):191–198. [PubMed: 19520472]

Ssewamala FM, Han C-K, Neilands TB, Ismayilova L, Sperber E. Effect of economic assets on sexual risk-taking intentions among orphaned adolescents in Uganda. American Journal of Public Health. 2010a; 100(3):483–488. [PubMed: 20075323]

Ssewamala FM, Karimli L, Han C-K, Ismayilova L. Social capital, savings, and educational outcomes of orphaned adolescents in sub-Saharan Africa. Children and Youth Services Review. 2010b; 32(12):1704–1710. [PubMed: 20948971]

Ssewamala FM, Neilands TB, Waldfogel J, Ismayilova L. The impact of a microfinance-based intervention on depression levels of AIDS orphaned children in Uganda. Journal of Adolescent Health. 2012; 50(4):346–352. [PubMed: 22443837]

Subbarao, K.; Coury, D. African Region Human Development Series. World Bank publication; 2004. Reaching out to Africa's orphans: a framework for public action.. Available at:http://siteresources.worldbank.org/INTHIVAIDS/Resources/3757981103037153392/ReachingOuttoAfricasOrphans.pdf

Thurman TR, Kidman R, Taylor TM. Does investment in home visitors lead to better psychological health for HIV-affected families? Results from a quasi-experimental evaluation in South Africa. AIDS Care. 2014; 26(Suppl 1):1–9. [PubMed: 23767772]

Tu X, Lv Y, Li X, Fang X, Zhao G, Lin X, et al. School performance and school behavior of children affected by acquired immune deficiency syndrome (AIDS) in China. Vulnerable Children and Youth Studies. 2009; 4(3):199–209. [PubMed: 20107622]

UNICEF. Grandmothers and HIV/AIDS. 2004. Available at: http://www.unicef.org/sowc07/docs/sowc07_panel_2_2.pdf

UNICEF. Towards an AIDS-free generation—Children and AIDS: Sixth Stocktaking Report, 2013. UNICEF; New York: 2013. Available at: http://www.unicef.org/gambia/Towards_an_AIDS-free_generation__Children_and_AIDS-Sixth_Stocktaking_Report_2013.pdf

## Table 1

Sociodemographic characteristics of the sample ($n$ = 1410)

| Variable | Total sample ($n$ = 1410)% | Boys ($n$ = 621) % | Girls ($n$ = 789) % | $t$ test or $\chi^2$ |
|---|---|---|---|---|
| Gender | | 44 | 56 | |
| Age (Mean, SD) | 12.7 (1.23) | 12.9(1.22) | 12.4(1.18) | 8.77*** |
| Orphanhood status | | | | 6.38** |
| Double orphan | 21.1 | 24.2 | 18.6 | |
| Single orphan | 78.9 | 75.8 | 81.4 | |
| Primary caregiver | | | | 0.63 |
| Biological parent | 39.1 | 40.1 | 38.4 | |
| Grandparents | 36.6 | 36.6 | 36.6 | |
| Other relative (uncle, aunt, siblings, in-laws) | 24.3 | 23.3 | 25.0 | |
| Household composition | | | | |
| Number of people in the household (Mean, SD) | 6.35(2.79) | 6.38(2.84) | 6.34(2.75) | .284 |
| Number of children in the household (Mean, SD) | 3.18(2.20) | 3.15(2.30) | 3.21(2.12) | –.527 |

*$p \leq .05$

**$p \leq .01$

***$p \leq .001$

**Table 2**

Educational, psychosocial, and economic preferences of study participants ($n$ = 1410)

| | By gender | | | | By orphanhood status | | |
|---|---|---|---|---|---|---|---|
| | **Total ($n$ = 1410)%** | **Boys ($n$ = 621) %** | **Girls ($n$ = 789) %** | ***t* test or $\chi^2$** | **Double orphans ($n$ = 297) %** | **Single orphans ($n$ = 1113)%** | ***t* test or $\chi^2$** |
| Educational plans after primary school | | | | | | | 1.34 |
| Planning to start secondary education | 94.6 | 96.8 | 92.9 | 10.2*** | 96.0 | 94.2 | |
| Not planning to start secondary education | 5.4 | 3.2 | 7.1 | | 4.0 | 5.8 | |
| Certainty to achieve education plan (mean, SD) | 4.08(1.18) | 4.13(1.16) | 4.04(1.19) | –1.39 | 4.0(1.17) | 4.1(1.18) | 1.26 |
| Educational aspirations | | | | 119.9*** | | | 14.4* |
| Drop out before primary 7 | 0.4 | 0.6 | 0.1 | | 0 | 0.4 | |
| Drop out before senior 4 | 2.4 | 2.1 | 2.7 | | 1.0 | 2.8 | |
| Complete senior 4 and stop | 9.4 | 12.1 | 7.4 | | 11.8 | 8.8 | |
| Go on to senior 6 and stop | 7.2 | 11.9 | 3.6 | | 9.1 | 6.7 | |
| Go on to technical college | 10.6 | 10.6 | 10.7 | | 13.8 | 9.8 | |
| Go on to university and get a degree | 30.9 | 37.8 | 25.4 | | 30.3 | 31.0 | |
| Go on to graduate school | 39.0 | 24.8 | 50.3 | | 34.0 | 40.4 | |
| Talked to caregiver about school work | 87.6 | 84.2 | 90.2 | 11.6*** | 82.5 | 88.9 | 8.99** |
| School satisfaction Scale (mean, SD) | 28.9(2.97) | 28.8(2.96) | 28.9(2.98) | –.082 | 28.8(3.07) | 28.9(2.94) | –0.30 |
| Psychosocial preferences (mean, SD) | | | | | | | |
| Child depression inventory | 11.6(5.68) | 11.6(5.56) | 11.5(5.78) | 0.47 | 11.4(5.83) | 11.6(5.64) | –0.41 |
| Tennessee self-concept scale | 78.4(10.7) | 79.7(10.9) | 77.4(10.5) | 4.08*** | 78.8(10.62) | 78.3(10.79) | 0.66 |
| Beck hopelessness scale | 5.37(3.09) | 5.35(2.94) | 5.39(3.22) | –0.25 | 5.50(3.17) | 5.34(3.08) | 0.83 |
| Care about future self | 4.67(0.55) | 4.69(0.52) | 4.64(0.58) | 1.88 | 4.72(0.50) | 4.66(0.57) | 1.85 |
| Likeness for future self | 4.80(0.43) | 4.81(0.42) | 4.79(0.44) | 0.77 | 4.86(0.37) | 4.78(0.5) | 2.95** |
| Family cohesion | 31.6(6.32) | 31.8(6.35) | 31.5(6.29) | 1.02 | 31.3(6.57) | 31.7(6.26) | –0.98 |
| Economic preferences | | | | | | | |
| Own savings (yes) | 30.7 | 40.6 | 22.9 | 50.8*** | 29.3 | 31.1 | 0.35 |
| Knowledge of caregiver saving money (yes) | 36.5 | 30.9 | 40.8 | 15.9*** | 27.6 | 38.8 | |

| | By gender | | | | By orphanhood status | | |
|---|---|---|---|---|---|---|---|
| | **Total (*n* = 1410)%** | **Boys (*n* = 621) %** | **Girls (*n* = 789) %** | ***t* test or $\chi^2$** | **Double orphans (*n* = 297) %** | **Single orphans (*n* = 1113)%** | ***t* test or $\chi^2$** |
| Importance of saving toward a specific goal (mean, SD) | 27.3(2.86) | 27.9(2.51) | 26.7(2.99) | 8.06*** | 27.6(2.60) | 27.2(2.92) | 1.97* |
| Confidence level in saving toward a specific goal (mean, SD) | 25.7(4.39) | 26.6(4.14) | 25.0(4.45) | 7.18*** | 26.1(3.89) | 25.6(4.51) | 2.03* |
| Family assets (mean, SD) | 9.73(3.22) | 10.0(3.24) | 9.49(3.19) | 3.19*** | 9.97(3.34) | 9.67(3.19) | 1.42 |
| Availability of basic necessities (mean, SD) | 4.64(1.51) | 4.59(1.45) | 4.68(1.56) | –1.07 | 4.52(1.55) | 4.67(1.50) | –1.59 |

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

## Table 3

Hierarchical regression results: influence of sociodemographic characteristics, psychosocial and family processes, and economic preferences on children's educational preferences ($n$ = 1410)

| Model | $R^2$ | Adjusted $R^2$ | Change in $R^2$ |
|---|---|---|---|
| 1) Sociodemographic characteristics (age, gender, double orphan, number of children in the household, and primary caregiver) | .069 | .065 | |
| 2) Psychosocial and family processes predictors (care about future self, likeness for future self, self-concept, hopelessness, depression, family cohesion, talked to caregiver about school work and school satisfaction) | .131 | .122 | .062*** |
| 3) Economic predictors/preferences (knowledge of caregiver's savings, confidence level to save for a specific goal, family assets and availability of basic needs) | .139 | .128 | .008** |

** $p \leq .01$

*** $p \leq .001$

## Table 4

Regression results: sociodemographic characteristics, psychosocial and family processes, economic preferences and children's educational aspirations ($n$ = 1410)

| Predictor variable | β(SE) | t value |
|---|---|---|
| Constant | 4.95(.76) | 6.5*** |
| Sociodemographic characteristics | | |
| Age | –.18(.03) | –5.9*** |
| Gender (female) | –.42(.08) | –5.4*** |
| Double orphan | –.12(.10) | –1.2 |
| No.of children in household | .03.02) | 1.8 |
| Biological parent | –.14(.10) | –1 3 |
| Grandparent(s) | –.09(.09) | –.94 |
| Psychosocial and family processes predictors | | |
| Care about future self | .20(.07) | 2.9** |
| Likeness for future self | .24(.09) | 2.7** |
| Self-concept | .003(.004) | .62 |
| Hopelessness | –.05(.01) | –3.5*** |
| Depression | .001(.007) | .12 |
| Family cohesion | .01(.006) | 2.01* |
| School satisfaction | .03(.01) | 2.2* |
| Talked to caregiver about school work | .49(.11) | 4.5*** |
| Economic predictors/preferences | | |
| Knowledge of caregiver's savings | .00(.00) | 2.34* |
| Confidence level to save for a specific goal | –.01(.009) | –1.6 |
| Family assets | –.02(.01) | –1.9* |
| Availability of basic needs | 0.1(.03) | .49 |
| $R^2$ | .139 | |
| Adjusted $R^2$ | .128 | |
| $F$ | 12.47*** | |

*$p \leq .05$

**$p \leq .01$

***$p \leq .001$

**Table 5**

Hierarchical regression results: influence of sociodemographic characteristics, psychosocial and family processes, and economic preferences on children's depression, hopelessness and self-concept ($n$ = 1410)

| | Depression | | | Hopelessness | | | Self-concept | | |
|---|---|---|---|---|---|---|---|---|---|
| **Model** | $R^2$ | Adjusted $R^2$ | Change in $R^2$ | $R^2$ | Adjusted $R^2$ | Change in $R^2$ | $R^2$ | Adjusted $R^2$ | Change in $R^2$ |
| 1) Sociodemographic characteristics (age, gender, double orphan, number of children in the household, and primary caregiver) | .007 | .002 | | .003 | –.002 | | .019 | .015 | |
| 2) Psychosocial and family processes predictors (care about future self, likeness for future self, self-concept, hopelessness, depression, family cohesion, talked to caregiver about school work and school satisfaction) | .282 | .276 | .275*** | .220 | .214 | .218*** | .345 | .340 | .326*** |
| 3) Economic predictors/preferences (knowledge of caregiver's savings, confidence level to save for a specific goal, family assets and availability of basic needs) | .294 | .286 | .012*** | .225 | .216 | .004 | .352 | .345 | .007** |

** $p \leq .01$

*** $p \leq .001$

## Table 6

Regression results: sociodemographic characteristics, psychosocial and family processes, economic preferences and children's depression, hopelessness, and self-concept ($n$ = 1410)

| Predictor variable | Depression | | Hopelessness | | Self-concept | |
|---|---|---|---|---|---|---|
| | $\beta$ (SE) | *t* value | $\beta$ (SE) | *t* value | $\beta$ (SE) | *t* value |
| Constant | 30.0(2.5) | 12.2*** | 11.7(1.4) | 8.1*** | 68.5(4.3) | 15.9*** |
| Sociodemographic characteristics | | | | | | |
| Age | –.03(.12) | –.24 | –.002(.06) | –.04 | –.42(.20) | –2.1* |
| Gender (female) | .71(.27) | 2.6** | .12(.16) | .77 | 2.1(.49) | 4.4*** |
| Double orphan | –.23(.35) | –.65 | .22(.19) | 1.1 | .23(.63) | .37 |
| No. of children in household | .16(.06) | 2.7** | .004(.03) | .12 | –.11(.11) | –.96 |
| Biological parent | –.12(.36) | –.34 | .04(.21) | .21 | –.03(.66) | –.04 |
| Grandparent(s) | –.09(.34) | –.25 | .007(.19) | .04 | .51(.61) | .83 |
| Psychosocial and family processes predictors | | | | | | |
| Care about future self | –.27(.25) | –1.1 | –.21(.14) | –1.5 | 1.1(.45) | 2.4* |
| Likeness for future self | –.57(.32) | –1.8 | .001(.18) | .007 | .53(.57) | .93 |
| Family cohesion | –.03(.02) | –1.1 | –.02(.01) | –1.4 | .37(.04) | 9.7*** |
| Depression | – | – | .14(.02) | 9.5*** | –.60(.05) | –13.0*** |
| Hopelessness | .43(.05) | 9.5*** | – | – | –.72(.08) | –8.7*** |
| Self-concept | –.18(.01) | 13.0*** | –.07(.01) | –8.7*** | – | – |
| Economic predictors/preferences | | | | | | |
| Knowledge of caregiver's savings | –.001(.00) | –1.3 | 3.1(.00) | .11 | .002(.001) | 1.9* |
| Confidence level to save for a specific goal | .007(.03). | .22 | –.01(.02) | –.72 | .18(.06) | 3.2** |
| Family assets | –.15(.05) | –3.3*** | .002(.03) | .08 | .01(.08) | .15 |
| Availability of basic needs | –.17(.09) | –1.8 | –.14(.05) | –2.5** | .21(.17) | 1.3 |
| $R^2$ | .294 | | .225 | | .352 | |
| Adjusted $R^2$ | .286 | | .216 | | .345 | |
| $F$ | 38.70*** | | 26.95*** | | 50.58*** | |

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$