Integrating Children's Savings Accounts in the Care and Support of Orphaned Adolescents in Rural Uganda

Fred M. Ssewamala and **Leyla Ismayilova**
Columbia University

Abstract

This study examines an economic empowerment model of care and support for orphaned adolescents in rural Uganda. Under this model, 277 AIDS-orphaned youths (ages 11–17) from 15 comparable schools were randomly assigned to either the usual care, which involves provision of counseling and education-related supplies, or the experimental condition, in which participants also received matched-savings accounts. The analyses indicate that poor families in rural Uganda can and do save for their youths if provided with support and incentives. Analyses also locate statistically significant differences between youths in the experimental and control groups on attitudes toward saving, academic performance, educational aspirations, and health-related behaviors. The results suggest that savings-related interventions have a place in the care and support of orphaned youths in poor sub-Saharan Africa, where the number of such youths is steadily increasing.

In most parts of sub-Saharan Africa, the burden of raising youths who have lost one or both parents (hereafter, "orphaned youths" or "orphans") falls primarily on extended family members, including grandparents, uncles, and aunts. However, the steady increase in the number of orphans, coupled with the increase in poverty that comes from the loss of wage-earning parents, is contributing to a breakdown in the African extended family system. Because there are few public welfare programs to serve them, many orphans are left to fend for themselves. In Uganda, a poor sub-Saharan African country heavily affected by wars and disease, over 2.3 million youths have lost one or both parents (UNICEF 2007). This represents approximately 8 percent of the country's population (World Bank 2008).

For these reasons, UNICEF recently called on organizations to move away from institutional care and to develop efficient and sustainable family-centered programs (UNICEF 2008). Because of the number of orphaned youths, extended families often are not willing or able to take in additional orphans, even if the youths are their kin. This phenomenon pushes most of the youths into one of three options. One is institutional care, an approach that is heavily criticized. Institutional care allegedly costs more than family-based care, isolates youths from socializing experiences in the community, and separates them from family-level protective factors crucial to emotional, cognitive, and overall psychosocial development (Johnson, Browne, and Hamilton-Giachritsis 2006; Mulheir and Browne 2007). Institutional care also is found to negatively affect youths' normal psychosocial functioning and mental well-being (Vorria et al. 1998a, 1998b, 2006; Maclean 2003; Nelson et al. 2007).

The second option commonly available to orphans involves settings in which they depend on reactive strategies that take the form of aid in food, clothing, and other materials from

government and nongovernmental organizations (Drew, Makufa, and Foster 1998; World Bank 2000; UNAIDS, UNICEF, and the U.S. Agency for International Development 2004; UNICEF 2008). This option is criticized for encouraging perpetual dependency on donations, especially those from foreign sources, without providing the economic resources necessary to empower families to plan for their long-term future (Ssewamala and Curley 2006).

The third option is for orphans to live on their own in what is called youth-headed households or, in desperation, to migrate to large urban areas in search of employment. Because orphans who migrate to the urban areas usually lack employable skills, they often end up on the streets, where they beg, engage in petty theft, begin drugs and other substance abuse, and exchange sex for money. These activities expose them to sexually transmitted diseases (Ssewamala 2005).

Against this backdrop, local and international organizations are initiating a number of innovative efforts to strengthen families in the care and support of orphaned youths. In Uganda, several organizations are exploring new interventions designed to meet the psychosocial needs of orphans through a family-centered model of care and support. Some interventions also promote microfinance opportunities, facilitate the mobilization of savings, and thereby provide resources for the education of youths or the development of small businesses. The Suubi Project, the focus of this article, is one such initiative designed to mobilize savings for orphaned youths' education.

The Suubi Project presents an alternative approach for care and support of orphaned youths. It encourages orphans' caregiving families to partner with local community-based organizations, banks, and schools to save money for the youths' education. Linking youths and their families to formal financial institutions is an important step, as such relationships are rare in Uganda. The links may play a role in helping some families to establish modest savings and credit lines. These financial supports go far beyond the resources provided by traditional aid, in that they may assist families by providing a buffer against general cash-flow shortfalls and financial shocks. They also may enable families to expand small income-generating businesses or to meet such obligations as school fees, medical expenses, and other routine domestic needs. Moreover, the approach uses a family-centered intervention to keep youths within a family environment and working with the living parent or other family members who retain parental rights or custody.

In examining the feasibility and effect of a family-centered economic intervention approach, this article addresses two research questions: (1) To what extent do poor families participate in such an intervention that involves the promotion of savings accounts as a form of care and support for orphaned youths? and (2) What effect would a family-centered economic intervention have on a participating youth's education and health-related outcomes?

These two questions are important for several reasons. First, although the typical interventions for poor orphans are responses of well-meaning governmental and nongovernmental organizations, they have attracted considerable criticism. Thus, there is a need to explore alternative forms of care and support that strengthen the family environment. Second, sub-Saharan Africa, as a region, has the highest and fastest-growing number of orphaned youths. By this writing, 47 million children have lost one or both parents, and the number of orphans is expected to increase as adults infected with HIV continue to die (UNAIDS 2006; UNICEF 2007). Because most countries in the region have no operational social policies to deal with these increasing numbers, it may be beneficial to evaluate the feasibility and effect of a family-centered intervention that keeps youths within their families and that may strengthen family stability. Such an evaluation may also be of public interest as a guide to policy and programming. Third, many of the programs (such as the Suubi Project) that use a microfinance

approach in the care and support of orphaned youths are being implemented within sub-Saharan Africa, especially for families in the poorest rural villages. Before taking the intervention to scale, it would be remiss not to address the question of whether these poor rural families are able to use financial institutions to save for the education of orphaned youths.

Suubi Project: A Family-Centered Economic Intervention

The AIDS epidemic and a 20-year civil war have had a devastating impact on Uganda. The events have led to population displacement, worsening living conditions, exacerbation of poverty, and disruption of already weakened social service systems (Topouzis 1994; Machel 2001; Putzel 2004). Moreover, the country lacks a comprehensive operational national policy to support orphaned youths. There thus is a compelling need for programs that combine the traditional care for marginalized populations with new interventions. These interventions might strengthen economic opportunities available to families caring for orphans, develop these youths' future-planning skills, enhance their health-related functioning, and provide educational opportunities.

As implemented, the Suubi Project goes considerably beyond the usual care, which primarily consists of institutionalization and reactive strategies (involving food and material aid). Instead, the Suubi intervention focuses on economic empowerment of families caring for orphaned youths. It attempts to address the health risks and poor educational achievements resulting from poverty and limited options. Specifically, the intervention promotes children's savings accounts, also known as children development accounts, for postprimary education and microenterprise development (i.e., development of small income-generating businesses).

The Suubi intervention is grounded in asset theory (Sherraden 1990, 1991), which holds that assets (e.g., savings, educational opportunities, and economic opportunities in the form of income-generating activities or microenterprises) have important economic, social, and psychological benefits for individuals and families. Asset building is increasingly viewed as a critical factor for reducing poverty, improving psychosocial functioning, and positively affecting attitudes and behaviors (Ssewamala et al. 2008).[1] Asset theorists suggest that assets (even small amounts) change people's economic lives, behavior, attitudes, and hopes for the future (Sherraden 1990, 1991).

In addition, asset accumulation contributes to an asset effect, which Mark Schreiner and Michael Sherraden (2007, 6) describe: "Humans are forward-looking, and current well-being depends in part on expected future well-being. People with more assets in the present expect to have more resources in the future… . Not only do [people with assets] think differently, but others also treat them differently." Research also links owning assets and knowing that these can be used during hard times to feelings of safety and security that confer a sense of stability and permanence (Rakoff 1977). These assumptions are explicitly advanced by the Suubi Project. Economic empowerment, here pursued through asset building and asset ownership, is posited to help youths envision the future with optimism, encourage planning for the future, and promote behavior change among those who might otherwise be vulnerable.

Implementation of the Suubi Project

Funded by the U.S. National Institute of Mental Health, the Suubi Project is a 3-year study (2005–8) involving 286 youths. The Suubi Project is based in Matale Parish. Located in Rakai District, Matale Parish is about 120 miles south of Kampala, the capital of Uganda. Rakai

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[1]For the purpose of this article, "asset building" is defined as efforts that enable people with limited financial and economic resources to acquire and accumulate long-term productive assets.

District is one of those hardest hit by HIV and AIDS (Ssewamala et al. 2008). It thus has one of the country's largest populations of orphaned youths. Saint John's Matale Parish, a faith-based community institution, currently cares for or provides services to about 700 orphans. The parish provides counseling, support, and other forms of aid (e.g., scholastic materials, school lunches, and after-school sports and music programs) to both youths and their caregiving families.

The orphaned youths participating in the current study were randomly selected from 15 rural public primary schools in Rakai District. The schools included in the study have similar socioeconomic characteristics, including overall performance on the national standardized Primary Leaving Examinations (PLEs), and they attract students from similar socioeconomic backgrounds. Each of the 15 primary schools was randomly assigned to the experimental or control condition, such that all selected youths from a particular school received the same intervention. This method is primarily adopted to address issues related to sample contamination.

Each youth in the control condition received the care commonly used for orphaned youths. This includes recreation services (e.g., sports and music activities), counseling services (including help coping with personal, emotional, and psychosocial problems), food aid in the form of school lunches, and scholastic materials (e.g., textbooks). The care is sponsored and administered by St. John's Matale Parish.

In addition to the usual care mentioned above, the youths in the experimental condition received a family-centered asset-based intervention.[2] This intervention consists of three components. The first provides youths with access to workshops that focus on asset building and future planning. The workshops are conducted by Ugandan students from Makerere University who are familiar with the traditions of the study area and trained on human-subjects issues. The topics covered during the workshops include asset-building strategies (saving, education, and investing in income-generating activities), how to save money, and career planning. The second component is a monthly mentorship program in which peers offer youths advice on life options and avoiding risky behavior. Mentors also reinforce the importance of learning and build optimism. The third is a child savings account (CSA) dedicated to paying for postprimary schooling or a small family business. This account provides financial resources with which the youths might begin to realistically plan for their future education or vocational training. The program follows from the theory that counseling and food aid may have little effect if youths lack the financial means to pursue long-term educational or vocational aspirations (Sherraden 1986;Ssewamala et al. 2008). The monthly one-to-one mentorship program is intended to help the orphaned youths foster meaningful and lasting relationships with adult role models, relationships that enable them to overcome a variety of challenges they face in daily life. The mentorship component is modeled on programs in the United States, and such programs are found to improve child outcomes (Tierney, Grossman, and Resch 1995).

The CSA is a matched-savings account held in the youth's name in a well-established financial institution or bank registered by the Central Bank of the Republic of Uganda. The youth's family members and friends are allowed, and indeed encouraged, to contribute to the CSA. The account is then matched with money from the Suubi Project. The match cap, or the maximum amount of family contribution to be matched by the Suubi Project, is the equivalent of $10 a month per family.[3] The match rate is 2 : 1. This means that if a youth in the Suubi experimental condition deposited $10 in each of the 12 months and made no withdrawal, the

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[2] The phrase "family-centered asset-based intervention" is used deliberately because the Suubi intervention is focused on youths within a family setting. The youths participating in the intervention are living within their families and not in institutions or any other setting.
[3] Amounts in this article are specified in U.S. dollars.

youth would have a total of $360 in the CSA at the end of 1 year. That amount includes the $120 family contribution and $240 in matched funds from the Suubi Project. Although the cost of secondary school varies, the average cost of a government-supported secondary school in semiurban and rural Uganda is between $150 and $200 per academic year. The $360 in the CSA is thus enough to pay for about 2 years of a participant's secondary education.

The Suubi Project limits the use of CSA matched savings. Youths may access the matched portion of the funds only to pay for education (secondary education or vocational training) or to invest in a family-income-generating activity (e.g., raising poultry, raising pigs for sale, buying a heifer or milk-producing cow, and funding a small business). All families in the study chose to save for the participating youth's postprimary education. A monthly savings account statement was generated for each youth. The statements allowed the youth to see accumulated savings. They also reinforce family support for continued savings in the program. During the intervention period, each youth (with a caregiver as a cosigner) had access to his or her own CSA, so that the money could be withdrawn in case of an emergency. The matching funds were kept in a separate account and were not accessible to the participant.

When a participant was ready to attend secondary school or vocational training, the Suubi Project issued the bank check or voucher for the matching funds. The check was issued directly to the school the student chose to attend. The students then contributed their portion of the total cost for the academic term. If the youths withdrew their personal savings for purposes other than those specified by the Suubi Project, they would forgo the associated match. The process was designed to eliminate families' temptation to pressure the youths to withdraw the money for family use. It was also intended to avoid potential misuse of the matching funds by the youths' family members or caregivers.

Method

Sample

It is important to note that the Suubi Project is focused on youths who reside within a family-care setting, which traditionally has been and continues to be the dominant and most sustainable form of care for orphans in Uganda and most parts of sub-Saharan Africa (Matshalaga and Powell 2002). Thus, the youths included in the study have to be living with a family member. This could be a blood relative or a member of the extended family system. The program does not enroll youths living in institutional care (such as orphanages) or on the streets.

The starting sample for this study included 286 AIDS-orphaned adolescents drawn from 15 rural public primary schools in the Rakai District of southern Uganda. The experimental group included 138 youths from nine schools, and the control group was composed of 148 youths from six schools. Because of attrition and missing data at the 10-month posttest follow-up, the sample was reduced to 277. The experimental and control groups were reduced to 135 and 142, respectively. The average age for the youths was 13.7 years at pretest (ages range from 11 to 17 years).

Measures

Each youth in this study participated in an individual 90-minute baseline (hereafter, "pretest") interview. A second interview was conducted 10 months following the intervention (hereafter, "posttest"). Questions in the interviews were adapted from scales employed previously in the United States and South Africa (Auslander et al. 1992; Levy et al. 1993; Bhana et al. 2004).

Dependent variables—Average monthly net deposit (AMND) serves as a measure of the extent to which families caring for orphaned youths participate in the Suubi intervention. This

measure is consistent with those employed by prior research on matched-savings accounts (e.g., American Dream Demonstration [ADD] project; Sherraden et al. 2000; Schreiner, Clancy, and Sherraden 2002; Ssewamala and Sherraden 2004). Specifically, AMND is the participant's net deposit divided by the number of participation months. The measure takes into account the length of participation in the Suubi Project:

$$AMND = \frac{\text{deposit} + \text{interest} - \text{unmatched withdrawals} - \text{unmatchable deposits}}{\text{total months of participation}},$$

where the AMND increases with the participant's savings.[4] Because no data on formal verifiable savings are available for the control group, AMND is only computed for youths in the experimental condition. The actual savings amounts used to compute AMND come from financial institutions holding the CSAs and thus are quite accurate. Including unverifiable or self-reported savings (the only savings data available for the control group) might bias the results.[5]

To assess attitudes toward saving money, questions from the instruments used in the ADD evaluation were adapted so that they are culturally and age appropriate for Ugandan youths (Sherraden et al. 2000; Schreiner 2001; Schreiner et al. 2002; Ssewamala and Sherraden 2004). A five-item subscale measures how important saving is for participating youths' education, family needs, independent living, future employment, and investment in family-income-generating activity (e.g., purchasing poultry for egg production or a cow for milk production). The adolescents rate items on a three-point scale (not important, somewhat important, and very important). The possible scores on this measure range from 5 (not important) to 15 (very important).

Several measures help to assess the effect of the economic intervention (in this case, the Suubi intervention) on outcomes related to participants' education and health behavior. These include measures of educational plans and aspirations, academic performance, and sexual risk-taking behaviors (which serve as a health outcome measure).

Educational plans and aspirations—Questions assessing a student's future educational plans and aspirations were adapted from the Collaborative HIV/AIDS and Adolescent Mental Health Project Family Study Program (CHAMP) in the United States and South Africa (Levy et al. 1993; Paikoff 1995; Bhana et al. 2004). Three questions measure youths' educational plans and aspirations. First, participants in both groups were asked whether they plan to go on to secondary school after completing primary school (seventh grade). Second, youths were asked whether they plan to go to college or university. Third, youths were asked to indicate "how certain they were that they would accomplish these educational plans." Participants rated their certainty on a scale from 1 (least) to 3 (most). This measure is used as a proxy for a measure of the level of confidence that the participant will accomplish the educational plans.

Academic performance—Two items measure aspects of academic performance. School attendance is measured by records obtained from the experimental and control schools. School grades are measured by results from PLEs, which are administered to students throughout Uganda at the end of the seventh grade. The tests were taken at least 7 months after the

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[4]In this article, the term "unmatchable deposits" refers to savings that are over and above the maximum amount that could be matched within a given period of time. In this case, the period was within the first 10 months on which the data are based.
[5]For accuracy, the actual savings amounts used to compute AMND (the measure of the extent to which families caring for orphaned youths participate in the Suubi intervention) came from financial institutions holding the CSAs. Since the control group did not have verifiable savings in the bank, AMND is only computed for youths in the treatment condition.

implementation of the Suubi Project (i.e., the project was implemented in April, and students took the PLEs in November of the same year). The PLE grades come directly from the schools and were confirmed with the students during the follow-up interviews. Because participants in the control and experimental groups have similar socioeconomic characteristics at pretest (average age, gender ratios, number of adults in the household, type of orphan, and identity of financial provider), many of the observable academic performance differences may to some extent be attributable to the Suubi intervention.

Sexual risk-taking behavior and attitudes—Questions on sexual risk-taking behaviors involve the participant's history of sexual intercourse and, if the participant is sexually active, the frequency of unprotected sex. To assess attitudes toward engaging in risky sexual behaviors, questions were adapted from several sources (Auslander et al. 1992; Slonim-Nevo et al. 1994; Slonim-Nevo, Auslander, and Ozawa 1995). All were made culturally appropriate to the Ugandan situation (Ssewamala et al. 2008). The scale includes six items: "I believe it's OK for people my age to have sex with someone they've just met," "I agree that it's OK to force a girlfriend/boyfriend to have sex even when they don't want to," "I believe it's OK to have sex without protection with someone you know," "I believe its OK for people my age to have sex with someone they love," "I believe its OK for people to have sex before marriage," and "My religion teaches me that people should wait until they are married before they have sex." Responses are measured on a five-point scale, and scores range from 6 (agree a lot) to 30 (disagree a lot). During analysis, the item "My religion teaches me that people should wait until they are married before they have sex" was reverse coded. High scores indicate strong agreement with the measured attitudes and therefore strong intention to engage in risky sexual behaviors or strong approval of those behaviors.

Control variables—The key independent variable of this study is participation in the Suubi Project. This variable was dummy coded. The research examines whether participation affects the outcomes of interest: (1) savings (for the experimental group only, as verifiable savings data are not available for the control group), (2) educational plans and aspirations, (3) academic performance, and (4) sexual risk-taking behavior and attitudes (used as a measure of health-related outcomes).

To assess whether the experimental and control groups are comparable on important background characteristics, analyses examine several socioeconomic and demographic characteristics of respondents at pretest. These characteristics include age of the youth, gender of the youth, number of people in the respondent's household, type of orphanhood (respondents are classified as double orphans if they have no living biological parent or as single orphans if they have one living biological parent), employment status of the respondent's primary caregiver (defined as the person identified by the youth as responsible for the youth's welfare and well-being, which includes meeting basic food, housing, clothing, medical, and educational needs), and the primary caregiver's relationship with the respondent.

Table 1 presents the characteristics of the youths involved in the project. As the table suggests, 57 percent of the 277 youths involved in the Suubi Project are female. Participating families have, on average, six people in the household (the range is from two to 18 people). In addition to the respondent, households include three other children on average. These children range in age from 0 to 17 years. Almost 40 percent of participating youths are double orphans. Among the primary caregivers are grandparents, aunts, and uncles.

Table 1 shows that youths in the experimental and control groups differ to a statistically significant degree at pretest on three characteristics. Youths in the experimental group are found to have more people and more children in their household. In addition, the groups differ by the male caregiver. A higher percentage of youths in the experimental group reported having their

biological father present in the household than did youths in the control group. It is unclear how these differences affect the respective prospects of youths in the experimental and control groups. For example, resources available for the respondent may be limited if the household is large and particularly if it includes several youths. By contrast, the respondent may have ample resources if his or her father is present. As described below, analyses control for these factors and for the other characteristics listed in table 1.

Data Analysis

A repeated-measures analysis of variance (or general linear model) is used to estimate the effect of the intervention. The procedure is commonly used to test changes over time under different conditions (Judd, McClelland, and Ryan 2008). It is employed here to compare the experimental and control groups at pretest and at the posttest conducted 10 months following the intervention. Analyses control for all covariates that might confound the relations between Suubi Project participation and the outcomes of interest. Categorical variables, including gender, type of orphanhood, and the primary caregiver's employment status, are entered as fixed factors. Continuous variables, including participant's age and the number of people in the household, are entered as covariates. The model also includes controls for whether outcome data come from the pretest or 10-month follow-up, as well as a dummy variable indicating assignment to the experimental group. The terms for the interaction between the outcome factor and experimental group assignment (i.e., the interaction between posttest and the experimental group assignment), if statistically significant, demonstrate the effect of intervention. However, in the case of educational performance, for which pretest data are not available, the experimental group dummy is used to estimate the effect of the intervention.

Results

Savings Outcomes: Participation in the Suubi Project

Actual saving as an outcome measure—Results on saving indicate that participants in the experimental condition (with CSAs) do save. As mentioned earlier, three (2.2 percent) of the 138 participants in the experimental condition dropped out by the 10-month follow-up. Of the remaining 135 participants in the experimental condition, 10 participants (7.4 percent) did not save anything. Average monthly deposits ranged from less than a dollar ($0.14) to $77. Because unmatchable amounts (amounts over and above the match cap) are subtracted in calculating AMND, however, the range for AMND in this study is from $0.14 to $10 (the match cap). On average, youths in the experimental group save $6.33 per month, or $76 per year. There are no statistically significant differences in saving by gender ($6.33 in AMND for participating boys and $6.88 in AMND for participating girls) or type of orphanhood ($7 in AMND for double orphans and $6.33 in AMND for single orphans). After individual savings are matched, the participants accumulate, on average, $228 per year.[6]

Although the savings amounts in the Suubi Project (a monthly average of $6.33, or an accumulated yearly savings of $228, including the match) may seem very modest by the standard of Western countries, these are large sums in a poor country like Uganda, where the 2008 gross domestic product per capita (purchasing power parity) was $900 (Central Intelligence Agency n.d.). The $228 yearly savings are enough to pay for about 1.5 years of a student's secondary education in an ordinary semiurban public secondary school.

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[6]During the booster sessions, participants were asked where they got the money for their savings accounts. The youths and their caregivers had become very innovative at raising funds. Several mentioned that they were writing to long-lost relatives in cities like Kampala and towns like Masaka and Mbarara, asking them to contribute to the accounts; others raised domesticated animals (chicken, pigs, and rabbits) for sale, still others depended entirely on their primary caregiving families.

Attitudes toward saving money—Results in table 2 suggest that, although both the control and experimental groups shift attitudes toward saving money over the 10-month follow-up period, the movement is in the positive direction for youths in the experimental condition. In contrast, it is in the negative direction for youths in the control condition. Specifically, the mean score for experimental group participants on the measure of attitudes toward saving money is 13.17 (SD = 1.71) at pretest and 14.09 (SD = 1.01) at the 10-month follow-up. For the control group, however, the score declined from 14.54 (SD = .97) at pretest to 14.21 (SD = 1.34) at posttest. The attitudes-experimental group interaction is statistically significant ($F_{1,257}$ = 27.91, $p < .001$, $\partial\eta^2 = .1$).

Education-Related Outcomes

Educational plans—As figure 1 shows, 79 percent of control group participants reported at pretest that they planned to continue with their education and go on to secondary school, and 78 percent of the experimental group reported this. At the 10-month follow-up, the percent that reported planning to go on to secondary school dropped from pretest levels by 13 percentage points in the control group, but the percentage increased by 11 percentage points in the experimental group. The plans-treatment interaction is statistically significant ($F_{1,254}$ = 8.11, $p < .01$, $\partial\eta^2 = .031$).

There are several possible explanations for the reported changes in educational plans. Exposure to the experiment may increase participants' sense of hope or belief that they may continue their education and that they have the means (through their CSAs) to do so. In contrast, youths in the control group may not envision the possibility of moving on to the next educational level (without having the resources).

The percentage of experimental group adolescents who plan to go on to college or university remains almost unchanged over time (80 percent at pretest and 82 percent at posttest). However, the percentage decreases slightly (by 6 points, from 73 percent at pretest to 67 percent at posttest) for the youths in the control group. The changes are not statistically significant, nor is the difference in changes across groups.

Certainty of accomplishing educational plans—As mentioned earlier, this article measures perceptions of the level of certainty that participants assign to the likelihood that they will accomplish their educational plans. The measure serves as a proxy for the participants' level of confidence or realistic hope that their educational plans can be accomplished. For adolescents planning to pursue a college or university degree, the findings indicate a statistically significant change in this perceived level of certainty ($F_{1,188}$ = 7.57, $p < .01$, $\partial\eta^2 = .039$). There is a 27-percentage-point increase (60 percent at pretest to 87 percent at follow-up) in the experimental group's level of certainty. In contrast, there is almost no change in the level of certainty among control group members (57 percent at pretest and 56 percent at follow-up).

School grades—Participants' scores on the Uganda PLE instrument range from 4 (best) to 36 (worst). At the 10-month follow-up, youths in the experimental group score (26.82; SD = 7.11) better than their counterparts in the control group (28.87; SD = 6.81). The difference between the two groups' average is slightly more than 2 points and is statistically significant ($F_{1,225}$ = 4.52, $p < .05$, $\partial\eta^2 = .025$). However, a pretest measure is not available. Because the 15 schools performed similarly on PLEs and the model includes several controls that may be associated with performance, it is likely that at least some of the differences in grades at posttest can be attributed to the intervention.

School attendance—Results indicate that the Suubi intervention does not have a statistically significant measured effect on school attendance. Within the experimental group, the average percentage of days participants attend school remains the same at follow-up as it was at pretest (90 percent). For participants in the control group, however, attendance decreases by 9 percentage points (from 94 percent at pretest to 85 percent at the posttest).

Health-Related Outcomes

Sexual risk-taking behavior—The number of youths reporting sexual intercourse is too small to permit statistical analyses of group differences. At pretest, only three respondents (1 percent) reported ever having sexual intercourse. All three reported having first intercourse before age 15, and none of them reported using protection during the event. At the 10-month follow-up, seven youths reported that they had intercourse in the previous year. Four youths from the experimental group reported this, and all reported using protection. Of the three control group participants reporting intercourse, one reported using protection.

There may be several reasons why participants reported low rates of sexual activity. One reason may be the young average age of respondents (13.7 years). Second, although the sample for the study consists of orphans, the participants are from relatively stable rural communities. They may be more conservative than urban youths of the same age. Third, the participants may underreport their own sexual experiences. Thus, 23 percent of participants reported at pretest that they know one or more friends who had sexual intercourse, and 18 percent reported feeling pressure to have sex.

Because the number of reported sexual risk-taking behaviors is small, the focus here is on estimating the effects of the intervention on adolescents' attitudes toward sexual risk-taking behaviors. Similar to self-reported behaviors, attitudes may differ from the actual objectively measured behaviors. This is especially true of something so socially charged as sexual behaviors, and results should therefore be interpreted with caution (Armitage and Conner 2001). However, youths' attitudes and normative beliefs, especially those concerning the morality of having sex at a young age and the positive perception of safe sex practices, are among the building blocks contributing to and shaping future sexual risk-taking behavior (White, Terry, and Hogg 1994; Raj 1996; Kotchick et al. 2001; MacPhail and Campbell 2001).

Attitudes toward sexual risk-taking behavior—The results show an observable difference between the experimental and the control groups in changes on attitudes toward sexual risk-taking behaviors, including changes on attitudes toward abstinence from sex until marriage and unprotected sex over the period of interest. On the scale used to measure the construct (high scores represent strong agreement with the measured risk-taking behaviors), control group mean scores increase by 2.77 points, from 8.22 points (SD = 3.3) at pretest to 11.09 points (SD = 4.8) at posttest. Adolescents in the experimental group reported a mean score of 9.95 points (SD = 3.91) at pretest and 9.04 points (SD = 3.64) at posttest, for a reduction of .91 points over time. The estimated effect of the intervention is statistically significant ($F_{1,254} = 28.66$, $p < .001$, $\partial\eta^2 = .101$).

Study Implications

Although the results presented here are from a relatively small sample ($N = 277$), a short follow-up period (10 months), and a group probably not representative of urban adolescents, several implications are worth noting. First, the results suggest that a family-centered economic intervention could have a role in providing care and support for one very vulnerable group (orphaned youths), at least in a rural setting. The results suggest that providing support and incentives to poor rural families caring for orphaned youths in Uganda can enable the families

to save for the educational needs of the youths under their care. They also suggest that, regardless of gender or type of orphanhood, all youths can fully participate in a family-centered economic-empowerment intervention.

Second, the results suggest that matched-savings programs might achieve positive long-term effects on the participants by incorporating asset-building training and a mentorship component. The findings imply that such programs improve participants' academic aspirations and performance, increasing their motivation to make careful and responsible choices regarding sexual risk taking. If the future looks brighter, youths may be more inclined to preserve it.

Third, all in all, economic empowerment models may be an important ingredient in the much-needed multidimensional and combined approach to the care and support of orphaned youths, especially those in one of the poorest regions on earth: sub-Saharan Africa. Just like the Suubi Project, the multidimensional approach may combine the usual care for orphaned youths with monetary savings programs, training in financial management, and other microfinance-related services that would empower the youths to eventually live an independent and productive life.

It is important to note that the Suubi Project is implemented as a bundle of services that include financial education, mentorship, and a CSA. It is therefore not possible to identify the specific aspects of the Suubi Project that directly influence the outcomes reported in this article. Future studies should consider varying the elements of the Suubi intervention so that the effectiveness of each specific element can be discerned.

It would also be useful to track other outcomes for the youths. In particular, it would be helpful to examine their family stability, later school attendance, academic achievement, and health. Nevertheless, it may be worthwhile to consider further experiments with economic empowerment interventions for care and support of orphaned youths in poor developing countries like Uganda. It also may be worthwhile to extend the models to other populations and settings. Indeed, UNICEF, Save the Children, and the child advocacy and service institutions might consider integrating similar economic empowerment approaches in their program designs.

Acknowledgments

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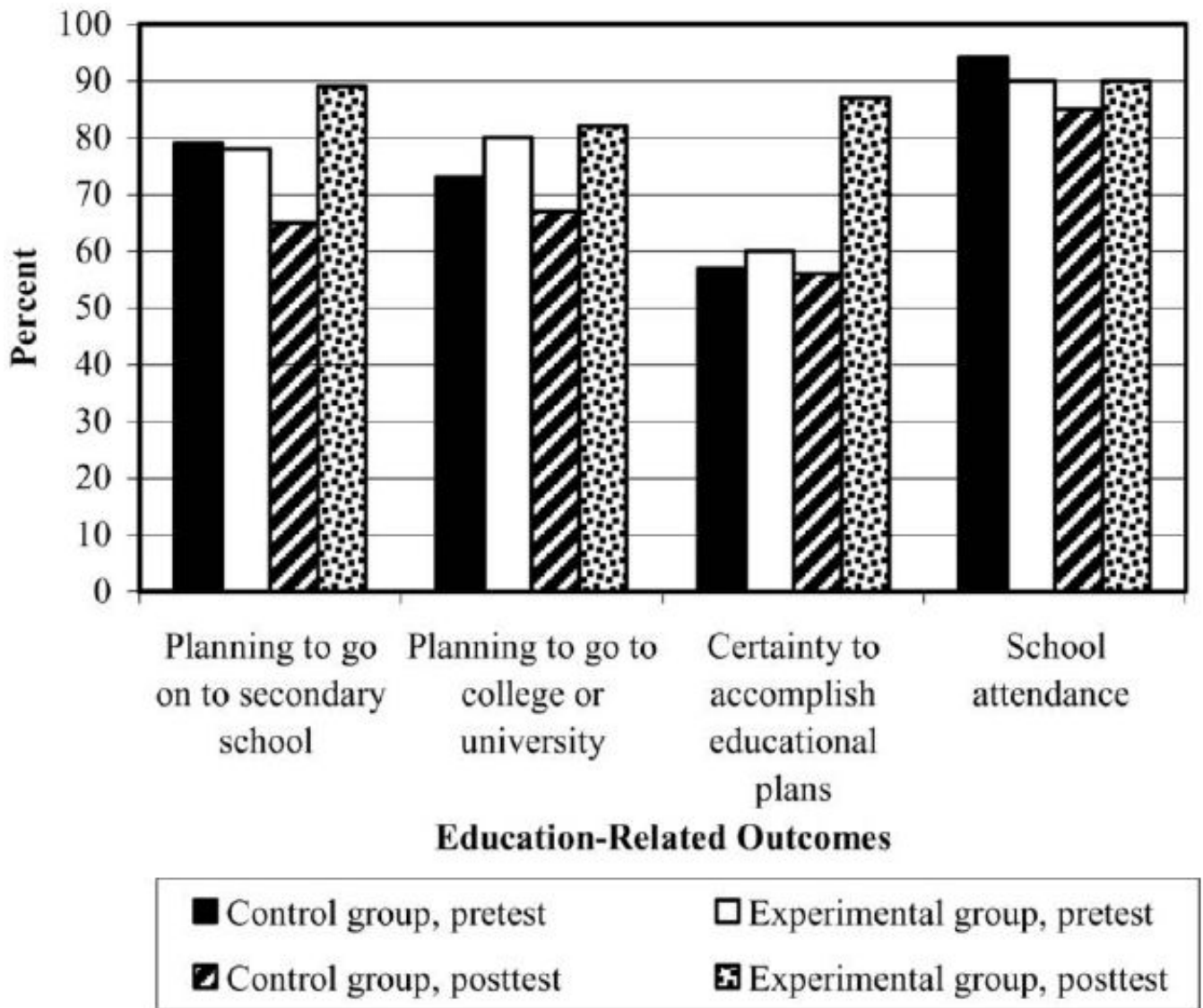World Bank. World Development Indicators 2008. Washington, DC: World Bank; 2008.

Fig. 1.
Education-related outcomes: experimental and control groups compared at pretest and 10-month posttest.

Table 1

Sociodemographic Characteristics of Suubi Participants

KEY CHARACTERISTIC	TOTAL SAMPLE (N = 277)		CONTROL GROUP (n = 142)		EXPERIMENTAL GROUP (n = 135)		t/χ²
	Mean or n	SD or %	Mean or n	SD or %	Mean or n	SD or %	
Female youth	157	57	75	53	82	61	1.77
Mean youth age (years)[a]	13.72	1.4	13.64	1.48	13.81	1.31	-.99
Average number of people in household[a]	6	2	6	2	7	3	-2.14*
Average number of children in household[a]	3	2	3	2	4	3	-2.66**
Report father not living	222	81	117	84	105	78	1.21
Report mother not living	160	58	81	58	79	59	.01
Report both parents not living	106	38	57	40	49	36	.43
Caregiver employment status:							2.99
Formal employment	105	37	48	33	58	43	
Self-employed	172	62	94	67	77	57	
Female caregiver:							3.46
Biological mother	108	39	50	37	58	43	
Stepmother	9	3	5	4	4	3	
Grandmother	100	36	57	40	43	32	
Aunt	43	16	20	14	23	17	
Sister	6	2	4	3	2	2	
No woman	11	4	6	4	5	4	
Male caregiver:							13.54*
Father	79	29	33	23	46	34	
Grandfather	37	13	17	12	20	15	
Uncle	30	11	11	8	19	14	
Brother	10	4	5	4	5	4	
Other	4	1	3	1	1	1	
No male present	117	42	73	51	44	33	

NOTE.—SD = standard deviation.

[a]Results in the SD or % columns are standard deviations.

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*
$p \leq .05.$

**
$p \leq .01.$

Table 2

Educational and Health Outcomes in Experimental and Control Groups at Pretest and 10-Month Posttest (*N* = 277)

	CONTROL GROUP (*n* = 142)		EXPERIMENTAL GROUP (*n* = 135)		
	Pretest	10-Month Posttest	Pretest	10-Month Posttest	*F*-TEST
Attitude to saving money:					
Importance of saving[a]	14.54 (.97)	14.21 (1.34)	13.17 (1.71)	14.09 (1.01)	27.91**
Educational plans:					
Planning to go on to secondary school	79	65	78	89	8.11**
Planning to go to college or university	73	67	80	82	1.36
Certainty to accomplish educational plans	57	56	60	87	7.57**
Academic performance:					
School grades[a]	NA	28.87 (6.81)	NA	26.82 (7.11)	4.52*
School attendance	94	85	90	90	1.97
Sexual risk-taking behaviors:					
Attitudes toward sexual risk taking[a]	8.22 (3.3)	11.09 (4.8)	9.95 (3.91)	9.04 (3.64)	28.66***

NOTE.—NA = not available. Unless otherwise specified, results in the first four columns are presented as percentages. The reported *F*-tests for significance of the experimental effect represent statistical significance of the outcome variable × experimental group interaction term indicating a statistical significance of difference between change in outcome for experimental and control groups from pretest to posttest. Further, the tests (*F*-tests) are from models that include controls for gender, participant's age, household size, type of orphanhood, and employment status of the primary caregiver. The *F*-test for the academic performance variable tests something slightly different: the experimental dummy rather than the experiment × follow-up interaction. For details, see analysis section.

[a]Results in the first four columns include means, with standard deviations in parentheses.

*
p ≤ .05.

**
p ≤ .01.

***
p ≤ .001.