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A Novel Economic Intervention to Reduce HIV Risks Among School-Going AIDS Orphans in Rural Uganda

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Abstract

This study tested an economic intervention to reduce HIV risks among AIDS-orphaned adolescents. Adolescents (n = 96) were randomly assigned to receive the intervention or usual care for orphans in Uganda. Data obtained at baseline and 12-month follow-up revealed significant differences between the treatment and control groups in HIV prevention attitudes and educational planning.

Keywords

International; AIDS orphaned adolescents; AIDS orphan care and support; Economic intervention; Africa; Poverty

AIDS is a global public health and medical crisis, particularly for the people of sub-Saharan Africa. In Uganda—a country especially threatened by AIDS—over 1 million children have lost one or both parents due to the disease [1]. The number of these AIDS orphans are expected to increase by 50,000 annually [2]. Facing multiple problems, AIDS orphans in Uganda sorely need responsive interventions to help them prevent their own HIV infection and advance their educational and economic futures, despite their disadvantaged status. Poverty is a risk factor for many health and medical problems, yet the majority of intervention studies do not target economic well-being as a primary outcome.

This study tests an economic intervention for AIDS-orphaned adolescents in Uganda. Based on asset theory [3], the intervention employs such assets as children savings accounts, family microenterprises, and scholarships to fight poverty and promote health and social functioning. Asset theory predicts that an orphaned adolescent with no belief that he/she has the economic means to afford postprimary education is more likely to have high levels of depression, academic difficulties, and consequently drop out of school, and is less likely to be able or have the desire to avoid negative health consequences. However, provided with the economic means, this adolescent may think and behave differently, staying in school, and avoiding health-risk behaviors. Asset theory is consistent with other behavioral and psychosocial theories (e.g., theory of reasoned action [4] and social learning theory [5]). Prior studies have illustrated the relationship between asset-ownership and adolescents' health and educational outcomes [6–

8]. None of these studies, however, focused on care and support for adolescents through microfinance.

Based on asset-theory, the pathway we are proposing as a result of an adolescent participating in the microfinance/economic intervention would be that intervention creates and/or increases adolescents' savings, which in turn, increases their overall resources. Greater resources improve adolescents' expectations for the future and their well-being, leading to continued schooling (future educational planning) and positive health behaviors (including attitudes toward engaging in HIV risk behaviors).

Methods

Study design

In an experimental design (protocol approved by Columbia University IRB), 96 AIDS-orphaned adolescents from seven comparable primary schools in Rakai district of southern Uganda were randomly assigned to experimental ($n = 50$) and comparison conditions ($n = 46$). Randomization was carried out at the level of the school. Each adolescent assented to study participation, and had the informed consent of at least one guardian.

In 1996, the Ugandan government introduced free-universal primary education, which increased primary school enrollment among orphaned children [9]. The sample for this study is most likely representative of school-going AIDS orphaned children in rural Uganda.

Adolescents in the sample were primarily female (70%), and had an average age of 13.8 years. Experimental adolescents were slightly younger and were less likely to have a living father (Table 1).

All adolescents in the study received usual care for AIDS orphans in Uganda, which included peer counseling, health education, and scholastic materials. In addition, experimental adolescents received a family economic intervention, which included a Child/Youth Development Account (CDA) and six 2-hour classes on career planning, career goals, microfinance, and financial well-being. Held in the adolescent's name in a bank, the CDA is funded by contributions from the adolescent's family members/friends, with 2:1 matching funds from the intervention. Account holders may use the CDA only to pay their educational expenses, or to invest in family income-generating activities.

Measurement and analysis

Outcome data were obtained through 1-hour individual assessment interviews, conducted by a research assistant blind to study assignment, prior to intervention delivery and 12 months postintervention. Assessment items, adapted for Ugandan adolescents from previously tested scales in South Africa and United States [10] were translated into the local language and checked for wording and meaning, and pre-tested on Ugandan adolescents by Ugandan research staff. Instruments tapped: (a) HIV prevention attitudes (six-item scale asking youth to rate opinions regarding HIV prevention behaviors on a four-point continuum from 1 = strongly disagree to 4 = strongly agree); and (b) educational planning, measured via a single item where adolescents were asked: what are your educational plans after senior secondary (the equivalent of high school in the U.S. education system)? Adolescents were dichotomized into those who reported no educational plan versus all other options.

Changes in mean scores from baseline to 12-month follow-up between experimental and control arms were compared using multivariate analysis of variance on each outcome variable, controlling for gender and age. Effect size was measured via partial eta-squared, in which small, medium, and large effects were operationalized as .01, .06, and .14, respectively [11].

Results

Adolescents did not significantly differ between conditions on their baseline scores on HIV prevention attitudes or educational plans. At 12-month follow-up, experimental adolescents had improved their HIV prevention attitudes scores (from 17.2 to 18.5), whereas youth within the comparison condition revealed decreased scores (from 18.5 to 17.6), $F(3, 79) = 3.9, p < .05$, partial eta-squared = 0.1, 95% confidence interval (CI) of the difference = $-.27$ to $-.01$. The increase in HIV prevention attitudes among experimental adolescents with 0.1 partial eta-squared indicate an effect size between medium and large. These effects are a step in the positive direction. They imply that experimental adolescents had a more positive opinion about using HIV prevention methods.

Experimental adolescents reported a significant increase in educational plans (88% to 96%), whereas youth in the comparison condition evidenced a decrease (93% to 83%) $F(3, 78) = 4.4, p < .05$, partial eta-squared = .07, 95% CI of the difference = $-.02$ to 2.5. The 0.07 partial eta-squared indicates a medium effect size. These results imply that experimental adolescents had increased aspirations for the future, in contrast to the results for the control group.

Savings outcomes data indicated that experimental adolescents saved an equivalent of US\$8.85 monthly. With matching rate of 2:1, the average participant accumulated US\$26.55 monthly or US\$318.60 per year. This is an impressive amount in a poor country like Uganda, and was sufficient to cover a student's postprimary education for 2 years. (Participants in the control arm had no bank accounts.)

Discussion

These findings suggest that AIDS-orphaned adolescents can benefit from a simple and feasible family economic intervention. Representing a departure from individual-level programs focused on behavioral risks for HIV infection, economic interventions may effect change by giving adolescents and their families a means to improve their lives in tangible and rewarding ways. Such interventions warrant further investigation as a way to reverse the disquieting trajectory of HIV infection in sub-Saharan Africa.

Not without flaws—including a relatively small sample size, self-report measures, a focus on school-going orphaned adolescents, and a relatively short follow-up period—this study is nonetheless an important step in the examination of family economic interventions for at-risk African youth. Future work might profitably involve larger clinical trials and expanded behavioral outcome measures.

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References

- [1]. Joint United Nations Programme on HIV/AIDS (UNAIDS). Report on the Global AIDS epidemic. UNAIDS; May. 2006 2006
- [2]. World Bank. Helping the Children, World Bank Directory of HIV/AIDS intervention in Africa. Author; Washington, DC: 2000.

- [3]. Sherraden M. Stakeholding: notes in theory of welfare based on assets. *Soc Serv Rev* 1990;64(4): 580–601.
- [4]. Ajzen, I.; Fischbein, M. *Understanding Attitudes and Predicting Social Behavior*. Prentice Hall; Englewood Cliffs, NJ: 1980.
- [5]. Bandura, A. *Social Learning Theory*. Prentice Hall; Englewood Cliffs, NJ: 1977.
- [6]. Sherer RD Jr, Bronson JD, Teter CJ, et al. Microeconomic loans and health education to families in impoverished communities: implications for the HIV pandemic. *J Int Assoc Physicians AIDSC Care* 2004;3(4):110–4.
- [7]. Zhan M, Sherraden M. Assets, expectations, and children's educational achievement in female-headed households. *Soc Serv Rev* June;2003 :191–211.
- [8]. Booysen F, Van Der Berg S. The role of social grants in mitigating the socio-economic impact of HIV/AIDS in two free state communities. *S Afr J Econ* 2005;73:545–63.
- [9]. United Nations Children's Fund [UNICEF]. *Africa's Orphaned Generations*. Author; New York: 2003.
- [10]. Bhana A, Petersen I, Mason A, et al. Children and youth at risk: adaptation and pilot study of the CHAMP (Amaqhawe) programme in South African. *J S Afr AIDS Res* 2004;3:31–41.
- [11]. Stevens, JC. *Applied Multivariate Statistics for the Social Sciences*. Lawrence Erlbaum; Hillsdale, NJ: 1992.

Table 1

Characteristics of 96 Ugandan Orphans and bivariate tests examining significant differences

Variable	Experimental (n = 50)	Control (n = 46)	Total	t/x ²
Child's age (mean)	13.6 (1.1) ^I	14.0 (1.0) ^I	13.8 (1.1) ^I	-2.18*
Child gender				
Male	28% (n = 14)	33% (n = 15)	30% (n = 29)	.24
Female	72% (n = 36)	67% (n = 31)	70% (n = 67)	
Mean # <17 yrs. in household	3.4 (2.7) ^I	3.1 (1.6) ^I	3.3 (1.9) ^I	.69
% no father	54% (n = 27)	74% (n = 34)	64% (n = 61)	6.53*
% no mother	44% (n = 22)	37% (n = 17)	41% (n = 39)	.35
% no father/mother	22% (n = 11)	24% (n = 11)	23% (n = 22)	.02

* p .05

^I Standard deviation.