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Findings from SHAZ!: A Feasibility Study of a Microcredit and Life-Skills HIV Prevention Intervention to Reduce Risk among Adolescent Female Orphans in Zimbabwe

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SUMMARY

This study tested the feasibility of a combined microcredit and life-skills HIV prevention intervention among 50 adolescent female orphans in urban/peri-urban Zimbabwe. Quantitative and qualitative data were collected on intervention delivery, HIV knowledge and behavior, and economic indicators. The study also tested for HIV, HSV-2, and pregnancy. At 6 months, results indicated improvements in knowledge and relationship power. Because of the economic context and lack of adequate support, however, loan repayment and business success was poor. The results suggest that microcredit is not the best livelihood option to reduce risk among adolescent girls in this context.

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Keywords

HIV; HSV-2; orphans; Zimbabwe; microcredit; microfinance; Africa; poverty; gender

Background

Zimbabwe, formerly one of southern Africa's most promising nation-states, is now characterized by extreme economic instability, where current inflation tops 25,000% and unofficial estimates run as high as 150,000% (Shaw, 2008). This instability has been linked to Zimbabwe's high HIV infection rates; the fourth highest in the world (UNAIDS & WHO, 2006). Adolescent women (under age 20) in Zimbabwe are at particular risk: they are three times as likely as their male counterparts to be HIV infected and they have the highest HIV incidence of any group in the country (Central Statistics Office Harare, 2007; UNAIDS/WHO, 2006).

Data on adolescent sexuality and reproductive health from across the globe uniformly indicate that HIV infection and risk behavior are intimately connected to the social and economic context of young people's lives (Mathur, Malhotra, & Mehta, 2001). The dual experience of poverty and gender inequality increases adolescent girls' risk of HIV through factors largely outside of their control, including limited access to health information and services, lack of access to education and related economic opportunities, and exposure to transactional sex and intimate partner violence (Dunbar et al., 2002; Dunkle et al., 2004b; Krishnan et al., 2007; Rivers & Aggleton, 1999). Girls that have been orphaned by AIDS or other causes (of which Zimbabwe has over one million (UNICEF, 2004) are even more vulnerable to HIV compared with nonorphans (Gregson et al., 2005; Kang, Dunbar, Laver, Padian, & 2008).

There is a clear and urgent need for programs to target this vulnerable and economically disadvantaged group, for whom traditional educational and behavioral-change HIV interventions are unlikely to achieve sustained reductions in risk or infection, in part because they do not address the contextual factors of poverty and gender inequities that contribute to HIV risk (Caceres, Rosasco, Mandel, & Hearst, 1994.; Krishnan et al., 2007; Snow & Buss, 2001). The SHAZ! (Shaping the Health of Adolescents in Zimbabwe) intervention is designed to prevent HIV by addressing these contextual factors.

We conducted a pilot of SHAZ!, which combined life-skills education with access to microcredit (extending small loans to entrepreneurs too poor to qualify for traditional bank loans), based on a theoretical framework adapted from Kabeer's work on empowerment (Kabeer, 1999) and empirical evidence that microcredit programs can improve reproductive health outcomes among women participants (Amin, Kabir, Chowdhury, Ahmed, & Hill, 1994; Schuler, Hashemi, & Riley, 1997).

While the overall goal of the SHAZ! pilot was to reduce HIV and related sexual risk, the present study piloted the *feasibility* of the SHAZ! approach, which aimed specifically to (1) identify methods for recruiting and retaining out-of-school orphan adolescent girls for intervention and evaluation activities, (2) examine the appropriateness of delivering a

microcredit intervention among this target population, and (3) refine intervention components and evaluation tools for a future large-scale intervention study. The evaluation used a mixed-method (quantitative and qualitative) approach among a small sample of 50 participants living in an urban setting near Zimbabwe's capital city of Harare (Caracelli & Greene, 1997)

METHODS

SHAZ! Pilot Intervention Overview

The SHAZ! pilot integrated three essential components: life-skills–based HIV education, business training and mentorship, and access to microcredit loans for business development. These components were implemented sequentially in Chitungwiza and Epworth, two urban/peri-urban communities near the capital city of Harare.

Life Skills—The SHAZ! life-skills curriculum was adapted from existing materials used in Zimbabwe and elsewhere; primarily *Talk Time* (developed by the Zimbabwean Centers for Disease Control targeting young Zimbabweans aged 15–29 and covering basic HIV/AIDS information (CDC, 2003)), and Stepping Stones (a broad training package in gender, HIV, communication and relationship skills (Welbourn, Williams, & Williams, 1995)). The resulting 10-part interactive training guide, delivered by SHAZ! life-skills trainers within groups of 25, covered the topics of HIV and reproductive health knowledge and skills (e.g., condom use) as well as issues related to gender, culture, and physical and sexual violence. Taken together, the life-skills modules were meant to strengthen the capacity of adolescent girls to confront the multitude of social and cultural forces that place them at risk.

Business Training and Mentoring—Business training was provided to prepare participants to engage in microenterprise activities upon receipt of their loan, and a mentorship component was designed to support participants to start up and manage their businesses. These components were carried out in partnership with local nongovernmental organizations (NGOs) and Zambuko Trust, the partner microfinance institution (MFI). An initial 5-day session covered topics such as goal setting, developing business ideas and business plans, and cash flow and management, culminating in the development and submission of business plans for loan financing. A 4-day skill-building workshop was offered in soap making, tie and dye of materials, or candle making. In addition, the SHAZ! research team worked with an existing mentorship program designed for high-school–aged girls to develop a similar program matching successful business women in the local community with younger and less-educated SHAZ! participants. Mentors were identified through community outreach efforts, and they agreed to meet regularly with participants to offer support for business-related matters.

Microcredit Loans—The partner MFI was supported through a grant from the United States Agency for International Development (USAID) to manage and secure all loans provided to SHAZ! participants. Zambuko Trust staff reviewed business plans and approved loans ranging from ZW$300,000 to ZW$500,000 (US$51 to US$87 at that time) for plans deemed viable. Because most participants did not have bank accounts, nor were they eligible

to open them because they were underage and/or lacked official documentation (e.g., birth certificate or national ID), the MFI offered to keep money for participants until it was needed for purchases or investments. Interest rates were set at 30%, compared with commercial lending rates of 50% to 60%, with repayment required within 3 to 9 months. The SHAZ! program used a modified group-lending model based on the concept of "mutual guarantee" (Watts et al., 2007), which provides and organizes loan repayment through weekly group meetings to instill social pressure and support to repay. Participants repaid loans to a loan officer and were informed that future loans from the MFI would be contingent on full repayment.

Research Design and Study Procedures

A subset of 50 participants, who met the eligibility criteria of being orphaned and out of school, was recruited from a cross-sectional survey (N=200) conducted to assess HIV prevalence and risk factors among adolescent girls (aged 16–19) in our research sites (Kang et. al. 2007). This sample size was chosen based on the number needed to pilot the life-skills curriculum (delivered through groups of 25) in two sites in order to inform ongoing intervention and research design and to pilot test and refine study instruments. The study did not intend to assess quantitative outcomes of the evaluation and, therefore, it was not powered to do so (Caracelli & Greene, 1997; Cook & Campbell, 1979).

Quantitative data were collected through Audio Computer-Assisted Self-Interviewing (ACASI) techniques and face-to-face interviews, including information on demographics, sexual behavior (including transactional sex), relationship power, and economic indicators. Orphan status was characterized as maternal (having lost a mother only), paternal (having lost a father only), or double (having lost both parents). The interview asked seven questions about general control in primary sexual or nonsexual romantic relationships (those considered boyfriends with whom they were not having sex), based on the Sexual Relationship Power Score adapted for use in South Africa (Dunkle et al., 2004a; Pulerwitz, Gortmaker, & DeJong, 2000). Scores were divided into tertiles and categorized as high, medium, or low relationship control. Experience of violence was defined as physical (being hit, pushed, or kicked), sexual (unwanted touching that did not lead to forced penetration), or forced sex (unwanted, forced penetration). Participants were tested for HIV, Herpes Simplex Virus Type 2 (HSV-2)—the most prevalent STI among adolescent women in Zimbabwe—and pregnancy, including pretest and posttest and supportive counseling.

Quantitative baseline and process data were summarized, including training attendance, the number of business plans developed and loans received, and loan repayment status at 6 months. Pre- and postintervention comparisons were made between baseline and 6 months using chi-square or Fischer Exact tests for significance. These data as well as the associated p-values are provided for descriptive purposes; sample sizes precluded quantitatively assessing outcome effects of the pilot study.

Semistructured, open-ended interviews were conducted in collaboration with the MFI partner among a subset (conveniently sampled by study staff) of 13 loan recipients to identify factors associated with business start-up and management, and loan repayment (e.g., having previous experience and/or family support). The purpose of these interviews was to

rapidly identify barriers associated with loan repayment in an effort to introduce programmatic responses to improve loan repayment. The data were analyzed using simple and rapid content analysis and ranking of factors by priority (Miles & Huberm, 1994). Information was analyzed regarding the mentorship component from monitoring reports. Focus group discussions were conducted postintervention and synthesized for ongoing improvement of life-skills sessions.

The protocol for this study was reviewed and approved by U.S. and Zimbabwean Internal Review Boards.

RESULTS

Quantitative Findings

Baseline, Follow-up, and Process Evaluation Statistics—Of the 49 participants for whom there are complete data at baseline (Table 1), 43% had lost their mother only, 14% has lost their father only, and 43% had lost both parents. The mean age was 17.5 years, and the majority (80%) had never been married. While over half (55%) had completed “O” levels (first 4 years of secondary school education), 45% had achieved only some secondary school or less. Among these participants, 23% had ever been homeless. Of the 43% that had ever had sex, 45% reported the main reason for engaging in sex the first time was for love, pleasure, or wanting to marry; 20% reported engaging in sex because they were aroused. Conversely, 25% reported being tricked or coerced to have sex, 5% reported being forced, and 5% reported that they needed food, money, or school fees. It should be noted that 43% reported that their first sexual experience involved physical force, regardless of their primary reason for engaging in sex for the first time. Four participants were HIV positive (8%), six were HSV-2 positive (12%), and none was currently pregnant.

Consistent participation in intervention activities was high (Table 2): training attendance averaged 80%, and 80% developed business plans to receive microcredit loans. Among participants, 98% reported in ACASI interviews that the life-skills training was “useful”; compared with 97% for business training and 60% for mentorship. Overall, 98% reported satisfaction with SHAZ!. At 6 months, 20% had begun loan repayment and 6% had repaid in full, out of an expected 70%.

At 6 months postintervention, significantly more participants reported having their own income (44% vs. 6 %, $p<0.001$) and their own savings (88% vs. 0%, $p<0.001$), although this may simply reflect the infusion of cash received through the microcredit loan. HIV knowledge increased, particularly among participants who answered correctly all questions about how HIV is transmitted (38% vs. 16%, $p<0.001$). The number of participants that reported high relationship power in their current sexual partnership increased from 1 to 4, $p=0.16$; the number of participants reporting high relationship power in nonsexual romantic relationships increased from 1 to 8, $p=0.04$. Twenty percent reported ever experiencing physical violence at baseline, and 14% had ever experienced sexual violence or rape. At 6 months, 16% reported experiencing physical violence in the past 6 months, 8% reported sexual violence, and 8% reported forced sex. Because the reporting timeframe was different (“ever” at baseline, “in the past 6 months” at follow-up), no statistical tests were conducted

for this variable. No statistically significant changes were reflected in future plans or aspirations, current sexual activity, or condom use.

Qualitative Findings

Microcredit: Factors Influencing Business Management and Loan Repayment

—Semistructured interviews were conducted with a sub-set of loan recipients. At the time of the interviews (3 to 4 months after receiving the loan), only one participant had paid in full, five were making payments according to their repayment schedule, two had started payments but were not on schedule and five participants had not yet made payments and did not envision being able to do so in the future.

Qualitative analysis of these interviews revealed several factors that were supportive of or that posed challenges to business start-up, maintenance, and/or loan repayment. Factors conducive to success included having previous business experience or capital (e.g., a sewing machine), family support (usually in the form of mothers or aunts already engaged in a business), or an alternative source of additional financial assistance. Challenges included the overall macroeconomic environment, which in turn created poor markets, inadequate financing (i.e., loan amounts insufficient to fulfill business plan), and external economic shocks (e.g., family illness). Girls' vulnerability, evidenced through theft or confiscation of goods and threats to personal safety, was also a barrier to success. Among the six participants that had paid in full or were on schedule with their payments, five reported having previous business experience or capital and/or family support. The single participant who paid in full reported having both. Neither assets nor family support were reported by those unable to make payments.

Although a wide range of businesses was initially proposed by SHAZ! participants (including interior design, tye and dye of material, and hairdressing), 10 of 14 participants went into "buying and selling". Buying and selling was a business characterized by purchasing goods in town and transporting them for sale in areas where such goods were scarce. The unforgiving economic context forced participants in this business to sell on credit, which demanded unanticipated, frequent, and costly follow-up trips for collection. Furthermore, the transportation of goods back and forth from town to rural areas was itself hazardous at times, making girls vulnerable to theft and the confiscation of goods or the extraction of bribes for the release of goods by police who were controlling the transportation of maize (used for a staple "sadza"). All 10 participants engaged in this business reported some type of threat related to these issues, as evidenced by these comments:

> Transport costs drain our resources. You spend money on going only to leave your goods… because we sell on credit. Sometimes you have to make several trips before you collect all the money that is due to you.
>
> —Epworth participant
>
> If it was not for the GMB [grain marketing board] police, I would prefer to get maize instead of cash because I sell maize for a higher price in the city. But if I take maize they will stop me and ask me for money, or they threaten to take my maize.

—Chitungwiza participant

Risk was not limited to the security of goods, but was also experienced as threats to personal safety. Many participants reported or feared being harassed by men, including the police. This vulnerability was heightened by the fact that participants were traveling to unfamiliar places, with presumably better markets, but lacking safe accommodation.

> In the bus at the compound, I always encountered men who wanted to have a relationship with me. I would tell them I was married or that I wasn't interested, but it wouldn't stop them.
>
> —Chitungwiza participant

Theft was a concern not only on the road, but in participants' homes as well, given that most participants did not have secure places to store money, goods, and materials related to their businesses.

Such challenges were reported consistently by participants, regardless of repayment status. However, those who reported having family support were able to manage their business loans in spite of these challenges. Family support helped cushion economic shocks, such as theft, or external shocks that demanded unexpected payments because of family illness or death, for example. Family support also offered some protection against hazards participants might encounter on the road, however family support was not the norm for this population:

> I had established a huge clientele and had several orders but what was setting me back was [that] my clothes, blankets, and the money I had made were stolen…[But] I will be able to meet the demands [of loan repayment] because my uncle is helping me pay back the loan.
>
> —Chitungwiza participant
>
> The dust road was not safe, but my personal safety was not compromised because we… were always dropped off just by my aunt's gate [where they stayed].
>
> —Epworth participant

Mentorship

A mid-point review of the mentorship component highlighted a lack of trust between mentors and participants: mentors reported that SHAZ! participants were looking for money from their mentors without working for it. Similarly, participants reportedly perceived that mentors were looking for free labor through requests that participants work with them "on attachment," which is similar to an unpaid internship. The reports also suggest that, overall, SHAZ! participants were not able to keep commitments to meet with their mentors because they lacked money for transport, and at times mentors were unavailable because they were occupied with their own businesses. Furthermore, the lack of regular and structured meetings hampered the level of support mentors might have been able to provide.

SHAZ! Life-Skills Training

Analysis from focus group data suggested that life skills sessions were popular and may have provided support that would normally be filled by family members, particularly aunts,

who traditionally discuss sensitive issues with girls. This notion was summed up by one participant who stated, “In SHAZ! we found very good aunts.” Focus group discussions suggested that participants gained a sense of personal value and hope, as well as skills to communicate effectively and assertively, including learning to say and mean no. Although life-skills sessions were highly valued, described by participants as “fun beyond fun” and “attention-grabbing” as well as “meaningful,” participants asked for the addition of more courses on physical and sexual abuse, assertiveness training, and issues related to HIV/AIDS.

> The [module] on sexual abuse… and the one on… HIV information…should be lengthened so that everyone gets a chance to air her view.
>
> —Epworth participant

> I would like more on the topic about protecting yourself as a young woman and I think more time should be spent on the issue of living with HIV and AIDS.
>
> —Epworth participant

DISCUSSION

The results of the SHAZ! pilot feasibility study revealed important weaknesses in the intervention as it was first conceptualized, which subsequently informed the ongoing development of the current SHAZ! program design. Microcredit has been heralded as an important strategy for overcoming poverty around the world. As a tried and tested model for economic empowerment among adult women in other resource-poor settings, it made common and scientific sense to test the feasibility of microcredit to economically empower adolescent girls. Furthermore, the choice of this model was informed by a theoretical framework and input from our research communities. In the end, however, only a small percentage of the participants were able to pay back loans. A contributing factor was, no doubt, Zimbabwe’s macroeconomic environment, which changed dramatically between 2002 when the project was envisioned and 2004 when the pilot was implemented. This period was marked by unprecedented inflation, increasing from 56% to 238% (World Bank Development Indicators Database, 2008), now estimated at 150,000% (Shaw, 2008). This environment proved problematic, as loans received and profits gained diminished in value daily. Although the failure of the microcredit component may be attributable to the adverse economic conditions in Zimbabwe, a microcredit program implemented at roughly the same time with adolescent girls in Nairobi, Kenya, within a much more stable economic context, revealed similar findings in terms of participants’ ability to manage microcredit loans (Population Council and University of California, 2006).

A major weakness in the present design arose through tailoring of the microcredit component for the target population to ensure that the loan process was without barriers to the adolescent participants. For example, as a prerequisite for lending, most microcredit programs require that clients have savings and/or existing businesses that they wish to scale-up through loan financing. Because participants in this study had neither, the MFI partner agreed to relax their standards to make microcredit work for them. In addition, because loan amounts were small and participants needed the entire amount to start up businesses, SHAZ!

utilized a modified group-lending model (as described above), paying out loans in one lump sum rather than through weekly installments delivered only when all group members paid on time. Without the social pressure to repay or the incentive for members to help repay in times of financial hardship—aspects intrinsic to the design of true group-lending models—the present model was less successful. Through efforts to modify microcredit for adolescent girls, the SHAZ! model violated some of microcredit's known best practices.

It is not possible to know if the SHAZ! microcredit component would have been successful if these best practices had been implemented. The recent Intervention with Microfinance for AIDS and Gender Equity (IMAGE) study in South Africa that combined microcredit with gender education resulted in decreased exposure to reported violence among program participants. Although HIV acquisition was not measured at the individual level (and therefore researchers have no evidence of reduced HIV risk), the results regarding women's empowerment are promising (Pronyk et al., 2006). It is important to note, however, that the IMAGE program was delivered among adult women with no modifications to the existing microcredit program. Under such conditions, none of the SHAZ! participants would have been eligible for loan financing. Further, while the SHAZ! MFI partner was protected via a grant from USAID that covered loans not repaid under this pilot project, the current results suggest that this target population would pose tremendous risks for microlenders under normal circumstances.

The most distressing finding of the SHAZ! feasibility study was the unintended consequences that increased participants' exposure to physical harm, sexual abuse, and coercion, demonstrating the hazards of promoting microcredit programs with girls and young women in precarious economic environments, without also ensuring adequate family and/or social support. While the mentorship component was intended to support participants to manage their loans and businesses, it was less effective than hoped, and feedback from community advisory groups suggested that mentorship was a "borrowed" Western concept. As Epstein rightly points out in her write-up of the SHAZ! program, "the researchers had not anticipated that their program to 'empower' these poor girls was actually placing them right in the path of HIV" (Epstein, 2007). However, the team of Zimbabwean and U.S. researchers did acknowledge the results of the feasibility study as an important, if not sobering, series of lessons learned. Immediate measures were taken to reduce participants' risk caused by their economic activities once these risks became known (e.g., by designing ad hoc life-skills sessions geared toward developing strategies for traveling in groups and/or selling locally). Most importantly, these findings challenged SHAZ! researchers to explore other economic strategies with greater potential to reduce vulnerability, including (1) offering a broader mix of microfinance services, such as microgrants that do not have to be repaid, and savings programs, (2) using conditional cash transfers (CCT) to support formal education and vocational training opportunities that build skills in the short term that evolve into future economic opportunities (Krishnan et al., 2007), and (3) enhancing family support as part of the empowerment process, in line with the cultural norms of the young participants.

Because adolescent girls will remain vulnerable to economic deprivation and HIV risk, the findings from the SHAZ! feasibility study offer important contributions to the field of public

health. There is clear potential for economic programs to improve the reproductive health of young women, including adolescent female orphans. However, these findings underscore the importance of rigorous research to identify the appropriate economic strategies for adolescent girls and women in different contexts lest interventions unintentionally increase their risk or vulnerability. In spite of the great interest globally in economic interventions to reduce HIV risk, no research to date has definitively assessed the effects of such interventions on reducing HIV acquisition directly, nor has any examined the intermediary effects (e.g., future aspirations, increased income) on enabling participants to gain control over their sexual lives. An understanding of the process by which economic factors affect adolescents' sex risk behavior and outcomes is critical to the design and promotion of effective programs and policies to improve the health and well-being of adolescent girls worldwide.

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TABLE 1

Baseline Characteristics of SHAZ! Pilot Study Participants (N=49)

Characteristic	Baseline n (%)
Orphan Status	
Maternal	21 (43)
Paternal	7 (14)
Double	21 (43)
Mean Age (Standard Deviation)	17.5 (+/− 1.02)
Marital Status	
Never married	39 (80)
Currently married	7 (14)
Divorced, separated, widowed	3 (6)
Education Level	
Some secondary or less	22 (45)
Completed “O” level	27 (55)
Ever Been Homeless	11 (23)
Ever Had Sex	21 (43)
Main Reason for Having Sex the First Time	
Aroused	4 (20)
Needed food, money, school fees	1 (5)
In love/wanted to marry/for pleasure	9 (45)
Forced	1 (5)
Tricked/coerced	5 (25)
First Sexual Experience Was Transactional	6 (29)
Currently HIV Positive	4 (8)
Currently HSV-2 Positive	6 (12)
Currently Pregnant	0 (0)

TABLE 2

Results Comparing Livelihood and Sexual Behavior Characteristics at Baseline and 6-Month Follow-Up (N=49)

Process Indicators		6 Months N (%)	p-value*
Training Attendance (participants that averaged 80% attendance)	—	44 (90)	—
Developed a Business Plan	—	40 (80)	—
Received a Loan	—	40 (80)	—
Began Loan Repayment	—	10 (20)	—
Repaid in Full	—	3 (6)	—
Characteristics Compared Between Baseline and Follow-up	**Baseline N=49 (%)**	**6 Months N= 37 (%)**	**p-value***
What Would You Most Like To Do If You Could			
Stay in or resume school	17 (35)	13 (38)	p=0.82
Work in formal job	21 (43)	9 (26)	p=0.17
Start own business	38 (78)	24 (71)	p=0.61
Get married	5 (10)	5 (15)	p=0.73
Migrate	4 (8)	4 (12)	p=0.71
Has Own Income	3 (6)	15 (44)	<0.001
Has Own Savings	0 (0)	30 (88)	<0.001
HIV Knowledge Score			
1 – Answered 7 or 8 of 13 questions correctly	11 (22)	0 (0)	<0.001
2 – Answered 9 or 10 of 13 questions correctly	10 (20)	1 (3)	
3 – Answered 11 or 12 of 13 questions correctly	20 (41)	20 (60)	
4 – Answered all questions correctly	8 (16)	13 (38)	—
Experienced Violence**			
Physical	10 (20)	6 (16)	
Sexual	7 (14)	3 (8)	
Forced sex	7 (14)	3 (8)	
Currently Sexually Active	9 (18)	8 (22)	p=0.79
High Power in Primary Sexual Relationship	1 (11)	4 (50)	p=0.16
High Power in Nonsexual Relationship*	1 (5)	8 (38)	p=0.04
Use of Condom with Primary Partner	9 (67)	3 (38)	P=0.35

* Fisher exact test for significance

** Violence reported at baseline is reported for ever experienced; at 6 months it represents violence during the study follow-up; thus, p-values not presented as time periods are not equivalent.