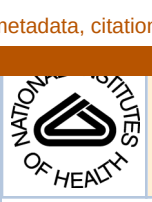

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Supporting Adolescent Orphan Girls to Stay in School as HIV Risk Prevention: Evidence From a Randomized Controlled Trial in Zimbabwe

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Abstract

Objectives—Using a randomized controlled trial in rural eastern Zimbabwe, we tested whether comprehensive support to keep orphan adolescent girls in school could reduce HIV risk.

Methods—All orphan girls in grade 6 in 25 primary schools were invited to participate in the study in fall 2007 (n=329). Primary schools were randomized to condition. All primary schools received a universal daily feeding program; intervention participants received fees, uniforms, and a school-based helper to monitor attendance and resolve problems. We conducted annual surveys and collected additional information on school dropout, marriage, and pregnancy rates. We analyzed data using generalized estimating equations over 3 time points, controlling for school and age at baseline.

Results—The intervention reduced school dropout by 82% and marriage by 63% after 2 years. Compared with control participants, the intervention group reported greater school bonding, better future expectations, more equitable gender attitudes, and more concerns about the consequences of sex.

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Contributors

D. Hallfors was responsible for the overall project concept, implementation and administration and drafted the article; other authors participated in the writing and review of the article. H. Cho conducted statistical analyses. S. Rusakaniko led the Zimbabwe research team. B. Iritani conducted the literature search and summary and the data management. J. Mapfumo conducted data collection and process evaluation. C. Halpern guided the development of survey item scales.

Human participant Protection

This research was approved and annually reviewed by the institutional review boards of the Pacific Institute for Research and Evaluation and the Medical Research Council of Zimbabwe.

Conclusions—We found promising evidence that comprehensive school support may reduce HIV risk for orphan girls. Further study, including assessment of dose response, cost benefit, and HIV and herpes simplex virus 2 biomarker measurement, is warranted.

A severe consequence of the AIDS pandemic has been the millions of children left orphaned and vulnerable by the deaths of their parents. The vast majority (estimated at about 12 million) of these children are living in sub-Saharan Africa.[1] Children of parents who die of AIDS suffer from the trauma of sickness, death, and associated hardships. The burden of caring for a sick parent, younger siblings, and of household subsistence often falls to adolescents, and many are forced to drop out of school and prematurely take on adult roles.[2,3] Sexual behavior increases with school dropout,[4,5] leaving adolescent orphans more vulnerable to HIV.

Girl orphans are particularly vulnerable to school dropout and early sex[6,7] as well as early marriage, pregnancy, and sexually transmitted infections, including HIV/AIDS.[8,9] Reducing early marriage is particularly important in Zimbabwe, because marriage is associated with elevated HIV and herpes simplex virus 2 (HSV-2) risk. Among married women aged 14 to 19 years in urban Harare, half of whom were orphans, 18% were infected with HIV and 42% with HSV-2, compared with a 6% prevalence for both sexually transmitted infections among those never married.[9]

Many recent studies have examined the influence of schooling on HIV status among adults. Some have found a positive association between education and HIV.[10,11] For men, possible underlying mechanisms for this association include higher disposable income, increased leisure time, and increased ability to travel and use commercial sex partners.[6,12–14] For women, more education delays first sex but also delays marriage, leading to a longer period of being single and more sexual partners, as well as the use of nonbarrier contraceptive methods such as the pill.[6,15,16] On the other hand, as more accurate information about transmission and prevention methods has become available, more recent studies have found an association between more education and decreasing likelihood of HIV infection,[6,17,18] suggesting that education may have a "social vaccine effect."[17](p467) For example, Hargreaves et al., who compared findings of studies using data from before and after 1996, noted that later studies were more likely to find a lower HIV risk with more education.[19] Another recent study found no relationship between education and HIV status.[20]

Studies of youth show more consistent evidence that adolescents who stay in school are protected from early sexual debut and other HIV-related risk behaviors. [21–24] School attendance may play an important role in reducing HIV risk through a number of factors, including greater exposure to HIV messages, better cognition to make use of prevention knowledge, and greater self-efficacy.[6] Educational support and continued schooling may also improve attitudes about gender equity, by decreasing women's exposure to coerced unprotected sex and early marriage.[10,25]

Only 2 experimental studies, however, have tested whether support to stay in school results in better HIV-related outcomes.[26,27] Both found that such support increased school attendance and decreased pregnancy and marriage. In a randomized controlled trial of 328 primary schools in western Kenya, Duflo et al.[27] found that providing student uniforms significantly decreased school dropout and marriage rates for both boys and girls, and pregnancy for girls, compared with providing teachers with comprehensive training to deliver the Kenyan HIV curriculum.

In a more recent study, Baird et al.[26] tested a conditional cash transfer program among young women (n=2893) in Malawi and found positive effects on school attendance after 1 year. The study provided secondary school fees, and a small monthly cash incentive if

participants stayed in school. Most participants were in school at baseline (average age=14 years) but a sub-sample had left school (average age=17 years). Both student and out-of-school samples were randomized to intervention (conditional cash transfer) and control (no treatment) conditions. After 1 year, the intervention maintained a significantly higher proportion of women in school irrespective of original school status. Notably, 61% of the intervention group in the out-of-school sample came back to school (compared with 17% of controls) and were less likely to marry or become pregnant. The intervention did not affect marriage or pregnancy among school girls, however.

We have reported findings from a randomized controlled trial in rural eastern Zimbabwe to test whether comprehensive support to keep orphan girls in school can reduce HIV risk. We focused on the influence of school as social context, using the Social Development Model[28] as our conceptual framework. This model, along with earlier Social Control Theory,[29] suggests that staying connected to prosocial adults, peers, and institutions results in better adolescent health and behavioral outcomes. The loss of 1 or both parents leaves orphans at a distinct disadvantage in navigating the risks of adolescence. The importance of consistent connections to prosocial, caring adults has been well documented in the United States as being a prime determinant of positive behavioral outcomes among adolescents.[30–33]

For an orphan, school may be particularly important in maintaining order, routine, and access to caring adults, as well as education. We tested support to stay in school (i.e., fees, uniforms, school supplies, and an adult assigned to monitor school attendance and help if needed) as a structural intervention to surround young orphaned adolescent girls with a protective environment. We hypothesized that intervention group girls would be more likely to bond with school, as evidenced by greater attendance and perceptions that adults cared about them, and that they would have higher educational aspirations, more positive expectations about the future, more equitable gender attitudes, more protective attitudes about sex, lower self-reported sexual behavior, and lower rates of marriage and pregnancy.

METHODS

We identified 5 rural geographical clusters in the Zimbabwe province of Manicaland, which surrounds the provincial capital of Mutare. Each cluster included 2 high schools, 1 Methodist and 1 government, and their main feeder primary schools, as part of an overall study design to test the impact on HIV risk factors of support to stay in school (reported here) and type of high school. We then randomized each high school's feeder primary schools to the intervention or control condition. All orphan girls (1 or both parents deceased) in grade 6 were identified by school staff and invited to participate. A total of 26 primary schools and 335 orphan girls were identified; all agreed to participate in the baseline survey conducted in September 2007.

Study Design

The study was longitudinal with repeated measurement of outcome variables (3 annual time points are reported here). Units of randomization were primary schools; units of analysis were orphan girls nested in these primary schools. Random assignment of primary schools to the intervention or control study condition was not revealed to schools and students until after the baseline survey to avoid sensitizing participants. Thirteen primary schools were originally assigned to each condition, but 1 control school was dropped from the study when it was discovered that all 5 participant girls had 2 living parents (Figure 1); 1 additional girl was dropped at an intervention school for the same reason.

Intervention

Intervention students received school support (starting in November 2007), including fees, exercise books, uniforms, and other school supplies (e.g., pens, soap, underpants, and sanitary napkins). Female teachers at each intervention primary school were selected and trained by research personnel as helpers (approximately 1 helper to 10 participants). Helpers were trained to monitor participants' school attendance and to assist with absenteeism problems as they arose, but were not to provide special HIV information or life skills training. A small fund was available to helpers for addressing attendance problems. After grade 7, the girls matriculated to high school and new helpers were selected and trained in the new schools.

Three of the 5 Methodist high schools were boarding schools, and most of the intervention students admitted to these high schools became boarders (n=47). Because many teachers have housing at rural schools in Zimbabwe, some intervention students attending government high schools informally boarded with female teachers during the week (n=26), primarily because of distance to students' homes (more than a 6-mile walk each way). Girls living with teachers typically went home every weekend; girls in Methodist boarding schools went home during holidays only (i.e., month-long breaks between each of 3 terms). All high schools were coeducational.

Consent and Incentives

Researchers in Zimbabwe obtained informed signed consent for surveys from a parent or guardian and assent from participating students. After the baseline survey, consent or assent to participate in the intervention group was obtained from students in the relevant schools. Primary schools in both conditions were provided a universal feeding program (porridge or nutritious drink for all students at the school). School heads and helpers received a modest cash incentive (US$15–$20 per term).

Survey Questionnaire

The self-administered questionnaire included items about demographic and outcome variables developed from other instruments.[24,34–38] We administered the questionnaire using audio computer-assisted self-interview (ACASI) technology, with participants listening, reading, and responding to questions using personal digital assistant devices in either English or Shona. Items were programmed with skip patterns, and students could refuse any item. ACASI has been found to facilitate more complete reporting of highly stigmatizing sexual behavior.[39–41]

We administered the survey annually in the classroom setting. In addition to the survey data, we obtained information from the schools about enrollment rates, dropout rates, and reason for dropout, including marriage or pregnancy. Key study variables were as follows. "Socioeconomic status" comprised a count (12 items) of assets in the home (e.g., electricity, farm animals). "School absence" was a self-reported variable characterizing absence during the past year. "Perceptions of caring adults" measured how much students felt that 3 key groups (teachers, adults in family, adults in community) cared about them. We collected data on "school dropout" from school staff, classmates, and others who could also tell whether the participant had moved and enrolled at another school; known dropouts as of January 1, 2010, were included. "Educational aspiration" was the level of education the respondent would like to complete. "Future expectations" included questions about the respondent's perceived chances of completing secondary school and beyond, making enough money by age 30, and living to age 35.

The "gender equity index" comprised 5 items, such as "Education is more important for boys than for girls," with higher scores indicating more equitable attitudes. "Wife-beating endorsement" comprised a count of yes responses to 5 items (possible score=0–5), such as "Is it okay for a husband to beat his wife if she argues with him?" Three scales measured attitudes toward sex: "disagree with early sex," "waiting [for sex] because of values," and "waiting because of consequences"; a single item also measured "believe in waiting until marriage." We measured "sexual debut" by positive response to the survey item, "Have you ever had sexual intercourse?" (coded yes or no). We collected "marital and pregnancy status" from knowledgeable school staff, classmates, and others to include all marriages and pregnancies known as of January 1, 2010.

Statistical Analyses

Using baseline data, we conducted factor analyses to create a multi-item index of socioeconomic status (Cronbach α=0.77) and gender equity (Cronbach α=0.70). For group equivalence at baseline, we conducted significance tests on main demographic and outcome variables using the *t* test for continuous variables and the χ^2 test for categorical variables.

To evaluate intervention effects, we tested differential changes from baseline to follow-up between the intervention and control groups. The study was longitudinal, with multiple measurements of the same students and students nested within schools, resulting in a probable violation of the assumption that residuals of the model were independent. To address this lack of independence, we used SAS PROCGENMOD version 9 (SAS Institute Inc, Cary, NC) to complete generalized estimating equations, which analyze correlated outcomes with reasonable statistical efficiency.[42] The models assessed condition, time (as a continuous variable), and the condition-by-time interaction, controlling for participant age and clustering within primary school. To determine whether boarding resulted in special intervention effects, we also compared outcomes between boarding and nonboarding intervention participants.

RESULTS

The final total study enrollment was 329 girls (184 intervention and 145 control) attending grade 6 in 25 primary schools. Most girls were aged 12 years (range=10–16 years) at baseline. Two follow-up surveys were administered annually after the baseline survey. At the first follow-up survey (September 2008), we achieved an overall 97% retention rate (97% in the intervention vs 96% in the control condition). At the second follow-up (September 2009), we achieved an 88% retention rate (93% in the intervention vs 82% in the control condition); difference by condition was significant ($P \leq .001$). We obtained data on school dropout and marriage from an additional 23 participants, yielding an effective retention rate on these outcomes of 97% for intervention participants and 92% for control participants (Figure 1).

Baseline Equivalence and Attrition

We found no significant differences ($P < .05$) on key measures at baseline by intervention or control condition. However, marginal differences ($P \leq .1$) existed in orphan status and educational aspirations (Table 1).

Survey nonresponders at the second follow-up were more likely to be in the control group ($P \leq .05$); they were also marginally ($P \leq .10$) older, reported more school absence, and had lower future expectations about making enough money. To assess possible impact of differential attrition on the randomized design, we excluded nonrespondents from baseline

equivalence analyses. Groups differed only on the perception of teacher caring (4.01 for intervention group vs 4.30 for control group on a Likert scale of 1–5; *P*=.04).

Outcomes

As seen in Table 2, compared with intervention participants, control participants had 6 times the odds of dropping out of school (odds ratio [OR]=8.5; *P*≤.001) and nearly 3 times the odds of getting married (OR=2.92; *P*=.02). Only 2 girls were known to be pregnant, both in the control group. Intervention participants were less likely to be absent from school than were control participants (*P*≤.001; Table 3) and were marginally more likely to perceive that teachers cared about them (*P*=.07). Given the significant difference favoring the control group in our attrition analyses, this finding is likely conservative. Intervention participants believed they had better chances of completing high school (*P*=.03) and college (*P*=.01) and of making enough money by age 30 years (*P*=.08) than did control participants. They were also more likely than were control participants to endorse gender equity (*P*=.07) and were more likely to report waiting for sex because of the consequences (*P*=.03).

Boarding Versus Day School

Only 1 marginally significant difference was found between intervention group boarders and nonboarders in the second follow-up survey in 2009. Boarders were more likely than were nonboarders to perceive that adult family members cared about them (*P*=.08). Three intervention participants were married before matriculating to high school (i.e., before boarding was offered to any students). Of the remaining 3 intervention participants who married (Table 2), 1 was boarding in Methodist school when she dropped out to get married. Of the 8 intervention group dropouts, 6 were married. The 2 additional dropouts were both day students.

DISCUSSION

We found that after 2 years of exposure to an intervention supporting them to stay in school, orphan girls had increased odds of remaining in school and reduced HIV risk through early marriage. Effects were especially striking as students matriculated into high school after grade 7. By the end of the first year of high school, the intervention reduced school dropout rates by 82% and marriage rates by 63%.

Study findings suggest that the intervention increased bonding with school and teachers. Without support, it is difficult for orphan girls to continue into secondary school in rural Zimbabwe. Although some participants in the control group had their fees paid by family or philanthropic sponsors, school staff frequently reported that control group participants had been “chased away” from school (i.e., told to go home and get money to pay school fees). Although schools are supposed to educate all children regardless of ability to pay, chasing children away was tolerated because “no one would pay fees otherwise” (oral communication from a teacher in one of the study high schools, September 2009).

Besides higher enrollment, those in the intervention group also reported higher attendance, and were more likely than were those in the control group to feel that teachers cared about them. Compared with girls in the control group, they also reported higher expectations to complete secondary school and college. These variables are very much related to the concept of bonding or “sticking to” school. Intervention group participants were also more likely to expect future financial rewards from schooling.

Intervention participants held more equitable gender attitudes than did control group participants at the 2-year follow-up. This difference is not surprising because educated women can consider career paths with greater financial independence; they can also be more

selective in marriage and the timing of fertility. Many researchers have suggested that structural strategies to improve gender equity are important to HIV prevention.[10,25,43]

Finally, intervention participants were more likely than were control participants to report over time that the consequences of sex were an important factor in their desire not to have sexual intercourse. Concern about consequences fits with our conceptual model of school support as HIV protection through social control (i.e., positive social influences). Sex has higher costs and lower benefits for a young girl with a chance to stay in school.

If schooling results in better future expectations, more equitable gender attitudes, and more concern about the consequences of sexual intercourse, it is reasonable to expect that students who have an assurance of school support may be less inclined to marry or have sex. Although the self-reported sexual intercourse variable was too inconsistent to be useful, we found convincing evidence of protection in the threefold difference in marriage rates by condition. From our close observations of the intervention group, we found that some guardians pressured orphan girls aged 12 to 15 years to marry, possibly because of the "bride price" payment, or because marriage would mean 1 fewer dependent in the household. Some religious groups likewise exert pressure on young girls to marry, often with much older husbands.[44] If continued schooling is not a viable alternative, then early marriage may compete with the less attractive options of becoming someone's maid or being passed from household to household.

The size and significance of the effects in our study are surprising, given the small sample size and young age of participants. To our knowledge, there is only 1 similar peer-reviewed published report—an experimental study in Malawi that tested the effects of school support on HIV risk behavior.[26] That study found large increases in school enrollment among former dropouts and a 41% decrease in the likelihood of marriage (16.4% for intervention group participants vs 27.7% for control group participants). However, conditional cash transfer did not demonstrate these effects among younger school girls (4.7% of both intervention and control group participants had married).

In contrast, we found a 63% reduction in marriage (3.3% in the intervention group vs 9.0% in the control group) among school girls younger than the Malawi participants (average age of Zimbabwe participants=14 years). This stronger effect suggests several possibilities: that the contexts in Zimbabwe and Malawi are different, that orphan girls marry earlier than do a population-based sample of young women, or that our intervention is more potent than conditional cash transfer. Since the "dose" of the intervention (e.g., boarding vs day school) varied among intervention participants, we plan to further examine the effect of dose and the cost-effectiveness of this intervention compared with other options. Given the current widespread popularity of conditional cash transfer and the high prevalence of orphans in resource-poor sub-Saharan Africa, cost-effectiveness research is essential for making evidence-based HIV prevention policy decisions.

Limitations of the present study include the use of self-reported data for most variables. A key outcome—self-reported sexual intercourse—was found to be unreliable among girls who reported ever having had sexual inter-course at any one of the survey time points (Table 3). Marriage and pregnancy were more reliable measures for sexual intercourse, but probably underestimated sexual risk for both groups. This suggests the importance of collecting HIV biomarkers in prevention trials, along with HSV-2 biomarkers, which also helps to rule out maternal child transmission.[45,46] Another limitation is the variability of the intervention, particularly when intervention group students went to secondary school. All intervention group students at study high schools received underpants, soap, pens, and exercise books, and some received formal or informal boarding. Such add-ons were not

anticipated at the start of the project. We are conducting cost-effectiveness analyses to discern the actual costs of the intervention and the value of variations, such as boarding, on outcomes. Finally, as a first study of this intervention, findings can only be generalized to rural orphan girls in eastern Zimbabwe.

School support is a very promising form of HIV risk prevention, and continued schooling is likely to provide many additional benefits to orphan girls. Further study, including examination of the effect of variations in dose, the relative cost-effectiveness of interventions, and HIV and HSV-2 biomarkers, is warranted.

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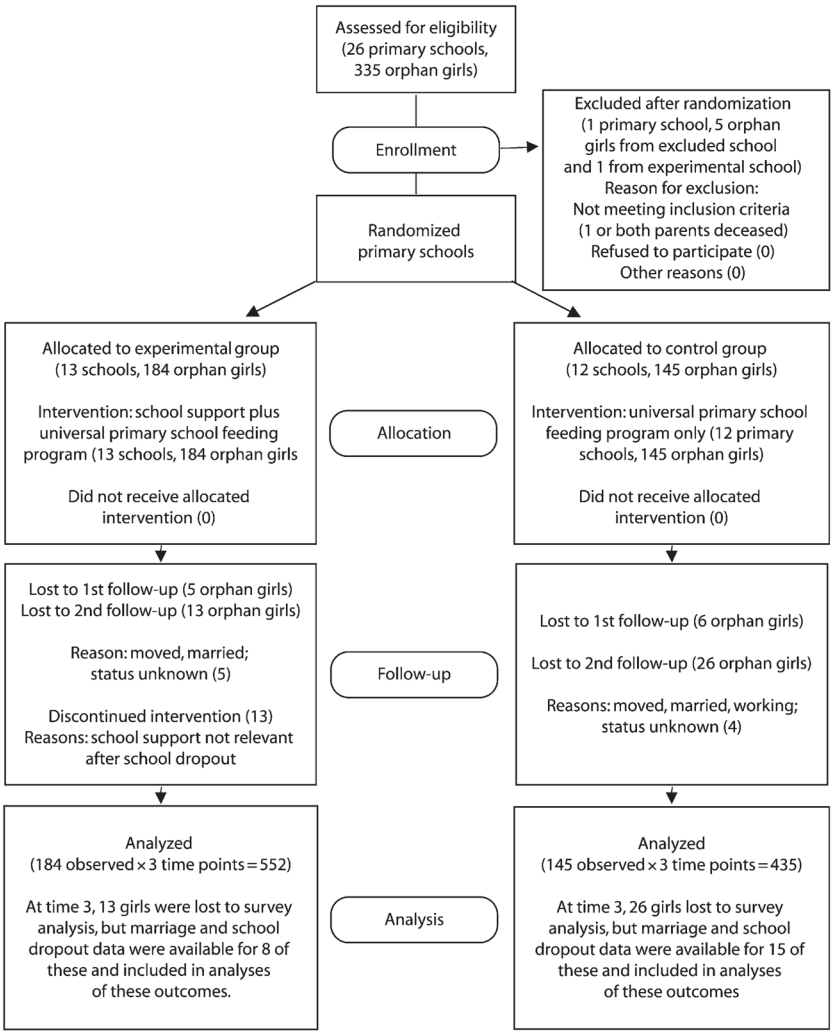

FIGURE 1.
Study design flowchart of intervention designed to keep orphan adolescent girls in school: Zimbabwe, 2007–2009.

TABLE 1

Baseline Equivalence of Intervention and Control Group Orphaned Girls Attending Grade 6 of Rural Primary Schools: Zimbabwe, 2007

	Intervention Group (n = 184), Mean or No. (%)	Control Group (n = 145), Mean or No. (%)	*t* or χ^2	*P*
Age at baseline, y	12.2	12.3	0.82	.41
Orphan status				
Maternal	16 (8.7)	21 (14.6)	5.51	.06
Paternal	98 (53.5)	84 (58.3)		
Double orphan	69 (37.7)	39 (27.1)		
SES count index[a]	3.22	3.28	0.22	.83
Has school uniform	105 (61.1)	83 (59.7)	0.06	.81
Absent from school[b]	2.02	2.23	1.35	.18
Perception that adults are caring[c]				
Teachers	4.03	4.20	1.21	.23
Adults in family	4.08	4.18	0.75	.46
Adults in community	3.40	3.26	−0.87	.38
Educational aspiration higher than secondary school	171 (92.9)	127 (87.6)	2.72	.1
Future expectations[d]				
Graduate from secondary school	3.41	3.30	−0.73	.47
Graduate from college or university	3.22	3.23	0.03	.97
Enough money by age 30 y	3.46	3.32	−1.05	.29
Live to age 35 y	3.18	3.07	−0.87	.39
Gender equity index[e]	2.60	2.61	0.05	.96
Wife-beating endorsement[f]	2.11	2.31	1.17	.24
Has ever had sexual intercourse	9 (4.9)	6 (4.1)	0.11	.75

Note. SES = socioeconomic status.

[a] Number of assets in home (0–12); α= 0.77.

[b] Responses ranged from 1 = never to 5 = more than 3 days a month.

[c] Responses ranged from 1 = not at all to 5 = very much.

[d] Responses ranged from 1 = almost no chance to 5 = almost certain.

[e] Higher scores indicate greater endorsement of equity; α= 0.70.

[f] Number of situations (1–5) for which wife beating was endorsed.

TABLE 2

Logistic Regression Results of School Dropout and Marriage Rates Among Orphaned Girls, by Study Condition: Zimbabwe, 2007–2009

Outcome	Intervention Group, No. (%)	Control Group, No. (%)	AOR (95% CI)
School dropout	8 (4.5)	36 (25.2)	8.48† (3.6, 19.8)
Marriage	6 (3.3)	13 (9.0)	2.92** (1.0, 8.3)
Pregnancy	0	2 (1.4)	_[a]

Note. AOR = adjusted odds ratio; CI = confidence Interval.

[a]Because only 2 pregnancies were known to occur, both in the control group, the specified model did not converge.

**$P \leq .05$;

†$P \leq .001$.

TABLE 3

Generalized Estimating Equation (GEE) Analysis of Effects of School Support Intervention on Outcome Variables Over 3 Time Points Among Orphaned Girls: Zimbabwe, 2007–2009

	Intervention Group, Mean or No. (%)			Control Group, Mean or No. (%)					
	Time 1	Time 2	Time 3	Time 1	Time 2	Time 3	Study Condition×Time, GEE	Study Condition, GEE	Time, GEE
School absence[a]	2.02	1.57	1.45	2.23	2.01	2.4	−0.42***	−0.34	0.13*
Perception that adults are caring[b]									
Teachers	4.03	4.41	4.14	4.18	3.91	4.11	0.14*	−0.05	−0.08
Adults in family	4.08	4.15	4.22	4.18	4.06	4.34	0.03	−0.11**	0.04
Adults in community	3.40	3.78	3.62	3.26	3.34	3.57	−0.02	−0.39	0.14**
Educational aspiration	171 (93)	169 (92)	166 (90)	127 (88)	130 (90)	111 (77)	−0.27	0.37	0.45***
Future expectations [c]									
Graduate from secondary school	3.41	3.82	4.06	3.30	3.37	3.63	0.17**	0.40	0.15**
Graduate from college or university	3.22	3.60	3.80	3.23	3.27	3.29	0.26**	0.36	0.03
Enough money by age 30 y	3.46	3.47	3.71	3.32	3.22	3.30	0.13*	0.49	−0.02
Live to age 35 y	3.18	3.18	3.51	3.07	3.22	3.22	0.07	0.77	0.08
Gender equity index[d]	2.60	2.92	3.13	2.61	2.79	2.89	0.11*	0.34	0.15***
Wife-beating endorsement[e]	2.11	2.05	2.35	2.31	2.45	2.56	0.00	0.32	0.13*
Thinks it is OK to ask husband to use condom	105 (58)	124 (69)	148 (87)	81 (56)	99 (71)	100 (85)	0.05	−0.01	0.72***
Thinks it is not OK to have sex as an adolescent[f] (α= 0.73)	NA	4.36	4.47	NA	4.24	4.43	−0.07	−0.06	0.19**
Believes in waiting for sex until marriage[f]	NA	2.49	2.11	NA	2.42	2.17	−0.12	−0.35	−0.26*
Waiting for sex because of values[f] (α= 0.66)	NA	1.32	1.24	NA	1.32	1.20	0.02	0.02	−0.10***
Waiting for sex because of consequences[f] (α= 0.76)	NA	1.17	1.07	NA	1.12	1.09	−0.07**	−0.11	−0.03*
Has ever had sexual intercourse	9 (5)	10 (6)	1 (1)	6 (4)	4 (3)	3 (2)	−0.28	−0.32	−0.35

Note. NA = not available. Participant age and primary school (since orphans were clustered in primary schools, and schools were randomized to condition) were covariates in the model. The 3 time periods were baseline (September 2007), first follow-up (September 2008), and second follow-up (September 2009). For GEE, study condition = 0 (control group) or 1 (intervention group), and time = 0 (time 1), 1 (time 2), or 2 (time 3).

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[a]Responses ranged from 1 = never to 5 = more than 3 days a month.

[b]Responses ranged from 1 = not at all to 5 = very much.

[c]Responses ranged from 1 = almost no chance to 5 = almost certain.

[d]Higher scores indicate greater endorsement of equity.

[e]Number of situations (1–5) for which wife beating was endorsed.

[f]As measured on a 5-point Likert scale.

*$P \leq .1$;

**$P \leq .05$;

***$P \leq .01$ (1-tailed test).