

THE IMPACT AND COST OF CHILD-MARRIAGE PREVENTION IN RURAL TANZANIA



This study contributes to the very limited literature examining the scalability of design, impact, and cost of interventions that can be implemented to address a widespread problem, at scale in poor settings. Our findings reflect that it is possible to implement simple, cost-contained interventions to prevent child marriage and promote schooling.

BACKGROUND

It is estimated that more than 100 million girls will be married during their childhood—before the age of 18 (UNICEF 2001)—in the next decade, and that 14 million will be married by age 15 (Bruce 2005). Child marriage is frequently prevalent in rural locations of poor countries, characterized by low levels of development and limited school and work opportunities (Lloyd 2005).

The negative impact of child marriage spans health, development, and demographic consequences. Ninety percent of first births to girls under age 18 take place in the context of marriage (Haberland et al. 2005), and not to unwed mothers as is often assumed. Childbearing typically follows these unions, with early first births being the most risky. Pregnancy and delivery complications are the main causes of death among girls aged 15–19, and girls who bear children before age 15 are five times more likely to die of pregnancy-related causes compared with older mothers (Murphy and Carr 2007). Some studies in sub-Saharan Africa suggest that girls who marry early have substantially increased risk of HIV infection—roughly 50 percent higher—compared with their unmarried sexually active peers (Glynn et al. 2001; Clark 2004), with the excess risk related to frequent intercourse, limited condom use, and husbands who are older and more likely to be HIV-positive compared with the boyfriends of unmarried girls (Clark, Bruce, and Dude 2006).

Girls married as children usually enter marriage with low levels of education or no education whatsoever, and limited knowledge and skills to negotiate marital roles (UNICEF 2011). For example, in Ethiopia, 79 percent of girls who married before the age of 15 had never been to school (Erulkar 2013). They also tend to have larger age differences with their husbands than those married later, which compromises their power within marriage, including decisions related to family planning (FP), childbearing, and maternal, newborn, and child health (MNCH) services (Mensch, Bruce, and Greene 1998). Lastly, child marriage is associated

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with increased total fertility and contributes significantly to population momentum (Bruce and Bongaarts 2009; Raj et al. 2009). This occurs because child marriage shortens the time span between generations and increases the number of years that females spend bearing children.

In most of the developing world, young people are increasingly marrying at later ages. Among young women in sub-Saharan Africa, educational expansion has a relatively strong link to delays in marriage age (Mensch, Singh, and Casterline 2005). Despite an overall trend toward later age at marriage, certain social, political, economic, and environmental shocks can be associated with reversals of this trend. For example, rates of child marriage among Syrian refugees in Jordan were found to be increasing, perhaps as a strategy to ensure girls' safety or to alleviate household stresses. From 2011 to 2013, registered marriages that involved underage girls increased from 12 to 25 percent (UNICEF 2014).

Child-Marriage-Prevention Programs

Although one in three girls in developing countries will be married before age 18, most child-marriage-prevention programs are small-scale and unevaluated. Lee-Rife and colleagues (2012) undertook a systematic review of 23 evaluated child-marriage interventions in developing countries, among which five were in sub-Saharan Africa. The review found that, although evidence is limited, the most effective approaches to delaying child marriage were those that empower girls, offer incentives such as conditional cash transfers, and engage communities. A more recent review by Hindin and Fatusi (2014) explored both published and grey literature and found most of the successful programs included a conditional cash transfer, supporting the findings of the earlier review.

For example, the *Berhane Hewan* program in Ethiopia offered a conditional asset transfer (goat) to families who kept their girls unmarried during the two-year pilot. In addition, girls were given school supplies and communities engaged in conversations on the harmful effects of child marriage. After two years of intervention, girls aged 10 to 14 in the Berhane Hewan site were one-tenth as likely to be married and three times more likely to be in school, compared with girls residing in the control area (Erulkar and Muthengi 2009).

Most evaluation plans lack rigorous costing data. This is a particular weakness of cash-transfer schemes, as programmatic cost would affect the ability to upscale successful schemes for large populations. For example, despite the successful impact of the Berhane Hewan pro-

gram in Ethiopia, there were lingering doubts about the scalability of providing a \$25 goat to families (amounting to \$1 per month for the two-year pilot), an amount which could not be justified in the absence of rigorous costing data. Interventions such as the *Zomba* scheme in Malawi offered households a conditional cash transfer of between \$4 and \$10 per month, and girls between \$1 and \$5 per month (Baird et al. 2012). While Zomba was found to reduce school drop-out by roughly 40 percent, it is unclear if such schemes can be feasibly scaled up to large populations in poor countries, given the monthly expense and the magnitude of payments.

As a result of the limited information on cost and scalability of conditional cash transfer programs, the Population Council and partners designed research to determine if simple, cost-contained interventions could be effective at delaying marriage in child-marriage hotspots in sub-Saharan Africa. The research includes rigorous costing data, providing evidence for subsequent expansion of successful approaches. This brief outlines the results of the research in the Tabora region of Tanzania.

FIGURE 1: Tabora Region, Tanzania



STUDY LOCATION

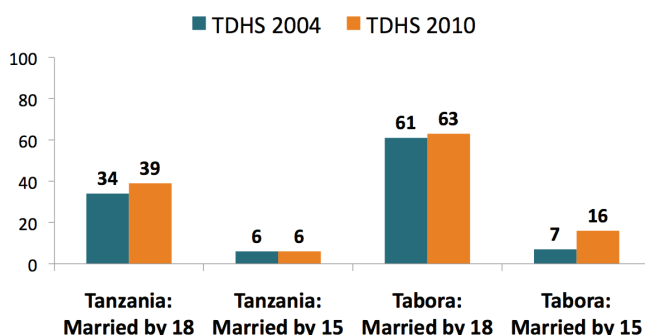
The Tabora region is located in central-western Tanzania and is one of the country's 30 regions (Figure 1). It has a population of more than 2.2 million and is one of the largest geographical regions in the country. The region is largely agricultural, and tobacco is a major economic



activity. The Population Council partnered with the Tabora Development Foundation Trust (TDFT), an NGO founded in 2001 with expertise in working with rural populations and relating to child rights issues. The Council also partnered with the National Institute of Medical Research (NIMR) on the evaluation.

The Tabora region has among the highest rates of child marriage in Tanzania. In addition, between the last two Demographic and Health Surveys (DHS), child marriage appears to be increasing in Tabora, particularly among girls under the age of 15 (Figure 2). Between 2004 and 2010, marriage of Tabora girls under the age of 15 more than doubled, from 7 to 16 percent. Likewise, trends in the DHS show a decline in educational attainment in Tabora, from an average of 3.7 years of schooling to 3.2 years of schooling, as well as an increase in the proportion of girls who had never been to school—among females aged 20 to 24 (results not shown).

FIGURE 2: Percent of Tanzanian females married by age 15 and age 18 (2004, 2010)



NOTE: Population Council tabulations of TDHS; among young women aged 20 to 24.

METHODOLOGY

The study compared and tested simple interventions to delay the age at marriage, in order to identify the most cost-effective, scalable minimum package needed to prevent child marriage. We implemented separate child-marriage-prevention strategies in different wards of Uyui District in Tabora, Tanzania.

Interventions Tested

In one ward of the Tabora region, we implemented **community sensitization** on the harmful effects of child marriage in an attempt to address social norms surrounding the practice. A facilitator's guide was developed to standardize messaging on the importance of girls' education and the negative impacts of child marriage. Community and religious leaders were trained at the beginning of the project to facilitate discussions and deliver messages during monthly village meetings or weekly religious services. In addition, project staff from TDFT disseminated messages on market days.

In another ward, schooling was promoted to unmarried girls aged 12 to 17. Girls who registered for **schooling promotion** accepted school materials with the agreement from girls and their families that they would remain unmarried and in school for the two-year duration of the pilot. Girls were given the choice of receiving a school uniform or school supplies, which included 12 exercise books, 5 pens, 2 pencils, and 1 mathematical set. Registered girls received supplies once at the beginning of the school year. In addition, school-going girls were encouraged to attend "Smart Girls' Clubs," after-school tutoring and life-skills clubs set up by the project.

In the **conditional asset transfer (CAT)** ward, unmarried girls aged 12 to 17 and their parents/guardians were provided with a goat if girls remained unmarried and in school throughout the pilot program.

One ward included all the project components, or a **comprehensive model**: community sensitization, schooling promotion, and a conditional asset transfer. In addition, a control ward was included in the study where no intervention took place. Interventions were implemented for 28 months.

Research was designed to determine if interventions had an effect on the prevalence of child marriage and school attendance at the level of the population.

Research Design

This was a quasi-experimental research design with interventions executed in different geographical areas for just over two years. The research was designed to determine if interventions had an effect on the prevalence of child marriage and school attendance at the level of the population. Separate cross-sectional, population-based baseline and endline surveys were undertaken before the interventions were established and after 28 months of intervention. At each round of the survey, 2,500 girls aged 12 to 17 were sampled, 500 per study ward, or cell, in order to measure the prevalence of child marriage at the level of the population, regardless of participation in the interventions. In each study ward, 17 enumeration areas (EAs) underwent a household listing in order to establish a sampling frame; 30 girls and 6 parents were selected for interview in each EA. Female interviewers conducted the interviews. Informed consent was obtained from the parent or guardian of the sampled adolescent and informed assent was obtained from the adolescent girl. Where a girl was married, it was considered that she was an emancipated minor and provided her own consent. Following the endline survey, a small-scale qualitative study was undertaken through focus groups to further explain the quantitative findings.



At the beginning of the study, an Excel spreadsheet was developed to enable systematic compilation of all project costs. Cost categories included staff time, office expenditures, training and meeting costs, travel expenditure, and purchase of commodities. Cost data were updated in the spreadsheet on a monthly basis by TDFT and Population Council staff. On a yearly basis, costing data were validated by a costing expert.

Our key outcomes were percent of girls aged 12 to 17 years who had ever been married and who were attending formal schooling. Because the earlier Berhane Hewan study in Ethiopia suggested that child-marriage interventions may operate differently among younger versus older adolescents, we conducted subgroup analysis separately on respondents aged 12 to 14 and 15 to 17. In terms of school attendance, we examined girls who were currently in school or who had attended during the previous year. Descriptive statistics compared levels of marriage and school attendance by study cell and time of survey. In addition, logistic regression was used to model the odds, separately, of being married and attending school at baseline and endline, controlling for age, socioeconomic status, and religion.

RESULTS

Study Population

At baseline 2,133 Tanzanian girls aged 12 to 17 were interviewed, amounting to an 85 percent response rate of the desired sample size. At endline, 2,104 girls were interviewed (84 percent of the desired sample size).

Prevalence of Child Marriage

Consistent with the DHS, between baseline and endline surveys, child marriage among 12- to 14-year-olds increased from 0.6 percent to 2.5 percent. Among girls 15 to 17, the prevalence of marriage remained largely unchanged: 19 percent at baseline and 20 percent at endline.

Table 1 shows the adjusted odds ratios at baseline and endline for having ever been married in the four study arms compared with the control site after adjusting for age, household assets, and religion. At baseline, the odds of being married were not significantly different between the intervention sites and the control site. At endline, girls aged 15 to 17 residing in the conditional asset transfer site were one-third as likely to be married as compared with girls residing in the control site, a statistically significant difference. Girls residing in the comprehensive / “full” study site were less likely to be married, but the significance level was marginal at $p < 0.1$.

TABLE 1: Adjusted odds ratios for Tabora girls having ever been married, by project site, with reference to the control arm

	Age 12 to 14 (n = 3,710)		Age 15 to 17 (n = 2,046)	
	Baseline (2011)	Endline (2014)	Baseline (2011)	Endline (2014)
	Odds ratio	Odds ratio	Odds ratio	Odds ratio
Community sensitization	3.15 NS	0.96 NS	1.29 NS	0.94 NS
Education promotion	0.68 NS	0.58 NS	0.69 NS	1.07 NS
Conditional asset transfer	1.04 NS	0.55 NS	1.00 NS	0.36 **
Comprehensive/ "Full" model	2.52 NS	0.33 ~	0.63 NS	0.52 ~

NOTE: Adjusted for age, household assets, and religion.
NS = Not significant.
Differences between sites significant at ~p < 0.10; *p < 0.05;
p < 0.01; *p < 0.001.

School Attendance

Consistent with trends in the DHS, school attendance in the previous year declined significantly from baseline to endline: from 75 percent to 68 percent. However, in multivariate models controlling for age, socioeconomic status, and religion, girls residing in the education promotion, conditional asset transfer, and comprehensive arms of the study were significantly more likely—roughly twice as likely—to have attended school in the previous year. Only the community-sensitization model appeared to have no impact on school attendance (Table 2).

TABLE 2: Adjusted odds ratios for Tanzanian girls having attended school in the previous year, by project site, with reference to the control arm

	Baseline (2011) (n = 2,982)	Endline (2014) (n = 2,774)
	Odds ratio	Odds ratio
Community sensitization	1.50 *	0.83 NS
Education promotion	1.25 NS	2.25 ***
Conditional asset transfer	1.17 NS	2.51 ***
Comprehensive/ "Full" model	1.26 NS	1.78 ***

NOTE: Adjusted for age, household assets, and religion.
NS = Not significant.
Differences between sites significant at ~p < 0.10; *p < 0.05;
p < 0.01; *p < 0.001.

Qualitative Findings

A small-scale study to understand the results of the impact evaluation was undertaken in Tabora, following the endline survey. Girls and parents were interviewed in focus groups and schools were visited. The assessment underscored the economic hardships faced by Tabora residents during the time of the study. The tobacco co-operatives had reportedly left farmers unpaid for extended periods, resulting in intensified economic hardship during the study period. This could have resulted in the declines in school enrollment and increases in very early marriage witnessed during the study.

For the past three years, farmers have not been paid well by the tobacco companies. We have not been getting paid since 2012. The whole Milumba village was not paid for its tobacco in 2013 and 2014.

—Father of adolescent girl, Tabora

The president expressed concern that tobacco farmers in the region have for long complained over not being paid after selling their produce to the cooperatives. "Regarding tobacco farmers, I have been briefed on swindling and graft, which has crippled the cooperatives and rendered them unable to pay the farmers."

—Pesa Times, June 9, 2014



FIGURE 3: Cost per girl served, by model

A. Cost per girl served per year, by model	
Community sensitization	\$11
Education promotion	\$22
Conditional asset transfer (goat)	\$107
Comprehensive/"Full" model	\$117

Program Costs

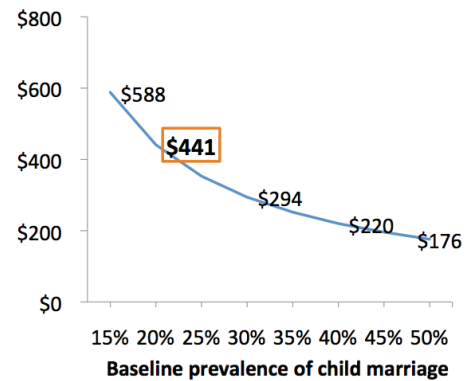
The cost of approaches per girl served ranged from \$11 to \$117 per year (Figure 3). Cost estimates included commodities provided, staff time, and monitoring and supervision costs. The cost effectiveness—or cost per marriage averted—was calculated for the successful model: the conditional asset transfer. The cost per marriage averted among girls 15 to 17 was \$441 (Figure 4). However, if one assumes the same magnitude of impact, the cost per marriage averted is lower in locations where child marriage is more prevalent. For example, in locations where 50 percent of 15- to 17-year-olds are married at baseline, the cost per marriage will be \$176 per marriage averted.

DISCUSSION

Most intervention research simply measures the impact of approaches on target populations, without regard to the feasibility of scaling up effective interventions. This study contributes to the very limited literature examining the scalability of design, impact, and cost of interventions that can be implemented to address a widespread problem, at scale in poor settings. Our findings reflect that it is possible to implement simple, cost-contained interventions to prevent child marriage and promote schooling.

Results are consistent with previous reviews of child-marriage interventions that found that economic interventions or cash/asset transfers appear to be effective in preventing child marriage as well as promoting school attendance. The study was conducted in the Tabora region, which was undergoing severe economic hardship at the time. The community-sensitization approach was not effective in either delaying marriage or promoting school attendance. Economic interventions that either provided school materials or a household asset (goat) did appear to improve school attendance; provision of the goat was also effective in delaying marriage among

FIGURE 4: Cost per marriage averted of conditional asset transfer among girls 15 to 17



older adolescent girls. In effect, it appears that providing economic support was crucial in changing the perceived value of the girl and providing an alternative to marriage. This may be especially pertinent in times of economic hardship and in locations where marriage practices involve economic exchanges between families.

The Population Council and its partners are exploring upscaling successful approaches while continuing to monitor programmatic impact and cost. We will assess locations where child marriage is the most prevalent, in order to maximize the cost effectiveness of interventions. In addition, we will explore the feasibility of providing assets other than a goat, in an attempt to lower programmatic cost and reduce logistical burdens to program staff.

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