

GIRL POWER: CONDITIONAL CASH TRANSFERS AND FEMALE EMPOWERMENT¹

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20 October, 2010

Abstract

Adolescent girls are seen by many as the key demographic target group to successfully break the cycle of poverty in developing countries. Policies that enable these girls to reach their full potential can have a strong impact not only on their own well-being, but also on that of future generations. This paper investigates the impact of a conditional cash transfer program for schooling on the empowerment of adolescent girls in Malawi. We find that the program, which transferred cash directly to school-age girls as well as their parents, empowered these girls in a number of important respects. First, it increased their resources and improved their self-perceived standing within the household. Moreover, it resulted in changed life choices, such as increased school attendance and delays in childbearing and marriage. Finally, program beneficiaries saw increases in the investments made in their human capital, such as in nutrition and health. Overall, the results point to the potential role that conditional cash transfer programs can play in improving the lives of adolescent girls in Sub-Saharan Africa.

Keywords: adolescent girls; cash transfers; female empowerment; randomized intervention.

JEL Codes: C93; I10; I21; I38.

¹ Acknowledgements: Raka Banerjee, Diana Boss, Josefina Durazo, Fernando Galeana, Nicola Hedge, Cara Janusz, Amanda Moderson-Kox, Lucie Tafara Moore, James Mwera and Erin Shedd provided excellence research assistance on the SIHR project. We are grateful to participants at the National Bureau of Economic Research (NBER) Africa Project Research Conference for valuable comments. We gratefully acknowledge funding from the Global Development Network, the Bill and Melinda Gates Foundation, NBER Africa Project, World Bank Research Support Budget Grant, as well as several trust funds at the World Bank: Knowledge for Change Trust Fund (TF090932), World Development Report 2007 Small Grants Fund (TF055926), Spanish Impact Evaluation Fund (TF092384), and Gender Action Plan Trust Fund (TF092029). Please send correspondence to: sbaird@gwu.edu.

1 INTRODUCTION

Adolescent girls are a key demographic target group to successfully break the cycle of poverty in developing countries (Levine et al. 2008). In Malawi, the focus of this paper, the population of 15-19 year old girls is forecast to grow by 66.9% from 2005 to 2020, making its projected growth-rate the third highest in the world (Warhurst, Molyneux, and Jackson 2010).² These numbers alone make targeting adolescent girls an important priority for policy-makers. Adolescent girls can also be strong agents of change. Empowering these girls to reach their full human potential not only brings immediate benefits to their own lives, but it also brings longer term benefits to their offspring and communities at large (Lloyd 2009). This message is the focus of the Coalition for Adolescent Girls founded by the United Nations Foundation and the Nike Foundation as well as “The Girl Effect”, a YouTube sensation that advocates for “the powerful social change brought about when girls have the opportunity to participate” (The Girl Effect).

This paper investigates whether a conditional cash transfer intervention for schooling targeted at adolescent girls in Malawi helped empower its recipients. The intervention, the Zomba Cash Transfer Program (ZCTP), was a randomized intervention that provided a group of young women aged 13-22 in Malawi with financial support in the form of direct cash transfers (and payment of school fees at the secondary level) conditional on satisfactory school attendance. The program was girl focused not only because it targeted young women, but also because, unlike in traditional Conditional Cash Transfer Programs (CCTs), part of the monthly transfer went directly to the girl. These characteristics make the ZCTP an ideal intervention in which to evaluate the impact of CCTs on the empowerment of adolescent girls.

Empowerment, as a concept, is hard to pin down. Kabeer (1999) defines empowerment as “the process by which those who have been denied the ability to make strategic life choices acquire such ... ability”.³ Essentially, Kabeer argues that two elements, resources and agency,⁴ determine the ability to exercise choice. Resources can broadly be defined as access and future claims to physical and human resources that are instrumental in making important choices in life.

² As of 2005, there were 849.6 million girls aged 10-24 in the world, comprising 13% of the global population. Between 2005 and 2020, the population of girls aged 10-24 years is forecast to grow by 5.1% (Warhurst, Molyneux, and Jackson 2010).

³ Note that many different definitions of female empowerment exist in the literature.

⁴ Sen (1999) refers to this as capabilities.

According to Kabeer, agency is “people’s actual capacity to define their own life-choices and to pursue their own goals.” Agency includes both internal cognitive processes such as reflection and analysis and the social processes of bargaining, negotiation, manipulation, norms, and conventions. Ultimately, improved ability to exercise choice (as a result of enhanced resources and agency) can affect day-to-day functioning of the affected women and their family members (for instance in terms of health status, nutritional intake, and time use).

The available literature approaches empowerment from multiple angles; however, most of the literature can be interpreted within the framework of Kabeer (1999) as investigating the impact of enhanced resources or agency on subsequent functionings. The existing empirical literature in economics largely focuses on policies or programs that increase a woman’s bargaining power within marriage, both improving her own outcomes as well as those of her children. For example, policies such as the old age pension in South Africa (Duflo 2003) and extended alimony rights in Brazil (Rangel 2006) had beneficial impacts on the health and education of the female children of beneficiaries. In addition, there is some evidence that female targeted interventions improve outcomes for women: a savings product in the Philippines improved women’s influence on household decisions (Karlan, Ashraf and Yin 2007), a micro-credit program in Bangladesh increased the female beneficiaries financial resources and mobility (Pitt, Khandker, and Cartwright 2006), and Oportunidades, a Mexican conditional cash transfer scheme, empowered women by encouraging them to negotiate better care from healthcare providers (Barber and Gertler 2010).⁵

Within the theoretical economics literature the discourse on female empowerment focuses on shifts in the balance of power within married couples in favor of the woman. A shift in the balance of power can take different forms, such as an increase in the woman’s education, an increase in the woman’s earning capacity, or improved access to birth control technologies. This shift can result in a reallocation of resources within the household towards the woman (Chiappori, Iyigun, and Weiss 2009; Chiappori and Oreffice 2008), both increasing the woman’s welfare and perhaps leading to a reduction in the couple’s fertility and even child mortality rates

⁵ There is also an older literature that investigates the impact of microcredit programs on female empowerment (e.g. Hashemi, Schuler, and Riley 1996; Schuler, Hashemi, and Riley 1997). Most of this literature uses no form of exogenous identification.

(Iyigun and Walsh 2007; Eswaran 2002). What is particularly interesting about the theoretical empowerment literature is that, unlike the empirical literature, it suggests that the determinants of empowerment within a relationship are to a large extent shaped earlier in life. If this assertion is correct, the existing empirical literature in economics potentially misses a crucial determinant of empowerment.⁶ This study attempts to fill this gap in the literature by focusing on the broader empowering effects of an intervention targeted explicitly at *never-married* young women.

Our analysis first examines the role the ZCTP played in altering certain patterns commonly observed among young women in Malawi such as limited schooling attainment, early pregnancy, and early marriage.⁷ These patterns can hamper one's ability to make important choices later in life. Limited schooling attainment and marriage at a young age, for instance, may reduce bargaining position in the relationship, and potentially affects the types of relationships women enter to in the first place. Pregnancy at an early age can result in severe health risks that affect the development of both mother and child. Our results indicate that the intervention had a substantial impact on these measures of agency. It successfully encouraged beneficiaries to attend school and, among girls who had dropped out of school before the start of the intervention, it reduced marriage and pregnancy rates.

The paper then turns to the extent the intervention affected the functioning of its beneficiaries and their position in their (mostly parental) households⁸. We observe that the intervention boosted beneficiaries' self-perceived standing in their households. Importantly this result was accompanied by further tangible improvements. For instance, beneficiaries who were not in school before the intervention were empowered to spend significantly more time investing in education related activities, as opposed to household chores, labor and leisure.

⁶ There is a strand of literature from the fields of demography and health that does focus on younger women, but from the more narrow scope of sexual empowerment, i.e. the process by which young women negotiate increasing control over their sexuality and safe and pleasurable sex with men (definition from Holland et al. 1992; for examples of this literature see Gage 1998; Gage 2000; Luke 2003; Ssewamala et al. 2010). This dimension of empowerment is of particular importance in sub-Saharan Africa (SSA) given the high rates of HIV/AIDS found in this region.

⁷ To some extent, the schooling, pregnancy, and education decisions of girls in Malawi are made simultaneously. When girls get married, for instance, they typically drop out of school. And while girls are pregnant they cannot attend school for some time, although they can usually return to school after they give birth.

⁸ An investigation of such contemporaneous effects within the parental household is a unique feature of this paper, as the existing empirical literature typically investigates empowerment in terms of bargaining power and functioning within a romantic relationship or marriage.

As the primary purpose of this paper is to provide an overview of the wide ranging empowering impact of a conditional cash transfer intervention on adolescent girls, we do not focus on the potential channels and mechanisms that drive these results.⁹ It is likely, however, that the empowering effects of the program run through a variety of channels. The increase in monetary resources potentially widens available choice sets in meaningful ways. Moreover, the increase in schooling attainment provides additional role models in the form of pupils and teachers to beneficiaries and can open up new opportunities on the labor market. The presented results should thus be interpreted as the overall impact of the program through all of the possible channels.

The remainder of this paper proceeds as follows. Section 2 describes the cash transfer intervention and the experimental design of this study. Section 3 discusses the estimation strategy. Section 4 presents the main results and section 5 discusses and concludes.

2 LOCATION, EXPERIMENTAL DESIGN, AND INTERVENTION

This paper investigates the impact of a randomly implemented cash transfer intervention on the empowerment of young initially never-married women in Zomba district, Malawi. In this section we provide a concise description of the location, research design and intervention.¹⁰

Location

Malawi, a small landlocked country in southern Africa, is overwhelmingly rural and poor even by African standards: Malawi's 2008 GNI per capita (PPP, current international \$) of \$830 is barely 40% of the sub-Saharan African average of \$1,991 (World Development Indicators Database 2009). Malawi also has a high HIV rate with an overall prevalence of 11.9%, and a prevalence rate of 8.4% among young women (aged 15-24) (UNAIDS 2008). Within Malawi, Zomba district, which is located in southern Malawi, was chosen as the site for the study. Zomba has high school dropout rates and low educational attainment, as well as an HIV prevalence that is significantly higher than the national average. While Zomba district is primarily rural it is also

⁹ Other papers, such as Baird, McIntosh, and Özler (2009) and Baird, McIntosh, and Özler (2010) delve deeper into the mechanisms behind some of the results presented in this paper.

¹⁰ For a more detailed description we refer the reader to Baird, McIntosh, and Özler (2009).

home to Zomba town, a city with roughly 100,000 inhabitants that once served as the colonial capital of Malawi.

Sample

A sample of 176 enumeration areas (EAs) in Zomba was randomly selected from the 550 EAs produced for Zomba district during the 1998 census by the National Statistics Office of Malawi.¹¹ A listing procedure identified the target population, all never-married 13-22 year-old females in the sampled EAs. The identified target population was then stratified into two main groups: 13-22 year-old females who were out of school at baseline (*baseline dropouts*) and 13-22 year-old females who were in school at baseline (*baseline schoolgirls*). In each selected EA, 100% of all eligible baseline dropouts and 75%-100% of all eligible baseline schoolgirls were randomly sampled to participate in the study, where the percentage depended on the core respondents age at baseline and the strata she lived in (urban, near rural and far rural). This sampling procedure resulted in a total study sample of 3,796 women with an average of 5.1 baseline dropouts and 16.7 baseline schoolgirls per EA.

Survey

From October 2007 to February 2008 a baseline household survey was administered to the entire sample of 3,796 young women (henceforth referred to as core respondents). This household survey consisted of two sections. One section was administered directly to all core respondents and the other section was administered to the heads of the households in which the respondents were residing. One year after the baseline survey, from October 2008 to February 2009, a second wave of household surveys was administered to the core respondents and their household heads. A third round of the household survey took place post-program, between January 2010 and June 2010.

Randomization

The 176 EAs were randomly assigned to treatment (88) and control (88). In the 88 treatment EAs, all baseline dropouts were offered conditional cash transfers. In 46 of these

¹¹ An enumeration area consists of approximately 4-5 villages, or 250 households.

treatment EAs, a randomly determined share of baseline schoolgirls were offered conditional transfers. The randomization procedure gives us a total of 2,890 girls who were assigned to either the control group or conditional treatment group. The number of girls assigned to conditional treatment or control is smaller than the total study sample of 3,796 girls because the intervention being evaluated in this paper is part of a larger experiment with multiple treatment arms. The remaining girls in the study sample are either baseline schoolgirls living in one of the 27 treatment EAs where baseline schoolgirls were offered unconditional cash transfers, or they are baseline schoolgirls living in any of the 88 treatment EAs who were not made an offer to participate in the cash transfer intervention.¹² The analysis with respect to the latter treatment arms is beyond the scope of this paper. Here we examine only the effect of the conditional treatment arm and thus focus on the 2,890 girls who were assigned to either the control group or conditional treatment group.

Intervention

The cash transfer intervention consisted of a monthly transfer to the household heads and a monthly transfer to the core respondents. The average monthly transfer amounted to US\$10 per household, roughly 15% of total monthly consumption in our sample households at baseline.¹³ In addition to this direct transfer, school fees were paid directly to the schools for respondents attending secondary school.¹⁴ As part of the transfer program, monthly school attendance of all the conditional cash transfer recipients was checked and payment for the following month was withheld for any student whose attendance was below 75% of the number of days school was in session for the previous month.

3 ESTIMATION STRATEGY

¹² Girls who live in treatment EAs but who do not receive transfers allow for the measurement of spillover effects within treatment EAs.

¹³ The Household transfer was randomly varied at an EA level across households, with amounts ranging from \$4 to \$10. The individual transfer was randomly varied at an individual level, with amounts ranging from \$1 to \$5. In this paper we examine only the average effect of the conditional transfers.

¹⁴ If girls were attending a public secondary school their school fees were paid directly and in full to the school. Girls attending a private school were compensated for school fees only up to the average of the school fees charged by public schools (approximately \$20 per term). In Malawi public primary schools do not charge any fees, so there was no need to compensate girls in primary schools for school fees.

3.1 ATTRITION AND BALANCE

Before turning to the main results, this sub-section first examines two potential sources of bias: (i) differential attrition and (ii) imbalance in baseline characteristics between treatment and control. Table 1 investigates attrition by regressing a binary indicator that takes on the value of one if a respondent was surveyed in round two on the treatment indicator. Column (1) shows that, at 8%, the attrition-rate was low. The indicator for treatment is not significantly related to the follow-up interview rate. Similarly, columns (2) and (3) show that the tracking-rate was not affected by treatment when we split up the sample by our two main strata: baseline dropouts and baseline schoolgirls. These findings suggest that the results we present in this paper are unlikely to be biased due to differential attrition between the treatment and control group.

Table 2 investigates the balance of the experiment by regressing baseline covariates (including parental characteristics, personal characteristics, and characteristics of the households) that the literature suggests are correlated with our outcomes of interest on our treatment indicator. Column (1) presents the mean value of each of the baseline characteristics in the control, while column (2) presents the coefficient on the difference between treatment and control. We observe only one violation of balance. Treated respondents are slightly younger than control respondents. The remainder of table 2 examines the balance of baseline characteristics across the two main strata. Columns (3) and (4) focus on baseline dropouts and columns (5) and (6) focus on baseline schoolgirls. We once again observe violations of age in both cohorts, with no other baseline imbalance. Overall, the experiment appears to be well balanced across relevant baseline characteristics.

3.2 SPECIFICATION

We choose to focus our analysis on changes in outcomes between baseline (pre-program) and the first follow-up, which took place while the program was ongoing. This approach allows us to investigate whether there were any empowering impacts of the program while the young women were still participating. Further work will look at whether any of these short-term impacts are sustainable by utilizing post-program data from both 2010 and 2012.

For all outcomes that we observed during the first two rounds of data collection, we estimate intention-to-treat effects using a difference-in-differences specification. Formally, we estimate:

$$(1) \quad \Delta Y_{ij} = \beta_0 + X_{1ij}\beta + T_{2j}\gamma + \varepsilon_{ij},$$

where ΔY_{ij} is the change in the observed empowerment outcome for individual i in EA j after the baseline survey, X_{1ij} is a vector that contains a series of baseline controls, T_{2j} is a binary variable taking the value of one if an EA was offered treatment, and ε_{ij} is the error term. The estimated intention-to-treat effect is given by $\hat{\gamma}$.

In choosing the covariates, X_{1ij} , included in this analysis, we follow the approach advocated by Bruhn and McKenzie (2009) and control for two types of variables: strata that were used for block randomization in the trial and baseline characteristics that are predictive of the outcome. In this study, these covariates include dummy variables for age and geographic strata along with an index of household assets, highest grade attained, and sexual activity status – all measured at baseline.

Whenever we pool the data for baseline dropouts and baseline schoolgirls, we include a dummy for baseline schoolgirls because treatment intensity differs across the two groups. We cluster standard errors at the EA level – the level at which the main treatment status was assigned. To make the results representative of our study area, we weight observations by the inverse of the probability of being sampled. For variables that we observed only during the second wave of data collection we use a cross-section specification, replacing ΔY_{ij} , the left hand side of (1), with Y_{2ij} . We estimate Intention-to-Treat effects.

4 RESULTS

4.1 RESOURCES

We first investigate to what extent the ZCTP influenced the physical resources available to the core respondent. As explained above, the monthly transfers consisted of two components, one component paid to the household head of the core respondent and one component paid

directly to the core respondent herself. Table 3 looks at whether the cash transfers translated into higher monthly expenditures by respondents on themselves. Column (1) presents the impact of the intervention on all respondents. Columns (2) and (3) split the results by our two main strata, baseline dropouts and baseline schoolgirls. The bottom row shows the mean value of the dependent variable in the control group. The tables in the remainder of this paper are of a similar form.

Column (1) of Table 3 shows that, on average, the intervention's beneficiaries spent an additional US\$2 a month more than the control group, a 67% increase over the control. This expenditure amounts to roughly two thirds of the median amount of US\$3/month transferred directly to the respondents (). Columns (2) and (3) of Table 3 show that the absolute increase in expenditures is similar for baseline dropouts and baseline schoolgirls, with the relative increase being higher for baseline schoolgirls. The results in Table 3 suggest that the cash transfer program led to increased resource control for the beneficiaries.

Table 4 further shows that this increase in resources was most likely driven by the girl specific transfer. Panel A of Table 4 shows that respondents had little influence on the way the component paid to the household was spent. Roughly 90% of the respondents indicated that the expenditure decision for this component was made by someone else.¹⁵ Panel B of Table 4, on the other hand, shows that the influence of respondents over the component paid directly to them is markedly higher. Nearly 80% of the respondents indicate that they themselves determined how this transfer was spent.

4.2 AGENCY

4.2.1 SCHOOLING

Next, we turn to the impact of the intervention on social patterns that can be detrimental to the development of adolescent girls. We first investigate how the intervention affected schooling outcomes. Given that the transfers were made available to the respondents and their

¹⁵ Mothers determine how the transfer gets spent 60% of the time. This finding suggests that the ZCTP possibly also had an empowering effect on the respondents' mothers.

households conditional on the respondents attending school we would expect an impact on schooling attainment. Baird, McIntosh, Özler (2009) show that the intervention indeed had a strong effect on school attendance. One year after the start of the intervention, self-reported school attendance of treated baseline dropouts had increased by 44 percentage points (17% in the control group). Among baseline schoolgirls, the intervention reduced the dropout rate by 4 percentage points or 35% (11% in the control group). Attendance information collected from the respondents' teachers confirms this impressive self-reported impact of the intervention.

An important question is whether the program empowered respondents by providing them with additional knowledge and skills to make important life decisions. Baird, McIntosh, and Özler (2009) provide a first indication that the intervention indeed resulted in increased skills. They show that the share of respondents who indicate that they can read a letter written in English is a significant seven percentage points higher among treated baseline dropouts than among control baseline dropouts. Table 5 adds to this evidence by investigating whether the program increased participation in any form of health training (including nutrition, personal hygiene, food hygiene, sexual education, and HIV/AIDS). Column (2) shows that, in addition to improving their English skills, dropouts experienced a significant increase in the probability of participating in health training of 16 percentage points (54% in the control group). Column (5) shows that, at 37 percentage points (16% in the control group), the increase in the probability of baseline dropouts participating in any health training *in school* is even more pronounced.¹⁶ The observed increase in participation in health training potentially empowers respondents in making important health related choices.

4.2.2 FERTILITY

Having shown that the ZCTP improved the physical resources available to respondents and induced them to attend school, we now turn to the impact of the program on important social patterns that were not a direct condition of the intervention. We first investigate the impact of the

¹⁶ Despite the strong increase in health education, there is little evidence that the intervention resulted in improved knowledge about HIV/AIDS. During both survey waves respondents were asked to answer 4 true/false questions about HIV/AIDS. Our analysis suggests that the intervention did not result in an improvement of respondents' ability to answer these questions. This result perhaps reflects the fact that HIV/AIDS knowledge is often gained later, during pre-natal care.

intervention on respondents' fertility decisions, one of the prime outcomes in the theoretical empowerment literature (see for instance Iyigun and Walsh 2007; Eswaran 2002).

Baird, Chirwa, McIntosh, and Özler (2010) show that the conditional cash transfers significantly reduced sexual activity and pregnancy among treated baseline dropouts, with no impact among conditional baseline schoolgirls. One year after the start of the intervention treated baseline dropouts were 5.5 percentage points less likely to ever have been sexually active (82% in the control group) and 5 percentage points less likely to ever have been pregnant (61% in the control group). In Table 6 we investigate whether the program also impacted preferred fertility timing or desired life-time fertility. Table 6 first looks at the impact of the intervention on the number of months respondents would like to wait before having their next child. We observe that dropouts benefitting from the ZCTP want to wait close to an additional 8 months before getting pregnant. Turning to columns (4)-(6) of Table 6, we see that the intervention did not affect overall desired fertility. This result is not surprising given that the mean in the control group is less than three children. Although there is no evidence that the intervention will result in lower lifetime fertility, the delay in fertility may itself affect the well-being of beneficiaries (Boden, Fergusson, and Horwood 2007; Hotz, Mullin, and Sanders 1997), as well as the health and well-being of their children (Chen et al. 2007; Gilbert et al. 2004; LeGrand and Mbacké 1993; Levine, Pollack, and Comfort 2004).

4.2.3 MARRIAGE

Turning now to marriage, Baird, Chirwa, McIntosh, and Özler (2010) demonstrated that the CCT program led to a significant decline in marriage rates among baseline dropouts. At baseline all of the respondents were non-married. At follow-up (one year after the start of the intervention), 28% of the control girls in the baseline dropout group had gotten married. In the treated group the marriage rate was 11 percentage points lower. Among baseline conditional schoolgirls, on the other hand, there is no evidence of a significant impact of the intervention on marriage.

In addition to postponing marriage, it is possible that treatment girls who got married were making "better" marriage decisions than their control counterparts. Moreover, the intervention may, for instance, have increased the opportunities available to respondents to look

for a marriage partner with suitable traits in the future.¹⁷ Table 7 investigates whether wealth and education are among the three most important characteristics that respondents look for in choosing a spouse. We observe that the wealth of the spouse mattered significantly less for beneficiaries of the intervention, both for those in the married sub-sample and for the sample as a whole. When looking at the married sub-sample (columns (1)-(3)) roughly 6% of the control girls indicate that the wealth of the spouse is among the three most important characteristics. Among treatment girls this percentage is close to zero. In the sample as a whole (columns (4)-(6)), the mean in the control drops to 4% with a treatment impact of 2.7 percentage points. This finding could be an indication that the program reduced respondents' reliance, current and future, on partners for money.

The importance of the educational background of marital partners, on the other hand, appears to have increased. In the married sub-sample, twelve percent of the control girls indicate that education level is among the three most important characteristics. Among treatment girls this number is more than twice as high. When we turn to the sample as a whole, the numbers are quite startling with 56% of the control group indicating that education is important. The overall treatment impact is 5.6 percentage points and is largely driven by baseline dropouts. These results point to clear correlations between one's own schooling choice and that of their ideal future partner. Together, these results suggest the intervention potentially affects the marital partner that respondents choose.

Overall, the results presented in this section indicate that the intervention had a strong impact on agency, as it induced beneficiaries to postpone marriage and pregnancy and to increase their schooling attendance. These changes may well affect the well-being of these respondents later in life as well as their bargaining power in future relationships. Moreover, as the next section will show, the intervention also had a substantial impact on the contemporary functioning of respondents.

¹⁷ In Malawi arranged marriages are rare and women can choose their own spouse.

4.3 FUNCTIONINGS

4.3.1 POSITION IN THE HOUSEHOLD

Finally, we examine how the intervention affected three areas of functioning within the household: (i) self-perceived position in the household, (ii) daily activities, and (iii) nutrition and health. Table 8 first examines how the intervention affected respondents' answer to the question "Would you say your household cares more about your education now compared to 12 months ago?" Treated baseline dropouts and baseline schoolgirls are respectively 32 and 8 percentage points more likely to agree with the statement than control girls (16% and 52% in respective control groups). While we observe that both treated baseline dropouts and baseline schoolgirls experienced a substantial improvement in their perception of the households' attitude towards their education, this effect appears to have been markedly stronger among dropouts. Columns (4)-(6) of Table 8 examine how the intervention affected respondents' answer to the question "Would you say your household cares more about your health now compared to 12 months ago?" We again observe significant improvements for both baseline dropouts and baseline schoolgirls. However, at 7 and 16 percentage points respectively (24% and 26% in respective control groups), the improvement is now markedly weaker for dropouts than schoolgirls. These results suggest that the intervention substantially improved the self perceived standing of school-age girls within their households.

4.3.2 DAILY ACTIVITIES

In Table 9, we continue by examining whether the intervention had an impact on respondents' daily activities. These activities include schooling, labor, chores, which are all measured in changes, as well as sleep and leisure. For the first three variables we created a binary outcome variable that takes the value 1 if a respondent indicated that this was her primary daily activity and 0 otherwise. For sleep and leisure, we simply look at total number of hours dedicated to the activity in Round 2. In column (1) we observe that the intervention led to a 29 percentage point increase in the number of baseline dropouts indicating that schooling is their number one daily activity (17.2% in control group at follow-up). We find no such change among baseline schoolgirls. Accordingly, column (3) shows that the number of baseline dropouts indicating that chores are their primary daily activity was down by 17 percentage points (52% in

control group at follow-up). The number of baseline dropouts indicating that labor is their primary daily activity was down by 12 percentage points (30% in control group at follow-up). When we turn to the programs impact on hours of sleep and leisure we again see impacts among the baseline dropouts—they experience less sleep and leisure than their control counterparts. Together these results suggest that the intervention empowered baseline dropouts to spend more time investing in their future by attending school instead of participating in household production or remaining idle.

4.3.3 NUTRITION AND HEALTH

In section 4.3.1, we showed that respondents’ perceive their households’ to care more about their health as a result of the program. We now look at whether this perception is accompanied by tangible nutrition and health improvements. Kabeer (1999) argues that nutrition and health outcomes are a prime example of “universally valued functionings” and as such they are highly relevant empowerment outcomes.

Table 10 first looks at the impact of the intervention on nutrition by investigating the intake of three types of protein rich food: meat, eggs, and fish (Columns (1)-(3)). The outcome variable counts the number of days respondents ate any of these three ingredients over the seven days prior to the interview.¹⁸ Looking at columns (1) and (2) we observe that the intervention is associated with an increase in the consumption of protein rich food equal to half a portion a week, for both baseline dropouts and baseline schoolgirls (3.7 and 4.0 weekly portions in respective control groups). This result represents an increase in the consumption of protein rich foods by approximately 10%. Columns (4)-(6) of Table 10 investigate whether the intervention affected the probability that respondents sleep under a bed net. We observe a substantial and significant improvement among baseline schoolgirls, as they are 8 percentage points more likely to sleep under a bednet (49% in control group). We observe no improvements among baseline dropouts. Given the high rates of malaria in this area (baseline reports of being ill in the past two weeks was over 40%), the use of a bednet is particularly important for both attending school and general health.

¹⁸ This variable thus takes the values 0 to 21: 0 if the respondent ate none of the ingredients over the seven days prior to the interview and 21 if the respondent ate all of the ingredients on all of the seven days prior to the interview.

Together, the presented results suggest that the impact of the intervention differed substantially between baseline schoolgirls and baseline dropouts. We observe stronger health improvements among baseline schoolgirls and stronger changes in marriage, pregnancy, and day-to-day activities among baseline dropouts. A likely explanation for these differences lies in the actions taken by beneficiaries and their households to ensure that they receive the cash transfer. To be eligible for the cash transfer, households of baseline dropouts can encourage beneficiaries not to get married or pregnant, to spend more time attending school and less time on chores and labor. For households of schoolgirls the potential payoff from following this strategy is limited, because the respondents are already spending a relatively large share of their time on schooling. These households are more likely to increase the probability of receiving the transfer by focusing on the health of the beneficiary to minimize school absence due to illness.

5 CONCLUSION AND DISCUSSION

Adolescent girls in developing countries are considered to be an important target group for public policy. Empowering these girls not only directly affects them, but it also has the potential to bring benefits to future generations. Organizations such as the Coalition for Adolescent Girls are therefore pushing for social interventions specifically focused on this demographic group.

This paper investigates whether one such intervention, the ZCTP in Malawi, helped adolescent girls in their quest to fulfill their full potential. The intervention provided its beneficiaries with financial support conditional on attending school. The paper shows that, besides effectively enabling beneficiaries to improve their school enrollment, the intervention empowered its beneficiaries on a much wider range of outcomes.¹⁹ The intervention affected common socioeconomic patterns, as it induced beneficiaries to delay childbearing and marriage.

There is also some evidence that the intervention changed the desirable traits sought in both future and current spouses. Beneficiaries of the program were less likely to indicate that wealth was an important characteristic of their future spouse and more likely to indicate that

¹⁹ The impact of the intervention may be even broader, as the intervention may well have affected not only the beneficiaries themselves, but also their siblings and other family members.

education level was an important characteristic. These results suggest that empowering adolescent women may not only increase their bargaining power within future relationships, but it may also affect the type of relationship they enter into in the first place.

The intervention also affected the functioning of its adolescent beneficiaries. Beneficiaries report a significant improvement in their self-perceived standing in the household. They indicate that households care more about both their health and their education, with the effect on health stronger for baseline schoolgirls and the effect on education stronger for baseline dropouts. These improvements in self-perceived standing in the household were accompanied by more tangible changes in functioning. Baseline dropout beneficiaries report strong changes in day-to-day activities. They spend more time on education and less time working for short term benefits for the household, consistent with their perception that households care more about their education now. Baseline schoolgirls, on the other hand report strong changes in sleeping under a bed net. And both baseline dropouts and baseline schoolgirls report that the intervention increased their intake of protein-rich ingredients, such as eggs, fish, and meat.

Together, the results presented here indicate that a conditional cash transfer intervention can empower adolescent women in Sub-Saharan Africa in significant ways. It can affect social patterns that cause sub-optimal investments in the human capital of young women and it can improve both their standing in the household and their day-to-day functioning. Thinking about whether and how these results generalize to other cash transfer programs, there are a couple of unique design features that are specific to this intervention to keep in mind. First, this program transferred some of the funds directly to adolescent girls rather than making all the transfers to their mothers as most similar programs do. Second, conditions attached to cash transfers may clash with the autonomy (or agency) required to make independent decisions about important life choices. Further research is needed to help unpack the specific mechanisms through which cash transfers lead to empowerment, allowing for improved program design to target the specific needs of school-age girls.

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Table 1: Attrition: Dependent Variable =1 if Core Respondent Successfully Interviewed During Round 2

	All	Baseline Dropouts	Baseline Schoolgirls
	(1)	(2)	(3)
CCT Indicator	0.007 (0.021)	0.010 (0.020)	0.010 (0.026)
Constant	0.921*** (0.009)	0.898*** (0.013)	0.925*** (0.011)
Number of observations	2,890	889	2,001

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. This table depicts the results of regressing a binary indicator for being interviewed during the second wave of data collection on an indicator for treatment. Column 1 pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs.

Table 2: Balance of baseline characteristics

	All		Baseline Dropouts		Baseline Schoolgirls	
	Control	Treatment	Control	Treatment	Control	Treatment
	mean	difference	mean	difference	mean	difference
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Parental characteristics</i>						
Respondent's mother is alive	0.829	-0.034	0.794	-0.041	0.836	-0.032
Respondent lives in household with mother	0.646	-0.013	0.644	-0.058	0.646	-0.001
Respondent's Mother educated beyond primary school	0.326	0.060	0.292	0.041	0.333	0.065
Respondent's father is alive	0.692	0.017	0.644	0.010	0.702	0.018
Respondent lives in household with father	0.412	0.042	0.364	-0.051	0.421	0.067
Respondent's father educated beyond primary school	0.584	0.047	0.558	0.036	0.590	0.050
<i>Personal characteristics</i>						
Respondent's age	15.648	-0.332***	17.572	-0.431*	15.259	-0.305**
Respondent reported being ill in 2 weeks prior to interview	0.426	-0.037	0.393	0.016	0.433	-0.051
Respondent never had sex	0.709	0.003	0.300	-0.009	0.792	0.006
Highest grade attended by respondent	7.270	-0.236	6.229	-0.234	7.480	-0.237
Respondent is muslim	0.201	-0.038	0.221	-0.004	0.197	-0.048
Respondent is evangelical	0.229	0.003	0.229	0.037	0.229	-0.006
<i>Household characteristics</i>						
Asset index (first principal component of 15 durable goods)	0.333	0.404	-0.780	0.125	0.559	0.480
Household size	6.389	-0.047	6.093	0.018	6.449	-0.064
<i>Geographic strata (used for block randomization)</i>						
Respondent lives in Zomba City	0.320	0.083	0.187	-0.025	0.347	0.113
Respondent lives in rural area within 16 km from Zomba City	0.581	-0.099	0.686	-0.026	0.560	-0.118
Respondent lives in rural area more than 16 km from Zomba City	0.099	0.016	0.128	0.052	0.093	0.006
Observations in control and treatment:	1813	876	407	396	1406	480

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions for treatment (all) run using a treatment dummy and an indicator for baseline schooling status. Balance among baseline dropouts and baseline schoolgirls estimated by regressing only on a treatment

Table 3: Program impact on expenditures by the respondents on themselves over the past 30 day (difference in difference)

	All	Baseline Dropouts	Baseline Schoolgirls
	(1)	(2)	(3)
CCT Indicator	1.989*** (0.378)	2.025*** (0.565)	2.028*** (0.493)
Schoolgirl at baseline	-1.194*** (0.451)		
Time trend in control	0.975*** (0.207)	1.153*** (0.364)	0.939*** (0.227)
R2	0.043	0.048	0.044
Number of observations	2,685	801	1,884
Baseline mean (s.d.) in the control group	1.545 (0.153)	2.613 (0.347)	1.329 (0.166)

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column (1) pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate dropouts and schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset index and sexual activity status.

Table 4: Who typically decides how the transfer is spent (in percentages)

	All	Baseline Dropouts	Baseline Schoolgirls
	(1)	(2)	(3)
<i>Panel A: Transfer to household</i>			
Father	10.79	10.72	10.81
Mother	58.96	55.07	60.20
Self	8.54	14.20	6.73
Other	21.72	20.00	22.27
<i>Panel B: Transfer to respondent</i>			
Father	2.91	3.49	2.72
Mother	13.28	12.79	13.44
Self	78.43	79.94	77.94
Other	5.39	3.78	5.90
Observations	801	344	457

Notes: Column 1 pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Observations are weighted to make results representative of all study EAs.

Table 5: Program impact on health training over the past 12 months (cross section)

	<u>Dependent Variable:</u>					
	Participated in any health training			Participated in health training in school		
	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls
(1)	(2)	(3)	(4)	(5)	(6)	
CCT Indicator	0.011 (0.027)	0.155*** (0.040)	-0.034 (0.029)	0.052* (0.028)	0.368*** (0.036)	-0.038 (0.030)
Schoolgirl at baseline	0.179*** (0.026)			0.350*** (0.034)		
R2	0.081	0.089	0.014	0.194	0.226	0.019
Number of observations	2,682	801	1,881	2,682	801	1,881
Mean (s.d.) in control	0.819 (0.015)	0.539 (0.026)	0.875 (0.015)	0.713 (0.017)	0.163 (0.020)	0.824 (0.016)

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column (1) pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset index and sexual activity status.

Table 6: Program impact on timing of fertility and total desired fertility (cross section)

	<u>Dependent Variable:</u>					
	Ideal number of months before next child			Ideal number of children		
	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls
(1)	(2)	(3)	(4)	(5)	(6)	
CCT Indicator	5.387** (2.514)	7.595*** (2.934)	4.226 (3.080)	-0.092 (0.087)	-0.051 (0.097)	-0.095 (0.103)
Schoolgirl at baseline	5.954** (2.471)			0.015 (0.081)		
R2	0.223	0.135	0.192	0.038	0.044	0.040
Number of observations	2,624	778	1,846	2,684	800	1,884
Mean (s.d.) in control	74.602 (1.860)	52.003 (1.783)	79.173 (1.996)	2.824 (0.036)	2.899 (0.056)	2.809 (0.041)

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column (1) pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset index and sexual

Table 7: Program impact on choice of spouse (cross section)

	<u>Dependent Variable:</u>											
	=1 if spouse wealth important (married sub-sample)			=1 if spouse wealth important (entire sample)			=1 if spouse education important (married sub-sample)			=1 if spouse education important (entire sample)		
	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CCT Indicator	-0.056*** (0.020)	-0.068** (0.029)	-0.040* (0.024)	-0.027** (0.011)	-0.029** (0.014)	-0.027* (0.015)	0.123** (0.059)	0.093 (0.066)	0.121 (0.099)	0.056** (0.026)	0.129*** (0.037)	0.034 (0.031)
Schoolgirl at baseline	0.001 (0.020)			-0.000 (0.012)			0.065 (0.066)			0.120*** (0.032)		
R2	0.056	0.115	0.055	0.021	0.022	0.025	0.083	0.066	0.156	0.069	0.066	0.034
Number of observations	250	143	107	2,615	778	1,837	250	143	107	2,615	778	1,837
Mean (s.d.) in control	0.058 (0.020)	0.077 (0.027)	0.039 (0.021)	0.041 (0.010)	0.058 (0.012)	0.037 (0.012)	0.122 (0.026)	0.099 (0.033)	0.147 (0.042)	0.561 (0.013)	0.314 (0.025)	0.610 (0.014)

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column (1) pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset index and sexual activity status.

Table 8: Program impact on self-perceived standing in household (cross section)

	<u>Dependent Variable:</u>					
	=1 if household cares more about respondent's education than 12 months ago			=1 if household cares more about respondent's health than 12 months ago		
	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls
	(1)	(2)	(3)	(4)	(5)	(6)
CCT Indicator	0.134*** (0.029)	0.321*** (0.038)	0.081** (0.034)	0.138*** (0.038)	0.070** (0.034)	0.158*** (0.046)
Schoolgirl at baseline	0.131*** (0.033)			0.053* (0.029)		
R2	0.067	0.175	0.021	0.037	0.016	0.046
Number of observations	2,655	781	1,874	2,653	781	1,872
Mean (s.d.) in control	0.461 (0.014)	0.160 (0.021)	0.521 (0.017)	0.254 (0.012)	0.235 (0.022)	0.258 (0.013)

Notes: *** p<0.01, ** p<0.05, * p<0.1. Column (1) pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset

Table 9: Program impact on day to day activities

	<u>Dependent Variable:</u>									
	=1 if main daily activity is attending school (dif-in-dif)		=1 if main daily activity is doing household chores (dif-in-dif)		=1 if main daily activity is labor (agricultural or otherwise) (dif in dif)		Average number of hours of sleep per day (cross section)		Average number of hours of leisure per day (cross section)	
	Baseline Dropouts	Baseline Schoolgirls	Baseline Dropouts	Baseline Schoolgirls	Baseline Dropouts	Baseline Schoolgirls	Baseline Dropouts	Baseline Schoolgirls	Baseline Dropouts	Baseline Schoolgirls
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CCT Indicator	0.293*** (0.037)	0.025 (0.022)	-0.166*** (0.035)	-0.012 (0.020)	-0.118*** (0.035)	-0.002 (0.009)	-0.368** (0.145)	-0.099 (0.133)	-0.171** (0.073)	0.009 (0.089)
Time trend in control	0.079*** (0.017)	-0.109*** (0.010)	0.034* (0.019)	0.071*** (0.009)	-0.118*** (0.019)	0.029*** (0.005)	N/A	N/A	N/A	N/A
R2	0.137	0.100	0.074	0.075	0.051	0.038	0.044	0.039	0.051	0.037
Number of observations	801	1,884	801	1,884	801	1,884	800	1,884	800	1,882
Mean (s.d.) in control	0.094 (0.017)	0.985 (0.005)	0.485 (0.031)	0.010 (0.004)	0.416 (0.032)	0.003 (0.002)	9.507 (0.100)	9.032 (0.069)	1.951 (0.053)	1.762 (0.046)

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Columns (1)-(6) are measured in changes between Round 1 and Round 2, with the mean in control representing the baseline mean. Columns (7)-(10) are measured in Round 2 levels, with the mean in the control. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset index and sexual activity status.

Table 10: Program impact on nutrition and health (cross section)

	Dependent Variable:					
	Number of times respondent ate protein rich food over past 7 days			=1 if respondent sleeps under a bed net		
	All	Baseline Dropouts	Baseline Schoolgirls	All	Baseline Dropouts	Baseline Schoolgirls
(1)	(2)	(3)	(4)	(5)	(6)	
CCT Indicator	0.413** (0.166)	0.315* (0.180)	0.457** (0.199)	0.059* (0.033)	-0.019 (0.039)	0.079** (0.039)
Schoolgirl at baseline	-0.130 (0.152)			-0.089** (0.037)		
R2	0.107	0.095	0.115	0.063	0.143	0.063
Number of observations	2,685	801	1,884	2,675	797	1,878
Mean (s.d.) in control	3.917 (0.096)	3.680 (0.125)	3.965 (0.105)	0.509 (0.017)	0.587 (0.028)	0.494 (0.020)

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Column (1) pools baseline dropouts and baseline schoolgirls. Columns (2) and (3) investigate baseline dropouts and baseline schoolgirls separately. Standard errors (in parentheses) are clustered at the EA level and observations are weighted to make results representative of all study EAs. Regressions include baseline values for the following covariates: age indicators, geographical strata indicators, highest grade attained, household asset