The Effects of Cash and Complementary Services on Youth Exposure to Violence in Zimbabwe

Averi Chakrabarti[a,c], Sudhanshu Handa[a], Gustavo Angeles[a], David Seidenfeld[b]

Abstract

Violence against children is a clear violation of child rights and is a risk factor for adverse later life outcomes. Programs that alleviate poverty could, by addressing a structural determinant of child vulnerability, reduce child maltreatment and abuse. This paper uses data from the impact evaluation of Zimbabwe's Harmonized Social Cash Transfer (HSCT) Program, which combines cash transfers with complementary services (information on and assistance with accessing child protection resources), to identify program effects on the victimization of young persons to physical violence. Using a difference-in-differences approach, we find that the incidence of physical violence faced by youth in the treatment group is 19 percentage points lower than that faced by the comparison group four years into the program. The results build on a small and growing literature on the potential positive effects of unconditional cash transfers on youth exposure to violence.

[a]University of North Carolina at Chapel Hill
[b]American Institutes for Research
[c]Corresponding Author. Contact at averic@live.unc.edu

I. Introduction

Violence against children can take the form of "physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse" (UN General Assembly, 1989; UN Committee on the Rights of the Child, 2011). More than one billion children (aged two to 17 years), or approximately half of all children around the world, are likely being subjected to violence every year (Hillis et al, 2016). Authority figures such as caregivers and teachers often tend to be the perpetrators of physical violence against children, although peers are also common offenders. When it comes to the emotional abuse of children, parents and caretakers are again most likely to be responsible. Young children are particularly vulnerable to sexual abuse by individuals they know (often caregivers), while adolescents tend to be victimized outside their home. Intimate partners are the likely perpetrators of sexual violence against adolescent girls (UNICEF, 2014).

Violence against children is a clear violation of child rights and is detrimental for children's later life outcomes. Experiences with violence in childhood aggravate mental health issues such as depression (Paolucci et al, 2001; Gershoff, 2002); hinder cognitive, social and emotional development (Butchart et al, 2006); affect academic achievement (Paolucci et al, 2001; Ogando Portela and Pells, 2015); and increase the likelihood of being a victim to and/or perpetrator of violence in the future (Paolucci et al, 2001; Gershoff, 2002; Abramsky et al, 2011).

Poverty and other economic factors such as income inequality increase the risk for child neglect and abuse (Butchart et al, 2006; Hussey et al, 2006; Gilbert et al, 2009; Akmatov, 2011; Cancian et al, 2013; Meinck et al, 2015). Financial deprivation-child maltreatment linkages might emerge, for example, if caregiver stress from economic hardships leads to the neglect or maltreatment of children. Poor families might also use child/early marriage to relieve strains on household resources, which might expose children to abusive situations (Peterman et al, 2017).

Given that economic deprivation increases children's susceptibility to abuse and maltreatment, interventions to reduce violence against children have often incorporated anti-poverty strategies such as cash and in-kind transfers, skills training, microfinance and support for job searches (Marcus and Page, 2014). In this analysis, we explore whether one such program was able to protect young individuals from abuse. Specifically, we identify the impacts of a program providing unconditional cash transfers (CT) on youth exposure to physical violence.[1]

The Harmonized Social Cash Transfer (HSCT), a scheme of the Government of Zimbabwe, is oriented towards alleviating poverty and protecting orphans and vulnerable children (OVC). The program targets unconditional transfers to food insecure and poor households. In addition, beneficiaries are provided with information regarding child protection issues, made aware of available services and aided with accessing these resources. While we refer to the HSCT in the rest of the paper as a CT program, it should be kept in mind that the transfers were coupled with information and support specially aimed at enhancing child well-being.

[1] Children's experiences with physical violence could include "corporal punishment and all other forms of torture, cruel, inhuman or degrading treatment or punishment as well as physical bullying and hazing by adults or by other children" where corporal punishment refers to punishment with physical force and might involve smacking, slapping, spanking, kicking, shaking, pinching, biting, burning and other similar activities (UNICEF, 2014).

Soon after the HSCT was launched in 2012, a non-experimental impact evaluation study was set up to study its effects on different measures of well-being. Treatment households started receiving transfer payments after a baseline survey in May 2013 and a 12-month follow-up survey was conducted in July 2014. The first complementary services for children in beneficiary households began just before the 12-month follow-up survey. The 48-month follow-up survey took place in July and August 2017.

In this analysis, we use data from the three surveys of the HSCT impact evaluation to investigate whether the scheme changed the exposure of young individuals aged 13 to 24 years to different forms of physical abuse and whether it shaped the tendency of certain types of actors to commit violence against youth. We find that at the time of the 12-month follow-up survey, the HSCT had no identifiable effect on youth exposure to violence. Given that beneficiary households had only been receiving CTs for a year and had just started being exposed to the complementary HSCT services, one might interpret the lack of results at this stage to largely reflect the impact of a cash-only program in the short term. In contrast to the null effect at the first survey wave, the 48-month impact estimate shows a 19 percentage point decline in the incidence of violence experienced by youth in HSCT households, a result that can be interpreted as the medium term effect of a cash-plus program. Subsequent analyses suggest that boys might have benefitted more from HSCT—the point estimate of the program's effects on boys' exposure to violence at the 48-month follow-up survey is three times larger than the corresponding estimate for girls. The findings do not, however, point to any systematic effects on the types of perpetrators committing violence against youth.

In order to understand the potential pathways through which HSCT could have impacted youth violence, we next turn to examine whether the program was able to shape potential mediators. We find that beneficiary households were able to enhance their level of spending on consumption items and experience higher levels of food security than households in the comparison group. The main survey respondents from the treatment group also experienced more subjective well-being, considered their households to be better off than in the past and appeared to be more optimistic about their futures. This evidence allows us to hypothesize that the alleviation of financial insecurities due to the HSCT and the associated reductions in stress might have enabled caregivers to provide a more protective environment for their youth. This is borne out by our finding that young individuals in the treatment group were less likely to be engaged in casual and part-time labor at final follow-up—the influx of cash appears to have allowed households to withdraw youth from potentially dangerous work settings.

In the last set of results we present, we show that school enrolment is a risk factor for abuse, which is consistent with existing evidence from developing countries around the world. When we examine the distribution of perpetrators separately for those in and out of school, we find that authority figures (presumably school principals and teachers) are more commonly reported by school-going youth as being responsible for the physical abuse they face. At final follow-up, we do not find, however, any heterogeneity in the HSCT program's effects on youth violence by schooling

The rest of the paper is structured as follows. Section 2 discusses the linkages between poverty and child abuse. We describe the HSCT program, data, and the study sample and methods in Sections 3, 4 and 5 respectively. Section 6 contains the results and Section 7 covers robustness checks. We conclude with a discussion in Section 8.

II. Background: Potential channels through which cash transfers might shape child abuse

CTs are currently being used around the world as a major anti-poverty tool. By specifically targeting a major risk factor for child abuse and maltreatment, these programs could act to reduce youth exposure to violence. However, while much research has been conducted on the effects of these programs on outcomes such as child nutrition and health (Lagarde et al, 2007; Fiszbein et al, 2009; Leroy et al, 2009; Owusu-Addo and Cross, 2014; Bastagli et al, 2016; de Groot et al, 2017), and schooling (Fiszbein et al, 2009; Baird et al, 2013; Bastagli et al, 2016), impacts on childhood violence remain relatively unexplored (Peterman et al, 2017).

Peterman et al (2017) develop a framework to understand the pathways through which social safety nets (SSNs) might impact emotional, physical and sexual violence against children.[2] Given that SSNs are usually targeted to households, the authors postulate that they are likely to first influence household-level mechanisms and subsequently trigger caregiver/interpersonal-level and/or child-level pathways.

The household-level pathways are hypothesized to include economic security, labor force participation, time use, intra-household power dynamics and acute/chronic stress levels. To illustrate one way in which these factors could shape the risk of abuse—the alleviation of budget constraints has the potential to reduce stress levels of household members and thereby deter them from using physical force against young individuals in the household. Alternatively, poverty alleviation within households could prevent youth from resorting to risky practices that might expose them to violence, such as transactional sex.

At the caregiver and interpersonal level, SSNs could impact substance use, psychosocial wellbeing, caregiving practices, and conflict/violence within the household. For instance, income support could lead to improved caregiver wellbeing and thereby facilitate the adoption of better parenting practices (and the reduction of the use of corporal punishment). Child-level pathways encompass time in school, psychosocial wellbeing, time spent in risky settings, child marriage, and problem and risk behaviors. As an example, SSN-induced increases in school participation might cause children to withdraw from hazardous work environments, but might also put them at risk of violence perpetrated by authority figures, peers and individuals encountered during commutes to school.

Peterman and colleagues emphasize that the violence effects of the different potential mechanisms are likely to be moderated by contextual factors (such as the established policy, institutional and legal framework) and by household, caregiver and child vulnerability characteristics (examples of which are social isolation and discrimination based on HIV status). SSN program features (like targeting and the specified gender of the recipient) are also bound to determine the extent to which programs are able to affect childhood violence.

The authors go on to review the evidence from 14 studies that explore child experiences of violence in households benefitting from SSNs. They conclude that while such programs have

[2] The authors include the following types of schemes within the category of social safety net programs—conditional CTs, unconditional CTs, unconditional in-kind transfers, public work or cash for work programs, and vouchers or fee waivers.

been able to protect adolescent girls in Africa from sexual violence, they have not had consistent impacts in other contexts or on younger children.

III. Program description & study design

Initiated in 2012, the HSCT program in Zimbabwe is oriented towards alleviating chronic food insecurity and poverty, and protecting OVCs. The HSCT program, which is part of a range of strategies under the National Action Plan (NAP) for OVC, intends to harmonize the delivery of child protection interventions and cash transfers to poor households (Carolina Population Center, 2017).

Jointly funded by the Government of Zimbabwe, donors and the United National International Children's Emergency Fund (UNICEF), the HSCT program targets labor constrained and food poor households. Based on data collected through a census in the wards of program districts, the Ministry of Public Service, Labor and Social Welfare (MPSLSW), which implements the program, identifies beneficiary households that meet the eligibility criteria.[3] Households are classified as labor constrained if they do not have an able-bodied member between the ages of 18 and 59 who has been able to work for more than three months, have a dependency ratio of three or more, or have a severely disabled or chronically ill member needing intensive care. Food poor households are those that fall below the food poverty line and are incapable of meeting essential needs—they consume one or no meals a day; are unable to purchase basic non-food items such as clothing; depend on begging or piece work; do not own valuable assets; and receive no regular support from relatives, pension systems or existing welfare programs.[4]

Under the HSCT program, transfers are made to beneficiary households once in two months at designated payment points. The monthly value of the transfer depends on household size—$10, $15, $20 and $25 for households with one, two, three, and four or more members respectively. Households that are targeted by the program tend to be large (the median household size in the study sample is five) and so the majority of beneficiary households receive $25 per month. This is about 20 percent of monthly household expenditure at baseline (American Institutes for Research, 2013).

In order to enhance HSCT's protective effects for children, several non-cash components have been incorporated into the program. Government agencies and non-government organization (NGO) partners have staff available at HSCT payment points to discuss welfare and protection issues for all children, but also those that are especially relevant for children with disabilities and/or HIV/AIDS.[5] Help desks are available to take reports on a variety of cases—for example, those related to disability, to neglect or violence, and to birth registration—and these cases are then referred to the appropriate agencies. For example, children with disabilities are directed to the National Case Management system. Efforts are also made to link households to the health, education, protection and legal services they require. Finally, community-based volunteers are trained to identify, assist with and monitor children and families that need support.

An impact evaluation study was set up soon after HSCT's launch to identify program impacts on food security, human development, child protection and other outcomes. It was not possible

[3] Zimbabwe is divided into provinces, which are further split into districts. Districts are sub-divided into wards.
[4] A household is considered to be food poor if its expenditures cannot cover the minimum food energy needs of household members—at least 2,100 kcal per adult equivalent.
[5] The NGO partners are J.F. Kapnek Trust, AfricAid and Childline Zimbabwe.

to randomize treatment status within districts because the MPSLSW operational guidelines dictated that that once the program was launched in a district, all eligible households would be covered immediately. Instead, the study design took advantage of the phased rollout of the HSCT across the country. Three districts from phase 2 of the expansion (Binga, Mwenzi and Mudzi) were designated as treatment districts, and three neighboring districts scheduled to receive treatment in phase 4 (UMP, Chiredzi and Hwange) were designated as the comparison districts. The latter set of districts were selected to match the treatment districts on a range of agro-ecological characteristics, culture and economic conditions. Subsequently, 60 wards were randomly selected from the treatment districts and matched to 30 wards in the comparison districts on the basis of geographical conditions, climate, level of development, access to services and development programs, and culture. The evaluation compared households receiving transfers in the treatment districts with program-eligible households in the comparison districts. Program targeting was conducted in the 30 wards of the comparison district in the same way in which it was carried out in program districts, such that selected households in the comparison districts would have been eligible for HSCT had it expanded into these areas at the time. Of the eligible households in each of the 90 study wards, 34 were randomly selected to be part of the evaluation sample, leading to a total sample of 3,063 households. Program selection was supply driven (through a census) and the implementation of the precise program targeting procedure in the comparison group wards led to an observationally equivalent comparison group of households—this is demonstrated by the household-level baseline balance tests we perform for the study sample in Table A1 in the appendix (columns 1 and 2). Given our focus on youth in the current analysis, we also compare treatment and control households with youth members at baseline in this table (columns 3 and 4). As these statistics suggest, the HSCT evaluation study design produced a strong counterfactual for the impact evaluation.

A baseline survey was conducted in May 2013, treatment households started receiving transfers in October 2013 and a 12-month follow-up survey was conducted in July 2014. Most of the complementary services for the children in beneficiary households began just before the first follow-up survey, with some, such as the disability services, being launched soon after the 12 month survey. The delays were due to the time it took to finalize memorandums of understanding with partner organizations and to develop the protocols for the services being provided. The 48-month follow-up survey took place in July and August 2017. Each of the surveys took place after the annual harvest in Zimbabwe and are thus likely to capture household conditions at a time when food stores and resources are at a peak (Carolina Population Center, 2017). Institutional Review Board (IRB) approvals were secured from the American Institutes for Research's Institutional Review Board and the Medical Research Council of Zimbabwe.

IV. Data

At each wave of the HSCT evaluation study, a household survey collected data was on a wide range of topics such as education, health, time use, household enterprises, credit, food security, social networks, expenditures and livestock. In addition, a separate youth survey was administered to understand how the program shaped outcomes experienced during the critical period when young individuals are transitioning to adulthood. The youth were as asked about their sexual experiences, mental health, alcohol consumption, HIV and experiences with physical violence. The youth surveys were conducted in private after seeking consent from

both parents and respondents (only the respondents) for those 17 years or younger (18 years or older).

The HSCT youth module asked respondents about their victimization to three categories of physical violence during the 12 months prior to the survey:

> Has anyone ever slapped or pushed you?
>
> Has anyone ever hit you with a fist, kicked you, or beat you with an object?
>
> Has anyone ever used or threatened to use a knife or other weapon against you?

The youth who responded to the physical violence questions in the affirmative were also asked to specify whether the perpetrator of the last violent act was a parent or adult relative, boyfriend/girlfriend/intimate partner, authority figure (teacher, religious or community leader), peer/classmate, or other actor (for example, stranger). This information was collected separately for each type of violence that was measured.

The primary violence outcome that we examine in this analysis is an indicator variable that captures exposure to any of the three types of physical violence that were measured. The second aggregated measure of violence that we use denotes severe physical violence and it accounts for whether youth were hit with a fist, kicked, beaten with an object, or attacked/threatened with a knife or other weapon. Finally, we also look at the violence categories separately. In order to understand whether there are any changes in the violence committed by different categories of actors, we use categorical variables for the perpetrator of each type of violence. For brevity, we refer to the five categories as relative, partner, authority figure, peer and other.

As discussed in the background section above, an intervention like the HSCT could shape youth exposure to violence through different channels. The data collected through the household and youth surveys of the HSCT evaluation study allows us to explore whether there were effects on several of these potential mediators. Specifically, we examine household consumption and food security; caregiver subjective well-being and optimism; and youth schooling, work and partnership status. Table A2 in the appendix describes all the outcomes that we examine in our analysis.

Finally, all our empirical models control for youth sex and age, and for baseline values of several household characteristics.

V. Sample and methods

The HSCT study sample at baseline consisted of 3,063 households—2,029 in the treatment group and 1,034 in the comparison group. Of these households, 86 percent and 84 percent were resurveyed at the 12-month and 48-month follow-up surveys respectively. There was no evidence of differential attrition by treatment status during any of the follow-up surveys (American Institutes for Research, 2014; Carolina Population Center, 2017).

At each survey wave, up to three youth were selected from every household to be interviewed for the youth module; if more than three eligible youth were present, the youngest three were prioritized. At baseline, youth between the ages of 13 and 20 years were surveyed, and at the 12-month follow-up survey the age range for eligibility for the youth module was adjusted to 14-21 years. At the last follow-up, the age range for the youth module was further adjusted to 13-24 years to capture youth who were originally targeted at baseline, and also to allow for

younger children to age into the youth module in anticipation of future data collection. The response rates to the HSCT impact evaluation youth survey was particularly low during the first two surveys. 917 of 2,825 eligible youth (or 32 per cent) and 807 of 2,319 eligible youth (or 35 per cent) were interviewed during the baseline and 12-month follow-up surveys respectively. Of the 3,452 youth who were to be interviewed at final follow-up, 2,319 were surveyed, leading to a response rate of 67 per cent. Given the low response rates to the first two rounds of the youth survey and the time gap between the first and last surveys (four years), there was a low likelihood of following the same youth across time—only 73 individuals were surveyed for the youth module at all three survey waves.

Table 1 shows that there were differences in characteristics between youth who were surveyed and eligible youth who were not surveyed at every survey wave—for example, those not interviewed were typically older (the age differences between non-respondents and respondents are statistically significant at baseline and 48 months), and from households with older heads (significant at all waves). However, as demonstrated in Table 2, the treatment and comparison group respondents at each wave were balanced on several pre-treatment measures. Given the comparability of surveyed youth in treatment and control, contrasting outcomes across groups arguably allows for the identification of causal program effects, though these effects hold only for the youth targeted by the youth module—the younger youth in households.

After stacking the youth data from the different survey waves, we estimate the following difference-in-differences (DiD) model:

$$Y_{iht} = \beta_0 + \beta_1 X_{iht} + \beta_2 Z_h + \beta_3 \delta_t + \beta_4 T_h + \beta_5 (\delta_t * T_h) + \varepsilon_{iht} \quad (1)$$

where Y_{iht} represents an outcome for youth i living in household h at survey wave t (t=1 for the baseline survey, =2 for the 12-month follow-up and =3 for the 48-month follow-up), X_{iht} is a vector of youth characteristics at time t, Z_h is a vector of household characteristics prior to HSCT receipt or at baseline, δ_t are survey round fixed effects, and T_h=1 if household h resides in treatment districts and =0 if it resides in comparison districts. The vector of terms representing the interaction between the treatment variable and each of the time fixed effects is $\delta_t * T_h$—its coefficients represent the DiD estimators for the impacts at different survey rounds. ε_{iht} is the error term for child i in household h at time t.

For all indicator variable outcomes, we use linear probability models to estimate (1), though later on in the analysis we check whether results are sensitive to estimation with a non-linear model. As discussed in the Data section, in order to examine whether there were changes in the abusive actions of specific types of actors, we use an outcome variable for each type of violence to designate who among the mutually exclusive perpetrator categories was responsible for the last such abusive act against the respondent. Since the perpetrator variables represent unordered categories, we probe these outcomes by estimating (1) with multinomial logit models and present program impacts on the probability of violence by a certain type of actor (Maddala, 1987; Cameron and Trivedi, 2010). When exploring who was responsible for a specific category of physical violence against youth, we restrict the sample to only those who had been victimized by that kind of abuse.

In order to enhance the external validity of our estimates, we account for the incomplete response rates to the youth survey and weight all models with the inverse of the estimated probability of youth response and of the household she lives in. We adjust the youth weights

with household weights. At baseline, household weights were constructed to make the study sample representative of all eligible households in the study regions. These baseline weights were updated at follow-up surveys to account for household attrition using inverse probability weighting (Carolina Population Center, 2017).

Finally, we cluster the standard errors in (1) for the ward of residence due to the possibility of correlation in the outcomes of youth living in close proximity to each other.

Table 1: Comparison of youth not surveyed and surveyed across survey waves

Variable	Baseline			12-month follow-up			48-month follow-up		
	Non-Respondents	Youth Respondents		Non-Respondents	Youth Respondents		Non-Respondents	Youth Respondents	
Youth characteristics									
Female	0.50	0.49		0.47	0.51	*	0.45	0.47	
Age	15.43	15.28	*	16.31	16.30		16.98	16.52	***
Household characteristics (baseline values)									
Household size	6.53	6.65		6.46	6.42		6.01	6.22	*
Number of individuals 0-5 years	0.86	0.86		0.84	0.88		0.82	0.91	**
Number of individuals 6-17 years	3.25	3.42	*	3.21	3.23		2.92	3.06	*
Number of individuals 18-59 years	1.64	1.64		1.60	1.55		1.48	1.53	
Number of individuals 60 and above years	0.78	0.72		0.81	0.75		0.79	0.72	**
Household head's characteristics									
Female	0.69	0.69		0.67	0.71		0.67	0.68	
Age	56.54	50.94	***	58.28	51.95	**	54.76	53.43	*
Widow	0.31	0.32		0.32	0.29		0.31	0.29	
Divorced/separated	0.09	0.08		0.09	0.09		0.08	0.10	
Has some schooling	0.63	0.61		0.59	0.65	**	0.63	0.63	
Highest grade	3.71	3.92		3.47	3.85	**	3.75	3.74	
Per capita expenditure	22.70	23.61		23.07	24.08		24.28	23.89	
Observations	1,908	917		1,512	807		1,133	2,319	

Statistically significant mean differences across groups based on Wald tests are represented by: *** p<0.01, ** p<0.05, * p<0.1. The standard errors used for these tests are clustered at the ward-level.

Table 2: Comparison of surveyed youth in treatment and control across survey waves

Variable	Baseline			12-month follow-up			48-month follow-up		
	Control	Treatment		Control	Treatment		Control	Treatment	
Youth characteristics									
Female	0.48	0.52		0.60	0.62		0.49	0.47	
Age	15.33	15.32		16.49	16.15	*	17.14	16.74	*
Household characteristics (baseline values)									
Household size	7.61	7.09		6.84	6.55		6.66	6.47	
Number of individuals 0-5 years	1.14	0.86	*	1.09	0.82	*	1.05	0.98	
Number of individuals 6-17 years	3.83	3.67		3.44	3.44		3.20	3.24	
Number of individuals 18-59 years	1.87	1.81		1.59	1.56		1.66	1.55	
Number of individuals 60 and above years	0.77	0.74		0.71	0.72		0.74	0.69	
Household head's characteristics									
Female	0.62	0.67		0.66	0.68		0.66	0.69	
Age	54.16	50.16	*	49.98	51.52		53.33	52.55	
Widow	0.33	0.30		0.29	0.28		0.29	0.28	
Divorced/separated	0.05	0.10		0.07	0.09		0.08	0.11	
Has some schooling	0.63	0.60		0.71	0.63		0.64	0.64	
Highest grade	3.70	3.68		4.19	3.91		3.78	3.82	
Per capita expenditure	23.63	22.09		27.10	25.85		24.99	24.19	
Observations	273	644		253	554		722	1,597	

Statistically significant weighted mean differences across groups based on Wald tests are represented by: *** p<0.01, ** p<0.05, * p<0.1. The standard errors used for these tests are clustered at the ward-level.

VI. Results

Prevalence of violence at baseline

Before estimating the impacts of the HSCT program on youth physical violence with the analytical framework discussed above, we present summary statistics for baseline values of violence reported by the youth (Table 3). Almost half of all youth report being subjected to some form of physical violence and 24 percent of youth say they met with severe physical violence. The most frequent type of abuse is being slapped or pushed—40 percent of youth face this kind of violence. The most serious abuse—being attacked or threatened with a knife or other weapon—affects four percent of respondents. Peers are the most common perpetrator across all categories of violence (perpetrators for specific types of violence are examined only for those who report facing that kind of abuse). Virtually none of the means of the violence measures are statistically different for treatment and comparison youth at baseline.

In 2011, a nationally representative survey in Zimbabwe (the National Baseline Survey on the Life Experiences of Adolescents or NBSLEA) collected data on childhood experiences of violence. Even though the HSCT baseline survey was conducted a few years after the NBSLEA (in 2013), it is informative to compare the prevalence of violence in the current study sample with the NBSLEA sample. When we restrict our focus to HSCT youth aged 13-17 years (since the physical abuse questions in the NBSLEA used the same reference period as the HSCT surveys for only this age group), we find that 48 percent had experienced some form of physical violence. Even though these youth come from households that are significantly poorer than the average household in the country (American Institutes for Research, 2013), we find the incidence of violence among the sample to be very similar to the 47.5 percent of the NBSLEA sample that reported the same (ZIMSTAT et al, 2011).

Table 3: Treatment-Control balance on youth violence measures at baseline

Variable	All youth	Control group	Treatment group
Physical violence	0.48	0.44	0.49
Severe physical violence	0.24	0.23	0.25
Slapped/pushed	0.40	0.37	0.41
Hit with fist/kicked/beaten with object	0.22	0.21	0.23
Attacked or threatened with knife/other weapon	0.04	0.03	0.05
Perpetrator - Slapped/pushed			
Relative	0.29	0.31	0.29
Partner	0.05	0.09	0.04
Authority figure	0.24	0.25	0.24
Peer	0.36	0.31	0.38
Other	0.05	0.04	0.05
Perpetrator - Hit with fist/kicked/beaten with object			
Relative	0.32	0.25	0.35
Partner	0.06	0.13	0.04
Authority figure	0.23	0.32	0.19*
Peer	0.33	0.26	0.36
Other	0.06	0.05	0.06
Perpetrator - Attacked or threatened with knife/other weapon			

Relative	0.44	0.45	0.43
Partner	0.04	0.00	0.06
Authority figure	0.05	0.00	0.06
Peer	0.33	0.25	0.36
Other	0.14	0.30	0.10
Observations	917	273	644

Statistically significant weighted mean differences across groups based on Wald tests are represented by: *** p<0.01, ** p<0.05, * p<0.1. The standard errors used for these tests are clustered at the ward-level.

Main results

In Table 4, we present the main results of our analysis. We fail to detect any statistically significant effects of the HSCT program on physical violence at 12 months. If anything, the identified point estimates (except for the coefficient in column 5) indicate that treatment youth were more likely to suffer physical abuse. Recall that several of the HSCT complementary services aimed at enhancing child protection and welfare had just started before the 12-month follow-up survey, well after the first transfer payments were made. The information provided to beneficiary households on child abuse might have sensitized the youth to issues related to violence and led to higher reporting; however, given that households had been receiving transfers only for a year and had just been exposed to the services, there might not have been sufficient time for impacts on violence to materialize.

Turning to the 48-month coefficients, we find that treatment youth were 19 percentage points less likely to face any physical violence than comparison youth, a difference that is statistically significant at the one percent level (column 1). The impact estimate for severe physical violence (column 2) indicates a decline, but the coefficient does not attain statistical significance. Upon examining the different types of violence separately, we find that the results for any physical violence are driven by the first category—being slapped or pushed (column 3), which is the most common and perhaps the least severe kind of violence that was measured. The coefficient on the variable for being attacked or threatened with a weapon (column 5) is marginally significant. Note, however, that very few youth report facing this kind of violence—only four percent at baseline.

We probe whether there was any heterogeneity in these violence results by gender in Table A3 in the Appendix. While all the point estimates for the two groups are negatively signed, it seems like the violence deterring effects of HSCT were stronger for boys. At final follow-up, boys in the treatment group were about 28 percentage points less likely to be victimized by any form of physical abuse; the corresponding figure for girls is one-third the size. It should be noted though that the impact estimates on this indicator for the two groups are statistically not different from each other.

Table 4: Impacts of the HSCT program on youth exposure to physical violence

	(1)	(2)	(3)	(4)	(5)
Dependent variable:	Physical violence	Severe physical violence	Slapped/pushed	Hit with a fist/kicked/beaten with object	Attacked or threatened with knife or other weapon
Treatment	0.057	0.039	0.031	0.033	0.018
	(0.051)	(0.050)	(0.044)	(0.048)	(0.016)
12 months	-0.131***	-0.019	-0.194***	-0.015	-0.010
	(0.043)	(0.045)	(0.051)	(0.042)	(0.016)
48 months	0.052	0.050	0.011	0.048	0.023
	(0.049)	(0.056)	(0.039)	(0.058)	(0.015)
12 month treatment impact	0.041	0.006	0.075	0.007	-0.005
	(0.061)	(0.056)	(0.062)	(0.052)	(0.021)
48 month treatment impact	-0.189***	-0.109	-0.141***	-0.102	-0.042*
	(0.062)	(0.067)	(0.049)	(0.068)	(0.022)
Observations	4,038	4,038	4,037	4,037	4,032
R-squared	0.053	0.035	0.046	0.042	0.009
Baseline mean of dependent variable	0.477	0.243	0.399	0.223	0.041

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. The physical violence measures capture abuse in the 12 months before a survey.

During the 48-month follow-up, the youth module included several questions about the environment that the respondents were in and their relationship with potential perpetrators. We examine these outcomes here to get a sense of youths' settings. Since these questions were not asked in the earlier survey rounds, we cannot use empirical specification (1) to examine these outcomes, but estimate a single-difference model with the treatment indicator and all the usual control variables. Table 5 contains these results. Young individuals in treatment households appear to be significantly less worried about relationships at home and outside, less likely to witness a parent being subject to intimate partner violence and experience lower levels of humiliation by adults. Collectively, these findings demonstrate that treatment youth perceive themselves to be in more protective settings than control youth, and are consistent with our main finding that the HSCT program reduced youth exposure to violence.

Next, we examine whether there were any changes in the types of perpetrators committing violence against youth. We look only at perpetrators who slapped/pushed youth and those who punched/kicked/beat youth with an object. As highlighted above, only a small proportion of individuals were threatened or attacked with a weapon at any wave and we do not have enough

variation on the variable capturing perpetrators for this type of violence to achieve model convergence. Among the point estimates on violence committed by different categories of actors presented in Table 6, there are almost no statistically significant effects. The signs on the coefficients suggest, however, that the program might have engendered declines in violence by relatives and peers, but increases in abuse by partners and authority figures.

Table 5: Impacts of the HSCT program on youth environment at 48-month follow-up survey

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Youth is worried about relationship with people at home	Youth is worried about relationship with people outside home	Youth has seen parent being subjected to intimate partner violence at any point in time	Adult humiliated youth in front of others in last 12 months	Adult made youth feel unwanted in last 12 months	Adult threatened to abandon/told youth to leave home in last 12 months
Treatment	-0.067**	-0.070**	-0.038***	-0.067***	-0.030	-0.013
	(0.030)	(0.034)	(0.014)	(0.024)	(0.026)	(0.014)
Observations	2,315	2,315	2,297	2,297	2,304	2,304
R-squared	0.060	0.052	0.028	0.028	0.028	0.034
Control group mean of dependent variable	0.476	0.525	0.095	0.209	0.166	0.098

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The 48-month follow-up survey was conducted in 2017.

Impacts on potential mediators

In the Background section, we discuss Peterman et al's 2017 framework which highlights the various pathways through which programs like HSCT could influence childhood experiences of violence. In this section, we explore the impacts of the Zimbabwe CT on several of these potential mediators to understand whether they could have played a role in bringing about the observed declines in child abuse. We separately examine outcomes at the level of the household, the caregiver and the youth.

Table 6: Impacts of the HSCT program on violence perpetrated against youth by specific types of actors

	(1)	(2)
	Slapped/pushed	Hit with a fist/kicked/beaten with object
12 month treatment impact		
Relative	-0.149	-0.198*
	(0.115)	(0.111)
Partner	0.148**	0.150
	(0.072)	(0.093)
Authority figure	0.060	0.050
	(0.121)	(0.175)
Peer	-0.095	-0.131
	(0.084)	(0.130)
Other actor	0.036	0.130**
	(0.052)	(0.060)
48 month treatment impact		
Relative	-0.010	-0.155
	(0.091)	(0.107)
Partner	0.102*	0.144
	(0.061)	(0.091)
Authority figure	0.039	0.135
	(0.087)	(0.105)
Peer	-0.081	-0.056
	(0.075)	(0.095)
Other actor	-0.050	-0.068
	(0.045)	(0.043)
Observations	1,201	711
Baseline mean - violence by relative	0.294	0.319
Baseline mean - violence by partner	0.053	0.066
Baseline mean - violence by authority figure	0.244	0.229
Baseline mean - violence by peer	0.363	0.331
Baseline mean - violence by other actor	0.046	0.055

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with multinomial logit models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Sample restricted to those who experienced the kind of violence being examined. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. Data was collected on the perpetrator who committed the last act of a specific type of violence in the 12 months before a survey.

Household-level mediators

In order to capture the HSCT's effects on household economic security, we probe the per capita value of monthly household purchases of all items and of food items. For this estimation, we use model (1), but exclude the youth-level control variables of age and gender. Additionally, we restrict our analysis to only those households that had a young individual between the ages of 13 and 24 years at baseline. Table 7, which contains these results, shows positive HSCT effects on both expenditure measures.[6] The enhanced purchasing power of transfer-receiving households is likely to have improved their control over consumption choices and their sense of self-reliance, conditions that might have allowed caregivers to direct more focused care to their children and youth.

Caregiver-level mediators

During the baseline survey of the HSCT impact evaluation study, the household survey was administered to an individual within each household who was designated as the main respondent. The person most knowledgeable about the surveyed topics (such as health, education and consumption) was to be selected to be interviewed. At follow-up waves, attempts were made to re-interview the same individual as the main respondent. The HSCT evaluation surveys collected data on the main respondent's perceptions regarding household food security, individual wellbeing and future expectations, under the assumption that this individual is likely to be the caregiver of children and youth in the household, or be an appropriate proxy for the caregiver. Here, we examine these outcomes with a model akin to equation (1), except that the outcome and individual-level controls for this part of the analysis are at the level of the main respondent. As in our analysis of household-level mediators, we focus only on households that had at least one member aged 13 to 24 years at baseline.

In Table 8 we probe the following outcomes—whether main respondents report having three or more meals on a regular basis, the Household Food Insecurity Access Scale (Coates et al, 2007), a Subjective Well-being Scale (adapted from the Satisfaction with Life Scale developed in Diener et al, 1985), whether respondents consider their households to be currently better off than the previous year, and optimism about the future. Most of these measures are indicator variables with the exception of the two scales, on which higher values indicate more of the construct being measured—greater food insecurity and enhanced well-being. We describe these variables in more detail in Table A1.

[6] Past analyses of the HSCT program have documented its effects on total household consumption from different sources—from purchases, own production and gifts (Carolina Population Center, 2017; Bhalla et al, 2018). These investigations demonstrate that while the program had no detectable effects on aggregate consumption levels, treated households increased consumption resulting from self-purchases (in line with the results we report in Table 7), but these were offset by a decrease in the consumption of gifted items.

Table 7: Impacts of the HSCT program on household-level outcomes

	(1)	(2)
Dependent variable:	Per capita value of monthly household purchases of all items	Per capita value of monthly household purchases of food items
Treatment	-0.159	-0.134
	(0.918)	(0.557)
12 months	1.711**	0.610
	(0.720)	(0.463)
48 months	5.863***	2.433***
	(0.547)	(0.355)
12 month treatment impact	2.298***	1.401**
	(0.854)	(0.553)
48 month treatment impact	2.828*	2.125
	(1.526)	(1.298)
Observations	5,040	5,040
R-squared	0.028	0.011
Baseline mean of dependent variable	11.022	3.703

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. The sample is restricted to household that had youth members at baseline. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017.

The estimates presented in Table 8 demonstrate that the HSCT program led to improvements on all potential caregiver-level mediators by final follow-up. Given that caregivers in treatment households appear to be less concerned about meeting the food needs of their households, experience enhanced levels of well-being, consider their households to be better off than before, and exhibit higher levels of optimism, they might have been better able to provide safe environments for the young individuals in their households. This might have contributed to the declines in violence that we observe in the main results.

Table 8: Impacts of the HSCT program on caregiver-level outcomes

Dependent variable:	(1) Consumed three or more meals in a day	(2) Household Food Insecurity Access Scale	(3) Subjective Well-being Scale	(4) Household is better off compared to last year	(5) Belief that household will be better off in one year
Treatment	-0.003	-0.007	-0.062	-0.016	-0.010
	(0.019)	(0.512)	(0.323)	(0.024)	(0.028)
12 months	0.193***	-3.488***	1.244***	0.088***	0.174***
	(0.023)	(0.605)	(0.313)	(0.031)	(0.039)
48 months	0.287***	-2.802***	2.676***	0.266***	0.146***
	(0.021)	(0.542)	(0.405)	(0.040)	(0.025)
12 month treatment impact	0.083**	0.042	0.802**	0.394***	0.170***
	(0.034)	(0.750)	(0.394)	(0.038)	(0.044)
48 month treatment impact	0.072**	-1.839**	0.865*	0.224***	0.188***
	(0.034)	(0.728)	(0.464)	(0.046)	(0.035)
Observations	5,035	4,691	5,031	5,035	4,977
R-squared	0.115	0.084	0.091	0.144	0.070
Baseline mean of dependent variable	0.291	14.013	9.725	0.103	0.242

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. These questions were asked of the main respondent at each survey wave; we assume this individual is the caregiver of the children and youth in the household. Controls include caregiver age and gender and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. The sample is restricted to household that had youth members at baseline. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017.

Youth-level mediators

To understand whether the youth-level factors were likely to have mediated the impacts of HSCT on exposure to violence, we now turn to examine whether the program influenced youths' schooling outcomes, work activities and partnership status.

Table 9 presents the impacts we identify for potential youth-level mediators using equation (1). The HSCT program does not appear to have impacted youth schooling (columns 1 and 2) and the formation of relationships/marriages (column 4). However, at the 48-month follow-up, young individuals in the treatment group were 12.5 percentage points less likely to engage in casual work than their counterparts in the control group (column 3).[7] This finding suggests that at least part of HSCT's protective effects on youth could have emerged because it allowed households to withdraw young individuals from work settings.

Schooling as a predictor of violence

[7] Respondents could also potentially have been employed in work for a wage, salary, commission or payment in kind. In practice, however, 97 percent or more of the youth did not engage in such work during any survey wave (the reference period for which this information was collected was the week before the survey). There are no statistically significant program effects on this type of work by young individuals.

A growing body of evidence from developing countries suggests that there might be considerable child abuse occurring in educational institutions. For example, an examination of 2009 survey data from the Young Lives study indicated that corporal punishment was common among children in school—in the week spent in school prior to the survey, the proportion of eight year olds facing this type of abuse was 80, 40, 30 and 20 percent respectively in India, Ethiopia, Peru and Vietnam respectively (Ogando Portela and Pells, 2015). Surveys administered to teachers in 10 Francophone sub-Saharan African countries in 2014 found that the proportion of sampled teachers using corporal punishment against students ranged from 20 percent in Cote d'Ivoire to 72 percent in Chad (Bashir et al, 2018).

Table 9: Impacts of the HSCT program on youth-level outcomes

	(1)	(2)	(3)	(4)
Dependent variable:	Currently enrolled in an educational institute	Number of days attended school in the week before the interview[1]	Did any work as a casual/part-time/*maricho* laborer in the last 12 months	Currently married/co-habiting/has a partner
Treatment	0.061	0.130	0.045	-0.020
	(0.044)	(0.252)	(0.060)	(0.041)
12 months	-0.013	0.480	-0.069	0.052
	(0.071)	(0.291)	(0.051)	(0.062)
48 months	0.075**	0.156	-0.011	-0.004
	(0.034)	(0.259)	(0.052)	(0.046)
12 month treatment impact	0.018	-0.167	-0.029	-0.007
	(0.077)	(0.329)	(0.061)	(0.066)
48 month treatment impact	-0.008	-0.227	-0.125**	-0.012
	(0.044)	(0.315)	(0.063)	(0.049)
Observations	4,034	1,930	4,025	4,041
R-squared	0.355	0.030	0.110	0.264
Baseline mean of dependent variable	0.606	4.250	0.245	0.147

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. [1]In examining this outcome, the sample is restricted to those attending an educational institute that was not closed for holiday during the reference period.

To understand whether schooling is predictive of exposure to violence in our sample, we probe the any-physical violence outcome with an empirical specification that includes contemporaneous youth school enrolment status as the main covariate, the treatment indicator and the usual set of control variables. In Table 10, we present the results we obtain when we

estimate this model separately for each survey wave. At every survey wave, those in school appear to be significantly more likely to be abused—at least 10 percentage points more than those not in school.

Youth in school would likely be more vulnerable to violence by certain types of actors—authority figures (teachers and principals) and peers—than the out of school youth. In Figure 1, we depict the perpetrators of the most common form of violence (being slapped and pushed) separately for those in and out of school.

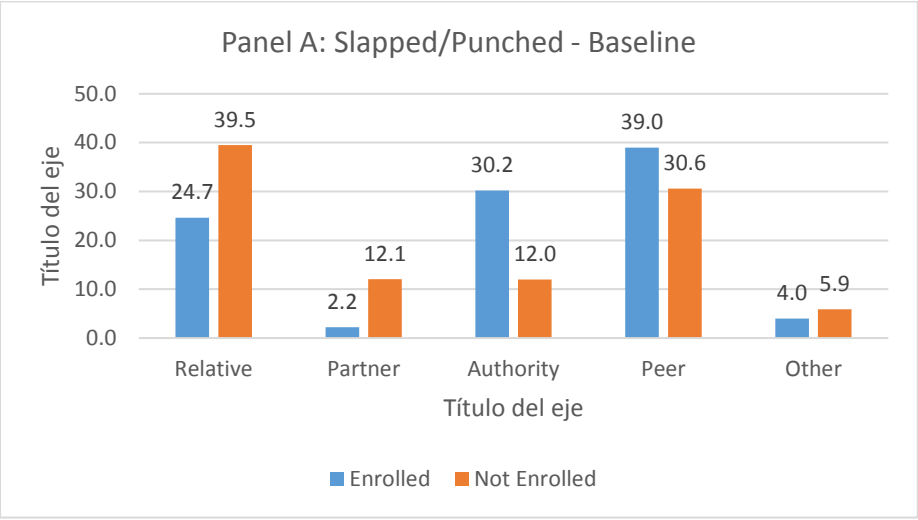
Table 10: Schooling as a risk factor for violence

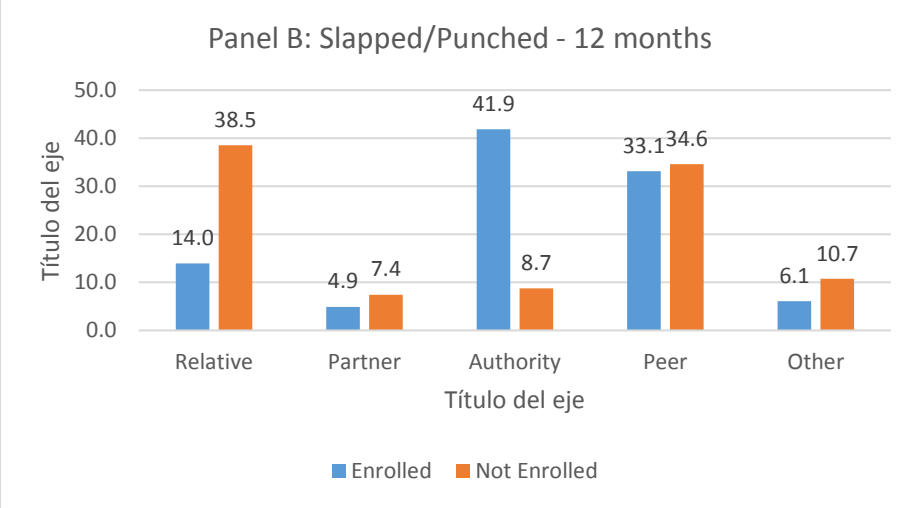
	(1)	(2)	(3)
Dependent variable:	Physical violence		
Sample restricted to:	Baseline	12-month follow-up	48-month follow-up
Currently enrolled in an educational institute	0.130**	0.174***	0.099***
	(0.050)	(0.060)	(0.024)
Treatment	0.041	0.071*	-0.134***
	(0.052)	(0.038)	(0.036)
Observations	912	807	2,310
R-squared	0.062	0.126	0.060
Mean of dependent variable	0.479	0.346	0.346

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017.

How susceptible an individual is to violence by a certain type of actor appears to depend on the setting where she is likely to be spending a considerable amount of time. Youth in school are at greater risk for abuse by authority figures, whereas those not in school are more vulnerable to violence by relatives. When we examine the distribution of perpetrators of the second most common type of violence—being hit with a fist/kicked/beaten with an object (results not shown), we continue to find that a higher proportion of violent acts against those enrolled are being committed by authority figures.

Figure 1: Perpetrators by schooling status





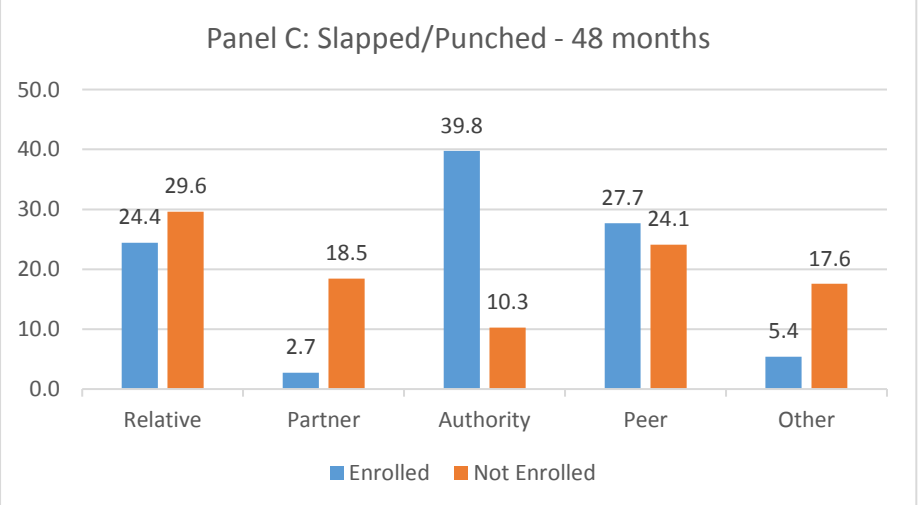


Table 11: Heterogeneity in HSCT's effects on youth violence by schooling

Panel A: Heterogeneous effects by contemporaneous schooling

	(1) Physical violence	(2) Severe physical violence	(3) Slapped/ pushed	(4) Hit with a fist/kicked/ beaten with object	(5) Attacked or threatened with knife or other weapon
12 month treatment impact	-0.100	-0.138	-0.052	-0.117	-0.032
	(0.096)	(0.083)	(0.077)	(0.080)	(0.038)
12 month treatment impact*Currently enrolled in an educational institute	0.246*	0.235*	0.252**	0.204	0.046
	(0.148)	(0.133)	(0.115)	(0.133)	(0.043)
48 month treatment impact	-0.244***	-0.219***	-0.165**	-0.200***	-0.048
	(0.076)	(0.072)	(0.065)	(0.072)	(0.033)
48 month treatment impact*Currently enrolled in an educational institute	0.097	0.184*	0.039	0.158	0.009
	(0.093)	(0.094)	(0.093)	(0.098)	(0.033)
Observations	4,029	4,029	4,028	4,028	4,023
R-squared	0.063	0.051	0.049	0.056	0.011
Baseline mean of dependent variable	0.479	0.244	0.400	0.224	0.041

Panel B: Heterogeneous effects by baseline schooling

	(1) Physical violence	(2) Severe physical violence	(3) Slapped/ pushed	(4) Hit with a fist/kicked/ beaten with object	(5) Attacked or threatened with knife or other weapon
12 month treatment impact	-0.112	-0.117	-0.033	-0.096	-0.051
	(0.106)	(0.094)	(0.090)	(0.092)	(0.031)
12 month treatment impact*Enrolled in an educational institute at baseline	0.211	0.177	0.166	0.152	0.056
	(0.147)	(0.119)	(0.137)	(0.121)	(0.035)
48 month treatment impact	-0.218**	-0.169*	-0.206**	-0.147*	-0.018
	(0.091)	(0.088)	(0.084)	(0.085)	(0.042)
48 month treatment impact*Enrolled in an educational institute at baseline	0.100	0.145	0.124	0.113	-0.022
	(0.103)	(0.101)	(0.107)	(0.099)	(0.052)
Observations	3,405	3,405	3,405	3,405	3,401
R-squared	0.052	0.039	0.042	0.044	0.013
Baseline mean of dependent variable	0.479	0.244	0.400	0.224	0.041

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. The physical violence measures capture abuse in the 12 months before a survey.

In Panel A of Table 11, we check if HSCT's impacts on youth violence vary by contemporaneous schooling (whether or not an individual is currently attending an education institution). Recall that in the main results, we find positively signed but insignificant 12 month effects on violence for the entire youth sample. In probing for heterogeneity by current schooling, we find that the HSCT effects for youth not in school at 12 months are negatively signed but insignificant. On the other hand, treatment youth in school appear to report experiencing higher levels of violence at this time, with some of these differential effects being statistically significant. As discussed before, some of HSCT's complementary services had just started operating before the first follow-up survey, and could thereby have started sensitizing youth to issues related to violence. Such activities might have prompted greater reporting of the violence taking place in schools even if there were no changes in prevalence levels. During the 48-month follow-up, we do not find differences in program impacts for youth in school and out of school with one exception—the HSCT's effect on youth vulnerability to severe physical violence appears to be higher for the former, but this difference is only marginally significant. The lack of heterogeneity in final program effects on violence by contemporaneous schooling is not surprising since the HSCT had no discernable impacts on educational outcomes (Carolina Population Center, 2017),

In Panel B of Table 11, we probe whether there is any heterogeneity in the effects on violence by baseline schooling, but fail to find evidence of such trends.

VII. Robustness checks

In this section, we examine whether the main results are sensitive to several changes to the study sample or estimation procedure.

At each survey wave of the HSCT impact evaluation study, data was collected on all the members of the study households. In case there was an individual living in the household who had not been there during a previous survey, information was specifically collected about when and why the individual had joined the household. Within the sample that we use for our analysis, we have 442 youth who entered the study sample only at final follow-up (the 'new' youth). The inclusion of these individuals in our sample could be problematic because of two reasons. Firstly, youth who had recently joined the treatment households might not have had time to individually benefit from the HSCT program—for example, they might not yet have utilized any of the child protection services that treatment households had received information about at the pay points.[8] We do know when 76 percent of the 'new' youth joined their households—66 percent had entered their households only the year before or the year of the final survey. Note though that the new individuals in the treatment group would have experienced the protective effects of the program that were channeled through household and caregiver pathways since their households would have been receiving transfers since the start of the program. Secondly, the entry of the new youth into the study households could undermine the validity of our results if there were systematically different factors responsible for changing household composition across the treatment and control groups. Indeed we do find that the control group received the bulk of the 'new' youth at the 48-month follow-up—about 65 percent. If these control youth were more likely to have experienced physical violence

[8] The youth who had joined the study households 12 months after program initiation (93 and 92 of youth respondents at the 12-month follow-up and 48-month follow-up surveys respectively) would have been exposed to the HSCT program for at least the three years between the last two surveys.

prior to joining the households, this would explain the positive program impacts we observe at the second follow-up.

To understand whether the 'new' youth in the sample are driving the main results that we identify, we drop these individuals and re-run the violence models for the remaining sample. The impact estimates presented in Table A4 in the Appendix show that this redefinition of the sample does little to change our results.

Recall that we use weights in all our models—essentially to make our youth sample resemble all young individuals in the households eligible for HSCT in the study regions and thus to increase the external validity of the estimates. Given that the youth who were surveyed at each wave were balanced across treatment assignment, estimating equation (1) without the weights would be sufficient to identify results that are internally valid. We thus re-examine the violence categories with an unweighted model (see Table A5 in the Appendix). As in the main results, we detect a decrease in any youth abuse at 48 months and find that this change is driven largely by a reduction in being slapped or pushed. There is no statistically significant difference between each unweighted impact estimate and the corresponding weighted estimate.

While all the primary violence measures that we probe are indicator variables, we use linear probability models (LPM) in our main analysis for ease of interpretation. In Table A6 in the Appendix, we re-examine these outcomes with probit models and find that our overall findings persist.[9]

VIII. Discussion

In this paper, we examine whether HSCT, a poverty alleviation and child protection program in Zimbabwe, influenced the incidence of physical violence experienced by youth. Physical abuse appears to be highly prevalent among the youth population that we focus on in this paper. Baseline data (2013) indicates that 47 per cent of the youth had either been slapped, pushed, punched, kicked, beaten with an object or threatened/attacked with a gun/other weapon in the year before the survey. We find that while the HSCT program did not have any immediate effects on youth violence (in 2014), it was able to reduce the treatment group's exposure to any kind of physical abuse by 19 percentage points four years into the program (in 2017). Further analyses indicate that enhancements in beneficiary households' self-sufficiency and food security, improvements in caregiver subjective well-being and reductions in youth participation in casual work could have been the channels through which HSCT was able to shield young individuals from physical violence.

At the time of the first follow-up survey of the impact evaluation study, the complementary services accompanying the CTs had only just started being offered and couldn't have had time to shape youth experiences. Thus, in a way, the effects identified at this stage could be viewed as those that were achieved in the short-run with a cash-only program. The findings from the second follow-up survey reflect the more medium term effects of a cash-plus program.

The HSCT program provided CTs to households in combination with information about child support or child protection services. Beneficiary households were also referred to and assisted with accessing specific services. HSCT's effectiveness at raising awareness about available services is suggested by the fact that a greater proportion of treated households at final follow-

[9] Results are the same when we estimate logit models (results available upon request).

up were able to name at least one resource for children within their community (such as health services or psychological support)—51 percent compared to the 39 percent of control households that was able to do the same. The usage of these services was, however, low across both groups, though slightly higher in HSCT households—10 percent versus eight percent among control households. Still, the non-cash services in HSCT might have played an important role in bringing about reductions in youth abuse, but we cannot disentangle the effects of the different components of the HSCT at the time of the second follow-up survey.

In early 2017, the High Court in Zimbabwe ruled that the corporal punishment of children in homes and schools is a violation of constitutional rights. While the ruling is yet to be approved by the Constitutional Court, the government has said that it is considering passing legislation to ban corporal punishment (Global Initiative to End all Corporal Punishment of Children, 2018). Given that the use of physical force as a means of disciplining children is widely considered to be acceptable in the country (Ndoma, 2017), a legal ban, should it go into effect in the near future, might not be able to reduce physical abuse and punishment of children and youth in the short term. However, as the results of this analysis suggest, using CTs to alleviate poverty, a structural determinant of child abuse and maltreatment, and complementary services can preclude or limit child exposure to physical violence and the subsequent harms experienced by the victims of abuse.

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Appendix

Table A1: Treatment-Control balance of households at baseline

	All households		Households with a youth member	
	Control	Treatment	Control	Treatment
	(1)	(2)	(3)	(4)
Household size	5.14	5.03	6.23	6.21
Number of individuals 0-5 years	0.81	0.78	0.98	0.90
Number of individuals 6-17 years	2.21	2.22	2.86	3.01
Number of individuals 18-59 years	1.30	1.20	1.66	1.57
Number of individuals 60 and above years	0.82	0.82	0.72	0.73
Household head's characteristics				
Female	0.66	0.69	0.64	0.69**
Age	59.25	56.43	56.24	52.57
Widow	0.37	0.37	0.30	0.32
Divorced/separated	0.07	0.10	0.07	0.09
Has some schooling	0.61	0.56*	0.67	0.62*
Highest grade	3.48	3.27	3.94	3.75
Per capita expenditure	31.82	30.85	24.71	24.21
Observations	1,034	2,029	615	1,214

Statistically significant weighted mean differences across groups based on Wald tests are represented by: *** p<0.01, ** p<0.05, * p<0.1. The standard errors used for these tests are clustered at the ward-level.

Table A2: Definition of outcomes

Variables	*Definition*
Physical violence	=1 if youth experienced any type of physical violence (being slapped/pushed, hit with a fist/kicked/beaten with an object or attacked/threatened with a knife or other weapon) in the 12 months before the survey, =0 otherwise
Severe physical violence	=1 if youth experienced any severe physical violence (hit with a fist/kicked/beaten with an object or attacked/threatened with a knife or other weapon) in the 12 months before the survey, =0 otherwise
Slapped/pushed	=1 if youth was slapped or pushed in the 12 months before the survey, =0 otherwise
Hit with a fist/kicked/beaten with object	=1 if youth was hit with a fist, kicked or beaten with an object in the 12 months before the survey, =0 otherwise
Attacked or threatened with knife or other weapon	=1 if youth was attacked or threatened with a knife or other weapon in the 12 months before the survey, =0 otherwise
Type of perpetrator of violence	
Relative	=1 if last act of violence was perpetrated by a parent or adult relative, =0 otherwise
Partner	=1 if last act of violence was perpetrated by a boyfriend or girlfriend or intimate partner, =0 otherwise
Authority figure	=1 if last act of violence was perpetrated by an authority figure (teacher, religious or community leader), =0 otherwise
Peer	=1 if last act of violence was perpetrated by a peer or classmate, =0 otherwise
Other actor	=1 if last act of violence was perpetrated by another individual (for example, a stranger), =0 otherwise
Supplementary outcomes	
Youth is worried about relationship with people at home	=1 if youth reports being worried about her relationship with people in her home, =0 if she is not worried at all
Youth is worried about relationship with people outside home	=1 if youth reports being worried about her relationship with peopleshe does not live with (such as friends and neighbors), =0 if she is not worried at all
Youth has seen parent being subjected to intimate partner violence at any point in time	=1 if youth has ever seen or hear a parent being punched, kicked or beaten up by the other parent, or their boyfriend or girlfriend, =0 otherwise
Adult humiliated youth in front of others in last 12 months	=1 if an adult said or did something on purpose to humiliate youth in front of others in the last 12 months, =0 otherwise
Adult made youth feel unwanted in last 12 months	=1 if an adult made youth feel unwanted in the last 12 months, =0 otherwise
Adult threatened to abandon/told youth to leave home in last 12 months	=1 if an adult threatened to abandon youth or told her to leave home in the last 12 months, =0 otherwise
HH-level outcomes	
Total consumption	Value of per capita household total consumption in the four weeks before the survey (in 2017 dollars)
Food consumption	Value of per capita household food consumption in the four weeks before the survey (in 2017 dollars)

Total consumption - Own purchases	Value of per capita household total consumption from household purchases in the four weeks before the survey (in 2017 dollars)
Total consumption - Gifts	Value of per capita household total consumption from gifts in the four weeks before the survey (in 2017 dollars)
Total food consumption - Own purchases	Value of per capita household food consumption from household purchases in the four weeks before the survey (in 2017 dollars)
Total food consumption - Own production	Value of per capita household food consumption from household production in the four weeks before the survey (in 2017 dollars)
Total food consumption - Gifts	Value of per capita household food consumption from gifts in the four weeks before the survey (in 2017 dollars)
Caregiver-level mediators	
Consumed three or more meals in a day	=1 if main respondent reports regularly consuming three or more meals in a day, =0 otherwise
Household Food Inscurity Access Scale	This scale was developed by the Food and Nutritional Technical Assistance project (FANTA) of the U.S. Agency for International Development (USAID) (Coates et al, 2007). Main respondents were asked nine questions about whether their households had to do any of the following in the four weeks before the survey due to a lack of resources: worry that their household would not have enough food, not eat preferred foods, consume a limited variety of foods, eat foods they did not want to eat, consume smaller meals than needed, eat fewer meals, have no food to eat, go to sleep at night hungry, and go a whole day and night without eating. Respondents' answered to each question with 'No' (a score of zero), 'Rarely' (one), 'Sometimes' (two), or 'Often' (three). The responses to the nine items are summed and the final score ranges from zero (food security) to 27 (extreme food insecurity).
Subjective Well-being Scale	This scale is based on responses to seven questions and captures overall life satisfaction (the measure we use is similar to the Satisfaction with Life Scale developed by Diener et al, 1985). Main respondents were presented with the following statements during the interview - 'In most ways my life is close to ideal', 'The conditions of my life are excellent', 'I am satisfied with my life', 'So far I have gotten the important things I want in life', 'If I could live my life over, I would change almost nothing'. 'I feel positive about my future', and 'I generally feel happy'. The responses to each of these statements lay on a five-point Likert scale, ranging from strongly disagree (a score of one) to strongly agree (five). The final scale lies between seven and 35, with higher values representing more subjective well-being.
Household is better off compared to last year	=1 if main respondent considers her household to be doing better of than 12 months ago, =0 otherwise

Belief that household will be better off in one year	=1 if main respondent thinks that he life will be better one year from now, =0 otherwise
Youth-level outcomes	
Currently enrolled in an educational institute	=1 if youth is currently attending an educational institution, =0 otherwise
Number of days attended school in the week before the interview	Number of days the youth attended school in the week before the survey
Did any work as a casual/part-time/*maricho* laborer in the last 12 months	=1 if youth did this kind of work for anyone who is not a member of the household in the past 12 months, =0 otherwise
Currently married/co-habiting/has a partner	=1 if youth is currently married, co-habiting or has a boyfriend/girlfriend, =0 otherwise

Table A3: Impacts of the HSCT program on youth exposure to physical violence, Results by gender

	GIRLS					*BOYS*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable:	Physical violence	Severe physical violence	Slapped /pushed	Hit with fist/kicked/ beaten with object	Attacked or threatened with knife or other weapon	Physical violence	Severe physical violence	Slapped /pushed	Hit with fist/kicked/ beaten with object	Attacked or threatened with knife or other weapon
Treatment	0.065	0.062	0.067	0.057	0.006	0.047	0.009	-0.005	0.010	0.021
	(0.068)	(0.062)	(0.065)	(0.058)	(0.023)	(0.076)	(0.069)	(0.069)	(0.071)	(0.020)
12 months	-0.156***	0.017	-0.231***	0.030	-0.028	-0.068	-0.051	-0.115*	-0.050	0.004
	(0.055)	(0.069)	(0.067)	(0.068)	(0.017)	(0.070)	(0.066)	(0.066)	(0.065)	(0.030)
48 months	0.002	0.012	0.019	0.012	-0.008	0.108	0.089	0.006	0.087	0.049**
	(0.050)	(0.059)	(0.054)	(0.056)	(0.017)	(0.078)	(0.086)	(0.063)	(0.092)	(0.025)
12 month treatment impact	0.107	-0.013	0.141*	-0.014	0.014	-0.079	0.011	-0.049	0.008	-0.017
	(0.085)	(0.087)	(0.081)	(0.083)	(0.026)	(0.083)	(0.080)	(0.081)	(0.079)	(0.036)
48 month treatment impact	-0.089	-0.028	-0.136**	-0.010	-0.011	-0.279***	-0.179*	-0.141*	-0.186*	-0.066**
	(0.072)	(0.073)	(0.064)	(0.067)	(0.028)	(0.092)	(0.094)	(0.077)	(0.099)	(0.030)
Observations	1,962	1,962	1,962	1,962	1,958	2,076	2,076	2,075	2,075	2,074
R-squared	0.046	0.044	0.044	0.055	0.017	0.082	0.057	0.057	0.072	0.027
Baseline mean of dependent variable	0.439	0.220	0.362	0.194	0.042	0.517	0.267	0.437	0.254	0.040

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. The physical violence measures capture abuse in the 12 months before a survey.

Table A4: Robustness check - Dropping new youth in households

	(1)	(2)	(3)	(4)	(5)
Dependent variable:	Physical violence	Severe physical violence	Slapped/pushed	Hit with a fist/kicked/beaten with object	Attacked or threatened with knife or other weapon
Treatment	0.049	0.035	0.026	0.030	0.017
	(0.050)	(0.050)	(0.044)	(0.048)	(0.016)
12 months	-0.132***	-0.014	-0.199***	-0.011	-0.010
	(0.044)	(0.045)	(0.052)	(0.041)	(0.016)
48 months	0.037	0.056	-0.010	0.054	0.025
	(0.040)	(0.050)	(0.037)	(0.053)	(0.015)
12 month treatment impact	0.044	0.003	0.078	0.005	-0.005
	(0.062)	(0.056)	(0.063)	(0.051)	(0.021)
48 month treatment impact	-0.175***	-0.106*	-0.121**	-0.100	-0.042*
	(0.056)	(0.062)	(0.049)	(0.063)	(0.023)
Observations	3,596	3,596	3,596	3,596	3,592
R-squared	0.048	0.038	0.041	0.043	0.009
Baseline mean of dependent variable	0.477	0.243	0.399	0.223	0.041

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Weights are applied to approximate effects for all eligible youth in study regions at baseline and to account for attrition. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. The physical violence measures capture abuse in the 12 months before a survey. The new youth are those who joined the study households between the 12-month follow-up and the 48-month follow-up surveys.

Table A5: Robustness check - Dropping youth weights

	(1)	(2)	(3)	(4)	(5)
Dependent variable:	Physical violence	Severe physical violence	Slapped/pushed	Hit with a fist/kicked/beaten with object	Attacked or threatened with knife or other weapon
Treatment	-0.004	-0.010	-0.003	-0.012	0.010
	(0.041)	(0.038)	(0.038)	(0.037)	(0.014)
12 months	-0.198***	-0.072*	-0.202***	-0.062	-0.019
	(0.042)	(0.041)	(0.044)	(0.040)	(0.014)
48 months	-0.002	0.009	-0.008	-0.000	0.014
	(0.035)	(0.036)	(0.033)	(0.037)	(0.013)
12 month treatment impact	0.100*	0.050	0.089	0.041	0.008
	(0.059)	(0.049)	(0.057)	(0.047)	(0.019)
48 month treatment impact	-0.120**	-0.043	-0.111**	-0.034	-0.027
	(0.047)	(0.044)	(0.043)	(0.043)	(0.017)
Observations	4,038	4,038	4,037	4,037	4,032
R-squared	0.053	0.024	0.048	0.027	0.008
Baseline mean of dependent variable	0.477	0.243	0.399	0.223	0.041

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with linear probability models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Youth are individuals between the ages of 13 and 24 waves The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. The physical violence measures capture abuse in the 12 months before a survey.

Table A6: Robustness check - Estimating probit models

	(1)	(2)	(3)	(4)	(5)
Dependent variable:	Physical violence	Severe physical violence	Slapped/pushed	Hit with a fist/kicked/beaten with object	Attacked or threatened with knife or other weapon
12 month treatment impact	0.045	0.009	0.082	0.009	-0.003
	(0.061)	(0.054)	(0.059)	(0.049)	(0.022)
48 month treatment impact	-0.186***	-0.106*	-0.135***	-0.097	-0.041*
	(0.060)	(0.061)	(0.048)	(0.061)	(0.022)
Observations	4,038	4,038	4,037	4,037	4,032
Baseline mean of dependent variable	0.477	0.243	0.399	0.223	0.041

Robust standard errors presented in parentheses are adjusted for clustering at the level of the ward of residence. *** p<0.01, ** p<0.05, * p<0.1. Specifications estimated with probit models. Controls include youth age and gender, and baseline values of the following household characteristics - log household size, respondent age, education and marital status, household demographic composition and indicators for the province of residence. Youth are individuals between the ages of 13 and 24 waves. The baseline survey was conducted in 2013, the 12-month follow-up survey in 2014 and 48-month follow-up survey in 2017. The physical violence measures capture abuse in the 12 months before a survey. We present marginal effects of the treatment at the different follow-up waves.