



Original article

Impacts of a Cash Plus Intervention on Gender Attitudes Among Tanzanian Adolescents

 Yekaterina Chzhen, Ph.D.^{a,*}, Leah Prencipe, M.P.H.^b, Frank Eetaama, M.D.^c, Paul Luchemba, M.Sc.^d, Tumpe Mnyawami Lukongo, M.A.^d, and Tia Palermo, Ph.D.^e
^a Department of Sociology, Trinity College Dublin, Dublin, Ireland^b Department of Public Health, Erasmus University Medical Center (Erasmus MC), Rotterdam, the Netherlands^c Children and AIDS Section, UNICEF Tanzania, Dar es Salaam, Tanzania^d Tanzania Social Action Fund, United Republic of Tanzania, Dodoma, Tanzania^e Department of Epidemiology and Environmental Health, State University of New York at Buffalo, Buffalo, New York

Article history: Received March 31, 2020; Accepted July 12, 2020

Keywords: Gender attitudes; Violence; Sexual and reproductive health; Adolescents; Tanzania; Africa



A B S T R A C T

Purpose: Inequitable attitudes toward men's and women's roles, rights, and responsibilities are associated with poor health-related outcomes, particularly for girls and women. Yet, we know relatively little about what interventions work to improve gender-equitable attitudes among adolescents in low-income countries. This study examines the impact of a government-implemented "cash plus" intervention on gender-equitable attitudes among adolescents in Tanzania. The intervention includes discussions and activities related to gender norms, embedded in broader life skills, livelihoods, and health training.

Methods: The study utilizes a cluster randomized design, using data from 1,933 males and females aged 14–19 years at baseline who took part in the baseline (2017), midline (2018), and endline (2019) surveys. Gender attitudes were measured using 24 items from the Gender-Equitable Men (GEM) Scale. We estimate intent-to-treat impacts on the GEM scale and four subscales (violence, sexual relationships, reproductive health, and domestic chores).

Results: The "cash plus" intervention had a significant impact on the overall GEM scale at midline. The intervention increased gender-equitable attitudes on the domestic chores subscale at both midline and endline. The intervention improved gender-equitable attitudes among males on the overall GEM scale and three subscales at midline and on two subscales at endline, but it had no impacts among females.

IMPLICATIONS AND CONTRIBUTION

The study found that a government cash plus intervention implemented through government structures and targeted to adolescents in rural Tanzania improved gender equitable attitudes, particularly among males. However, future research should investigate why adolescent girls report lower support for gender-equitable norms and effective ways to increase

Tanzania Adolescent Cash Plus Evaluation Team

University at Buffalo: Tia Palermo. UNICEF Office of Research: Valeria Groppo, Jacobus de Hoop, Lusajo Kajula, Leah Prencipe, Jennifer Waidler
 EDI Global: Johanna Choumert Nkolo (co-Principal Investigator), Respichius Mitti (co-Principal Investigator), Bhoke Munanka
 Tanzania Social Action Fund: Paul Luchemba, Tumpe Mnyawami Lukongo
 Tanzania Commission for AIDS: Aroldia Mulokozi
 UNICEF Tanzania: Ulrike Gilbert, Paul Quarles van Ufford, Rikke Le Kirkegaard, Frank Eetaama

Trial Registration: This trial was retrospectively registered under the Pan African Clinical Trial Registry (www.pactr.org) database as PACTR201804003008116 on April 6, 2018.

Conflicts of interest: The authors have no conflicts of interest to disclose.

Authors' contributions: T.P. and Y.C. conceptualized the topic for this article. T.P.

was responsible for the research design. L.P. and Y.C. conducted the statistical analysis. Y.C. and T.P. wrote the first draft of the article. All authors contributed to interpretation of statistical analyses, revising and writing the article, and approval of the final version. Members of the evaluation team further contributed to study design and data collection.

Informed assent and parental consent were obtained for all unmarried adolescents aged 14–17 years, and written informed consent was obtained directly for those aged 18 and 19 years and married adolescents aged 15–17 years. The legal age of marriage for females in Tanzania is 15 years, and we did not have any married girls in our sample under the age of 15 years.

* Address correspondence to: Yekaterina Chzhen, Ph.D., Department of Sociology, Trinity College Dublin, 3 College Green, Dublin 2, Ireland.

E-mail address: chzheny@tcd.ie (Y. Chzhen).

Conclusions: Gender transformative social protection is currently being advocated as a way to address the gendered nature of poverty and its consequences. Initiatives such as the one studied here, which address the multifaceted drivers of gender inequities, could be a promising way forward.

© 2020 Society for Adolescent Health and Medicine. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

gender-equitable attitudes among this group.

Adolescence is a period of rapid physical, sexual, and neurological changes and also a time where individuals can face myriad risks to safe and healthy transitions to adulthood, including school dropout, early pregnancy and marriage, HIV and other STI infections, and gender-based violence [1]. The world has recently seen a shift in the disease burden among adolescents, who face not only communicable disease and reproductive health-related and nutrition threats but also violence, injury, and noncommunicable diseases [2]. Exacerbating these risks, gender socialization intensifies during adolescence [3]. Defined as a process in which “individuals develop, refine and learn to ‘do’ gender through internalizing gender norms and roles as they interact with key agents of socialization, such as their family, social networks and other social institutions” [3], gender socialization presents challenges for adolescents (particularly for girls as expectations constrain their life choices). Yet, this period is also an opportunity to intervene to communicate healthier, more equitable gender attitudes. This may ultimately lead to improved well-being for adolescents today as well as for future generations [3–5].

The risks of early pregnancy, HIV infection, and violence are gendered. For example, studies in Tanzania show that females aged 20–29 years are twice as likely as their male counterparts to be living with HIV [6] and adolescent girls are more likely to experience physical and sexual violence than are boys [7]. Moreover, in Tanzania, one girl in three (31%–37%) is married before age 18 years, and 43% of females aged 20–24 years gave birth before age 18 years [8]. Thus, inequitable gender norms, defined as “the sets of rules for what is appropriate masculine and feminine behavior in a given culture” [9], play a role in the economic, social, and health disadvantages of women and adolescent girls. As adolescents and young adults start to form romantic relationships, gender inequity within relationships is associated with adverse outcomes including intimate partner violence [10] and unprotected sex [11]. A growing evidence base from lower income countries suggests that adolescents often express support for inequitable gender norms from a young age [4]. Although girls in North America and Western Europe tend to report more equitable gender attitudes than boys [12], evidence on gender differences in attitudes is mixed in lower income countries [4]. Yet, as the process of puberty intensifies gender-related social expectations [12], adolescent-focused interventions have the potential to influence attitudes to gender norms before these views become fixed and translate into behavior patterns.

A recent review identified 31 small-scale programs from lower- and middle-income countries aimed at influencing the gender socialization process and recorded that most of the evaluations found changes in gender attitudes, but changes in actual behaviors were less common [3]. Relatedly, a review of curriculum-based sexuality and HIV education found that of 22 interventions examined, only 10 addressed gender or power, and these were five times as likely to be effective as those that did not in reducing STIs and unintended pregnancy [13].

Thus, addressing gender attitudes is important for improving sexual and reproductive health (SRH) and HIV health outcomes [14], yet there remain gaps in our understanding of what interventions work to improve gender-equitable attitudes and related behavioral outcomes. An emerging area of evidence to improve multidimensional adolescent well-being relates to “cash plus” or integrated social protection programming. It has been posited that complementary programming or linkages to existing services can boost the impacts of cash transfers, as the latter is often not sufficient to overcome structural factors impeding the use of cash transfers for change [15].

Nevertheless, there is limited evidence of the effectiveness of “cash plus” interventions to improve adolescent well-being in sub-Saharan Africa. An earlier body of work examining HIV risk factors among adolescents suggested that “cash plus care” may be more effective than cash alone in improving adolescent outcomes [16,17]. A related category of adolescent programming examines a combination of interventions in a capacities/asset-building framework. These programs have combined economic strengthening with training or information on gender and reproductive health topics, mentoring, and/or “safe spaces” where adolescent girls can meet together [18–22]. The evidence from these bundled programs for adolescents, while mixed, suggests that “cash plus” may also be effective in facilitating safe and healthy transitions to adulthood. The present study makes an important contribution to this emerging “cash plus” evidence base.

This study analyses the impact of a government-implemented, adolescent-focused “cash plus” intervention on gender-equitable attitudes in rural Tanzania and investigates whether the impact differs between males and females. We estimate impacts from an ongoing cluster randomized control trial (cRCT) evaluation of the “cash plus” intervention recently piloted in two districts within a national social protection program. This multisectoral intervention recognizes that adolescent health outcomes are determined not only by factors within the health sector but also by those in other sectors and are often driven by poverty [23]. We hypothesize that this intervention led to increases in gender-equitable attitudes among males and females.

Methods

Intervention: Ujana Salama

The intervention examined here is an adolescent-focused “cash plus” intervention entitled Ujana Salama (“Safe Youth” in Swahili). It was layered onto a national social protection program, the Productive Social Safety Net (PSSN), whose main component is a bimonthly cash transfer to households and implemented within its structures, with technical assistance from the United Nations Children’s Fund (UNICEF). Our intervention (conducted 2018–2019) was targeted to villages where

the PSSN had rolled out in 2015 (with PSSN cash payments continuing through 2019). The current evaluation did not control roll out of the cash, nor did receipt of the PSSN vary within our study population. Although there is no variation in PSSN implementation across study villages, households may receive slight variations in the payment amount each month based on compliance with conditions (e.g., school attendance and health checkups). The average PSSN payment amount is 16,612 TZS per month (approximately 7.16 USD) [24].

Ujana Salama was designed to complement the PSSN with a package of adolescent-focused interventions to strengthen productive, human, and health capital to promote sustainable and healthy livelihoods that increase resilience, well-being, and empowerment [25]. The intervention was delivered between February 2018 and July 2019 and comprised (1) livelihood and life skills training; (2) mentoring and asset transfer; and (3) supply-side strengthening of adolescent-friendly HIV and SRH services.

The PSSN and Ujana Salama are both implemented by Government through the Tanzania Social Action Fund (TASAF), the former nationally, and the latter piloted in four districts (Rungwe, Busokelo, Mufindi, and Mafinga) in the Iringa and Mbeya regions of Tanzania [26]. The first intervention component, the livelihood and life skills training curriculum, was delivered face-to-face in 2-hour sessions over a 12-week period between February and May 2018 by two mentors in each village and reinforced via peer educators. All adolescents (male and female and all ages) were administered the trainings together in a group setting (one group per village) once per week. Mentors further conducted community sensitization and mobilization to get support and buy-in from parents and guardians for adolescents participating in Cash Plus activities. In addition to HIV and SRH, the life skills curriculum included topics relevant to gender norms (e.g., differences between gender and sex, gender stereotypes and how they affect boys and girls, relationships with family and community, community expectations of boys and girls, and gender-based violence). After the training sessions, a mentoring phase was conducted over 9 months (July 2018 to March 2019), where mentors met twice per month with adolescents to mentor and coach adolescents on livelihood options and life concerns. Alongside mentoring, the intervention provided adolescents with links to strengthened, adolescent-friendly health services. At the end of the mentoring phase, adolescents received a productive grant (equivalent to 80 USD) to pursue education, vocational training, or business startup opportunities.

Data and study design

The Ujana Salama impact evaluation is a multiyear, longitudinal, mixed-method study that includes baseline (2017), “midline” follow-up (2018), and 24-month follow-up “endline” (2019) surveys [26]. The impact evaluation uses a cRCT design. To examine the impacts of the “plus” intervention over and above those of the PSSN alone, 130 villages (clusters) were randomized into two study arms: (1) Cash Plus communities receiving the PSSN combined with adolescent-targeted “plus” components (treatment arm); and (2) PSSN-only communities, receiving cash only (control arm; Figure A1 in the [Online Appendix](#)). TASAF provided a list of eligible adolescents in the 130 villages based on program enrollment data, and then survey enumerators further identified any additional adolescents living in the identified

households but not on the TASAF list. Adolescents were considered eligible for the pilot and study if they were (1) living in a PSSN household; and (2) aged 14–19 years at baseline. Randomization of the 130 villages into study arms (control or treatment) was stratified by TASAF administration areas (four districts) and village (large vs. small villages) and occurred in July 2017, after baseline surveys were conducted (April to June 2017). No adolescent-focused intervention activities had taken place before baseline surveys. Midline data collection (completed May to July 2018) took place immediately after 12 weeks of face-to-face training on livelihoods and life skills, whereas endline surveys were completed after all program components were implemented (June to August 2019). Questionnaires were administered to (1) adolescents; (2) households; (3) health facilities in study communities; and (4) a group of knowledgeable individuals in each community.

Ethical clearance

Ethics approval for the study was granted by the National Institute for Medical Research (NIMR/HQ/R.8a/Vol.IX/2784) and the Tanzania Commission for Science and Technology (COST-ECH). The study is also registered with the Pan African Clinical Trial Registry (PACTR) as PACTR201804003008116.

Informed assent and parental consent were obtained for all unmarried adolescents aged 14–17 years, and written informed consent was obtained directly for those aged 18 and 19 years and married adolescents aged 15–17 years. Because of the sensitive nature of several topics, adolescent interviews were conducted in private locations (in Swahili) where other household members could not hear what was being discussed and were administered by same-sex enumerators.

Measures

To analyze changes in adolescent gender norms attitudes, we used a 24-item version of the Gender-Equitable Men (GEM) Scale (Figure A2 in the [Online Appendix](#)). The scale was designed to measure the impacts of gender-focused interventions in development settings [27,28]. We used the 24-item version validated with males and females aged 10–24 years in Uganda [4]. Items assess support for inequitable gender attitudes across four domains: violence, sexual relationships, reproductive health and disease prevention, and domestic chores and daily life. Each item was scored on a 3-point scale (1 = agree, 2 = partially agree, and 3 = do not agree). We constructed a continuous GEM scale by dichotomizing all items (“agree” and “partially agree” vs. “do not agree”) and summing up the responses. The scale ranges from 0 to 24, with higher values reflecting more equitable attitudes. The internal consistency of the 24-item scale in our sample at baseline is .87 (Cronbach’s alpha). The four domain subscales are similarly constructed by summing up the dichotomized responses to the corresponding items.

The main independent variable was treatment status (1, if a village was in the treatment group; and 0, otherwise). Regression models described in more detail below also control for gender, age at baseline, as well as district and village size (large vs. small) dummies because randomization was stratified on these characteristics.

Statistical analysis and sample

We first describe program uptake and then summarize outcomes of interest by treatment arm and gender.

Next, we estimate the intent-to-treat (ITT) effects of the intervention on gender-equitable attitudes using data from the baseline, midline, and endline surveys. The ITT analysis allows us to obtain unbiased estimates of intervention impacts by leveraging the random assignment of villages to treatment and control arms. The inclusion of the adolescents who lived in the treatment villages but did not take up the program leads to more conservative estimates of the treatment effect, but these ITT estimates provide a better indicator of expected impacts on the population level (compared with average treatment on the treated estimates) should this program be further rolled out. Although 51.3% of the eligible adolescents across the treatment villages took part in the training, only 24.6% attending all 12 sessions [29]. Females (55%) were statistically significantly ($p < .01$) more likely to attend the training than their male peers (46%). The most commonly reported reasons for not attending the training were that the adolescents had not heard about the program, they had been at school, or that they had not been informed.

We use analysis of covariance to estimate the ITT effects. Analysis of covariance is considered a more efficient estimation method than the popular differences-in-differences estimator, which would overcorrect for differences in the baseline outcomes, when the autocorrelation between baseline and follow-up values of the outcome is low (below .2) [30]. Indeed, the autocorrelation of the GEM scale between the baseline and midline waves is low ($\rho = .13$). We regress the GEM scale (and its four subscales separately) on the treatment indicator, the value of the outcome at baseline, stratification variables, and controls. We also test for heterogeneous impacts by including an interaction term between the treatment indicator and a characteristic of interest (e.g., gender and sexual debut). The decision to examine heterogeneous program impacts by sexual debut was post-hoc. All analyses adjust standard errors for clustering at village level.

A total of 3,599 adolescents in PSSN households were found to be eligible for this study at baseline, and 2,458 completed interviews (68%) and were thus enrolled in the study. The main reason for not completing the youth interview at baseline was unavailability (93%), but the interview status was balanced by treatment and control [26]. At midline, 2,104 adolescents (86% of the study sample) were reinterviewed, and 2,191 (89%) were reinterviewed at endline, with 1,933 interviewed at all three waves (992 in the control and 941 in the treatment arm). These attrition rates are in line with studies of similar adolescent populations in the region [18,31]. Those who responded “don’t know” to a GEM item were coded as missing for that item. The analytic sample includes 987 respondents in the control and 932 in the treatment arm who (1) were interviewed all three waves; (2) have nonmissing values on at least one subscale at baseline after listwise deletion; and (3) have nonmissing values for at least one subscale at midline or endline that correspond to nonmissing observations at baseline. The analytic sample for the 24-item scale is 1,179 at midline and 1,229 at endline. Analytic sample sizes for the subscales range from 1,359 for sexual relationships at midline to 1,866 for domestic chores at endline (Table A1 in the [Online Appendix](#)).

Results

Sample characteristics

At baseline, average scores on the overall GEM scale were 12.5 (Table A1 in the [Online Appendix](#)). Average scores at baseline among the subscales were 3.7 (violence), 2.8 (reproductive health), 4.3 (sexual relationships), and 1.7 (domestic chores). There were no statistically significant differences in attitudes to gender norms between adolescents living in the treatment and control villages at baseline (Table 1). We found no evidence of selective attrition on the outcome variable or subscales (Table A2 in [Online Appendix](#)), and thus, the internal validity of the study design was maintained.

Intervention impacts on average

The “cash plus” life skills training did not have an impact on the full 24-item GEM scale after 12 months (endline), although it had an impact of .88 points ($p < .05$) soon after the training, at midline (Table 2). However, the intervention did increase gender-equitable attitudes related to the domestic chores and daily life domain by .27 points out of 5 ($p < .01$) and .23 points ($p < .01$) at midline and endline, respectively. There were no significant impacts on the remaining three subscales at midline or endline.

Intervention impacts by gender

The intervention increased equitable gender norms attitudes among males but not among females, although males already had more equitable attitudes than females on average at baseline (12.9 vs. 11.9 out of 24, respectively [26]). Column 2 of Table 3 shows that, at midline, the GEM score increased by 1.52 points ($p < .01$) more among adolescent males in the treatment villages than those in the control villages. The subscales analysis indicates that the impacts were particularly relevant for the violence, sexual relationships, and domestic chores domains for males, whereas there were no statistically significant impacts among females on any of the subscales. Column 3 of Table 3 shows that the intervention indeed had a differential impact by gender on the full GEM scale and on three of its subscales. Among males, although the impact on the full GEM scale dissipated by the endline, a statistically significant impact could still be detected on two of the subscales (violence and domestic chores).

Further analysis of the male subsample suggests that the positive impacts observed for males at midline were concentrated among those who at baseline reported that they had never had sexual intercourse, even if they have subsequently debuted (Table 4). The pattern is similar to the endline impacts. Only a minority (13%) of the male respondents had already become sexually active at baseline. There were no impacts for females, regardless of sexual debut.

Discussion

Inequitable gender norms are linked to myriad adverse behaviors, health, and social outcomes for adolescents [4,12]. This study demonstrated that a 12-week livelihoods and life skills training improved gender-equitable attitudes—related domestic chores and daily life among 14- to 19-year-olds in rural Tanzania soon after the training, according to ITT estimates from a cRCT

Table 1

Baseline means of background characteristics in the three-wave panel sample, by treatment status

	Control		Treatment	
	Mean	N	Mean	N
Background characteristics				
Age	16.08	987	16.01	932
Female	.46	987	.43	932
Sexually debuted	.17	987	.15	932
Age of household head	58.65	985	58.34	932
Female-headed household	.67	987	.65	932
Household size	4.94	987	5.01	932
Mufindi/Mafinga PAAs	.50	987	.51	932
Large village	.72	987	.67	932
Gender-norms attitudes				
GEM scale (0–24)	12.68	780	12.30	699
Violence subscale (0–6)	3.75	942	3.66	896
Reproductive health subscale (0–5)	2.78	876	2.75	797
Sexual relationships subscale (0–8)	4.35	836	4.28	756
Domestic chores subscale (0–5)	1.76	969	1.68	916

No statistically significant differences between treatment and control groups. GEM = Gender-Equitable Men.

evaluation of the “cash plus” intervention recently piloted in two districts within a national social protection program. Some impacts could still be detected after 12 months. This study is innovative in that it is layered on an existing government social protection program with a national reach to more than one million households. The fact that it is implemented within government structures means that it has high potential for sustainability and further scaleup. By reaching out to households directly, it can help reach some of the most marginalized youth that other programs miss out on.

Nevertheless, our analysis indicates that the life skills training has had positive impacts on equitable gender norms attitudes only among males. The largest and most precisely estimated impact soon after the intervention was on the domestic chores and daily life domain, with weaker evidence of impact on the violence, and sexual relationships subscales. At the 12-month follow-up, there was an impact on the violence and domestic chores subscales only. The fact that we found fewer and less precisely estimated impacts on the domains related to sexual relationships, and reproductive health is perhaps explained by

Table 2

Cash Plus intervention impacts on gender norms attitudes at midline and endline

	ITT impact midline	ITT impact endline
GEM scale (0–24)	.88* (.40)	.34 (.35)
N	1,179	1,229
Violence subscale (0–6)	.13 (.09)	.13 (.09)
N	1,751	1,760
Reproductive health subscale (0–5)	.17 (.09)	-.02 (.08)
N	1,482	1,517
Sexual relationships subscale (0–8)	.18 (.14)	-.01 (.13)
N	1,359	1,393
Domestic chores subscale (0–5)	.27** (.10)	.23** (.07)
N	1,847	1,866

Linear models were estimated on the panel of youth interviewed at all three waves. Regressions control for gender, age, and outcome value at baseline, district x size fixed effects. Standard errors adjusted for clustering at the community level are reported in parentheses.

ITT = intent-to-treat.

* $p < .05$, ** $p < .01$.

the fact that fewer adolescents would have had a direct experience of these issues in a sample where fewer than one in five (17%) of 14- to 19-year-olds reported having had a sexual intercourse at baseline.

The finding of no impact on adolescent girls is disconcerting, especially as females already expressed less equitable attitudes than males at baseline. Similarly, The International Men and Gender Equality Survey of adults across five Tanzanian regions in 2017 also showed that women expressed less equitable attitudes in the domestic chores and daily lives domain of GEM, although a different mix of GEM subscales overall was used, and the sample comprised both older adolescents and adults [32]. In contrast, findings for 10- to 24-year-olds from a recent analysis in Uganda did not identify any gender differences in mean GEM scores using the same version of the GEM scale as the present study [4]. One explanation for these findings could be that adolescent girls face so many more constraints on their behavior that they find it hard to even imagine a gender-progressive world. After all, those who deviate from gender norms can be subjected to discrimination and social sanctioning [33]. A randomized controlled trial evaluation of a gender-transformative intervention in Haryana, India, that engaged adolescents (12 years of age on average) in classroom discussions about gender equality showed a larger positive effect on boys' behaviors (such as helping with household chores) than on girls' behaviors [34]. The authors note that it is likely because boys were freer to choose to do more around the house and girls would have had to receive permission to do less.

The intervention's impact was heterogenous even among males. The training only changed attitudes among those who had not had experiences of sexual intercourse before the baseline. The differential impact is not likely to be driven by age differences: the intervention affected males (but not females) at midline in both the younger (14–15) and older (16–19) age groups, with or without controlling for sexual debut at baseline.

Early sexual debut tends to be associated with less equitable gender norms. A study of gender norms among young people in Uganda finds significantly lower support for equitable gender norms among 15- to 24-year-olds who had reported having had sex [4]. In a separate analysis of data from the Tanzania Cash Plus evaluation baseline survey, we find that males who have had sexual intercourse tend to express less equitable gender-role attitudes, whereas the opposite pattern holds for females [35]. Moreover, a cluster randomized trial of a gender transformative program for adolescent boys in rural India found a greater positive effect on gender-egalitarian attitudes for younger (aged 13–14 years) than older (aged 15–19 years) boys [36]. This suggests that to shift the attitudes of male adolescents toward more gender-equitable norms, interventions need to take place early, before personal experiences have led to the solidification of attitudes to gender norms. Future research should address gender attitudes as a pathway to improvements in related health behaviors and outcomes.

There are some limitations to the present study. First, responses related to gender-equitable attitudes may suffer from social desirability bias. However, we do not expect bias to vary systematically between treatment and control groups, and thus, the internal validity of the study is maintained. Second, despite being a cash plus intervention, the study design was limited by program roll-out, whereby the cash to households was rolled out in 2015 and the “plus” components targeted to adolescents were rolled out between 2018 and 2019. Thus, our study is able to isolate impacts of the “plus” components (but not cash, cash plus, or synergies between the two).

Table 3
Cash plus intervention impacts on gender norms attitudes at midline and endline, by gender

	Midline			Endline		
	Females	Males	Differential impact	Females	Males	Differential impact
	ITT impact	ITT impact		ITT impact	ITT impact	
	(1)	(2)	(3)	(4)	(5)	(6)
GEM scale (0–24)	.003 (.45)	1.52** (.52)	–1.55* (.62)	–.11 (.51)	.66 (.45)	–.72 (.66)
N	502	677		538	691	
Violence subscale (0–6)	–.08 (.13)	.30* (.12)	–.39* (.18)	.01 (.15)	.24* (.11)	–.21 (.18)
N	767	984		779	981	
Reproductive health subscale (0–5)	.09 (.11)	.23 (.12)	–.14 (.15)	–.01 (.11)	–.03 (.11)	.05 (.15)
N	642	840		668	849	
Sexual relationships subscale (0–8)	–.17 (.18)	.43* (.18)	–.60* (.24)	–.27 (.19)	.17 (.16)	–.41 (.25)
N	578	781		603	790	
Domestic chores subscale (0–5)	.02 (.12)	.48** (.15)	–.48* (.21)	.17 (.11)	.28** (.09)	–.12 (.14)
N	829	1,018		845	1,021	

Linear models were estimated on the separate subsamples of youth interviewed at all three waves. Regressions control for age, outcome value at baseline, and district × size fixed effects. Standard errors adjusted for clustering at the community level are reported in parentheses. Differential impact refers to regressions estimated on the pooled panel sample and augmented by the interaction term (treatment × subgroup). The estimated coefficient on the interaction term is reported.

GEM = Gender-Equitable Men; ITT = intention-to-treat.

* $p < .05$, ** $p < .01$.

In this way, our study can generalize to potential noncash interventions aimed at attitudes or behavior change. Third, in longitudinal studies, attrition is always a concern. Nevertheless, we did not find evidence of selective attrition, thus maintaining the internal validity of the study. The overall attrition rate in this study is comparable to that in other longitudinal analyses of adolescents in Eastern and Southern Africa [31]. Finally, respondents who were excluded from the analysis could be a nonrandom subsample. We estimated single-difference linear models for the subsample of approximately 300 respondents missing at least one GEM item at baseline, and the findings are consistent with the main results (Table A3 in the [Online Appendix](#)).

In summary, we found limited evidence that a government cash plus intervention targeted to adolescents improved gender

equitable attitudes. The impacts were concentrated among males, especially those who had not yet debuted sexually, and several impacts dissipated by the 12-month follow-up. Gender-transformative social protection is currently being advocated as a way to address the gendered nature of poverty and its consequences. Initiatives such as the one studied here, which address the multifaceted drivers of disadvantage among adolescents in low-income settings and have a high level of generalizability and potential for scale-up, could be a promising way forward to improve multidimensional well-being. However, future research should investigate the reasons why adolescent girls report lower support for gender-equitable norms to design more effective interventions, as well as what can be done to reinforce trainings for more sustainable impacts in the medium term and long term.

Table 4
Cash plus intervention impacts on gender norms attitudes at midline and endline, by sexual debut at baseline (males only)

	Midline			Endline		
	ITT impact (sexually debuted at baseline)	ITT impact (not sexually debuted at baseline)	Differential impact	ITT impact (sexually debuted at baseline)	ITT impact (not sexually debuted at baseline)	Differential impact
	(1)	(2)		(4)	(5)	
GEM scale (0–24)	1.44 (1.17)	1.49** (.56)	.09 (1.22)	.29 (.98)	.71 (.47)	–.19 (1.13)
N	93	584		103	588	
Violence subscale (0–6)	.02 (.29)	.34* (.13)	–.37 (.31)	.31 (.28)	.22 (.11)	.15 (.31)
N	129	855		126	855	
Reproductive health subscale (0–5)	.13 (.35)	.23 (.12)	–.05 (.36)	–.05 (.29)	–.03 (.12)	–.04 (.31)
N	111	729		116	733	
Sexual relationships subscale (0–8)	.56 (.41)	.39* (.19)	.24 (.43)	.13 (.39)	.17 (.17)	.04 (.43)
N	109	672		118	672	
Domestic chores subscale (0–5)	.61 (.33)	.47** (.16)	.14 (.36)	.18 (.26)	.29** (.09)	–.11 (.30)
N	129	889		131	890	

Linear models were estimated on the separate subsamples of youth interviewed at all three waves. Regressions control for age, outcome value at baseline, and district × size fixed effects. Standard errors adjusted for clustering at the community level are reported in parentheses. The differential impact column refers to regressions estimated on the pooled panel sample and augmented by the interaction term (treatment × subgroup). The estimated coefficient on the interaction term is reported.

GEM = Gender-Equitable Men; ITT = intention-to-treat.

* $p < .05$, ** $p < .01$.

Acknowledgments

The authors would like to acknowledge the support of the Tanzania Social Action Fund (TASAF) and Tanzania Commission for AIDS, in particular Ladislaus Mwamanga (TASAF), Amadeus Kamagenge (TASAF), and Mishael Fariji (TASAF) for the implementation of this evaluation. In addition, the United Nations Children's Fund personnel instrumental to the initial planning stages of this pilot and study include Beatrice Targa, Patricia Lim Ah Ken, Victoria Chuwa, Naomi Neijhoft, and Tulanoga Matwimbi. The authors would also like to acknowledge the hard working field teams of EDI Global, who conducted the data collection for this study to the highest professional standards.

Funding Sources

Funding for this research has been provided by Oak Foundation (#OCAY-16–73) and UNICEF Tanzania, as well as the Swedish International Development Cooperation Agency (G41102) and the UK Department for International Development (203529-102) through grants to UNICEF Office of Research—Innocenti supporting the Transfer Project. Additional funding for implementation of program activities was provided by Irish Aid. The funders had no role in analysis or interpretation of data.

Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2020.07.025>.

References

- Balvin N, Banati P, eds. *The adolescent brain: A second window of opportunity. A compendium*. Florence: UNICEF Office of Research - Innocenti; 2017.
- Liang M, Simelane S, Fillo GF, et al. The state of adolescent sexual and reproductive health. *J Adolesc Health* 2019;65:S3–15.
- John NA, Stobenau K, Ritter S, et al. Gender socialization during adolescence in low- and middle-income countries: Conceptualization, influences and outcomes. *Innocenti Discuss Pap* 2017;1:2–61.
- Vu L, Pulerwitz J, Burnett-Zieman B, et al. Inequitable gender norms from early adolescence to young adulthood in Uganda: Tool validation and differences across age groups. *J Adolesc Health* 2017;60:S15–21.
- Patton GC, Ross DA, Santelli JS, et al. Next steps for adolescent health: A Lancet Commission. *Lancet* 2014;383:385–6.
- Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC), National Bureau of Statistics, et al. Tanzania HIV/AIDS and Malaria indicator survey 2011–2012. Dar Es Salaam: TACAIDS, ZAC, NBS, OCGS and ICF International; 2013.
- Palermo T, Pereira A, Neijhoft N, et al. Risk factors for childhood violence and polyvictimization: A cross-country analysis from three regions. *Child Abuse Negl* 2019;88:348–61.
- Population Council, Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC), et al. *The adolescent experience in-depth: Using data to identify and reach the most vulnerable young people, Tanzania 2009–2012*. Dar Es Salaam: Population Council, TACAIDS, ZAC and UNICEF Tanzania; 2015.
- Ryle R. *Questioning gender: A sociological exploration*. Thousand Oaks: Pine Forge Press; 2011.
- Conroy AA. Gender, power, and intimate partner violence: A study on couples from rural Malawi. *J Interpers Violence* 2014;29:866–88.
- Varga CA. How gender roles influence sexual and reproductive health among South African adolescents. *Stud Fam Plann* 2003;34:160–72.
- Kågesten A, Gibbs S, Blum RW, et al. Understanding factors that shape gender attitudes in early adolescence globally: A mixed-methods systematic review. *PLoS One* 2016;11:1–36.
- Haberland NA. The case for addressing gender and power in sexuality and HIV education: A comprehensive review of evaluation studies. *Int Perspect Sex Reprod Health* 2015;41:31–42.
- George AS, Amin A, de Abreu Lopes CM, et al. Structural determinants of gender inequality: Why they matter for adolescent girls' sexual and reproductive health. *BMJ* 2020;368.
- Roelen K, Devereux S, Abdulai AG, et al. How to make 'cash plus' work: Linking cash transfers to services and sectors. Florence: UNICEF Office of Research - Innocenti; 2017.
- Cluver LD, Orkin MF, Yakubovich AR, et al. Combination social protection for reducing HIV-risk behavior amongst adolescents in South Africa. *J Acquir Immune Defic Syndr* 2016;72:96–104.
- Cluver LD, Orkin FM, Boyes ME, et al. Cash plus care: Social protection cumulatively mitigates HIV-risk behaviour among adolescents in South Africa. *AIDS* 2014;28:S389–97.
- Bandiera O, Buehren N, Burgess R, et al. Women's empowerment in action: Evidence from a randomized control trial in Africa. *Am Econ J Appl Econ* 2020;12:210–59.
- Alam R. Empowering adolescent girls in East Africa: Evidence from BRAC. Dar Es Salaam: Social Protection Plus Workshop; 2016.
- Özler B, Hallman K, Guimond M-F, et al. Girl empower—a gender transformative mentoring and cash transfer intervention to promote adolescent wellbeing: Impact findings from a cluster-randomized controlled trial in Liberia. *SSM Popul Health* 2020;10:100527.
- Austrian K, Hewett PC, Soler-Hampejsek E, et al. Adolescent Girls Empowerment Programme: Research and evaluation mid-term technical report. Nairobi: Population Council; 2016.
- Pettifor A, Wamoyi J, Balvanz P, et al. Cash plus: Exploring the mechanisms through which a cash transfer plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. *J Int AIDS Soc* 2019;22:e25316.
- Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public Health Rep* 2014;129:19–31.
- Rosas N, Zaldivar S, Granata MJ, et al. Evaluating Tanzania's productive social safety net: Findings from the midline survey. Washington DC: The World Bank; 2019.
- UNICEF. Cash plus: An adolescent livelihood, health and well-being intervention as part of Tanzania's productive social safety net programme. Florence and Dar Es Salaam: UNICEF; 2017.
- Tanzania Cash Plus Evaluation Team. A cash plus model for safe transitions to a healthy and productive adulthood: Baseline Report. Florence: UNICEF Office of Research - Innocenti; 2018.
- Pulerwitz J, Barker G. Measuring attitudes toward gender norms among young men in Brazil: Development and psychometric evaluation of the GEM scale. *Men Masculinities* 2008;10:322–38.
- Pulerwitz J, Hughes L, Mehta M, et al. Changing gender norms and reducing intimate partner violence: Results from a quasi-experimental intervention study with young men in Ethiopia. *Am J Public Health* 2015;105:132–7.
- Tanzania Cash Plus Evaluation Team. A cash plus model for safe transitions to a healthy and productive adulthood: Midline report. Florence: UNICEF Office of Research - Innocenti; 2020. <https://www.unicef-irc.org/publications/1100-cash-plus-model-for-safe-transitions-to-healthy-and-productive-adulthood-midline.html>.
- McKenzie D. Beyond baseline and follow-up: The case for more T in experiments. *J Dev Econ* 2012;99:210–21.
- Austrian K, Soler-Hampejsek E, Mumah J, et al. Adolescent girls initiative-Kenya: Midline results report. Nairobi: Population Council; 2018.
- Levtov R, Vlahovicova K, Barker G, et al. Momentum toward equality: Results from the international men and gender equality survey (IMAGES) in Tanzania. Washington DC: Promundo-US, Uzazi na Malezi Bora Tanzania, and Tanzania Commission for AIDS; 2018.
- Heise L, Greene ME, Opper N, et al. Gender inequality and restrictive gender norms: Framing the challenges to health. *Lancet* 2019;393:2440–54.
- Dhar D, Jain T, Jayachandran S. Reshaping adolescents' gender attitudes: Evidence from a school-based experiment in India. Cambridge, MA: NBER Work Pap; 2018.
- Palermo T, Chzhen Y, Balvin N, et al. Examining determinants of gender attitudes using a structural equation modelling approach: Evidence among Tanzanian adolescents. *BMC Womens Health* 2020;20:195.
- Gupta AK, Santhya KG. Promoting gender egalitarian norms and practices among boys in rural India: The relative effect of intervening in early and late adolescence. *J Adolesc Health* 2020;66:157–65.