



Original article

## Stepping Stones and Creating Futures Intervention to Prevent Intimate Partner Violence Among Young People: Cluster Randomized Controlled Trial

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### A B S T R A C T

**Purpose:** Young people, not in formal employment or education, face exceedingly high levels of intimate partner violence (IPV). We evaluated whether Stepping Stones and Creating Futures, compared with a wait-list control, can reduce IPV and strengthen livelihoods.

**Methods:** A cluster randomized controlled trial with 34 clusters in urban informal settlements in eThekweni Municipality, South Africa. Participant inclusion criteria were aged 18–30 years, resident in the informal settlement, and not working or in education. A total of 676 women and 646 men were recruited from September 2015 to September 2016. At recruitment, participants were not blinded to study arm. Endline data were collected from March to October 2018 (24 months postenrollment). Analyses were by intention-to-treat and separate for men and women. No clusters withdrew; endline retention was 74.9% (n = 505) men and 80.6% (n = 545) women.

**Results:** At endline in the intervention arm, men's self-reported past year IPV perpetration was lower (physical IPV [adjusted odds ratio [aOR]: .71, 95% confidence interval [CI]: .51–.97], severe IPV [aOR: .70, 95% CI: .52–.94], and sexual IPV [aOR: .74, 95% CI: .54–1.03]). There was no difference in men's controlling behaviors ( $\beta = .06$ , 95% CI:  $-.51$  to  $.63$ ) or past month earnings ( $\beta = .21$ , 95% CI:  $-.42$  to  $.83$ ). For women, earnings were significantly higher in the intervention arm ( $\beta = .97$ , 95% CI:  $.43$ – $1.51$ ), but there were no differences for past year IPV experience (physical IPV [aOR: .92, 95% CI:  $.62$ – $1.37$ ]; sexual IPV [aOR: .90, 95% CI:  $.64$ – $1.28$ ], severe IPV [aOR: .93, 95% CI:  $.66$ – $1.31$ ]) or controlling behaviors ( $\beta = -.01$ , 95% CI:  $-.88$  to  $.86$ ).

**Conclusion:** Stepping Stones and Creating Futures is effective in reducing men's self-reported perpetration of IPV and strengthening women's livelihoods, but not women's experiences of IPV.

**Trial registration:** NCT03022370. Registered January 13, 2017.

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### IMPLICATIONS AND CONTRIBUTION

Stepping Stones and Creating Futures reduced young men's self-reported perpetration of intimate partner violence and strengthened young women's livelihoods in the challenging contexts of urban informal settlements in South Africa.

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

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Intimate partner violence (IPV) [1] and HIV acquisition [2] are major health risks for young women, driven by a cluster of risk factors, including poverty, substance use, depression, and gender inequalities [3–6]. Outside of school settings, interventions combining gender transformative and economic strengthening show considerable promise in reducing women's experiences of IPV [7] and HIV acquisition risk [8,9]. However, they have struggled to achieve similar outcomes with younger women (aged <30 years), living in informal settlements [7–9] where IPV and HIV acquisition risk are more common. In addition, young men are rarely included as direct recipients of such interventions [7], despite men's HIV risk behaviors, perpetration of IPV, substance use, and poor mental health, being driven by poverty and gender inequalities [4,10] and impacting on women's health and well-being.

There remains limited evidence about IPV prevention among young people in the global south. A 2015 review showed participatory group training approaches were promising [11]. The best evaluated of these was Stepping Stones, which focused on improving gender equity and communication and relationship skills. In a randomized controlled trial, in rural South Africa with school students (aged 15–24 years), Stepping Stones showed a significant reduction in women's and men's HSV 2 acquisition and a reduction in men's self-reported IPV perpetration at end-line, plus men's alcohol use reduced at midline [12]. The evaluation showed no other impacts for women, and the qualitative process evaluation suggested that although women's agency increased, they were unable to reduce their experiences of IPV because they were economically dependent on men they were dating and could not leave relationships [13].

We built on Stepping Stones and sought to evaluate it with young out-of-school men and women in urban informal settlements. To address women's economic dependency on men and the overall contexts of poverty, we combined Stepping Stones with a livelihood strengthening intervention (Creating Futures) [14]. Creating Futures is a group-based curriculum focused on supporting young people to review the livelihood opportunities in their context and develop a single implementable livelihood strategy [14]. Thus, we evaluated Stepping Stones and Creating Futures intervention among young people (aged 18–30 years) residing in urban informal settlements. We hypothesized the intervention would reduce IPV perpetration (men) and experience (women) and reduce HIV risk via strengthening livelihoods, promoting gender equity, reducing substance use, and improving mental health.

The study was approved by the ethics committees of the South African Medical Research Council and the University of KwaZulu-Natal. Our protocol is registered at [clinicaltrials.gov](https://clinicaltrials.gov) (NCT03022370) and published elsewhere [15], and we present primary and secondary trial outcomes.

## Methods

### Trial design

We conducted a two-arm cluster randomized controlled trial as the intervention is delivered to groups, with a wait-list control condition. More details on study rationale, setting, methods, and intervention are available elsewhere [15].

The setting was eThekweni Municipality, KwaZulu-Natal Province, South Africa. Clusters were communities in urban

informal settlements, based on naturally occurring divisions, or larger informal settlements that could be subdivided based on naturally occurring barriers (such as a major road or river) [15]. Cluster eligibility criteria were they were in the Municipality, lacked the provision of formal services (e.g., electricity and/or water), and were deemed safe enough to work in by a local nongovernment organization (NGO), Project Empower.

Eligible participants resided in the cluster were aged between 18 and 30 years and not in school, education, or formal employment. In addition, they had to be mentally competent to give informed consent and able to communicate in English, isi-Zulu, or isiXhosa.

### Intervention

Stepping Stones and Creating Futures aims at transforming gender attitudes and strengthening livelihoods, based on adult learning theories [16], such as discussion and critical thinking, through group-based activities, such as role-plays, body mapping, and participatory diagramming. Stepping Stones [17] focuses on gender, relationships, violence, and sexual health, whereas Creating Futures covers issues including setting livelihood goals, coping with crises, saving and spending, and getting and keeping jobs, within a sustainable livelihoods framework [18]. In total, the intervention comprises 21 sessions, each ~3 hours long, delivered twice a week to single sex groups of ~20. Intervention materials comprise two printed manuals and one "diary/workbook" for young people and require only paper and pens and few other resources to deliver (further details in [Supplementary File 1](#)). There was a wait-list control, and there was no contact with control participants apart from for data collection at midline and endline.

### Outcomes

Reflecting on the multiple objectives of the intervention and lack of agreement on how best to measure IPV, we outlined five primary outcomes. Three outcomes assessed men's self-reported perpetration and women's experience of IPV in the past year ([Table 1](#)), specifically, physical, sexual, and severe IPV (a combined physical and/or sexual IPV measure assessing two or more instances of IPV, derived from previous studies showing major health impacts of two or more instances of IPV [6]). One outcome assessed women's experiences and men's use of controlling behaviors in their relationship with the primary partner (e.g., for women "He wants to know where I am all the time") [20]. A final outcome assessed past month earnings on a continuous scale. Outcomes were prespecified in the trial protocol [15].

Secondary outcomes are described in [Table 1](#). In addition, although not prespecified in the protocol, we present women's experiences and men's perpetration of emotional IPV, economic IPV, and nonpartner sexual violence, following studies showing economic interventions can increase these [8].

### Sample size

Sample size was based on pilot study data [26], where past year physical and/or sexual IPV perpetration (men) was 45% and experience (women) was 41%. We assumed we would only follow-up 14 of 20 participants per cluster. Our calculation showed that 16 clusters per arm would provide 80% power to

**Table 1**  
Outcome measures in the Stepping Stones and Creating Futures trial

	Source	Indicator	Number of items	Method of scaling	Hypothesized direction of change because of the intervention
<b>Primary outcomes</b>					
Physical IPV	WHO VAW scale, adapted and widely used in South Africa [6,19]	One or more episode of physical IPV in the past 12 months (men perpetrate and women experience)	5	Binary	Decrease
Sexual IPV		One or more episode of sexual IPV in the past 12 months (men perpetrate and women experience)	3	Binary	Decrease
Severe IPV		More than one episode of physical or sexual intimate partner in the past 12 months (men perpetrate and women experience)	8	Binary	Decrease
Controlling behaviors	Modified Sexual Relationship Power scale [20]	Experiences of control in primary relationships by male partner (men perpetrate and women experience)	8	Mean	Decrease
Earnings in the past month		Earnings through work in the past month	1	Mean log transformation	Increase
<b>Secondary outcomes</b>					
Gender attitudes	Modified Gender Equitable Men's Scale [21]	Agreement with statements on gender attitudes (4-point Likert scale, $\geq$ more inequitable)	20	Mean	Decrease
Emotional IPV	Scale developed for original Stepping Stones trial [6]	One or more episodes of emotional IPV in past 12 months (men perpetrate and women experience)	5	Binary	Decrease
Economic IPV	WHO VAW scale, adapted and widely used in South Africa [6]	One or more episodes of economic IPV in past 12 months (men perpetrate and women experience)	4	Binary	Decrease
Nonpartner sexual violence	Scale developed for original Stepping Stones trial [6]	One or more episodes of nonpartner sexual violence in the past 12 months (men perpetrate and women experience)	6	Binary	Decrease
Depressive symptomology (CESD)	CESD scale [22]	Depression in the past week, continuous	20	Mean	Decrease
Suicidal ideation		Thoughts about ending life in past month	1	Binary	Decrease
Life circumstances	Satisfaction With Life Scale	Views around current life context ( $\geq$ better)	4	Mean	Increase
Alcohol consumption	Alcohol Use Disorders Identification [23]	Past year alcohol consumption (continuous, $\geq$ more)	10	Mean	Decrease
Problem alcohol use	Test (AUDIT) scale [23]	Excessive alcohol use using AUDIT (7/8 cut)	10	Binary	Decrease
Quarreling about alcohol		Quarreling with partner about alcohol use (of those who report drinking alcohol)	1	Binary	Decrease
Last sexual partner		Self-reported person last had sex with (main partner [1] vs. others [0])	1	Binary	Increase
Transactional sex	Scale developed for previous South African research [24]	Sex primarily motivated by material gain to female casual or once-off sex partner in last 12 months, defined as provision of food, cosmetics, clothes, transportation, items for children or family, school fees, somewhere to sleep, or	5	Binary	Decrease

(continued on next page)

**Table 1**  
Continued

	Source	Indicator	Number of items	Method of scaling	Hypothesized direction of change because of the intervention
Work shame	IMAGES study [25]	cash. Giving for men and receiving for women Feelings of shame around lack of work and poor quality of work ( $\geq$ more shame)	4	Mean	Decrease
Work stress	IMAGES study [25]	Stress related to lack of work and poor quality of work ( $\geq$ more stress)	4	Mean	Decrease
Stealing because of hunger		Stealing food or money because of lack (never vs. any) in the past month	1	Binary	Decrease
Mobilization of cash in emergency		Ability to access R200 in an emergency (very difficult or somewhat difficult, compared with somewhat easy, easy)	1	Binary	Increase
Savings		Savings in the past 4 weeks	1	Mean log transformation	Increase

AUDIT = alcohol use disorders identification test; CESD = Center for Epidemiologic Studies Depression; IMAGES = International Men and Gender Equality Survey; IPV = intimate partner violence; WHO = World Health Organization; VAW = Violence Against Women.

detect a 19% reduction in IPV incidence at 12 months, enabling analysis of women and men separately [15]. We included an additional cluster per arm (total clusters  $n = 34$ ) in case of cluster dropout postrecruitment.

### Randomization

Clusters were identified and enrolled by Project Empower. They secured permission from local ward counselors, and none refused to participate.

Once clusters were recruited, they were allocated a number, and the study statistician used the Excel random number generator to allocate clusters to each arm. At randomization, the statistician did not know which number was allocated to which cluster. There are often high levels of mistrust among marginalized communities around research, and historical experiences of communities being promised support and then not receiving it; to prioritize participant well-being, clusters were, therefore, randomized before participants were recruited. There were no strategies to reduce contamination postrecruitment of participants.

In each cluster, the research team and Project Empower would then set up centrally, and Project Empower staff moved around the cluster talking to potential participants. Participants showing interest were brought to the research team who explained the information sheet and informed consent form and responded to questions. If participants were willing to participate in the study, they completed the informed consent and the baseline questionnaire. No participants refused to complete the baseline questionnaire once they had completed the informed consent. In each cluster, we aimed to recruit 20 women and 20 men. There was no racial or gender bias in recruitment. Recruitment was stratified by gender, and we sought to recruit equal numbers; we did not recruit based on self-identified racial categorization; however, informal settlements in eThekweni are predominately “black,” and almost all participants self-identified as black.

Questionnaires were self-completed on tablets, with in-built skip patterns and logic and range checks, in either English, isiZulu, or isiXhosa. If participants had literacy problems, a research assistant completed face-to-face interviews, occurring <5% of time. At midline, teams tracked participants based on baseline information, and questionnaires were self-completed on tablets as at baseline. At endline, audio assist was added to improve comprehension and reduce the need for face-to-face interviews.

### Blinding

Participants were not blinded at recruitment to their arm allocation, and the statistician was not blinded during analysis.

### Description of similar interventions

During the trial period, there was significant investment in IPV and HIV prevention in South Africa. Specifically, DREAMS was implemented in eThekweni Municipality (one of five sites across South Africa), from 2016 onward, which included a shortened version of Stepping Stones, and in both arms, there were DREAMS interventions. At midline and endline, we included a single item about attending “workshops by other NGOs” since the last interview. In total, 270 men (total 45.3%; intervention 45.9% vs. control 44.7%) and 219 women (total 38.6%; intervention 42.2% vs. control 35.2%), we followed up reported attending a workshop run by another organization, and there were no significant differences by arm.

### Statistical methods

An intention-to-treat analysis was followed with individuals analyzed according to the trial group to which their cluster was randomized and in line with a prespecified analysis plan for the primary and secondary outcomes. Because the trial included 34 clusters, individual-based analyses were

**Table 2**

Baseline social and demographic characteristics of two study arms, with standardized mean differences

	Men			Women		
	Intervention (N = 338), %/mean (n)	Control (N = 336), %/ mean (n)	Standardized mean difference	Intervention (n = 339), %/ mean (n)	Control (N = 338), %/mean (n)	Standardized mean difference
Age (years)						
18–19	8.6 (29)	12.8 (43)	-.03	12.7 (43)	12.4 (42)	.13
20–24	53.9 (182)	49.7 (167)		48.4 (164)	41.1 (139)	
25–29	32.8 (111)	28.9 (97)		33.9 (115)	36.1 (122)	
30–38/30–35	4.7 (16)	8.6 (29)		5.0 (17)	10.4 (35)	
Education						
Primary only	12.4 (42)	10.4 (35)	.06	7.1 (24)	9.5 (32)	.09
Secondary	87.6 (296)	89.6 (301)		92.9 (315)	90.5 (306)	
Household food insecurity (mean)	2.84	2.96 (335)	.08	2.88	3.17	.18
Past year physical IPV (men's self-reported perpetration and women's experience)	49.9 (168)	50.5 (169)	.01	59.0 (200)	60.1 (203)	.02
Past year sexual IPV (men's self-reported perpetration and women's experience)	27.3 (92)	30.5 (102)	.07	28.9 (98)	30.2 (102)	.03
Severe past year IPV (men's self-reported perpetration and women's experience)	55.8 (188)	58.2 (195)	.05	64.9 (220)	65.4 (221)	.01
Controlling behaviors ( $\geq$ more)	10.81 (337)	11.02 (334)	.06	10.29	10.3	.00
Earnings in past month	410 (338)	414.00 (335)	.07	183	154.35	-.01
Gender-equitable attitudes ( $\geq$ less equitable)	28.06 (338)	27.96 (334)	-.01	25.54	25.71	.02
Past year emotional IPV (men's self-reported perpetration and women's experience)	62.6 (211)	68.7 (230)	.13	78.2 (265)	78.1 (264)	.00
Past year economic IPV (men's self-reported perpetration and women's experience)	47.5 (160)	46.6 (156)	.02	50.4 (171)	54.4 (184)	.08
Past year nonpartner sexual violence (men's self-reported perpetration and women's experience)	35.9 (121)	41.8 (140)	.12	32.7 (111)	33.4 (113)	.01
Depressive symptoms (CESD, $\geq$ more symptoms)	20.12 (335)	21.25 (334)	.12	21.24	21.06	-.02
Suicidal ideation (past 4 weeks)	22.7 (76)	25.8 (86)	.07	32.7 (111)	27.5 (93)	.11
Life circumstances ( $\geq$ better circumstances)	10.36 (338)	10.19 (335)	-.05	10.2	9.6	-.17
Alcohol use (AUDIT, score, $\geq$ more)	7.44	8.24	.12	3.94	4.66	.05
Problematic alcohol use ( $\geq$ 8)	41.4 (140)	45.8 (154)	.09	21.5 (73)	24.6 (83)	.07
Arguing about alcohol with partner—of those who drink alcohol (yes)	46.0 (103)	43.3 (104)	.05	32.8 (59)	42.5 (77)	.20
Last sex partner (main partner c.f. any other)	52.9 (173)	58.5 (190)	.11	75.8 (232)	76.8 (218)	.02
Past year transactional sex with casual/once-off partner	55.1 (180)	58.8 (191)	.08	39.2 (133)	42.0 (142)	.06
Shame about lack of work ( $\geq$ more shame)	10.8	11.1	.12	10.82	11.08	.10
Stress about lack of work ( $\geq$ more stress)	12.14	12.04	-.03	12.2	11.92	-.10
Ability to mobilize R200 in an emergency	13.6 (46)	10.8 (36)	.09	13.3 (45)	10.1 (34)	.10
Stealing in past 4 weeks because of hunger	37.3 (126)	36.1 (121)	.02	24.8 (84)	25.4 (86)	.02
Savings in the past 4 weeks	114.7 (337)	111.4 (334)	.14	24.01 (338)	34.67 (339)	-.02

AUDIT = alcohol use disorders identification test; CESD = Center for Epidemiologic Studies Depression.

performed, adjusting for clustering [27]. All analyses were done in Stata 15 (StataCorp LLC).

Before assessing intervention effect on trial outcomes, we performed descriptive analysis on loss to follow-up (LTFU), assessing whether LTFU was associated with intervention arm, outcomes at baseline, or baseline predictors of outcomes. There was no difference in LTFU by arm, although LTFU was slightly

higher in the intervention arm. There was no other relationship between outcomes and LTFU.

Outcomes were analyzed using generalized estimating equation models for binary outcomes and mixed effects models for continuous outcomes, accounting for the clustered nature of the data. Log transformation was used for past month savings and earnings, and both were analyzed using the Tobit

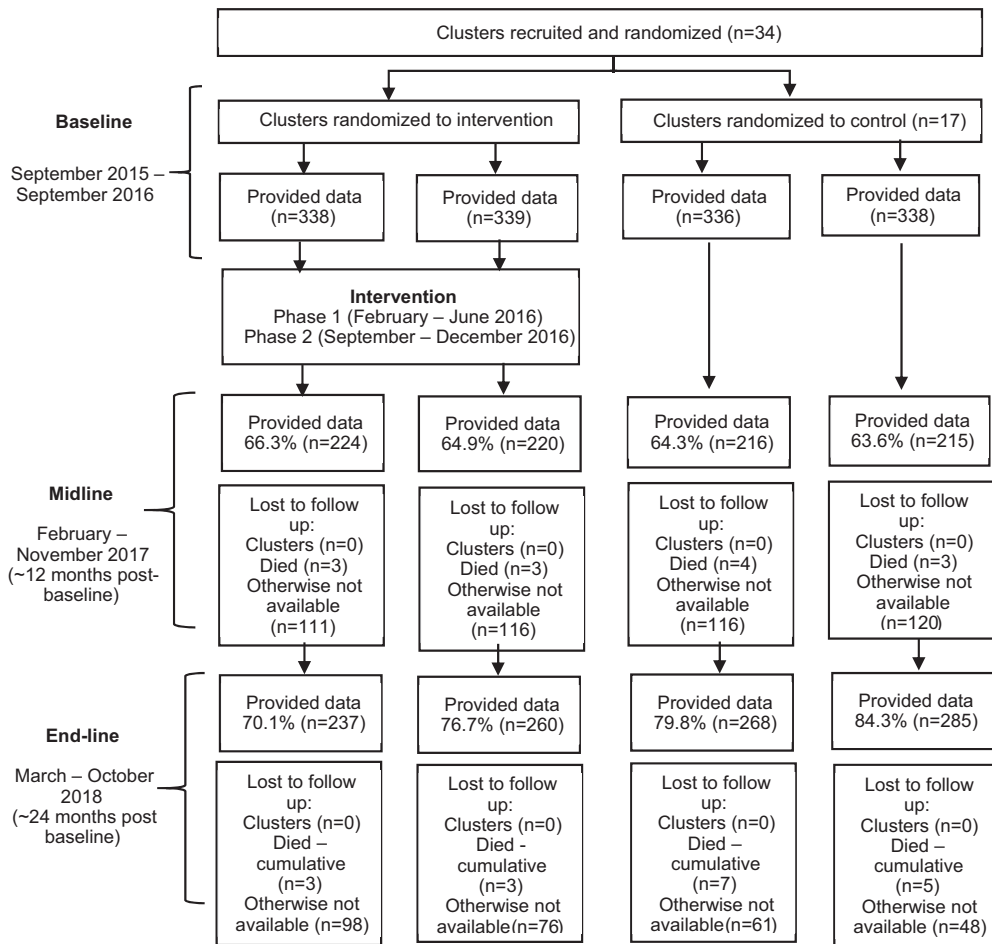


Figure 1. Stepping Stones and Creating Futures CONSORT diagram.

model because of the high clustering seen around zero in the data [28]. Adjustments were done for the baseline outcome variable of interest only, as no meaningful differences in the standardized mean differences ( $>.2$ ) of other predictor variables were found at baseline (Table 2). We report percentages or means, 95% confidence intervals (95% CI), and  $p$  values for outcomes.

We conducted two sensitivity analyses. We performed a per-protocol analysis, excluding all intervention participants from analysis if they attended less than three sessions after enrollment. In addition, as whole cases were missing for 25% of men and 19% of women, and at random, we performed multiple imputation, using 10 imputations [29]. Analysis models used were the same as those used in the primary analysis.

#### Role of the funding source

None of the funding sources played a role in study design, data collection, analysis, interpretation, or writing of the results. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

## Results

### Recruitment

Figure 1 shows the trial flow diagram. Clusters were recruited between May and June 2015, and participants were recruited between September 2015 and September 2016. The majority of control clusters ( $n = 16$ ) had participant recruitment, and baseline data collected from October 2015 to December 2015, and in one cluster, this was done in September 2016. Intervention clusters were recruited in two phases: phase 1 recruitment was from January 2016 to February 2016, then these clusters received the intervention (completion June 2016). Phase 2 recruitment was from August 2016 to September 2016, then received the intervention (to December 2016). Midline follow-up was January to November 2017, approximately 12 months postbaseline, and endline was March to October 2018, approximately 24 months postbaseline.

### Baseline data

At baseline, 677 women and 674 men were recruited into the trial. Table 2 shows participants' baseline characteristics, and there were no differences between arms. Overall, men's

mean age was 23.8 years (range 18–38 years; interquartile range 21–26), and women's mean age was 23.8 years (range 18–36; interquartile range 21–26). The majority of participants had some secondary education.

At baseline, primary and secondary outcomes were similar across arms (Table 2). Past year physical IPV was 59.5% for women and 50.1% for men, sexual IPV was common (28.9% men and 29.5% women) as was severe IPV (65.1% women and 57.0% men). Past month mean earnings were low, women reported R169 (range R0–R4000 [US\$11, \$0–\$267]; exchange rate calculated: 15 South African Rand = 1 US Dollar.), and men R412 (range R0–R15,000 [US\$27, \$0–\$1,000]).

### Intervention delivery

The intervention was delivered by Project Empower's trained facilitators, and the whole intervention was delivered to all clusters. There were multiple challenges during delivery, including flooding, local protests, and an election, which led to delays in implementing Phase 2 of the intervention. In the intervention arm, 57.1% of men, and 71.1% of women, attended three or more sessions [30].

### Numbers analyzed

Follow-up rates (Figure 1) at midline were 64.3% (n = 435) for women and 65.3% (n = 440) for men, and at endline, 80.5% (n = 545) for women and 74.9% (n = 505) for men. There were 18 deaths (six men and 12 women), with no differences by arm. All women, and the majority of men, who died, did so of "natural causes," and two men were stabbed to death. We had two additional violent attacks on men reported and three other serious adverse events. The research team investigated all deaths and serious adverse events, and none were linked to study activities, and all were reported to the ethics committees. In addition, we had referral mechanisms to counseling and healthcare and were guided by women's decisions about appropriate responses if they reported requiring assistance to our team.

### Outcomes and Estimation

**Primary outcomes.** Table 3 shows men's primary outcomes. At endline, men in Stepping Stones and Creating Futures reported significantly less past year physical IPV perpetration (adjusted odds ratio [aOR]: .71, 95% CI: .51–.97) and severe IPV perpetration (aOR: .70, 95% CI: .52–.94) and some indication of lower self-reported past year sexual IPV perpetration (aOR: .74, 95% CI: .54–1.03). At midline, these measures were all in the hypothesized direction and of a similar magnitude to endline, but not statistically significant. At endline, there was no difference in controlling behaviors ( $\beta$ : .06, 95% CI:  $-.51$  to  $.63$ ), although at midline, they were significantly lower in the intervention arm ( $\beta$ :  $-2.35$ , 95% CI  $-3.45$  to  $-1.24$ ). There were no differences by arm in past month earnings ( $\beta$ : .21, 95% CI:  $-.42$  to  $.83$ ) at endline, although mean earnings in the intervention were 21% higher (R988 vs. R817; \$66 vs. \$54).

At endline (Table 4), women's primary outcomes showed significantly more past month earnings ( $\beta$ : .97, 95% CI .43–1.51), reflecting a 46% difference between mean scores (R565 vs. R385; \$38 vs. \$26), and there was indication of change at midline ( $\beta$ : .68, 95% CI: .00–1.35). There was no difference

between arms for past year physical IPV (aOR: .92, 95% CI: .62–1.37), sexual IPV (aOR: .90, 95% CI: .64–1.28), severe IPV (aOR: .93, 95% CI: .66–1.31), or experiences of men's controlling behaviors ( $\beta$ :  $-.01$ , 95% CI:  $-.88$  to  $.86$ ).

**Secondary outcomes.** For men, at endline, those in the intervention group reported significantly less self-reported past year economic IPV perpetration (aOR .65, 95% CI: .44–.97) and an indication of lower self-reported perpetration of emotional IPV (aOR: .82, 95% CI: .59–1.14) and nonpartner sexual violence (aOR: .78, 95% CI: .57–1.07; Table 3). At midline, men reported more gender-equitable attitudes ( $\beta$ :  $-6.14$ , 95% CI  $-8.93$  to  $-3.36$ ).

Men's overall alcohol use was significantly lower in the intervention arm at midline ( $\beta$ :  $-1.99$ , 95% CI:  $-3.79$  to  $-.20$ ) and endline ( $\beta$ :  $-1.16$ , 95% CI:  $-2.01$  to  $-.04$ ), and at midline, men reported less arguments with partners about alcohol (aOR: .59, 95% CI: .37–.98). In addition, at midline, men reported significantly fewer depressive symptoms ( $\beta$ :  $-3.02$ , 95% CI:  $-5.30$  to  $-.73$ ).

HIV risk behavior was assessed and generally saw no differences by arm. However, the proportion of men reporting the last person they had sex with was a main partner increased in the intervention arm at midline (aOR: 1.62, 95% CI 1.19–2.28) but was not sustained at endline.

There were some indications of men's livelihoods strengthened. Men's savings in the past month were significantly higher at endline ( $\beta$ : .64, 95% CI: 16–1.11), and at midline, men reported feeling less shame about lack of work ( $\beta$ :  $-.69$ , 95% CI:  $-1.31$  to  $-.08$ ) and less stealing in the past week because of hunger (aOR: .49, 95% CI: .32–.74).

For women, secondary outcomes showed little improvement (Table 4). Savings in the past 4 weeks improved significantly at endline ( $\beta$ : .60, 95% CI: .18–1.02), and at midline, there was a slight indication ( $\beta$ :  $-1.69$ , 95% CI:  $-3.44$  to  $.06$ ), that those in the intervention group reported less gender inequitable attitudes.

**Ancillary analysis.** The per-protocol analysis was consistent with the primary analysis for men (Table 3) with similar magnitudes of change reported for all variables. However, past year sexual IPV was significantly lower (aOR: .66, 95% CI: .45–.97) in the intervention arm, but economic IPV was not, and alcohol use was only marginally significant ( $\beta$ :  $-1.10$ , 95% CI:  $-2.31$  to  $.11$ ). For women (Table 4), the per-protocol analysis was consistent with the main analysis, but depression at endline ( $\beta$ :  $-2.02$ , 95% CI:  $-3.73$  to  $-.31$ ) was significantly lower, as was shame about lack of work ( $\beta$ :  $-.47$ , 95% CI:  $-.90$  to  $-.05$ ). Similarly, the imputed analyses (Supplementary Table 1) showed no major differences in the primary analysis for women. However, for men, the imputed analysis found changes in self-reported past year perpetration of sexual IPV to be nonsignificant, and men at endline reported significantly better life circumstances.

### Discussion

Young men participating in Stepping Stones and Creating Futures showed a consistent patterning of less self-reported violence perpetration with significant reductions in physical, severe, and economic IPV and trends toward less self-reported sexual IPV and nonpartner sexual violence perpetration at endline. In addition, there was a significant reduction in overall alcohol consumption at midline and endline. There were no

**Table 3**  
Primary and secondary outcomes for men at 12 and 24 months according to intervention, for intention-to-treat and per-protocol analyses

	Intention-to-treat analysis						Per-protocol analysis					
	Stepping stones and creating futures		Control		Odds ratio/ unadjusted coefficient (95%CI)	p value	Stepping stones and creating futures					
	No. of participants	Mean or percentage	No. of participants	Mean or percentage			Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p value	No. of participants attending ≥3 session	Mean or percentage	Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p value
<b>Primary outcomes</b>												
Past year physical IPV perpetration												
12 months	224	46.0	216	53.7	.74 (.39, 1.42)	.367	.75 (.38, 1.45)	.389	142	43.0	.69 (.35, 1.33)	.267
24 months	237	36.3	268	44.0	<b>.73 (.53, .99)</b>	<b>.046</b>	<b>.71 (.51, .97)</b>	<b>.032</b>	157	34.4	<b>.67 (.46, .97)</b>	<b>.033</b>
Past year sexual IPV perpetration												
12 months	224	34.4	216	44.0	.65 (.33, 1.29)	.221	.66 (.33, 1.28)	.218	142	31.7	.61 (.29, 1.29)	.196
24 months	237	21.9	268	27.2	<b>.73 (.53, 1.00)</b>	<b>.047</b>	<b>.74 (.54, 1.03)</b>	<b>.072</b>	157	20.4	<b>.66 (.45, .97)</b>	<b>.033</b>
Severe past year IPV perpetration												
12 months	224	52.7	216	58.8	.77 (.39, 1.49)	.431	.78 (.39, 1.56)	.488	142	50.7	.77 (.39, 1.52)	.454
24 months	237	41.8	268	50.4	<b>.71 (.53, .93)</b>	<b>.014</b>	<b>.70 (.52, .94)</b>	<b>.019</b>	157	39.5	<b>.65 (.47, .92)</b>	<b>.014</b>
Controlling behaviors (≥more)												
12 months	224	9.0	216	11.5	<b>β -2.49 (-3.58, -1.40)</b>	<b>&lt;.0001</b>	<b>β -2.35 (-3.45, -1.24)</b>	<b>&lt;.0001</b>	142	9.0	<b>β -2.27 (-3.41, -1.14)</b>	<b>&lt;.0001</b>
24 months	237	10.0	268	10.0	β .01 (-.59, .60)	.982	β .06 (-.51, .63)	.839	157	10.0	β .13 (-.60, .85)	.733
Earnings in past month <sup>b</sup>												
12 months	224	1,177	216	1,020	β .60 (-.19, 1.39) <sup>b</sup>	.140	β .63 (-.14, 1.40) <sup>b</sup>	.110	142	1,180	β .48 (-.38, 1.33)	.273
24 months	237	988	268	817	β .18 (-.47, .83) <sup>b</sup>	.584	β .21 (-.42, .83) <sup>b</sup>	.521	157	1,014	β .24 (-.43, .90)	.486
<b>Secondary outcomes</b>												
Gender-equitable attitudes (≥less equitable)												
12 months	224	22.7	216	28.9	<b>β -6.20 (-8.99, -3.42)</b>	<b>&lt;.0001</b>	<b>β -6.14 (-8.93, -3.36)</b>	<b>&lt;.0001</b>	142	22.3	<b>β -6.12 (-8.89, -3.36)</b>	<b>&lt;.0001</b>
24 months	237	25.0	268	25.2	β -.17 (-2.12, 1.79)	.868	β -.30 (-1.87, 1.28)	.712	157	24.6	β -.36 (-1.96, 1.24)	.660
Past year emotional IPV												
12 months	224	64.7	216	69.9	.79 (.50, 1.23)	.298	.86 (.54, 1.36)	.506	142	67.6	.97 (.59, 1.60)	.909
24 months	237	57.8	268	64.2	.77 (.57, 1.05)	.097	.82 (.59, 1.14)	.245	157	59.2	.86 (.62, 1.18)	.352
Past year economic IPV												
12 months	224	45.5	216	52.3	.78 (.38, 1.59)	.493	.77 (.38, 1.59)	.485	142	49.0	.77 (.38, 1.57)	.472
24 months	237	46.0	268	55.2	<b>.69 (.49, .96)</b>	<b>.029</b>	<b>.65 (.44, .97)</b>	<b>.035</b>	157	44.4	.78 (.48, 1.27)	.316
Past year nonpartner sexual violence												
12 months	224	47.3	216	51.4	.74 (.36, 1.54)	.423	.76 (.36, 1.58)	.458	142	49.3	.88 (.42, 1.88)	.750
24 months	237	32.9	268	41.0	<b>.69 (.52, .93)</b>	<b>.015</b>	<b>.78 (.57, 1.07)</b>	<b>.131</b>	157	31.9	.79 (.54, 1.16)	.235
Depressive symptoms (CESD, ≥more symptoms)												
12 months	224	16.8	216	19.9	<b>β -3.06 (-5.36, -.76)</b>	<b>.009</b>	<b>β -3.02 (-5.30, -.73)</b>	<b>.010</b>	142	17.7	-2.17 (-4.50, .15)	.067
24 months	237	19.3	268	20.4	β -1.09 (-2.91, .74)	.242	β -.75 (-2.48, .99)	.398	157	19.4	β -.44 (-2.13, 1.25)	.611
Suicidal ideation (past 4 weeks)												
12 months	224	17.4	216	22.2	.71 (.37, 1.36)	.305	.70 (.36, 1.36)	.290	142	20.4	.92 (.53, 1.58)	.758
24 months	237	20.7	268	24.3	.83 (.51, 1.34)	.438	.86 (.53, 1.41)	.558	157	21.7	.83 (.42, 1.64)	.591



**Table 3**  
Continued

	Intention-to-treat analysis						Per-protocol analysis					
	Stepping stones and creating futures		Control		Odds ratio/ unadjusted coefficient (95%CI)	p value	Stepping stones and creating futures					
	No. of participants	Mean or percentage	No. of participants	Mean or percentage			Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p value	No. of participants attending ≥3 session	Mean or percentage	Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p value
Life circumstances (≥better circumstances)												
12 months	224	10.6	224	10.1	β .55 (−.09, 1.20)	.095	β .57 (−.06, 1.21)	.076	142	10.6	β .63 (−.04, 1.31)	.067
24 months	237	10.6	268	10.0	β .57 (−.05, 1.19)	.072	β .55 (−.07, 1.16)	.080	157	10.6	<b>β .60 (.00, 1.19)</b>	<b>.049</b>
Alcohol use (AUDIT, score, ≥more)												
12 months	224	7.6	216	9.8	<b>β −2.16 (−4.04, −.28)</b>	<b>.024</b>	<b>β −1.99 (−3.79, −.20)</b>	<b>.029</b>	142	7.7	<b>β −2.09 (−4.03, −.16)</b>	<b>.034</b>
24 months	237	6.8	268	8.0	<b>β −1.16 (−2.18, −.14)</b>	<b>.025</b>	<b>β −1.03 (−2.01, −.04)</b>	<b>.041</b>	157	7.0	β −1.10 (−2.31, .11)	.075
Problematic alcohol use (≥8)												
12 months	224	40.2	216	50.0	.67 (.43, 1.02)	.061	.67 (.44, 1.04)	.072	142	40.9	.93 (.68, 1.28)	.668
24 months	237	40.9	268	43.7	.90 (.68, 1.20)	.491	.95 (.69, 1.32)	.776	157	40.8	.67 (.43, 1.05)	.081
Arguing about alcohol with partner— among those who drink alcohol (yes)												
12 months	142	47.2	140	60.7	<b>.58 (.36, .95)</b>	<b>.029</b>	<b>.59 (.37, .97)</b>	<b>.036</b>	94	41.5	<b>.54 (.31, .94)</b>	<b>.028</b>
24 months	160	33.8	184	42.9	.68 (.43, 1.07)	.097	.72 (.41, 1.27)	.256	102	33.3	.66 (.38, 1.14)	.133
Last sex partner (main partner c.f. any other)												
12 months	216	60.7	208	47.1	<b>1.70 (1.24, 2.34)</b>	<b>.001</b>	<b>1.64 (1.19, 2.28)</b>	<b>.003</b>	135	63.0	<b>1.87 (1.22, 2.88)</b>	<b>.004</b>
24 months	220	62.7	258	61.6	1.03 (.68, 1.56)	.872	1.02 (.67, 1.56)	.931	144	63.2	1.02 (.66, 1.58)	.926
Past year transactional sex with casual/once- off partner												
12 months	216	65.7	208	75.0	.65 (.39, 1.06)	.084	.75 (.44, 1.26)	.275	135	60.7	.59 (.34, 1.020)	.060
24 months	220	53.6	258	56.6	.89 (.58, 1.36)	.591	.92 (.60, 1.40)	.692	144	54.9	.97 (.63, 1.49)	.893
Shame about lack of work (≥more shame)												
12 months	224	10.4	216	11.1	<b>β −.74 (−1.35, −.12)</b>	<b>.019</b>	<b>β −.69 (−1.31, −.08)</b>	<b>.027</b>	142	10.4	β −.69 (−1.40, .03)	.059
24 months	237	10.7	268	10.9	β −.17 (−.63, .30)	.483	β −.09 (−.58, .40)	.721	157	10.7	β −.16 (−.70, .38)	.566
Stress about lack of work (≥more stress)												
12 months	224	11.6	216	11.9	β −.34 (−.88, .20)	.214	β −.37 (−.89, .15)	.162	142	11.4	β −.52 (−1.18, .14)	.121
24 months	237	11.8	268	12.0	β −.15 (−.66, .36)	.565	β −.19 (−.71, .32)	.468	157	11.9	β −.16 (−.65, .33)	.520
Ability to mobilize R200 in an emergency												
12 months	224	24.6	216	20.8	1.10 (.48, 2.53)	.816	1.08 (.47, 2.48)	.856	142	23.9	1.06 (.47, 2.38)	.888
24 months	237	15.6	268	11.6	1.40 (.85, 2.31)	.183	1.49 (.89, 2.50)	.129	157	12.1	1.17 (.65, 2.10)	.597
Stealing in past 4 weeks because of hunger												
12 months	224	28.1	216	44.0	<b>.50 (.33, .75)</b>	<b>.001</b>	<b>.49 (.32, .74)</b>	<b>.001</b>	142	24.7	<b>.40 (.25, .63)</b>	<b>&lt;.001</b>
24 months	237	38.4	268	39.2	.98 (.66, 1.45)	.903	.96 (.64, 1.43)	.836	157	40.1	1.03 (.65, 1.64)	.891
Past 4 weeks savings <sup>b</sup>												
12 months	224	119.1	216	57.8	β .23 (−.22, .68) <sup>b</sup>	.138	β .27 (−.17, .71) <sup>b</sup>	.228	142	119	β .47 (−.03, .97)	.063
24 months	237	210.2	268	79.5	<b>β .63 (.12, 1.12)<sup>b</sup></b>	<b>.015</b>	<b>β .64 (.16, 1.11)<sup>b</sup></b>	<b>.009</b>	157	209	<b>β .69 (.16, 1.23)<sup>b</sup></b>	<b>.011</b>

AUDIT = alcohol use disorders identification test; CESD = Center for Epidemiologic Studies Depression; CI = confidence interval.

<sup>a</sup> Adjusted for baseline term.

<sup>b</sup> Analysis done on log-transformed (plus 1); all items in bold are significant.

**Table 4**  
Primary and secondary outcomes for women at 12 and 24 months according to intervention, for intention-to-treat and per-protocol analyses

	Intention-to-treat analysis								Per-protocol analysis				
	Stepping Stones and Creating Futures		Control		Odds ratio/unadjusted coefficient (95% CI)	p value	Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p-value	Stepping Stones and Creating Futures		Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p value	
	No. of participants	Mean or percentage	No. of participants	Mean or percentage					No. of participants attending ≥3 session	Mean or percentage			
<b>Primary outcomes</b>													
Past year physical IPV experience													
12 months	220	47.7	215	49.3	.93 (.68, 1.28)	.657	.97 (.70, 1.35)	.870	178	46.6	.97 (.69, 1.36)	.849	
24 months	260	51.5	285	54.4	.90 (.61, 1.31)	.575	.92 (.62, 1.37)	.686	207	49.8	.87 (.57, 1.33)	.515	
Past year sexual IPV experience													
12 months	220	34.1	215	32.1	1.10 (.75, 1.62)	.620	1.10 (.72, 1.67)	.665	178	32.6	1.03 (.66, 1.58)	.909	
24 months	260	33.1	285	35.4	.90 (.63, 1.28)	.565	.90 (.64, 1.28)	.555	207	34.3	.95 (.67, 1.35)	.780	
Severe past year IPV experience													
12 months	220	54.1	215	53.5	1.02 (.73, 1.42)	.903	1.03 (.73, 1.45)	.858	178	52.8	1.00 (.71, 1.41)	.983	
24 months	260	58.1	285	60.0	.92 (.66, 1.28)	.628	.93 (.66, 1.31)	.672	207	57.5	.92 (.61, 1.37)	.679	
Controlling behaviors (≥more)													
12 months	220	9.7	215	9.9	β −.20 (−1.15, .75)	.676	β −.21 (−1.07, .66)	.639	178	9.9	β −.20 (−1.10, .70)	.668	
24 months	260	9.7	285	9.7	β .05 (−.87, .97)	.919	β −.01 (−.88, .86)	.984	207	9.5	β −.19 (−1.22, .83)	.711	
Earnings in past month <sup>b</sup>													
12 months	220	393	215	402	β .68 (.00, 1.37) <sup>b</sup>	.051	β <b>.68 (.00, 1.35)<sup>b</sup></b>	<b>.050</b>	178	369	β .71 (.00, 1.42)	.051	
24 months	260	565	285	385	β <b>.99 (.41, 1.57)<sup>b</sup></b>	<b>.001</b>	β <b>.97 (.43, 1.51)<sup>b</sup></b>	<b>&lt;.0001</b>	207	539	β <b>.98 (.39, 1.57)</b>	<b>.001</b>	
<b>Secondary outcomes</b>													
Gender-equitable attitudes (≥less equitable)													
12 months	220	21.6	215	23.6	β <b>−2.07 (−4.14, .00)</b>	<b>.050</b>	β −1.69 (−3.44, .06)	.058	178	21.1	β <b>−2.04 (−3.93, −1.4)</b>	<b>.036</b>	
24 months	260	22.0	285	21.7	β .33 (−1.55, 2.21)	.729	β .25 (−1.09, 1.58)	.718	207	21.2	β −.28 (−1.76, 1.20)	.712	
Past year emotional IPV													
12 months	220	68.2	215	67.4	1.03 (.68, 1.57)	.878	1.05 (.71, 1.55)	.805	178	66.9	.98 (.66, 1.46)	.937	
24 months	260	75.4	285	75.8	.98 (.64, 1.50)	.917	.98 (.64, 1.51)	.940	207	76.8	1.07 (.67, 1.71)	.777	
Past year economic IPV													
12 months	220	54.1	215	55.4	.95 (.64, 1.42)	.810	.97 (.64, 1.47)	.886	178	58.4	1.17 (.78, 1.75)	.444	
24 months	260	58.9	285	62.5	.86 (.60, 1.25)	.435	.88 (.61, 1.26)	.477	207	57.5	.83 (.54, 1.27)	.383	
Past year nonpartner sexual violence													
12 months	220	29.1	215	32.6	.85 (.57, 1.28)	.437	.85 (.55, 1.30)	.442	178	29.8	.88 (.57, 1.37)	.581	
24 months	260	33.5	285	34.4	.96 (.60, 1.54)	.875	.99 (.62, 1.58)	.968	207	32.4	.94 (.57, 1.56)	.820	
Depressive symptoms (CESD, ≥more symptoms)													
12 months	220	20.9	215	21.5	β −.65 (−2.97, 1.67)	.584	β −1.18 (−3.14, .78)	.237	178	21.1	β −1.07 (−3.20, 1.06)	.325	
24 months	260	22.0	285	23.1	β −1.16 (−3.05, .73)	.229	β −1.52 (−3.14, .11)	.067	207	21.6	β <b>−2.02 (−3.73, −.31)</b>	<b>.020</b>	
Suicidal ideation (past 4 weeks)													
12 months	220	26.4	215	28.8	.88 (.58, 1.35)	.566	.86 (.56, 1.31)	.486	178	26.4	.84 (.53, 1.32)	.456	
24 months	260	31.9	285	25.4	1.37 (.90, 2.08)	.145	1.29 (.85, 1.97)	.228	207	27.5	1.05 (.65, 1.70)	.851	
Life circumstances (≥better circumstances)													
12 months	220	10.5	215	9.8	β .62 (−.09, 1.33)	.086	β .34 (−.33, 1.01)	.316	178	10.4	β .21 (−.45, .87)	.529	
24 months	260	10.3	285	9.9	β .41 (−.33, 1.14)	.278	β .14 (−.52, .80)	.679	207	10.2	β .05 (−.61, .71)	.882	

**Table 4**  
Continued

	Intention-to-treat analysis							Per-protocol analysis				
	Stepping Stones and Creating Futures		Control		Odds ratio/unadjusted coefficient (95% CI)	p value	Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p-value	Stepping Stones and Creating Futures		Adjusted odds ratio/coefficient (95% CI) <sup>a</sup>	p value
	No. of participants	Mean or percentage	No. of participants	Mean or percentage					No. of participants attending ≥3 session	Mean or percentage		
Alcohol use (AUDIT, score, ≥more)												
12 months	220	4.4	215	4.1	β .27 (-1.20, 1.74)	.72	β .74 (-.60, 2.08)	.279	178	4.4	β .90 (-.56, 2.36)	.226
24 months	235	4.3	249	4.6	β -.35 (-1.53, .83)	.562	β -.13 (-1.21, .95)	.810	207	4.2	β -.19 (-1.39, 1.00)	.751
Problematic alcohol use (≥8)												
12 months	220	22.7	215	22.8	.99 (.61, 1.59)	.952	1.15 (.68, 1.95)	.596	178	22.5	1.21 (.68, 2.13)	.516
24 months	235	22.1	249	26.1	.80 (.53, 1.23)	.315	.82 (.53, 1.26)	.364	207	21.9	.88 (.51, 1.53)	.649
Arguing about alcohol with partner— among those who drink alcohol (yes)												
12 months	109	34.9	99	39.4	.82 (.46, 1.47)	.513	.88 (.47, 1.65)	.679	178	34.8	.94 (.48, 1.85)	.867
24 months	129	30.2	138	34.1	.86 (.56, 1.32)	.480	1.14 (.67, 1.92)	.635	207	29.9	1.21 (.70, 2.09)	.483
Last sex partner (main partner c.f. any other)												
12 months	195	78.5	190	79.0	.98 (.56, 1.73)	.944	1.00 (.54, 1.88)	.992	158	76.6	.89 (.47, 1.67)	.710
24 months	236	78.4	243	74.9	1.21 (.80, 1.83)	.357	1.16 (.73, 1.84)	.526	147	79.0	1.24 (.78, 1.97)	.358
Past year transactional sex with casual/once-off partner												
12 months	195	47.2	190	43.2	1.17 (.76, 1.79)	.468	1.25 (.82, 1.90)	.296	178	50.0	1.37 (.90, 2.09)	.139
24 months	236	47.0	243	48.6	.94 (.64, 1.37)	.751	.92 (.63, 1.36)	.691	207	43.6	.81 (.53, 1.23)	.314
Shame about lack of work (≥more shame)												
12 months	220	10.3	215	10.3	β -.08 (-.48, .33)	.716	β -.02 (-.40, .36)	.905	178	10.2	β -.05 (-.42, .32)	.792
24 months	260	10.3	285	10.7	β -.37 (-.80, .07)	.097	β -.31 (-.72, .10)	.137	207	10.1	<b>β -.47 (-.90, -.05)</b>	<b>.028</b>
Stress about lack of work (≥more stress)												
12 months	220	11.7	215	11.7	β .07 (-.49, .62)	.813	β .02 (-.55, .58)	.952	178	11.9	β .15 (-.43, .72)	.615
24 months	260	12.0	285	12.1	β -.19 (-.65, .27)	.416	β -.23 (-.70, .24)	.332	207	11.9	β -.23 (-.73, .27)	.369
Ability to mobilize R200 in an emergency												
12 months	220	12.3	215	8.8	1.43 (.77, 2.67)	.261	1.34 (.71, 2.53)	.360	178	12.9	1.48 (.79, 2.77)	.217
24 months	260	10.4	285	10.5	.98 (.58, 1.67)	.953	.96 (.56, 1.65)	.872	207	10.1	.94 (.48, 1.84)	.866
Stealing in past 4 weeks because of hunger												
12 months	220	33.2	215	32.6	1.03 (.70, 1.51)	.890	1.07 (.73, 1.59)	.721	178	33.2	1.08 (.70, 1.66)	.732
24 months	260	33.9	285	29.5	1.22 (.83, 1.80)	.314	1.30 (.89, 1.90)	.174	207	31.9	1.23 (.81, 1.86)	.327
Savings in past 4 weeks <sup>b</sup>												
12 months	220	50.5	215	29.1	.29 (-.10, .68) <sup>b</sup>	.140	.29 (-.08, .66) <sup>b</sup>	.121	178	55.8	<b>β .40 (.01, .79)</b>	<b>.046</b>
24 months	260	82.6	285	63.9	<b>.61 (.18, 1.03)<sup>b</sup></b>	<b>.005</b>	<b>.60 (.18, 1.02)<sup>b</sup></b>	<b>.005</b>	207	89.3	<b>β .70 (.25, 1.15)</b>	<b>.002</b>

AUDIT = alcohol use disorders identification test; CESD = Center for Epidemiologic Studies Depression; CI = confidence interval; IPV = intimate partner violence.

<sup>a</sup> Adjusted for baseline term.

<sup>b</sup> Analysis done on log-transformed (plus 1); items in bold are significant.

indications of changes in HIV acquisition risk. Women did not show a reduction in their experience of IPV or HIV acquisition risk after exposure to the intervention.

There was evidence of economic benefit for women and men from the intervention. Women had significantly improved earnings in the past month at endline by 47%, and there was evidence that change had begun at midline. Men's past month earnings were 20% higher in the intervention arm, but this was not statistically significant. By endline, past 4 weeks savings for men were about three times larger, and for women, 25% larger, in the intervention arm than control, and both were significant.

### Interpretation

For men, there was a broad coherence across the different measures of self-reported perpetration of violence against women at midline and endline with comparable reductions reported in all forms at both time points. Despite some of these changes not being conventionally statistically significant, the overall patterning and coherence of changes are highly suggestive that Stepping Stones and Creating Futures reduced all forms of men's self-reported violence perpetration, not just those achieving statistical significance.

There was also an impact on men's alcohol use at midline and endline. Alcohol is a driver of men's perpetration of IPV [31] rooted in prevailing patriarchal constructions of masculinity [32,33]. Although not explicitly targeted in the intervention, the topic of alcohol emerged in group discussions, and it may be reduced alcohol consumption contributed to reduced IPV perpetration. That the intervention impacted both, highlights the multiple outcomes that gender transformative and economic strengthening interventions may be able to have.

The effects on men's self-reported perpetration of violence and alcohol use are very similar to the initial Stepping Stones trial, conducted with young school goers (aged 16–25 years), which similarly showed a reduction in IPV perpetration at endline and alcohol use at midline [12]. The inclusion of economic strengthening (Creating Futures) for young, unemployed men might be a “drawcard” for encouraging male engagement. Theoretically, qualitative work has emphasized gender transformation is framed by men, and families and partners, as “growing up” [34], essentially moving from a youthful masculinity to a worker masculinity [33], supporting men to consider their livelihoods may provide a foundation for them to work on other aspects of themselves.

For women, there was strong evidence that Stepping Stones and Creating Futures increased past month earnings and past 4 weeks savings at endline, which are linked to improved sense of well-being and autonomy [8]. In addition, despite concern women's economic empowerment can increase women's experiences of violence [7,35], there was no indication this happened.

It was hypothesized—based on theory and previous research [8,9]—combining economic strengthening and gender transformation would reduce young women's experiences of IPV through increasing bargaining power (via earning and greater social confidence) and enabling women to leave violent relationships. There are two reasons this may not have happened. First, although earnings and savings increased significantly, they remained low overall, and the relatively small increases potentially did not translate into enough financial ability to exit violent relationships and/or negotiate better terms.

Second, economic theories of IPV assume stable dyadic households. In our sample, young women rarely lived with their male partner and often had two or more ongoing relationships [36]. It may be pathways of change that are not the same for these young women. In addition, the qualitative process evaluation emphasized young women also achieved social respect and love from these relationships, and violence was only one consideration among many [36].

The study has a number of limitations. Randomization occurred before participant recruitment, and at recruitment, participants were not blinded to their study arm, and although no participants are known to have declined to participate because of arm allocation, this may have occurred. Recruitment of control and intervention arms was at different periods, and overall follow-up could have varied significantly; however, it is unclear how this may have biased outcomes. All measures are self-reported, and there may have been social desirability in reporting, particularly in the intervention arm, however, given many measures did not vary between arms and desired changes were not seen across all measures, this seems unlikely. We only used audio computer-assisted self-interviewing at endline, which may have biased the outcome, although it is unclear in what direction. The validity of underlying change is greatly enhanced by having multiple measures for violence and economic outcomes and our attention to patterns of change across measures. Despite considerable efforts to trace participants, there was differential follow-up by arm, and this may affect outcomes, although it is unclear in what direction. There was no blinding in the study, which may have effect on the analysis. The DREAMS intervention was implemented in similar communities over the study period, with a large proportion of study participants attending a workshop run by an NGO during follow-up. The impact of DREAMS is unclear, although we adjusted for it in additional analyses (Supplementary Table 2), and this showed no difference to the outcomes.

### Conclusions

Stepping Stones and Creating Futures showed consistent patterning for men's self-reported perpetration of violence and alcohol use, reflecting very similar results from a trial only of Stepping Stones among young rural school attenders. This provides promising evidence about the generalizability of results for men. Future studies should try and recruit couples to assess whether men's self-reports are validated by women's reported experiences, as there is a risk of social desirability in reporting. There was no impact on women's experiences of IPV (in either trial), but in this trial, women's livelihoods were significantly improved.

When considering generalizability, the recruitment process was similar to that normally used by Project Empower (and other NGOs); however, group formation is typically over a few weeks before a core set of regular attendees is established. In this study, because of requiring a closed cohort, we did not allow this, which may have resulted in our failure to draw in some people who were more highly motivated to participate and benefit from the intervention, and thus, we may understate possible impact. However, participants were not blinded to arm allocation at recruitment, and this may have led to differential recruitment in arms, limiting generalizability.

Stepping Stones and Creating Futures is the first livelihood strengthening and gender transformation for young men

demonstrating a reduction in self-reported perpetration of IPV, overall alcohol use, and improved savings. We also demonstrated the intervention enabled women to increase their earnings and savings, but the intervention had no impact on their experience of IPV. Stepping Stones and Creating Futures should be scaled up, and based on current evidence, we consider it should be delivered to women, as well as men, for reasons of equity and to enable women to benefit from the economic dimensions. DREAMS demonstrated that interventions such as this can be delivered at scale through NGOs; however, close monitoring of fidelity is required. The lack of impact on IPV for young women out-of-school requires greater research on how we can work with them to prevent IPV.

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## Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2019.10.004>.

## References

- [1] Stockl H, March LM, Pallitto C, Garcia-Moreno C. WHO multi-country study team. Intimate partner violence among adolescents and young women: Prevalence and associated factors in nine countries: A cross sectional study. *BMC Public Health* 2014;14:751.
- [2] Dellar RC, Dlamini S, Karim QA. Adolescent girls and young women: Key populations for HIV epidemic control. *J Int AIDS Soc* 2015;18:19408.
- [3] Decker MR, Benning L, Weber KM, et al. Physical and sexual violence predictors: 20 years of the women's interagency HIV study cohort. *Am J Prev Med* 2016;51:731–42.
- [4] Hatcher AM, Stockl H, McBride RS, et al. Pathways from food insecurity to intimate partner violence perpetration among peri-urban men in South Africa. *Am J Prev Med* 2016;56:765–72.
- [5] Rotheram-Borus MJ, Tomlinson M, Le Roux I, Stein JA. Alcohol use, partner violence, and depression: A cluster randomized controlled trial among urban South African mothers over 3 years. *Am J Prev Med* 2015;49:715–25.
- [6] Jewkes R, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: A cohort study. *Lancet* 2010;376:41–8.
- [7] Gibbs A, Willan S, Misselhorn A, Mangoma J. Combined structural interventions for gender equality and livelihood security: A critical review of the evidence from southern and eastern Africa and the implications for young people. *JIAS* 2012;15:17362.
- [8] Gibbs A, Kerr-Wilson A, Jacobson J. A global comprehensive review of economic interventions to prevent intimate partner violence and HIV risk behaviours. *Glob Health Action* 2017;10(suppl 2):1–15:1290427.
- [9] Swann M. Economic strengthening for HIV prevention and risk reduction: A review of the evidence. *AIDS Care* 2018;30:37–84.
- [10] Gibbs A, Jewkes R, Willan S, Washington L. Associations between poverty, mental health and substance use, gender power, and intimate partner violence amongst young (18–30) women and men in urban informal settlements in South Africa: A cross-sectional study and structural equation model. *PLoS One* 2018;13:e0204956.
- [11] Ellsberg M, Arango DJ, Morton M, et al. Prevention of violence against women and girls: What does the evidence say? *The Lancet* 2015;385:1555–66.
- [12] Jewkes R, Nduna M, Levin J, et al. Impact of stepping stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: Cluster randomised controlled trial. *Br Med J* 2008;337:a506.
- [13] Jewkes R, Morrell R. Sexuality and the limits of agency among South African teenage women: Theorising femininities and their connections to HIV risk practices. *Soc Sci Med* 2012;74:1729–37.
- [14] Misselhorn A, Mushinga M, Jama-Shai N, Washington L. Creating futures: Lessons from the development of a livelihood strengthening curriculum for young people in eThekweni's informal settlements. *Sex Education* 2014;14:543–55.
- [15] Gibbs A, Washington L, Willan S, et al. The stepping stones and creating futures intervention to prevent intimate partner violence and HIV-risk behaviours in Durban, South Africa: Study protocol for a cluster randomized control trial, and baseline characteristics. *BMC Public Health* 2017;17:336.
- [16] Freire P. *Pedagogy of the oppressed*. New York: Continuum; 1973.
- [17] Jewkes R, Nduna M, Jama-Shai N. *Stepping Stones South Africa: A training manual for sexual and reproductive health communication and relationship skills*. Pretoria: MRC; 2010.
- [18] Misselhorn A, Jama-Shai N, Mushinga M, et al. *Creating Futures: Supporting young people in building their livelihoods*. Durban: HEARD; 2012.
- [19] Garcia-Moreno C, Jansen HAFM, Ellsberg M, et al. Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. *Lancet* 2006;368:1260–9.
- [20] Pulerwitz J, Gortmaker SL, DeJong W. Measuring sexual relationship power in HIV/STD research. *Sex Roles* 2000;42:637–60.
- [21] Pulerwitz J, Barker G. Measuring attitudes toward gender norms among young men in Brazil development and psychometric evaluation of the GEM scale. *Men and Masculinities* 2008;10:322–38.
- [22] Radloff LS. The CES-D scale a self-report depression scale for research in the general population. *Appl Psychol Meas* 1977;1:385–401.
- [23] Saunders JB, Aasland OG, Babor TF, et al. Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction* 1993;88:791–804.
- [24] Dunkle KL, Jewkes R, Nduna M, et al. Transactional sex with casual and main partners among young South African men in the rural eastern cape: Prevalence, predictors, and associations with gender-based violence. *Social Sci Med* 2007;65:1235–48.
- [25] Fleming PJ, McCleary-Sills J, Morton M, et al. Risk factors for men's lifetime perpetration of physical violence against intimate partners: Results from the International Men and Gender Equality Survey (IMAGES) in eight countries. *PLoS One* 2015;10:e0118639.
- [26] Jewkes R, Gibbs A, Jama-Shai N, et al. Stepping stones and creating futures intervention: Shortened interrupted time series evaluation of a behavioural and structural health promotion and violence prevention intervention for young people in informal settlements in Durban, South Africa. *BMC Public Health* 2014;14:1325.
- [27] Hayes R, Moulton L. *Cluster randomised trials*. Chapman & Hall; 2009.
- [28] McDonald JF, Moffitt RA. The uses of Tobit analysis. *Rev Econ Stat* 1980;62:318–21.
- [29] Schafer JL. Multiple imputation: A primer. *Stat Methods Med Res* 1999;8:3–15.
- [30] Gibbs A, Dunkle K, Washington L, et al. Factors associated with young people's attendance at an IPV prevention intervention in informal settlements in South Africa: A prospective analysis. *Glob Public Health* 2019;1–12.
- [31] Foran HM, O'Leary KD. Alcohol and intimate partner violence: A meta-analytic review. *Clin Psychol Rev* 2008;28:1222–34.
- [32] Hatcher AM, Colvin CJ, Ndlovu N, Dworkin SL. Intimate partner violence among rural South African men: Alcohol use, sexual decision-making, and partner communication. *Cult Health Sex* 2014;16:1023–39.
- [33] Gibbs A, Sikweyiya Y, Jewkes R. "Men value their dignity": Securing respect and identity construction in urban informal settlements in South Africa. *Glob Health Action* 2014;7:1–10:23676.
- [34] Gibbs A, Jewkes R, Sikweyiya Y, Willan S. Reconstructing masculinity? A qualitative evaluation of the stepping Stones and creating Futures intervention for young people in urban informal settlements in South Africa. *Culture Health Sex* 2015;17:208–22.
- [35] Austrian K, Muthengi E. Can economic assets increase girls' risk of sexual harassment? Evaluation results from a social, health and economic asset-building intervention for vulnerable adolescent girls in Uganda. *Child Youth Serv Rev* 2014;47:168–75.
- [36] Willan S, Ntini N, Gibbs A, Jewkes R. Exploring young women's constructions of love and strategies to navigate violent relationships in South African informal settlements. *Cult Health Sex* 2019;21:1225–39.