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Factors associated with young people's attendance at an IPV prevention intervention in informal settlements in South Africa: A prospective analysis

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ABSTRACT

Understanding factors shaping attendance at behavioural interventions is critical for programmatic planning. Through the Stepping Stones and Creating Futures intervention trial amongst young (18-30) women and men to reduce intimate partner violence and strengthen livelihoods, we prospectively assessed factors associated with intervention attendance. Baseline data were collected between September 2015 and September 2016 among 677 women and 675 men. For women, in multinomial models, compared to high attenders, medium ($\beta = -0.04$, $p = 0.001$) and low ($\beta = -0.05$, $p = 0.003$) attenders had lived less time in the community, medium attenders were more likely to have children ($\beta = 0.97$, $p = 0.001$), and low attenders had less gender-equitable attitudes ($\beta = -0.57$, $p = 0.035$). For men, in multinomial models, compared to high attenders, medium attenders were more likely to have completed secondary school ($\beta = 1.48$, $p = 0.011$) and to have worked in the past three months ($\beta = 0.64$, $p = 0.021$). Low attenders had lived for a shorter period in the community ($\beta = -0.06$, $p = 0.005$), and were more likely to have worked in the past three months ($\beta = 0.66$, $p = 0.041$) compared to high attenders. Attendance was shaped by structural factors, and gender-specific factors, and these need to be incorporated into future interventions.

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Introduction

Intimate partner violence (IPV) is a major global public health challenge for adolescents and young people. In a nine-country study, young women aged 15–24 were more likely to have experienced recent IPV than older women (25–49), with the majority of study sites reporting upwards of 50% prevalence (Stockl, March, Pallitto, & Garcia-Moreno, 2014). Similarly, young men are more likely to perpetrate IPV than older men (Jewkes, Sikweyiya, Morrell, & Dunkle, 2011). Urban informal settlements are sites of particularly high levels of IPV. In South Africa, for instance, the most recent population-representative data in South Africa, which comes from Gauteng Province, showed women's past year experience of IPV was 13% (Machisa, Jewkes, Morna, & Rama, 2011). While a study in informal settlements in the same province reported men's past year perpetration of IPV

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was 56% (Hatcher, Stöckl, McBride, Khumalo, & Christofides, 2019). Similarly in eThekwini Municipality in KwaZulu-Natal Province, where the current study took place, past year experience of IPV was reported by two-thirds (65.2%) of young women residing in urban informal settlements (Gibbs, Jewkes, Willan, & Washington, 2018).

Behavioural IPV prevention interventions work with adolescents and young women and men in a range of settings (Ellsberg et al., 2015), including during school hours, after-school, and in community-based settings. The choice of settings and timings has important implications for targeting specific young people, and their attendance. Ensuring adequate attendance of young people at behavioural interventions is critical for ensuring adequate intervention 'dosage' (Hayes, Chapple, & Ramirez, 2014).

There is a limited body of research on factors shaping young people's attendance in behavioural interventions, and almost none specifically looking at IPV prevention interventions. In the broader literature studies have emphasised four groups of barriers and facilitators of attendance: structural factors related to community context; relational factors; 'individual' level-factors; and intervention/programmatic factors (Whittaker & Cowley, 2012).

Structural factors, particularly poverty, consistently undermines intervention attendance (Ringle et al., 2015; Williams et al., 2010). Poverty can operate in multiple ways, from creating conflict between work and work seeking, and session attendance (Gibbs, Jewkes, Mbatha, Washington, & Willan, 2014; Whittaker & Cowley, 2012; Williams et al., 2010), to participants lacking money to travel to sessions (Ringle et al., 2015). It is also plausible that youth living in the greatest poverty have poorer education levels (Gibbs et al., 2018), which may make intervention groups seem less familiar, friendly settings. In addition, they may have more trauma-related mental health problems including learning and concentration difficulties, which inhibit full engagement and interest in learning (Romano, Babchishin, Marquis, & Fréchette, 2015).

A series of studies have highlighted how relational factors, including whether parents are supportive or not of the intervention, can shape young people's attendance (Ringle et al., 2015). Other relational factors including a partner's or community level support/resistance to participation in interventions can shape attendance (Gibbs et al., 2014; Gibbs, Jewkes, Karim, Marofi, & Corboz, 2018; Murray, Craigs, Hill, Honey, & House, 2012; Ringle et al., 2015).

Individual-level factors (although often shaped by relational and structural factors), such as depression and concentration challenges, and post-traumatic stress disorder (PTSD) (Murray et al., 2012; Ringle et al., 2015) have been shown to reduce attendance. In addition, lack of interest in the overall programme topic (Ringle et al., 2015) and perceived irrelevance of the topic (Zuma et al., 2018) can further undermine attendance.

Programmatic implementation can also support or hinder young people's attendance. Different delivery timings and settings change attendance, for instance, in-school interventions can achieve much higher attendance and coverage, than optional after-school interventions. In community settings, an intervention working with Tanzanian men (Kajula et al., 2015) used naturally existing social networks of men congregating in 'camps' to improve attendance. Other studies have emphasised the style of intervention delivery, suggesting attendance is higher in participatory interventions, where young people can engage with one another and content becomes relevant to their live and they do not feel dominated by adult perspectives (Gibbs, Campbell, Maimane, Nair, & Sibiya, 2009) and where young people can build rapport with facilitators (Namy et al., 2015).

Despite some evidence about what factors shape young people's attendance at interventions, there is almost no research related to attendance at IPV interventions. In this paper, we examine quantitatively factors associated with young women's and men's attendance at a participatory behavioural intervention focused on IPV prevention, Stepping Stones and Creating Futures (SS/CF), delivered in urban informal settlements in South Africa.

This analysis seeks to understand what factors from the baseline survey are associated with subsequent intervention attendance. Following the literature above, we have four hypotheses. First, socio-demographic/individual factors will shape attendance, whereby: those who are younger, report

a functional limitation, and have children (particularly women) are less likely to attend. Second, structural factors will undermine attendance, specifically, those reporting higher levels of poverty and lower levels of education, will be less likely to attend, and those who work more, and are more stressed about lack of work, will also be less likely to attend. Third, relational factors such as gender attitudes and practices will shape attendance whereby those reporting higher levels of IPV, non-partner violence, greater gender inequitable attitudes, and more controlling behaviours in their primary relationship, will be associated with less attendance. Fourth, those with poorer mental health, namely greater depressive symptoms, PTSD symptoms, greater alcohol use and worse views on life will attend less sessions.

Methods

Data came from young women and men enrolled in the Stepping Stones and Creating Futures (SS/CF) intervention cluster randomised control trial in urban informal settlements, in eThekwini Municipality, South Africa. Post cluster randomisation, young (18–30) women and men were recruited into the study by the NGO, Project Empower, with facilitators moving around the designated clusters, talking to potential participants. Young people who were interested were brought to a central location where research staff got informed consent from them, and then participants self-completed a baseline survey, on a cellphone with inbuilt software. Eligibility for recruitment was being aged (18–30), not in school or formal employment and resident in informal settlements. Baseline data collection occurred between September 2015 and September 2016.

Approximately 2–3 weeks after baseline data collection, Project Empower re-contacted everyone recruited into the intervention and identified an initial date for the first intervention session in their cluster. SS/CF is 21 sessions, each session lasts approximately 3 h, and is delivered by trained sex-matched peer facilitator to single-sex groups. Facilitators ran two sessions per group every week at a venue near to the cluster. Venues ranged from community/church halls to small rooms of participants' shacks. As part of the intervention, and because of high levels of poverty and food insecurity in this group, a small meal was provided to those who attended for consumption during the session as well as a small transport stipend R20 (~US$1.40) to cover local transportation. Facilitators had phone numbers for most participants and would contact participants to remind them about sessions. If participants did not attend, facilitators would follow-up with participants, and would sometimes visit the participant's house to enquire after them. At each session, facilitators collected details of who was in attendance and submitted them to Project Empower each day for reconciliation with cash records. Ethical approval came from the South African Medical Research Council's, and the University of KwaZulu-Natal's, ethics committees. Further details about the trial are available elsewhere (Gibbs et al., 2017).

Measures

Participant attendance was derived from sign-in sheets facilitators completed as part of routine monitoring. Data were extracted into a database and were linked to baseline data through unique identifiers by the research team. As attendance data were not normally distributed, we created a three-level attendance measure. 'High attenders' had attended 15–21 sessions; 'medium attenders' 3–14 sessions; 'low attenders' none, one or two sessions. Data on attendance were prospectively collected after the baseline survey.

Socio-demographic and behavioural data came from the cross-sectional baseline survey. Socio-demographic questions included age, education level (primary, secondary but not completed; secondary completed), whether they had any children, length of time living in the community (years) and functional limitations, measured using four items from the Washington Group Short Set of Disability Questions (e.g. Do you have difficulty seeing, even if wearing glasses) with responses: no difficulty, some difficulty, a lot of difficulty, or cannot do at all. Participants were coded as having

a functional limitation if they answered 'some difficulty' to two or more items, or 'a lot of difficulty' or 'cannot do at all' to one (or more) items.

Structural factors/poverty were assessed through five items. Household food-insecurity was assessed through three-items, comprising the household food insecurity access scale (HFIAS), and recoded as recommended into three levels (Coates, Swindale, & Bilinsky, 2007). A single item assessed ease of accessing R200 (~$15) in an emergency, coded very difficult and difficult compared to easy/very easy. We asked about stealing in the past month because of hunger (yes/no). Four questions assessed stress due to lack of work, e.g. 'I am frequently stressed or depressed because of not having enough work', with responses on a four-point Likert Scale, summed together with higher scores indicating greater stress (Cronbach α=0.75 women; 0.78 men). We asked one question about whether participants had worked in the past three months (yes/no).

Relational practices were assessed with four scales. 20 items assessed gender attitudes based on a modified gender-equitable men's (GEMS) scale, widely used and adapted in South Africa (Pulerwitz & Barker, 2008). Responses were on a four-point Likert scale (strongly agree; agree; disagree; strongly disagree), and summed (range 0–53, Cronbach α=0.86 women; α=0.87 men), with higher scores indicating more gender inequitable attitudes. We then created a tertile, indicating highly inequitable, moderate, and equitable gender attitudes. We assessed male controlling behaviours in a relationship, through 8 items adapted from the Sexual Relationship Power Scale (SRPS) (Pulerwitz, Gortmaker, & DeJong, 2000). Items included 'He won't let me wear certain things' (reworded for men) and participants could respond (strongly agree; agree; disagree; strongly disagree) and we summed the scale (range 0–24, Cronbach α=0.75 women; 0.68 men).

We measured severe IPV experienced (women) and perpetrated (men) through questions about physical IPV (5 items) and sexual (3 items) IPV, in the past year. All items were behaviourally specific (e.g. In the last 12 months how many times did you push or shove your current or previous girlfriend or wife?), based on the WHO Violence Against Women scale (Garcia-Moreno et al., 2006), previously been used in South Africa (Jewkes et al., 2006). Responses to each item were: no, once, few, or many times. Participants were coded as experiencing/perpetrating severe IPV is they responded once (or more) to two or more items, or else few, or many to one item. We also asked about non-partner sexual violence experienced (women) and perpetrated (men) in the past year using six items of a scale developed in South Africa (Jewkes et al., 2006) and used globally. All items were behaviourally specific and responses were: never, once, few or many times. A positive response to any item led to a person coded as perpetrating/experiencing non-partner sexual violence.

Mental health was assessed through four scales. Depressive symptoms were assessed using the Centre for Epidemiologic Studies Depression Scale (CES-D) scale (Radloff, 1977). Twenty items asked about past week depressive symptoms with responses ranging from never to everyday (range 1–57; Cronbach α=0.87 women; α=0.87 men). We used a score of 20/21 to dichotomise the scale (Gibbs, Govender, & Jewkes, 2018). We assessed post-traumatic stress symptoms, using 16 items of the Harvard Trauma scale (Cronbach α=0.91 women; men $\alpha = 0.92$), created a mean and dichotomised scores at 2.5 (Mollica et al., 1992). Problematic alcohol use was assessed through the AUDIT Scale, with 10 items asking about past-year drinking, and dichotomised at 7/8 as recommended (Saunders, Aasland, Babor, De la Fuente, & Grant, 1993). Views on their current life situation were assessed through asking four questions based on Diener's (Diener, Emmons, Larsen, & Griffin, 1985) life satisfaction scale (e.g. The conditions of my life are excellent), with responses: strongly disagree; disagree; neither agree nor disagree; agree; strongly agree. Items were summed, with higher scores indicating more satisfaction with life ($\alpha = 0.68$ women; α=0.67 men).

Analysis

Analyses were done separately for women and men. We first describe the sample using summary statistics, with percentages and number of observations for categorical variables, and mean scores and 95% Confidence Intervals (95% CI) for continuous variables. We then descriptively report

associations between attendance and each covariate. With categorical variables we describe percentages and numbers, and Chi-Squared tests assess measures of association. For scores, we used means and 95% CI to compare difference with no overlap in 95% indicating difference. All descriptive statistics include adjustment for the sampling.

We used multinomial regression, with robust clustering for errors to account for the clustered nature of data. We only entered variables into models significant at $p < 0.1$ for categorical variables, or no overlapping 95% CIs for continuous variables, from the descriptive models. We report adjusted β coefficients, 95% CIs and p-values for this model, with the 'high attenders' as a reference, to 'moderate attenders' and 'low attenders'. As this analysis is prospective, temporality of associations can be assumed.

Results

Women

In total 677 women enrolled at baseline, and 340 were in clusters randomised to the intervention arm. Attendance data were available for 99.7% (339) women. Just over a quarter (28.0%) were 'high' attenders, 43.1% medium attenders, and 28.9% low attenders (Table 1). Mean age was 23.6 years, and just over a quarter (28.4%) reported a functional limitation. Mean length of time in the community was 8.3 years. Two-thirds (65.5%) had some secondary education (but not completed), a quarter (27.4%) had completed secondary education, and the rest (7.1%) only had primary education. Food insecurity was high; over a quarter (29.2%) reported high levels and half (45.7%) medium levels of food-insecurity. One in ten (13.6%) reported that accessing R200 in an emergency would be easy, a quarter had stolen in the past month because of hunger (24.5%), and only a quarter (25.1%) had worked in the past three months.

Just over a quarter (28.9%) held the most gender inequitable attitudes, and a third the middle level (36.6%). Half (53.1%) had experienced severe IPV in the past year, and a third (32.2%) past year non-partner rape. Just under half (46.9%) reported high levels of depressive symptoms, one in five (21.5%) problem alcohol use, and one in five (20.7%) potential symptoms of PTSD.

Descriptively (Table 1), compared to high attenders a greater proportion of medium attenders reported having children (64.5% compared to 83.0%, $p = 0.004$). The mean length of time living in the community was longer for those in the high attendance group (11.2 years, 95% CI [9.2, 13.2]), compared to those in the lowest attendance group (6.9 years, 95% CI [5.2, 8.6]). In addition, the greatest proportion who reported stealing in the past month was among low attenders (33.7%), while only 17.8% of middle attenders and 25.1% of high attenders reported this ($p = 0.018$).

In terms of gender attitudes and practices, descriptively there was suggestion that women with less equitable gender attitudes and more experience of severe IPV and non-partner violence in the past year were less likely to attend sessions. The proportion of those reporting the least gender-equitable attitudes was a quarter (24.5%) among the high attenders and medium (26.7%) attenders, compared to a third (36.7%) of low attenders ($p = 0.104$). Similarly a greater proportion of those attending the fewest sessions, reported past year severe IPV (56.1%) and non-partner rape (34.7%) compared to those with the highest attendance (45.3% and 27.4%, respectively, though not significant at $p < 0.1$).

In the multivariate multinomial regression (Table 2), compared to the high attenders, medium attenders had lived less time in the community ($\beta = -0.04$, $p = 0.001$), and were more likely to have children ($\beta = 0.97$, $p = 0.001$). While low attenders, compared to the high attenders, had lived less time in the community ($\beta = -0.05$, $p = 0.003$), and had less gender-equitable attitudes (medium equitable $\beta = -0.57$, $p = 0.035$ and equitable $\beta = -0.47$, $p = 0.083$).

Men

675 men enrolled at baseline, and 338 men were in clusters randomised to the intervention arm. Attendance data were available for 97.3% (329) men. Overall, a fifth (18.8%) were high attenders,

Table 1. Sample and descriptive associations for young women's attendance at the Stepping Stones and Creating Futures intervention.

	Whole sample %/mean (*n*/95% CI)	Attendance 16–21 sessions %/mean (*n*/ 95% CI)	Attendance: 3–15 sessions %/mean (*n*/ 95% CI)	Attendance: 0, 1 or 2 sessions %/mean (*n*/ 95% CI)	*p*-value
Overall attendance		28.0 (95)	43.1 (146)	28.9 (98)	
Socio-demographics					
Age	23.6 (23.2–23.9)	23.5 (22.9–24.1)	23.9 (23.4–24.5)	21.3 (22.5–23.7)	
Disability (yes)	28.4 (94)	34.4 (32)	22.8 (33)	31.2 (29)	0.118
Length time in community (years)	8.3 (7.3–9.3)	11.2 (9.2–13.2)	7.4 (6.0–8.8)	6.9 (5.2–8.6)	
Kids (yes)	74.2 (244)	64.5 (60)	83.0 (117)	70.5 (67)	0.004
Education					
Primary	7.1 (24)	5.3 (5)	6.2 (9)	10.2 (10)	0.686
Secondary not complete	65.5 (222)	67.4 (64)	65.1 (95)	64.3 (63)	
Secondary complete	27.4 (93)	27.4 (26)	28.8 (42)	25.5 (25)	
Livelihoods					
Food-insecurity					
Low	25.1 (85)	27.4 (26)	22.6 (33)	26.5 (26)	0.917
Medium	45.7 (155)	45.3 (43)	47.3 (69)	43.9 (43)	
High	29.2 (99)	27.4 (26)	30.1 (44)	29.6 (29)	
Ease accessing R200 in emergency (easy)	13.6 (46)	12.6 (12)	11.6 (17)	17.4 (17)	0.422
Stolen in past month because of hunger	24.5 (83)	25.3 (24)	17.8 (26)	33.7 (33)	0.018
Stressed about lack of work (> = more)	12.2 (11.9–12.5)	12.1 (11.5–12.7)	12.1 (11.6–12.6)	12.3 (11.7–12.8)	
Worked in past three months (yes)	25.1 (85)	24.2 (23)	24.0 (35)	27.6 (27)	0.798
Gender attitudes and practices/experiences					
Gender attitudes					
Inequitable	28.9 (98)	24.2 (23)	26.7 (39)	36.7 (36)	0.104
Medium	36.6 (124)	42.1 (40)	32.9 (48)	36.7 (36)	
Equitable	34.5 (117)	33.7 (32)	40.4 (59)	26.5 (26)	
Severe physical and/or sexual IPV past 12m	53.1 (180)	45.3 (43)	56.2 (82)	56.1 (55)	0.197
Non partner rape past 12m	32.2 (109)	27.4 (26)	33.6 (49)	34.7 (34)	0.492
Relationship control (> = more controlled)	10.2 (9.8–10.7)	10.0 (9.1–10.9)	10.2 (9.4–11.0)	10.5 (9.7–11.3)	
Mental health					
Depressed (20/21)	46.9 (159)	48.4 (46)	50.7 (74)	39.8 (39)	0.233
Problem alcohol use	21.5 (73)	20.0 (19)	23.3 (34)	20.4 (20)	0.79
Potential PTDS (yes)	20.7 (70)	17.9 (17)	22.6 (33)	20.4 (20)	0.676
Views on life success (> = more successful)	10.2 (9.8–10.6)	10.1 (9.4–10.8)	10.5 (9.9–11.1)	9.9 (9.2–10.6)	

Note: Descriptive statistics account for clustering of data; *p*-values for categorical data, and comparison of 95% confidence intervals for continuous scales.

just over a third (38.3%) medium attenders and four in ten (42.9%) low attenders (Table 3). Men's mean age was 23.8years, a quarter (25.7%) reported any functional limitation, the mean length of time in the community 8.5 years, and 39.8% reported having a child. Over half (56.8%) only had secondary education (but not completed), and 30.7% had completed secondary school. There was

Table 2. Multinomial multivariable regression model for factors associated with attendance at the Stepping Stones and Creating Futures intervention for young women ($n = 329$).

	High attendance: 16–21 sessions	Medium attendance: 3–15 sessions		Low attendance: 0, 1 or 2 sessions	
		β (95% CI)	*p*-value	β (95% CI)	*p*-value
Length time in community (years)	Ref	−0.04 (−0.07, −0.02)	0.001	−0.05 (−0.08, −0.02)	0.003
Kids (yes)	Ref	0.97 (0.39, 1.55)	0.001	0.23 (−0.64, 1.11)	0.601
Stolen in past month because of hunger (yes)	Ref	−0.33 (−0.95, 0.28)	0.29	0.28 (−0.27, 0.83)	0.313
Gender attitudes					
Inequitable	Ref	Ref		Ref	
Medium	Ref	−0.23 (−0.90, 0.43)	0.486	−0.57 (−1.09, −0.04)	0.035
Equitable	Ref	0.31 (−0.33, 0.95)	0.344	−0.47 (−0.99, 0.06)	0.083

Note: Model uses robust errors for clustering, $p < 0.0001$.

a high level of food insecurity, a quarter (26.5%) reported high, and half (52.6%) medium levels of food-insecurity. Only 13.4% reported they could access R200 in an emergency easily, and a third (36.5%) reported stealing in the past month because of hunger. Just over a third (37.7%) had worked in the past three months.

Just under half (45.7%) reported severe IPV perpetration, and a third (35.7%) non-partner sexual violence perpetration in the past year. In terms of mental health, just under half (45.7%) reported depressive symptoms, 41.0% problem alcohol use, and 14.9% potential clinical symptoms of PTSD.

Descriptive associations showed differences in proportions for education levels, whereby a greater proportion of those completing secondary education were in the high (30.7%), and medium (38.9%) attender categories compared to the low attenders (23.4%, $p = 0.007$). In addition, high attenders reported a higher mean length of time in the community (12.4 years 95% CI 7.5–9.5), compared to low attenders (6.1 years, 95% C I4.8–7.4). Ease of access to R200 in an emergency, also varied by attendance, whereby a lower proportion (4.8%) of high attenders reported this, compared to 10.3% medium, and 19.9% low attenders ($p = 0.005$). Similarly, the proportion reporting working in the past three months was lowest in the high attenders (25.8%), increasing in medium attenders (38.1%), and low attenders (42.6%) ($p = 0.076$). A greater proportion of men in the most equitable gender attitudes category were in the high attenders (43.6%), compared to the low attenders (31.9%, $p = 0.016$).

In the multivariate multinomial regression (Table 4), compared to high attenders, medium attenders were more likely to have completed secondary education ($\beta = 1.48$, $p = 0.011$) and to have worked in the past three months ($\beta = 0.64$, $p = 0.021$). And compared to the high attenders, low attenders had lived for a shorter period of time in the community ($\beta = -0.06$, $p = 0.005$), and were more likely to have worked in the past three months ($\beta = 0.66$, $p = 0.041$).

Discussion

In this study, we assessed prospectively factors associated with young women's and men's attendance at a participatory behaviour change intervention, Stepping Stones and Creating Futures, designed to prevent IPV. Amongst these young men and women, lower attendance was associated with having lived less time in the community. For young women specifically, having children, and gender inequitable attitudes and experiences of violence were associated with less attendance, and for young men, working in the past three months and having completed secondary education was associated with less attendance.

Overall, there were significant challenges in attendance at the intervention, with over a quarter (28.9%) of women and four in ten (42.9%) men, attending none, one or two sessions only, and only just over a quarter (28.0%) of women, and a fifth (18.8%) of men attending 16 or more sessions, which translates to approximately 75% of the sessions. Recruitment was done fairly quickly, over two

Table 3. Descriptive associations for young men's attendance at the Stepping Stones and Creating Futures intervention.

	Whole sample %/mean (*n*/95% CI)	High attendance 16–21 sessions %/mean (*n*/95% CI)	Medium attendance: 3–15 sessions %/mean (*n*/95% CI)	Low attendance: 0, 1 or 2 sessions %/mean (*n*/95% CI)	*p*-value
Overall attendance		18.8 (62)	38.3 (126)	42.9 (141)	
Socio-demographics					
Age	23.8 (23.4–24.1)	23.7 (22.8–24.6)	23.5 (23.0–24.0)	24.0 (23.5–24.6)	
Disability (yes)	25.7 (82)	30.0 (18)	29.3 (36)	20.6 (28)	0.196
Length time in community (years)	8.5 (7.5–9.5)	12.4 (9.7–15.0)	9.4 (7.7–11.0)	6.1 (4.8–7.4)	
Have children (yes)	39.8 (129)	37.1 (23)	38.2 (47)	42.5 (59)	0.69
Education					
Primary	12.5 (41)	12.9 (8)	5.6 (7)	18.4 (26)	0.007
Secondary not complete	56.8 (187)	56.5 (35)	55.6 (70)	58.2 (82)	
Secondary complete	30.7 (101)	30.7 (19)	38.9 (49)	23.4 (33)	
Livelihoods					
Food-insecurity					
Low	21.0 (69)	14.5 (9)	24.6 (31)	20.6 (29)	0.459
Medium	52.6 (173)	54.8 (34)	53.2 (67)	51.1 (72)	
High	26.4 (87)	30.7 (19)	22.2 (28)	28.4 (40)	
Ease accessing R200 in emergency (easy)	13.4 (44)	4.8 (3)	10.3 (13)	19.9 (28)	0.005
Stolen in past month because of hunger (yes)	36.5 (120)	35.5 (22)	42.1 (53)	31.9 (45)	0.232
Stressed about lack of work (> = more)	12.2 (11.9–12.5)	12.7 (12.0–13.4)	12.4 (11.9–12.9)	11.8 (11.3–12.3)	
Worked in past three months (yes)	37.7 (124)	25.8 (16)	38.1 (48)	42.6 (60)	0.076
Gender attitudes and practices/experiences					
Gender attitudes					
Inequitable	30.7 (101)	24.2 (15)	30.2 (38)	34.0 (48)	0.016
Medium	35.9 (118)	32.3 (20)	30.2 (38)	42.6 (60)	
Equitable	33.4 (110)	43.6 (27)	39.7 (50)	23.4 (33)	
Severe physical and/or sexual IPV past 12m	45.7 (150)	41.9 (26)	45.2 (57)	47.9 (67)	0.731
Non partner rape past 12m	35.7 (117)	32.3 (20)	34.9 (44)	37.9 (53)	0.727
Relationship control (> = more controlling)	10.8 (10.3–11.2)	10.8 (9.8–11.8)	10.3 (9.6–11.0)	11.2 (10.6–11.8)	
Mental health					
Depressed (20/21)	45.7 (149)	52.5 (32)	43.2 (54)	45.0 (63)	0.481
Problem alcohol use	41.0 (135)	48.4 (30)	43.7 (55)	35.5 (50)	0.169
Potential PTDS (yes)	14.9 (49)	16.1 (10)	14.3 (18)	14.9 (21)	0.946
Views on life success (> = more successful)	10.4 (10.0–10.7)	10.0 (9.1–10.8)	10.2 (9.6–10.8)	10.7 (10.1–11.3)	

Note: Descriptive statistics account for clustering of data; *p*-values for categorical data, and comparison of 95% confidence intervals for continuous scales.

or three days for each cluster, and many participants made the decision to participate relatively quickly. In addition, there was a gap between participant recruitment and the intervention beginning (typically two to three weeks, but up to four or five weeks for some clusters). Such gaps have previously been shown to increase initial drop out from interventions, but less clearly impact the

Table 4. Multinomial multivariable regression model for factors associated with attendance at the Stepping Stones and Creating Futures intervention for young men ($n = 327$).

		Medium attendance: 3–15 sessions		Low attendance: 0, 1 or 2 sessions	
	High attendance: 16–21 sessions	β (95% CI)	*p*-value	β (95% CI)	*p*-value
Length time in community (years)	Ref	−0.03 (−0.07, 0.01)	0.119	−0.06 (−0.11, −0.02)	0.005
Education					
Primary	Ref	Ref		Ref	
Secondary (not complete)	Ref	1.18 (−0.28, 2.63)	0.113	−0.01 (−1.22, 1.20)	0.989
Secondary (complete)	Ref	1.48 (0.33, 2.63)	0.011	−0.20 (−1.09, 0.69)	0.665
Ease accessing R200 in emergency (easy)	Ref	0.62 (−0.49, 1.73)	0.274	1.17 (−0.04, 2.38)	0.058
Worked in past three months (yes)	Ref	0.64 (0.10, 1.18)	0.021	0.66 (0.03, 1.29)	0.041
Gender attitudes					
Inequitable	Ref	Ref		Ref	
Medium	Ref	−0.38 (−1.28, 0.52)	0.405	0.08 (−0.48, 0.64)	0.774
Equitable	Ref	−0.18 (−1.45, 0.60)	0.526	−0.48 (−1.26, 0.29)	0.221

Note: Model uses robust errors for cluster, $p < 0.001$.

continued attendance of those who attend a first session (Hayes et al., 2014). The approach to recruitment was shaped by the randomised control trial necessities of completing baseline surveys before the intervention began, starting a large number of clusters simultaneously, and having a closed cohort. This is compared to the normal approach by Project Empower, and similar NGOs, which is to establish a group and then allow group membership to be flexible for a few sessions, until a core set of participants emerge which is largely cohesive for the intervention period. It is important for future behavioural trials to develop strategies that balance research needs (closed cohort, baseline to be completed before intervention begins) with the practicalities of how group dynamics work and interventions are actually delivered.

For young women and men, a consistent predictor of higher levels of attendance was longer length of living in the community. Informal settlements have high levels of rural-urban circular migration (Gibbs et al., 2009; Hunter & Posel, 2012), with people coming to look for work, and if not finding any, often returning 'home' to rural communities, before trying the process again. Yet informal settlements are not homogenous; some where we worked were 'spillovers' from formal housing, essentially where young men and women moved as they grew up and wanted to leave home. As such, while they were informal (shacks, no formal connections to water/electricity) they were relatively stable and 'formal'. In other settlements, there was a greater proportion of rural migrants, who it is assumed were less 'stable' in their communities. Length of time living in the community is likely a measure of the stability of residence of the participants. It is also potentially an indicator of perceptions of being 'part of' a community and this may impact engagement with activities that are perceived as 'of the community', which may extend to hostility towards 'outsiders'. Or it could be those who have recently migrated have more pressure to look for work else return to rural homes and have less time to attend sessions. This has important implications for considering delivery strategies for participants who have been in communities for longer or shorter periods of time.

For women, medium attenders were more likely to have children, compared to high attenders. For medium attenders having children could have pushed them to participate in the intervention, as they felt greater responsibility for changing/improving their lives, but also undermined their participation, as conflicts between childcare responsibilities interfered with intervention attendance. In a number of cases, children were brought to the intervention, when alternative childcare strategies failed. Care work persistently undermines women's engagement in work and social activities

(England, 2005). Interventions need to actively consider how to incorporate women's childcare needs to enable participation.

Among young women, the relational factors of gender inequitable attitudes and experiences of violence were associated with reduced session attendance at SS/CF. In the multinomial model, those who attended the fewest sessions had the most gender inequitable attitudes, and descriptively, they also experienced more IPV and non-partner sexual violence; studies show women's gender inequitable attitudes and experiences are associated (Gibbs et al., 2018). It may be that the focus of SS/CF around transforming gender attitudes and norms, did not resonate with women who held incongruent views, and they experienced discomfort in the few sessions they attended. Or it could be that women experiencing violence, also held more inequitable views, and that those experiencing more violence were constrained from attending because of the violence they experienced. This is potentially a major challenge to the effectiveness of behavioural IPV prevention interventions for women if those who experience the most violence cannot or do not attend. However, levels of IPV were so high and gender inequity so marked that almost none of the women were from a group that wouldn't greatly benefit from the intervention.

For men, having recently worked was consistently associated with less attendance. Other studies have also shown conflict between intervention attendance and work involvement (Ringle et al., 2015; Williams et al., 2010), and this appeared to be particularly true for young men, where there were greater expectations about working and economic provision (Hunter, 2010) than for women, where work was not associated with attendance. Other studies have paid incentives to encourage participation, and while this may support attendance, it may undermine the generalisability of interventions and/or prohibitively drive up the costs of interventions. However, if we are committed to ensuring that interventions reach all men, recognition of the structural factors shaping men's intervention participation is critical and strategies to overcome these need to be developed.

There was a suggestion that men who had completed secondary education were more likely to be medium attenders, compared to those in the high attendance group. In other work, young men who had higher levels of education were less likely to have worked in the past three months (Gibbs et al., 2018). These findings are both suggestive that young men with more education are more likely to receive family support, which enabled them to complete education, and have less pressure to work.

The lack of association for structural factors shaping attendance for women and men as assessed through of poverty was different to what has been seen in other studies (Ringle et al., 2015; Whittaker & Cowley, 2012) and could have been due to a number of reasons. First, there was not much variation overall in the sample in terms of poverty levels, none had permanent jobs, and monthly earnings were low. Second, the intervention provided modest food (for examples basic sandwiches) and a transport stipend (R20; ~US$1.40) for session attendance, and this may have drawn the most food insecure and poorest to attend. If so, this has important implications for low-cost strategies to overcome issues directly related to widespread poverty and attendance.

The sample was a self-selecting and non-representative sample of young people residing in urban informal settlements. Specifically, the analysis was undertaken in the context of a research study, which has implications for attendance, for instance, we provided a lot more support to encourage attendance, such as regular messaging of participants, which may not be available in a large-scale intervention delivery. However, the NGO was also required to conform to processes to ensure research goals in terms of recruitment (e.g. a delay between recruitment and implementation), which could have undermined attendance. Importantly while the analysis was prospective, the primary outcome (attendance) was based on data collected from administrative information, rather than self-reporting, so was not subject to recall bias. However, there were missing data for men in particular, and record-keeping may not have been fully comprehensive.

This study raises a series of questions about how best to engage and target young people for participatory behavioural interventions to prevent IPV. Specifically, it highlights the fact that 'one-size' fits all models are not appropriate, and alternative mechanisms of delivery of interventions need consideration. This may include delivering the same intervention over shorter time periods (i.e. 21

sessions delivered over an intense two weeks) or developing shorter interventions. It emphasises that different delivery structures may be appropriate for different groups (e.g. those who are more stable, compared to migrants). Finally, it highlights that young women who experience violence and have children may struggle to attend an intervention and given these are often our key target groups, we need to develop ways to ensure they can participate in a sustained way.

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