

# Baseline results of a cluster-randomised trial assessing the effectiveness of sport-based HIV prevention in South African schools

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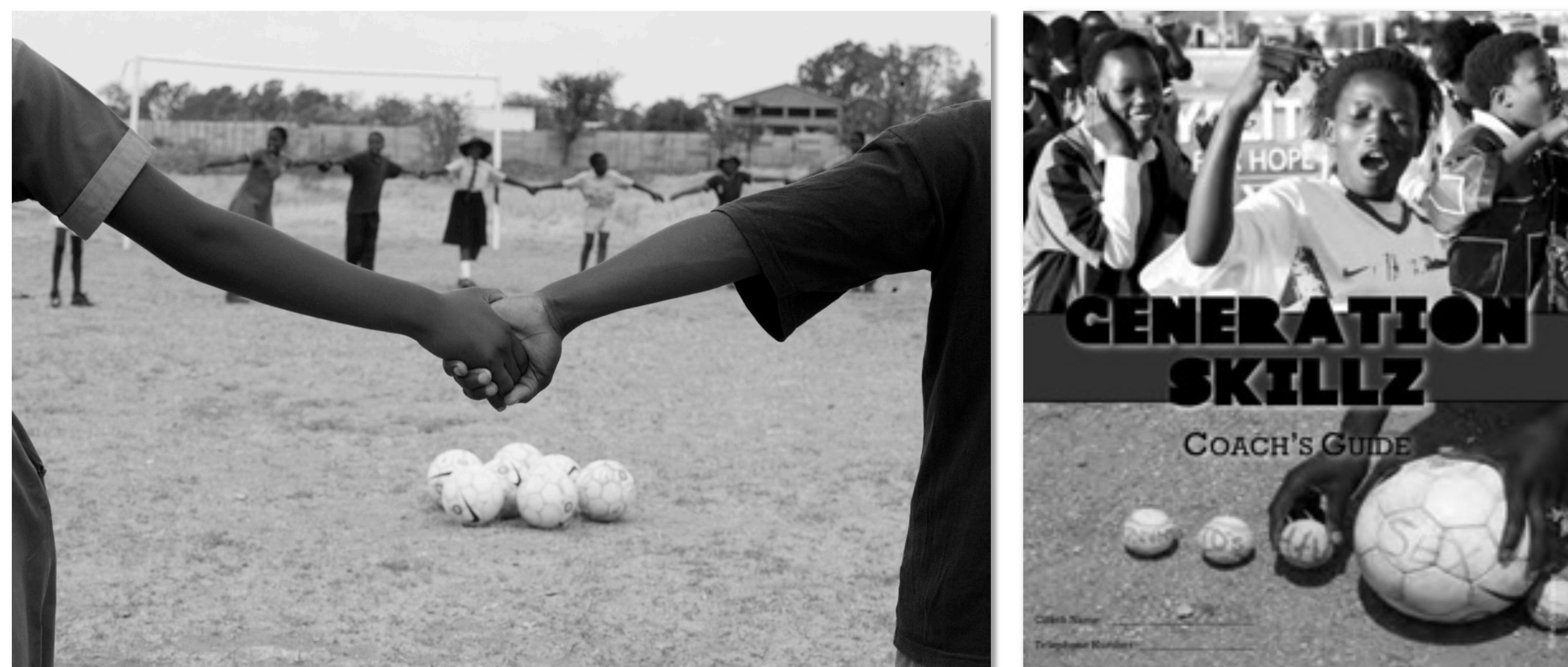
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## BACKGROUND

HIV prevalence among 15-24 year-olds in South Africa is amongst the highest in the world. HIV prevalence among young females is nearly two-times higher than among young males. Factors influencing HIV risk among adolescents in South Africa include high prevalence of reported age-disparate sex (particularly among girls), multiple partnerships (particularly among young men), harmful alcohol use, and gender-based violence.

Previous surveys have shown high prevalence of reported rape and intimate-partner violence (IPV) perpetration among adult men in South Africa, though little research has assessed such prevalence among adolescents.

A two-year cluster-randomized trial began in 2012, assessing the effectiveness of a sport-based HIV prevention intervention in reducing age-disparate partnerships, multiple partnerships, and perpetration of gender-based violence. The intervention, Generation Skillz, is delivered by Grassroot Soccer in public secondary schools in peri-urban townships of Cape Town and Port Elizabeth. Baseline surveys for this trial took place between March and September 2012.



Grassroot Soccer's Generation Skillz intervention targets Grade 9-10 learners using soccer themes, activities and metaphors to spark conversations about HIV, sex, and violence.

## METHODS

Forty-six schools in Cape Town and Port Elizabeth were randomised to either receive sessions led by trained Grassroot Soccer Coaches or standard Life-Orientation classes led by teachers. At baseline, 4485 Grade 9 learners (median age = 15 years) completed a 146-item self-administered questionnaire using Open Data Kit (ODK) software on touchscreen mobile phones. Questionnaires were completed in classrooms, taking 20-30 minutes, and assessed demographic/socio-economic, psychosocial, lifestyle, behavioural and relationship factors. Answers were confidential, with no personal identifying information captured on the questionnaire. Participants had the option of answering questions in English or Xhosa and of using Xhosa-based audio assistance. Chi-squares were used to assess crude differences by group, followed by multivariate linear and logistic regressions adjusting for age and school-level clustering.

Table 1: Sample characteristics (N=4485)

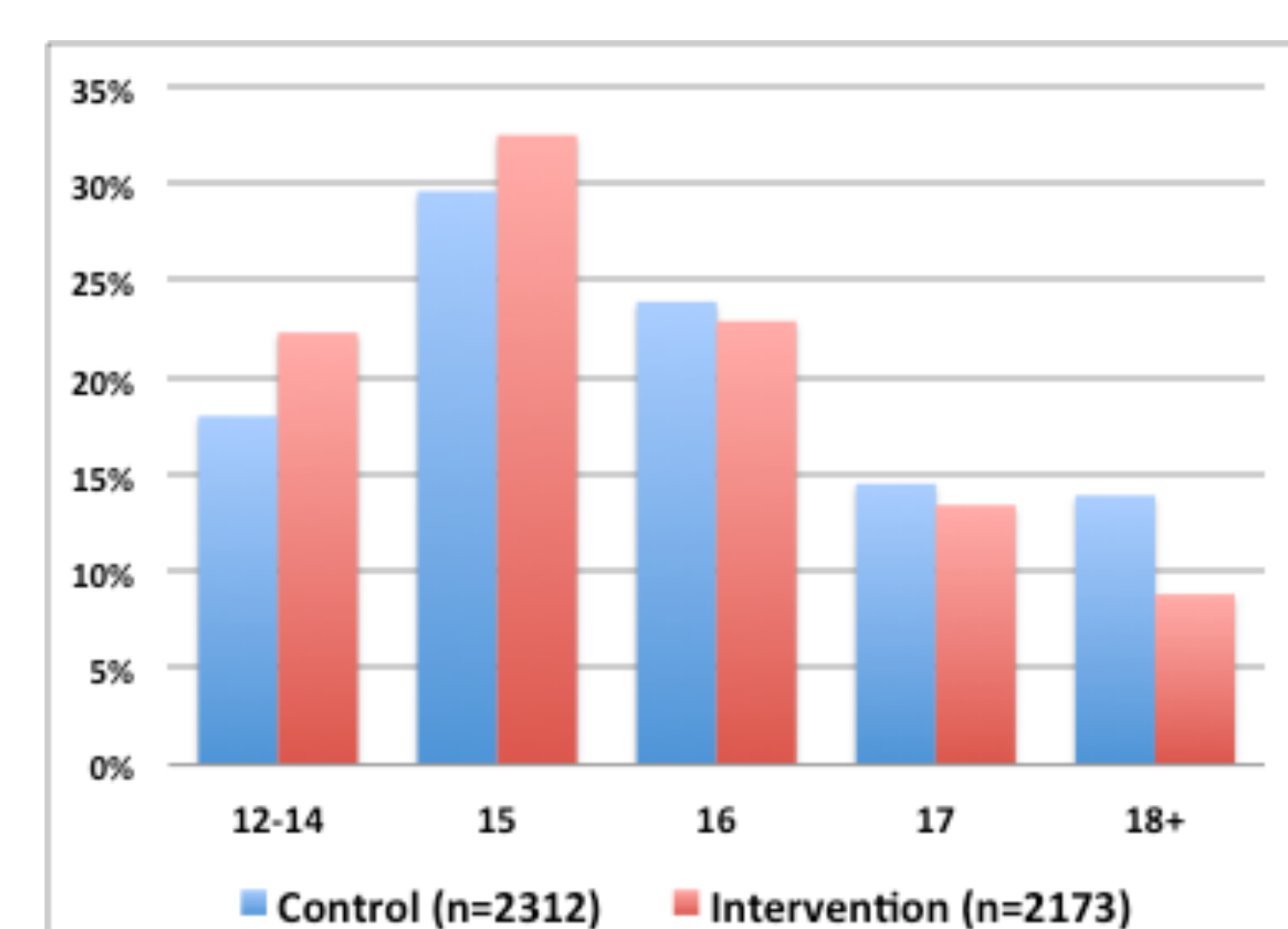
Characteristic	Intervention		Control		p value*
	N	%	N	%	
<b>Participants</b>	2173	48.5	2312	51.6	
<b>Site</b>					
Cape Town	822	37.8	762	33.0	
Port Elizabeth	1351	62.2	1550	67.1	<0.001
<b>Language</b>					
Xhosa	2092	96.3	2204	95.3	
Other	81	4	108	4	0.12
<b>Live with both parents</b>	773	35.9	737	32.2	0.009
<b>Orphan status</b>					
Non-orphan	1557	71.7	1631	70.5	
Single orphan	501	23.1	537	23.2	
Double orphan	115	5.3	144	6.2	0.39

\* Assessed via Pearson's chi-square test



Participants in Khayelitsha complete the self-administered questionnaire on ODK

Figure 1: Age distribution by group (n=4485)



The control group was slightly older than the intervention group (mean age 15.8 vs 15.5 years,  $p=0.071$ ). At baseline, more control than intervention participants reported not living with both parents (67.8% vs 64.1%,  $p=0.009$ ). The vast majority of participants (96.3%) were Xhosa speakers.

## RESULTS

At baseline, more control than intervention participants reported HIV stigma (27.4% vs 23.8%,  $p=0.007$ ).

Table 2: Reported knowledge and attitudes by sex and group

Item	Males				p value*	Females				
	Intervention	Control	Intervention	Control		Intervention	Control	Intervention	Control	
	N	%	N	%		N	%	N	%	
<b>HIV Knowledge</b>										
Low	267	28.4	309	29.4		371	30.1	399	31.7	
Med	358	38.1	388	36.9		437	35.4	452	35.9	
High	314	33.4	355	33.8	0.85	426	34.5	409	32.5	0.25
<b>HIV Stigma</b>										
Low	241	25.7	328	31.2		277	22.5	305	24.2	
Med	360	38.3	376	35.7		472	38.3	452	35.9	
High	338	36.0	348	33.1	0.018	485	39.3	503	39.9	0.71
<b>HIV Self-efficacy</b>										
Low	270	28.8	338	32.1		393	31.9	403	32	
Med	312	33.2	376	35.7		370	30.0	400	31.8	
High	357	38	338	32.1	0.011	471	38.2	457	36.3	0.54
<b>GEM Scale</b>										
Low	293	31.2	331	31.5		343	27.8	311	24.7	
Med	353	37.6	398	37.8		464	37.6	454	36	
High	293	31.2	323	30.7	0.83	427	34.6	495	39.3	0.014

\* Assessed via Chi-Square Test for Trend

More control than intervention females reported ever having had sex (45.1% vs 40.9%,  $p=0.038$ ), while more control than intervention males had depressive symptoms (31.5% vs 25.0%,  $p=0.001$ ), reported having an age-disparate partner (5+ years difference) in the last year (15.7% vs 12.0%,  $p=0.06$ ), and reported ever having perpetrated intimate-partner violence (37.6% vs 33.4%,  $p=0.051$ ) and rape (29.1% vs 23.7%,  $p=0.029$ ).

Table 3: Reported behaviour by sex and group

Item	Males				p value*	Females				
	Intervention	Control	Intervention	Control		Intervention	Control	Intervention	Control	
	N	%	N	%		N	%	N	%	
<b>Depressive Symptoms</b>	235	25.0	331	31.5	0.001	324	26.7	333	26.4	0.92
<b>Harmful alcohol use</b>	211	22.5	257	24.4	0.30	149	12.1	163	12.9	0.52
<b>Ever had sex</b>	603	68.2	684	70.0	0.73	482	40.9	543	45.1	0.038
<b>Ever used a condom**</b>	374	62.0	411	60.1	0.51	332	68.9	384	70.7	0.71
<b>Partners in last 12 mo</b>										
1	252	42.8	261	39.9		314	71.9	334	69.7	
2	165	28	190	29.1		83	19.0	104	21.7	
3 or more	312	53.3	365	56.7	0.32	96	22.5	119	25.0	0.72
<b>Age-disparate partner in last 12 months</b>	68	12.0	102	15.7	0.06	50	12.2	59	12.9	0.77
<b>Ever perpetrated IPV</b>	314	33.4	396	37.6	0.051					
<b>Ever perpetrated rape</b>	143	23.7	199	29.1	0.029					
<b>Ever a victim of IPV</b>						368	29.8	385	30.6	0.69

\* Assessed via Pearson's Chi Square or Chi-Square Test for Trend

\*\* Restricted to participants who reported having ever had sex

These differences between trial arms lost statistical significance after adjusting for age and clustering. No differences between groups were observed for sex, socio-economic status, HIV knowledge, self-efficacy, or number of sexual partners.

## CONCLUSION

There was a small age imbalance between study groups, which appears to explain other observed baseline imbalances. Outcome analyses for the main trial should be adjusted for age.

In this population of Grade 9 learners from Cape Town and Port Elizabeth, we observed distinct gender differences in knowledge, attitudes and behaviour. Higher prevalence of harmful attitudes and behaviours were reported in males than females. Of particular concern are the high numbers of sexual partners, high prevalence of reported intimate-partner violence and rape perpetration, and high prevalence of harmful alcohol use, suggesting these are an important area for intervention. Grassroot Soccer has incorporated these survey findings into its Generation Skillz intervention, which targets Grade 9 and 10 learners.

## ACKNOWLEDGEMENTS

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