

Peer-to-Peer Chain Recruitment for Enrolling Young South African Women into an HIV Pre-Exposure Prophylaxis (PrEP) Intervention Study: How did it Perform?

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BACKGROUND

- Peer-to-peer chain recruitment has been used for descriptive studies, but few intervention studies have employed it.
- Our study aimed to evaluate the feasibility, acceptability, and performance of peer-to-peer chain recruitment to enroll women into a randomized pilot trial of two online interventions to educate young South African women about Pre-Exposure Prophylaxis (PrEP).
- We evaluated if peer-to-peer recruitment was self-sustaining and resulted in enrolling women who, in subsequent waves, had less contact with the health care system and less knowledge about PrEP than the initial seeds.

METHODS

- Study Site: Central city eThekweni (Durban), South Africa.
- Participant eligibility: Sexually active (vaginal or anal sex with a man, past 6 months) women ages 18 to 25 years.
- Seeds (N=16) were recruited by study staff and randomized to Masibambane, Ladies Chat, a Gender-Enhanced group-based WhatsApp Workshop (GE), or Individual-Access (IA), a control condition that provided participants with online information/motivation materials only.
- Seeds had to agree to recruit other women (be a Peer Health Advocate, PHA). Each seed could recruit up to three women to participate in the same study condition, with an incentive for each enrolled woman
- Participants in subsequent waves could choose to recruit (be a PHA) or not.
- RDS-Analyst was used to create recruitment trees to display recruitment results from each seed by each wave.
- To assess linear trends in the distribution of PrEP knowledge and healthcare system contact variables across recruitment waves, we used the Cochran-Armitage trend test. The Fisher's Exact test was used to test for nonrandom associations between the variables and intervention arm.
- Participants with missing data were removed from the analysis. A p-value of less than .05 was accepted for statistical significance.

RESULTS

- Over three recruitment waves beyond the seeds, 84 women were recruited (Figure 1 and 2). Overall, 100 participants were enrolled in the study.
- Almost 90% of women chose to become recruiters (Table 1).
- There was no association between the intervention arm and whether a participant became a recruiter (Fishers Exact test $p = 0.510$).

Overall, as the waves increased:

- There was a statistically significant downward trend in educational attainment (post-secondary vs. less than post-secondary) (Cochran-Armitage test for trend, $p = 0.047$) (Table 2).
- The percentage of participants who had not heard of PrEP increased, but this linear trend was not statistically significant (Cochran-Armitage test for trend, $p = 0.064$) (Table 2).
- There was a decrease in the percentage of participants who reported that PrEP is used to prevent HIV infection. This linear trend was statistically significant (Cochran-Armitage test for trend, $p = 0.044$) (Table 2).
- There was a statistically significant downward trend for the "PrEP protects against" variable (Cochran-Armitage test for trend, $p = 0.018$) (Table 2).
- For the remaining PrEP knowledge variables, there was not a statistically significant linear trend (Table 2).
- Regarding recency of last reproductive health visit and last HIV test, there were no statistically significant linear trends across waves.

Figure 1: Recruitment Trees of 8 Gender-Enhanced (GE) Seeds

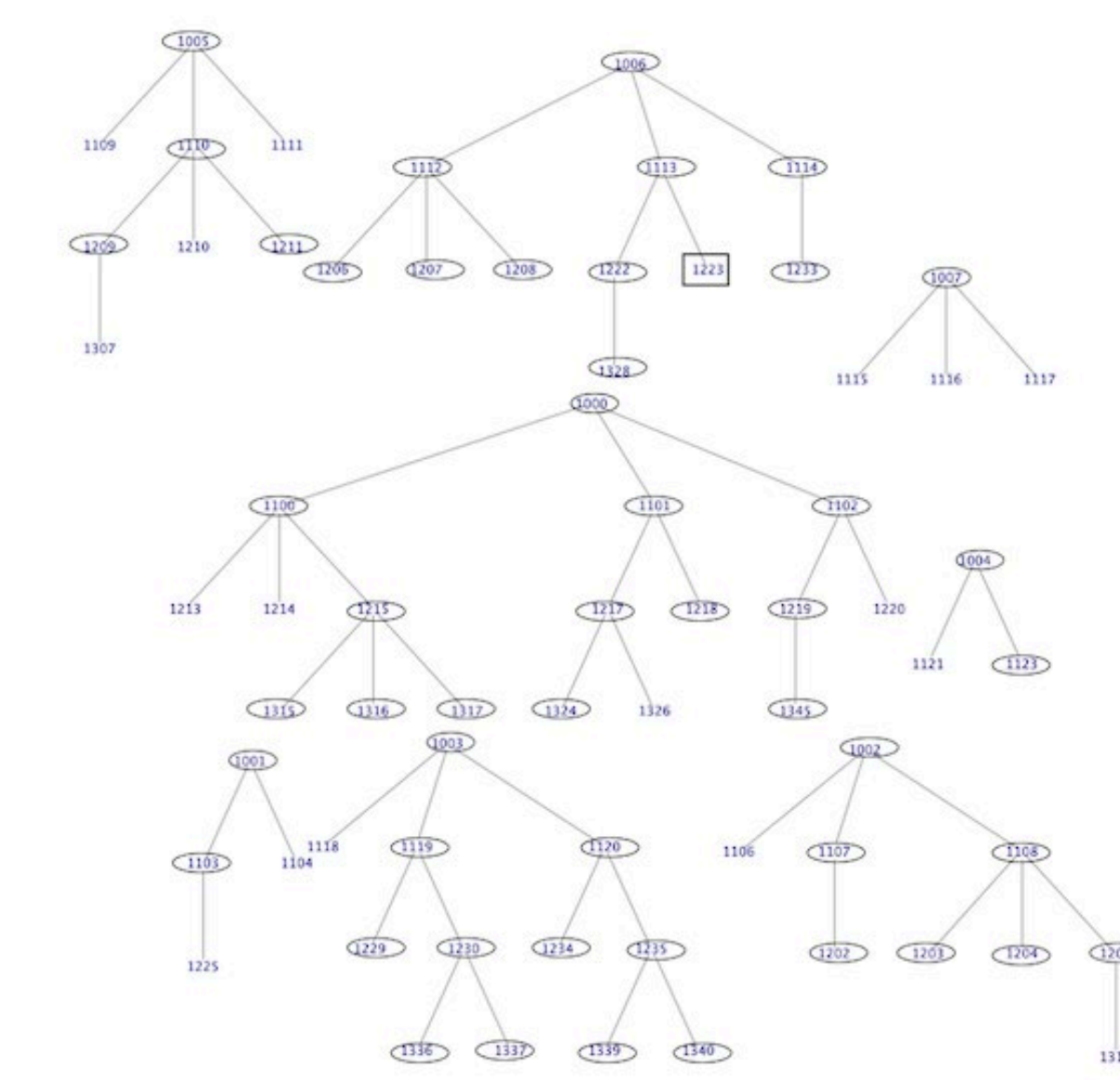


Figure 2: Recruitment Trees of 8 Individually-Accessed (IA) Seeds

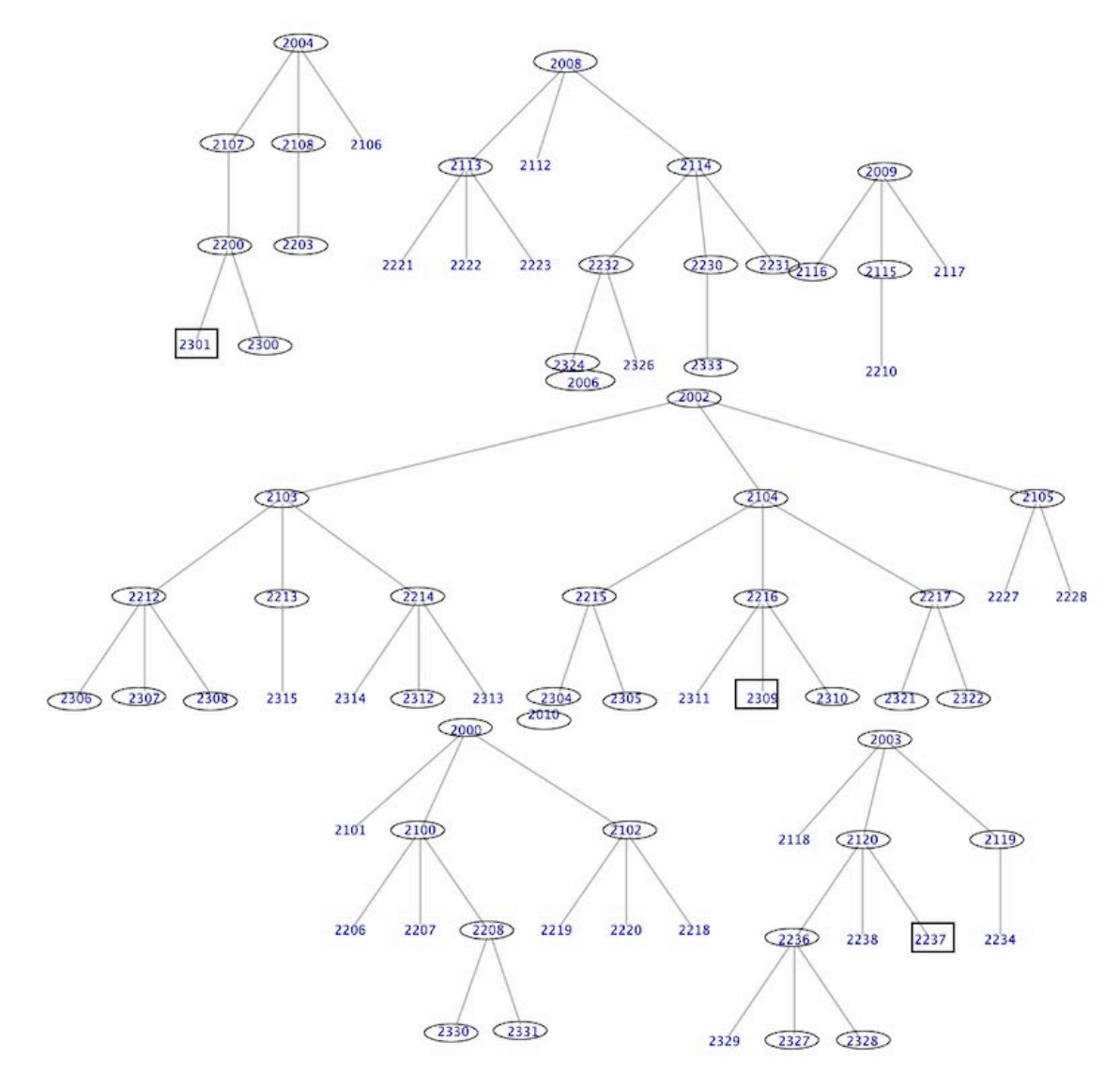


Table 1. Enrolled participants' decision to recruit other women (becoming a Peer Health Advocate, PHA)

Agreed to Recruit Other Women ¹	Total	Gender Enhanced	Individual Access	p-value ⁴
	Enrolled Participants Given the Chance to Become a Recruiter (N=58)	Enrolled GE Participants Given the Chance to Become a Recruiter (N=32) ²	Enrolled IA Participants Given the Chance to Become a Recruiter (N=26)	
Yes	52 (90%)	28 (88%)	24 (92%)	0.6814
No	6 (10%)	4 (13%)	2 (9%)	

¹Participants who were given the chance to become a recruiter did not include wave 3 (GE wave 3 = 10, IA wave 3 = 16), as they were not asked to be a recruiter and did not include the 16 seeds as they were required to recruit.
²Percentages may not sum to 100 due to rounding.
³Fisher's Exact Test assessing the association between agreeing to recruit other women and Intervention Arm

Table 2: Sociodemographic characteristics and PrEP knowledge at baseline of enrolled study participants by recruitment wave

Characteristic	Overall (N = 100) n (%)	Wave				P-value ¹
		0 (N = 16) n (%)	1 (N = 26) n (%)	2 (N = 32) n (%)	3 (N = 26) n (%)	
Education^{2,3}						0.047
Some secondary school	3 (3%)	0 (0%)	0 (0%)	0 (0%)	3 (12%)	
Matriculated	62 (63%)	9 (56%)	21 (81%)	15 (48%)	17 (65%)	
Completed secondary school	8 (8%)	0 (0%)	0 (0%)	5 (16%)	3 (12%)	
Post-secondary schooling	26 (26%)	7 (44%)	5 (19%)	11 (35%)	3 (12%)	
Ever Heard of PrEP or Pre-Exposure Prophylaxis						0.064
No	36 (36%)	3 (19%)	9 (35%)	13 (41%)	11 (42%)	
Yes	64 (64%)	13 (81%)	17 (65%)	19 (59%)	15 (58%)	
PrEP is a method that...^{2,4}						0.044
Prevents HIV infection	90 (91%)	16 (100%)	24 (92%)	29 (91%)	21 (84%)	
Treats HIV infection	2 (2%)	0 (0%)	1 (3.8%)	0 (0%)	1 (4%)	
Don't know/not sure	7 (7%)	0 (0%)	1 (3.8%)	3 (9%)	3 (12%)	
PrEP Protects Against^{2,5}						0.018
HIV	52 (53%)	12 (75%)	13 (50%)	18 (56%)	9 (36%)	
Both HIV and other sexually transmitted diseases	43 (43%)	4 (25%)	12 (46%)	12 (38%)	15 (60%)	
Don't know/not sure	4 (4%)	0 (0%)	1 (4%)	2 (6%)	1 (4%)	
Once You Start PrEP, you need to take it...^{2,6}						0.261
For as long as you think you could benefit from protection against HIV	69 (70%)	11 (69%)	17 (65%)	22 (69%)	19 (76%)	
For the rest of your life	12 (12%)	1 (6%)	4 (15%)	4 (12%)	3 (12%)	
Don't know/not sure	18 (18%)	4 (25%)	5 (19%)	6 (19%)	3 (12%)	
Last Time Participant Went to Any Kind of Clinic or Doctor for a Reproductive Health Service²						0.296
Longer than one year ago	7 (7%)	0 (0%)	3 (12%)	2 (6%)	2 (8%)	
Within the past year	89 (93%)	16 (100%)	22 (88%)	29 (94%)	22 (92%)	
Last Time Participant Had an HIV Test²						0.182
Longer than one year ago	6 (6%)	1 (6%)	0 (0%)	3 (10%)	2 (9%)	
Within the past year	89 (94%)	15 (94%)	26 (100%)	26 (90%)	20 (91%)	

¹ Cochran-Armitage Test for trend
² Sum may not equal 100 due to missing values. Percentages may not sum to 100 due to rounding. Percentages are based on the participants who provided data. Missing values were not included in the analysis.
³ Education was dichotomized into: Secondary School and Post-Secondary School for the Cochran-Armitage analysis.
⁴ PrEP methodology was dichotomized into: Prevents HIV and Incorrect Answer for the Cochran-Armitage analysis.
⁵ PrEP protects against was dichotomized into: HIV and Incorrect Answer for the Cochran-Armitage analysis.
⁶ PrEP duration was dichotomized into: For as long as you think you could benefit from protection against HIV and Incorrect Answer for the Cochran-Armitage analysis.

CONCLUSION

- Peer-to-peer recruitment is a feasible and self-sustaining way to recruit SA young women into a PrEP intervention study.
- Peer-to-peer recruitment was successful at reaching women with less education and less PrEP knowledge across the waves but was not successful at reaching women who had less contact with the health care system.
- This approach should be utilized more often for intervention studies for hard-to-reach or hidden populations.

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