New HIV Cases and ART Retention in Pretoria, South Africa: A Gender Project for High-Risk Women

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1. Background

Globally, South Africa sustains the largest population of people living with HIV. Although South African government programs have increased HIV testing, treatment access to antiretroviral therapy (ART), and linkages to HIV care, coverage is not uniform. Groups with a high prevalence of HIV – such as sex workers and women who use alcohol and other drugs (AODs) – face individual, structural, and economic barriers to HIV care and ART initiation and adherence.

The Seek, Test, Treat, and Retain (STTR) paradigm offers a strategy for extending HIV prevention, treatment, and adherence to ART among at-risk and hard-to-reach groups.

This project is testing an evidenced-based, woman-focused intervention to help women living with HIV progress through the treatment cascade and achieve suppressed viral loads and develop a healthy lifestyle. We report the complete baseline study data from women enrolled in a gender-focused, cluster randomized study in Pretoria, South Africa, to increase HIV testing, treatment, and retention in ART.

2. Methods

This study, funded by the National Institute on Drug Abuse (R01 DA032061), uses a prospective, geographically clustered, randomized two-group design to compare standard HIV testing and referral to the evidence-based Women's Health CoOp (WHC) Intervention using the STTR paradigm for vulnerable women. Intervention effects are assessed at 6 months and 12 months after enrollment.

SEEK

- Community outreach workers market the study and screen potential participants in known high-risk areas ("hot spots") and other venues within 14 zones throughout Pretoria (see **Exhibit 1**).
- Study eligibility criteria:
  - At least age 15
  - Weekly use of AODs in the past 90 days
  - Unprotected heterosexual sex in the past 6 months
  - Plan to stay in area for 12 months
  - Consent to rapid HIV testing and drug screening

Exhibit1. Recruitment Zones



TEST

- HIV rapid tests and confirmatory Western blot
- CD4 count (since January 2014)
- Alcohol breathalyzer
- Drug use screening with urine test
- Pregnancy with urine test

TREAT

- Women recruited from zones randomized to the enhanced intervention (the WHC+) receive:
  - An evidence-based woman-focused intervention to educate, build skills, promote harm reduction, and set healthy goals to address AOD use, sex risks, and victimization
  - Education about their CD4 count and the importance of ART adherence
  - Referrals and linkage to substance abuse treatment and rehabilitation

RETAIN

In addition to referrals for HIV clinical assessment, the WHC+ involves case management, reinforcement of intervention components, and activities to increase ART adherence with a personal action plan.



Staff conduct outreach to groups of women.

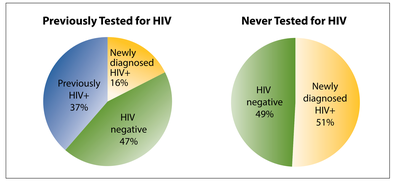
3. Results

We enrolled 640 women who completed interviews and were tested for HIV, pregnancy, and recent AOD use.

HIV

- 54% of all participants were living with HIV
- 68% of the sex workers were living with HIV
- 11% received their first HIV test at enrollment
- Although 20% of the participants were newly diagnosed with HIV, 51% who had never been tested were newly diagnosed (see **Exhibit 2**)

Exhibit 2. Distribution of Women Newly Diagnosed with HIV by Previous Testing History



Sociodemographics

- The median age of participants was 30 and ranged between 16 and 58
- Half of participants lived with their partner (see **Exhibit 3**)
- 78% of participants had given birth
- 70% owned a cell phone
- The housing conditions for most women were suboptimal (see **Exhibit 3**)

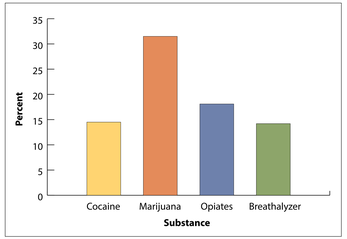
Exhibit 3. Socioeconomic Characteristics of Study Sample (N=640)

Characteristic	n	%
Marital status		
No main partner	77	12
Boyfriend	244	38
Cohabitating/married	320	50
Have given birth	499	78
Sex worker in past 6 months	237	37
Consider themselves homeless	171	27
Own cellphone	448	70
Ever incarcerated	225	35
Housing conditions		
Marginal: Live on the streets or in dwellings with plastic/cardboard for the roof or walls	109	17
Poor: Dwellings that used tin/metal sheets for the roof and walls	246	38
Fair: Wood/bricks/tiles/cement for walls with tin roofs	145	23
Good: Both walls and roof made with bricks, cement, tiles	140	22

Alcohol and Other Drug Use

- Marijuana (32%), opiates (18%), and cocaine (15%) were the most common biologically confirmed drugs of abuse (see **Exhibit 4**)
- 14% of participants had a positive alcohol breathalyzer
- Self-reported alcohol consumption was high:
  - 57% of participants drank heavily
  - 29% of participants were binge drinkers

Exhibit 4. Frequency of Substance Use – Biologically Confirmed



CD4 Count and Antiretroviral Therapy

- Only 22% of HIV-positive women were on ART
- Recent CD4 count results were only available for 146 women (43%)
- The distribution of CD4 count was approximately normally distributed: mean=481 cells/ml (standard deviation 284), median=455 (see **Exhibit 5**)
- 60% of participants had a count <500 cells/ml (see **Exhibit 5**), which made them eligible for ART; only 37% of them had ever taken ART
- The major barriers to ART were structural (such as clinics too far away, clinics ran out of ARTs, no CD4 tests) and individual (such as food insecurity, belief in traditional medicine, addiction) (see **Exhibit 6**)



PIMA machines test women's CD4 count on site. With CD4 results in hand, it can speed up the barriers in clinical staging.



WHC+ session: Women practice the female condom.

Exhibit 5. Histogram of CD4 Count

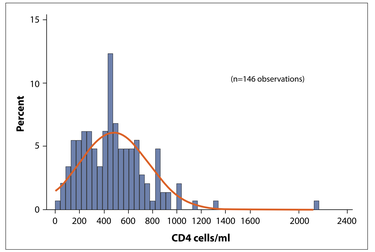


Exhibit 6. Barriers to Obtaining ART and Adherence to ART

Barriers	Baseline n=214
Did not stop taking ART	76
Medical Barriers (including perceived)	
CD4 too high	75
Took when pregnant and not now	2
TB testing/treatment	1
Psychosocial barriers	
Did not see the need	5
Fear side effects	3
Fear commitment of ART daily dose	3
Cannot take as needed	2
Did not disclose HIV to family, etc.	4
Kept missing doses	1
Unclear results/disbelief in results	2
Need to start process	1
Not ready for ARTs	2
Traditional medicine	0
Boyfriend	1
Environmental barriers	
No food to take with ART	6
No place to store ART medication	2
Fear medication would be stolen	0
Nearest clinic does not provide ART	3
Too much trouble to pick up ART medication	1
AOD use/arrests	1
Institutional barriers	
No identification card	2
Lacks transportation	2
Just received CD4 results	8
Attending wellness/starting soon	1
Other clinic issues	
Did not attend wellness class	5
Switched clinics	8
Missed staging appointment	23

4. Conclusions

- Although most participants had been tested for HIV previously, an alarming number of women who had never been tested were infected (51%), signaling the need to conduct outreach for these most vulnerable women.
- The high prevalence of AOD use and abuse (57% heavy drinkers) demonstrates that linking vulnerable women living with HIV to care must also involve treatment for AOD use.
- Increasing provision of services to vulnerable women requires substantially more resources to overcome structural barriers to obtain and adhere to ART.
- The WHC intervention addresses the Seek, Test, Treat, Retain paradigm and the challenges of implementing treatment as prevention in disadvantaged communities.



Staff review mapped zones to plan outreach and recruitment.



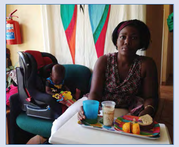
A mother with her newborn baby has a successful follow-up visit.



Donated healthy food offered at the session.



Reaching hard-to reach women in the bush.



Waiting for session in reception room.

More Information

Poster #852

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Presented at:

5th International Workshop on HIV and Women
Seattle, WA
February 21-22, 2015

Conference on Retroviruses and Opportunistic Infections (CROI)
Seattle, WA
February 23-26, 2015

www.rti.org

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