

Trends in HIV-seropositivity and associated factors among young women attending STI services at Alexandra community Healthcare centre, Gauteng Province, 2012-2021

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Background

- HIV remains a public health concern in South Africa (SA)
- New infections and HIV-associated mortalities have reduced (by 50% and 73% respectively since 2010-2021), but the progress is not enough to meet global targets¹
- Adolescent girls and young women (AGYW) aged 15-24 years are disproportionately affected compared to their male counterparts²
 - They accounted for 37% of the new HIV-infections in 2022³
- Adolescent girls and young women form part of the STI priority population due to high burden of STIs

Aim of the Study

To highlight trends in HIV-positivity among young women aged 18-24 years presenting with vaginal discharge syndrome (VDS) at Alexandra Community Healthcare Centre (AHC) from 2012-2021

Study Objectives

1. To describe trends in HIV-seropositivity among women aged 18-24 years at AHC, 2012-2021
2. To explore associations between HIV-positivity and clinical characteristics among women aged 18-24 years at AHC, 2012-2021

Methods

Study Design

- Secondary cross sectional analysis using data from the ongoing microbiological STI surveillance dataset 2012-2021 performed by the STI Reference Laboratory at the NICD

Study Setting

- AHC is located in Alexandra township, Gauteng province, SA,
- Alexandra is a low income area, with high burden of unemployment and poverty
- Constituting of mostly informal settlements



Methods

Study Population

- Women aged 18 to 24 years who presented with VDS at AHC between 2012-2021

Data collection (primary study)

- Structured questionnaire was administered
- Genital swabs were collected for multiplex PCR to detect discharge-causing pathogens;
 1. *Neisseria gonorrhoeae*
 2. *Chlamydia trachomatis*
 3. *Mycoplasma genitalium*
 4. *Trichomonas vaginalis*
- Blood specimens were collected for HIV serological testing

Data Analysis

Descriptive statistics was performed using frequencies, median and interquartile range (IQR) to

- Describe trends in HIV-positivity among study participants

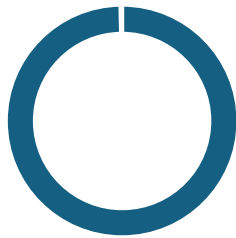
Logistic regression was used to explore associations between HIV-positivity and behavioural and clinical characteristics

- $p < 0.05$ was considered statistical significant in the final model

Participants characteristics N= 457

- Median age in years (22), IQR (18-24)

Sexual orientation



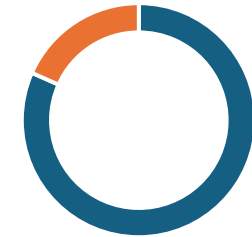
■ Heterosexual (99.8%) ■ Bisexual (0.2%)

Number of sexual partners in the last 3 months



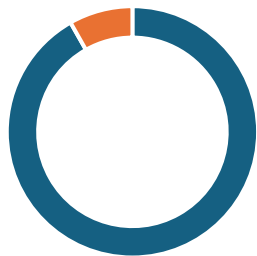
■ 0 (3.7%) ■ 1 (91%) ■ 2+ (5.3%)

Any STI diagnosed in the past 12 months



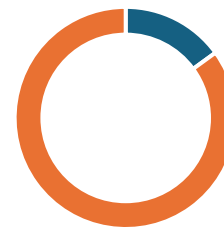
■ No (80%) ■ Yes (18%)

Have sexual partner outside South Africa



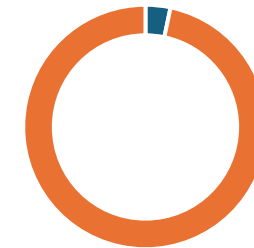
■ No (91.8%) ■ Yes (8.2%)

Knowledge of HIV-status at enrolment



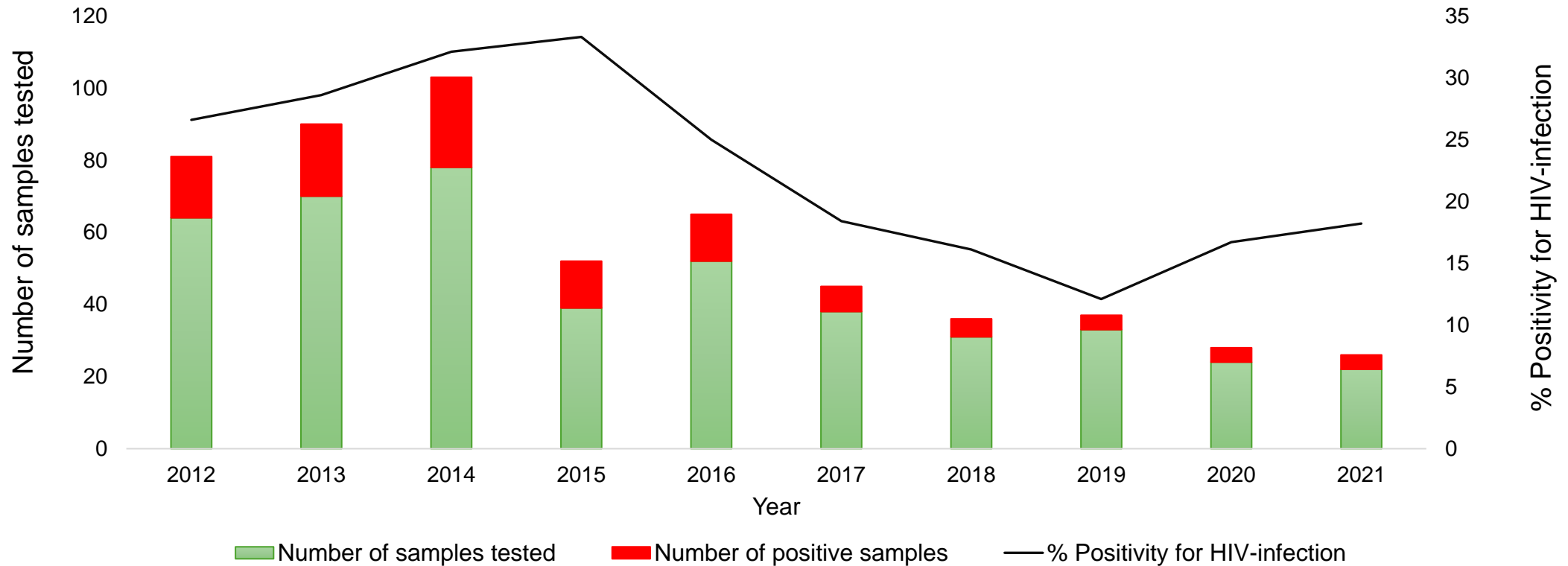
■ No (15%) ■ Yes (85%)

Self-reported HIV-status



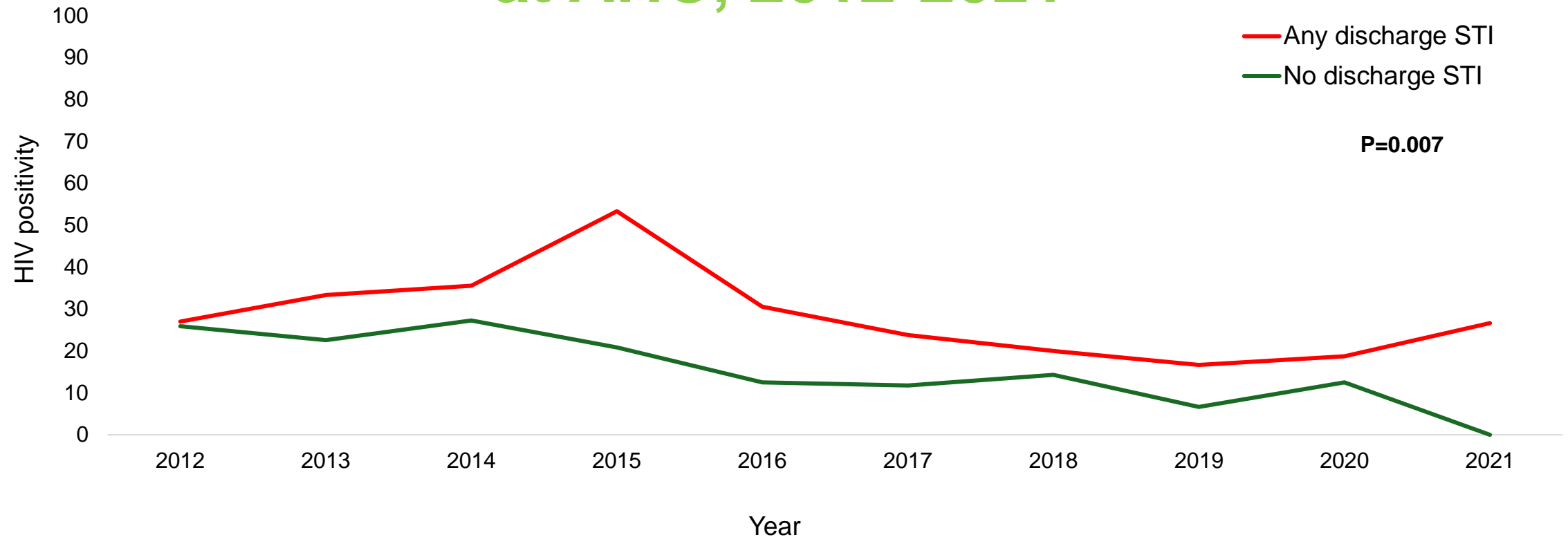
■ HIV-positive (3.3%)
■ HIV-negative (96.8%)

HIV-positivity among young women at AHC, 2012-2021



- Overall prevalence of HIV: 24.8% 95%CI (20.9 – 29.1)
- Overall percentage change in HIV-positivity (2012-2021): -31.4%

HIV-positivity by STI status among young women at AHC, 2012-2021



- Overall prevalence of discharge causing STI: 59% (95%CI: 54.2 – 63.7%)
- Overall HIV-positivity among women with any discharge STI: 29.8% (95%CI: 24.2 – 35.8%)
- Overall HIV-positivity among women without any discharge STIs: 18.3% (95%CI: 12.9 – 24.8%)

Univariate and multivariable analysis

Predictor factors	Categories	Crude OR (95%CI)	p-value	Adjusted OR (95%CI)	p-value
Diagnosed with any STI in the past 12 months	No	Reference			
	Yes	0.84 (0.47 – 1.49)	0.55		
Chlamydia	Negative	Reference			
	Positive	1.27 (0.8 – 2.02)	0.31		
Gonorrhoea	Negative	Reference			
	Positive	2.07 (1.27 – 3.38)	0.004	1.94 (1.12 – 3.39)	0.018
Trichomoniasis	Negative	Reference			
	Positive	2.24 (1.29 – 3.88)	0.004	2.03 (1.15 – 3.59)	0.015
<i>Mycoplasma genitalium</i>	Negative	Reference			
	Positive	1.32 (0.73 -2.4)	0.37		
Bacterial vaginosis	Negative	Reference			
	Positive	2.40 (1.5 -3.76)	<0.001	2.28 (1.38 – 3.767)	0.001
Vaginal candidiasis	Negative	Reference			
	Positive	0.76 (0.45 – 1.28)	0.3		
Having a sexual partner outside SA	No	Reference			
	Yes	0.34 (0.12 -0.99)	0.05	0.85 (0.07 – 0.85)	0.027

OR (odds ratios), 95%CI (95% confidence interval)

Discussion

- HIV-positivity reduced from 2012 - 2021 by 31.4%
 - However the burden of HIV remained high in this population (18.2%) and above the country's average (8.0%)
- Remarkable decline in HIV-positivity was observed between 2015 and 2019
 - Due to targeted interventions such as ART roll-out and increased coverage with voluntary medical male circumcision
- HIV-positivity was significantly high (29.8% vs 18.3%) among women with discharge STIs compared to those who did not have
 - Literature shows that STIs make people more susceptible to HIV⁴
 - These findings are consistent with those reported in Louisiana (USA) & Cape Town (SA) where HIV rates were higher in women with STIs ^{5,6}

Discussion

- Gonorrhoeae, Trichomoniasis and Bacterial vaginosis increased the odds of HIV infection among the study population
 - Gonorrhoeae and Trichomoniasis STIs were associated with HIV in a study conducted in KZN⁷
 - Similarly in a study in rural Eastern Cape Province (SA), Bacterial vaginosis was found associated with HIV⁸

Conclusion

- The study showed a cyclic trend in HIV-positivity among women with VDS
 - This may be attributable to various factors including biological, behavioural and structural factors which differs between time periods

Recommendations

- There is need for strategies channeled at young women to reduce the incident of HIV
 - Encourage timely treatment of STIs and genital infections and regular HIV testing
 - Employ educational programs to increase awareness on HIV prevention and control strategies such as the use of pre-exposure prophylaxis and consistent condom use
 - Incorporate HIV testing and management into STI management guidelines

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