

High prevalence of curable sexually transmitted infections amongst female sex workers (FSW) in rural KwaZulu-Natal, South Africa: Early findings from the AMETHIST Consortium study

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Background

Sexually transmitted infections (STIs) are an important public health problem in South Africa.

Prevalence of these infections is considerably higher among Female Sex Workers (FSW) (women who sell sex for money or goods).

High rates of STI in FSW is an occupational hazard due to high numbers of high-risk partners and sub-optimal condom use as well as poor access and uptake of testing and treatment services.

The study is part of a multi-site study called the AMETHIST Consortium: **A**dapted **M**icroplanning to **E**liminate **T**ransmissible **H**IV in **S**ex **T**ransactions, aimed at increasing FSW uptake of HIV prevention and care leading to virtual elimination of HIV transmission attributable to sex work.

There is limited data on curable STIs amongst FSW in rural, high HIV burden settings.

Objective

We estimate the prevalence of Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG) and Trichomonas vaginalis (TV) among representative FSW in rural South Africa.

Methods

Study site

The Africa Health Research Institute (AHRI) is situated in the uMkhanyakude district of KZN, SA.

The site is mostly rural and poor, with high youth unemployment (>80%) and HIV incidence (5.8/100 person-years) among adolescent girls and young women aged 20-24 years in 2016-2018

There are no FSW programmes in this setting.

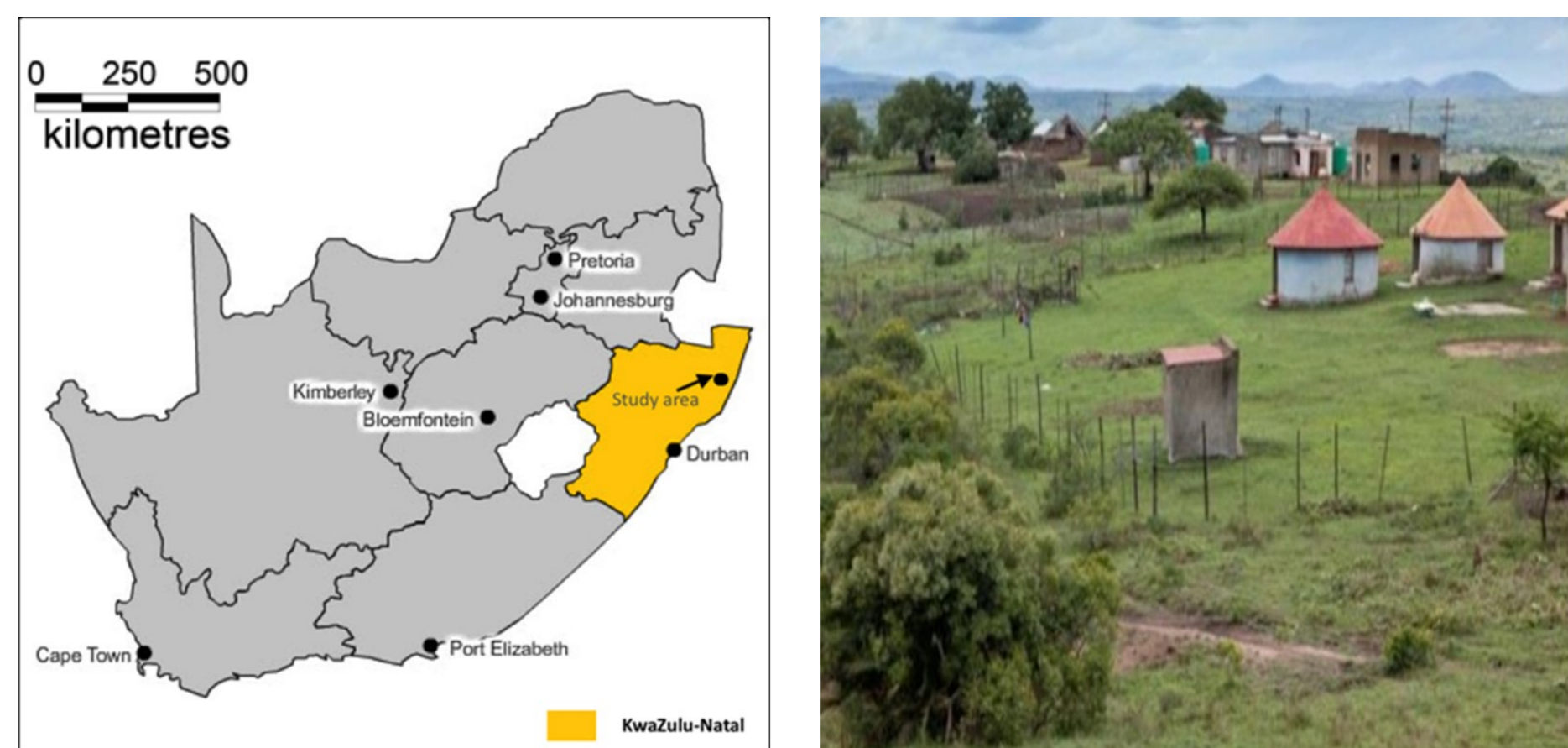


Figure 1: Map showing study site (in yellow) and an image of a typical homestead in the area.

Data collection

We conducted a respondent-driven sampling (RDS) bio-behavioural survey with 200 FSW older than 18 years; residing or working within the study site.

We identified 7 FSWs seeds across all the FSWs locations and venues identified during a mapping exercise in the study area.

We administered a survey on an electronic tablet using REDCAP software to understand types of sex work and partnerships, sexual risk, and unmet health needs.

We collected samples for HIV antigen/antibody and viral load testing and vaginal self-taken swabs or urine for CT and TV testing using Xpert® molecular tests.

Referral for treatment and care was provided through existing adolescent and youth friendly clinical research study services.

Findings

Between November 2021 and June 2022, we recruited 201 FSWs with seeds recruiting up to 15 waves.

There is evidence of homophily by age (Homophily=1.34, p=0.004) indicating FSW were likely to recruit peers of same-age and or younger.

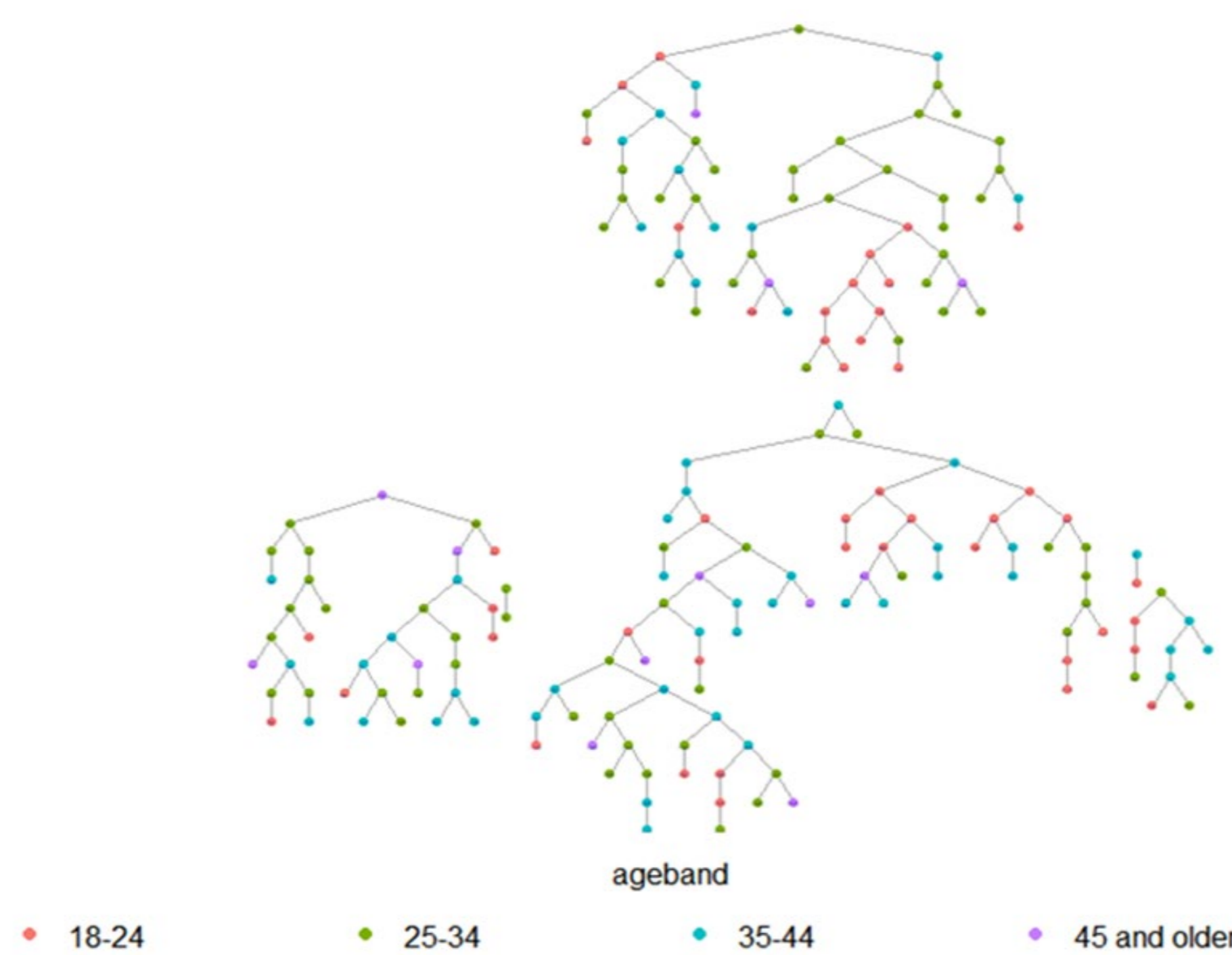


Figure 2: Diagram showing FSW recruitment trees by age

Table 1. Sociodemographic and interpersonal factors of FSW

	Total cohort (n=201)	With any STI (n= 69)
Sociodemographic factors		
Age, median (IQR)	31.4 (25.2-36.9)	31.2 (26.4 - 35.2)
Median age of entry into sex work: median (IQR)	23 (20 - 30)	23 (20 - 30)
Recent sex work initiation(≤3yrs)	65 (32.3%)	20 (29.0%)
Education		
No formal schooling	1 (0.5%)	0 (0.0%)
Primary school	17 (8.5%)	7 (10.3%)
Some secondary school	104 (52.0%)	37 (54.4%)
Matric	76 (38.0%)	23 (33.8%)
College/tertiary	2 (1.0%)	1 (1.5%)
Food insecurity		
	132 (66.3%)	49 (72.1%)
Interpersonal factors		
i. Sexual violence		
Forced sex by clients/intimate partner	14 (7.0%)	6 (8.7%)
Sex while incapacitated by client	6 (3.0%)	3 (4.3%)
Sex while incapacitated by intimate partner	8 (3.6%)	2 (3.0%)
ii. Sexual behaviors		
- Paying clients		
Number of paying clients in a week: median (IQR)	2 (1 - 3)	2 (1 - 3)
Any condomless sex with clients	43 (21.4%)	20 (29.0%)
Unprotected vaginal sex with clients (n=141)	22 (15.6%)	12 (21.4%)
Unprotected anal sex with clients (n=22)	7 (29.2%)	2 (28.6%)
- Non-paying intimate partner(s)		
Number of male intimate partners: median (IQR)	1 (1 - 3)	1 (1 - 3)
Any condomless sex with intimate partner(s)	94 (52.8%)	34 (54.8%)
Unprotected vaginal sex with intimate partner(s) (n=43)	9 (20.9%)	4 (23.5%)
Unprotected anal sex with intimate partner(s) (n = 10)	7 (70.0%)	2 (50.0%)
Alcohol use		
Once a month or less	50 (24.9%)	16 (23.2%)
2 to 4 times a month	50 (24.9%)	19 (27.5%)
2 to 3 times a week	40 (19.9%)	12 (17.4%)
4 or more times a week	30 (14.9%)	13 (18.3%)

- Median age of FSW was 31 years; 52% had some secondary school education and 66% were from food insecure households
- 34.3% had any curable STI (CT/NG/TV), of these
 - 8.7% reported experienced sexual violence by their clients/sexual partners
 - 29.0% and 54.8% reported ever having any condomless sex with clients and intimate partners respectively.

Self reported STI

Regardless of laboratory test results, 112 (55.7%) self-reported any STI symptoms and 48 (42.9%) reported completing STI treatment in past 12 months.

Table 2: STI prevalence

	Unweighted	Survey-weighted
Any STI	34.3%	30.0% (23.9%, 37.0%)
Chlamydia	18.7%	16.3% (11.6%, 22.3%)
Gonorrhoea	8.8%	7.9% (4.8%, 12.8%)
Trichomonas vaginalis	22.4%	18.6% (13.6%, 24.9%)
HIV	62.0%	60.8% (53.3%, 67.9%)
Risk of acquirable HIV	81.6%	82.7% (72.2%, 89.8%)
PrEP uptake	2.6%	2.8% (0.7%, 11.0%)

- Weighted STI prevalence was high (30.0%), particularly HIV (62%).
- Risk of acquiring HIV (defined as having any sex without a condom i.e condomless sex and not on PrEP) was also high more than 80%, with very low PrEP uptake (2.8%) among FSWs.
- Presence of STI was highest in those aged 25-34years (Fig 3)

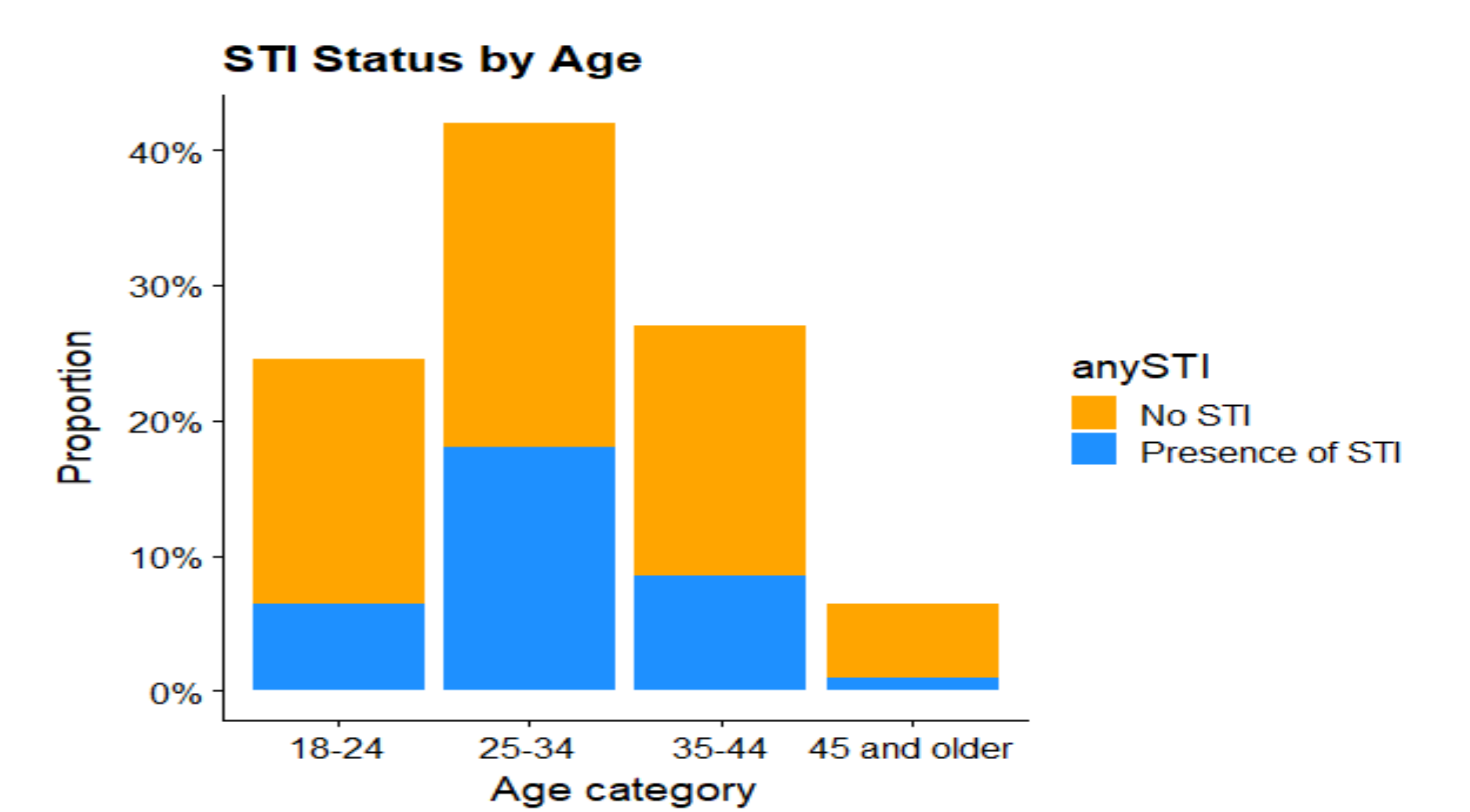


Figure 3: STI by Age

- The most common type of STI across all ages was Trichomonas vaginalis, followed by Chlamydia (Fig 4).

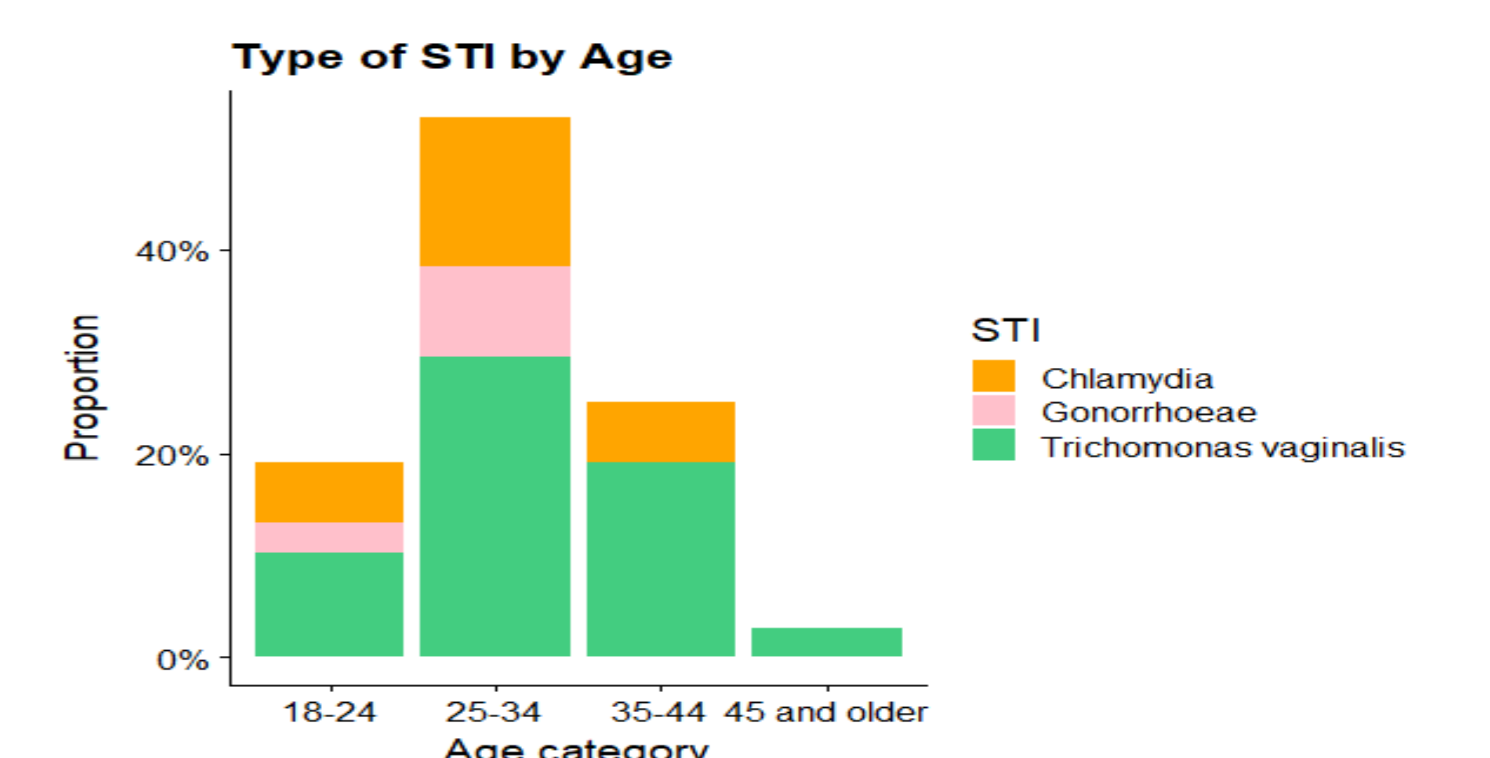


Figure 4: Type of STI by age

- HIV prevalence is high but almost all FSWs are on ART and virally suppressed. *1 participant did not have viral load data
- Only 2 FSWs were on HIV pre-exposure prophylaxis (PrEP) (Fig 5).

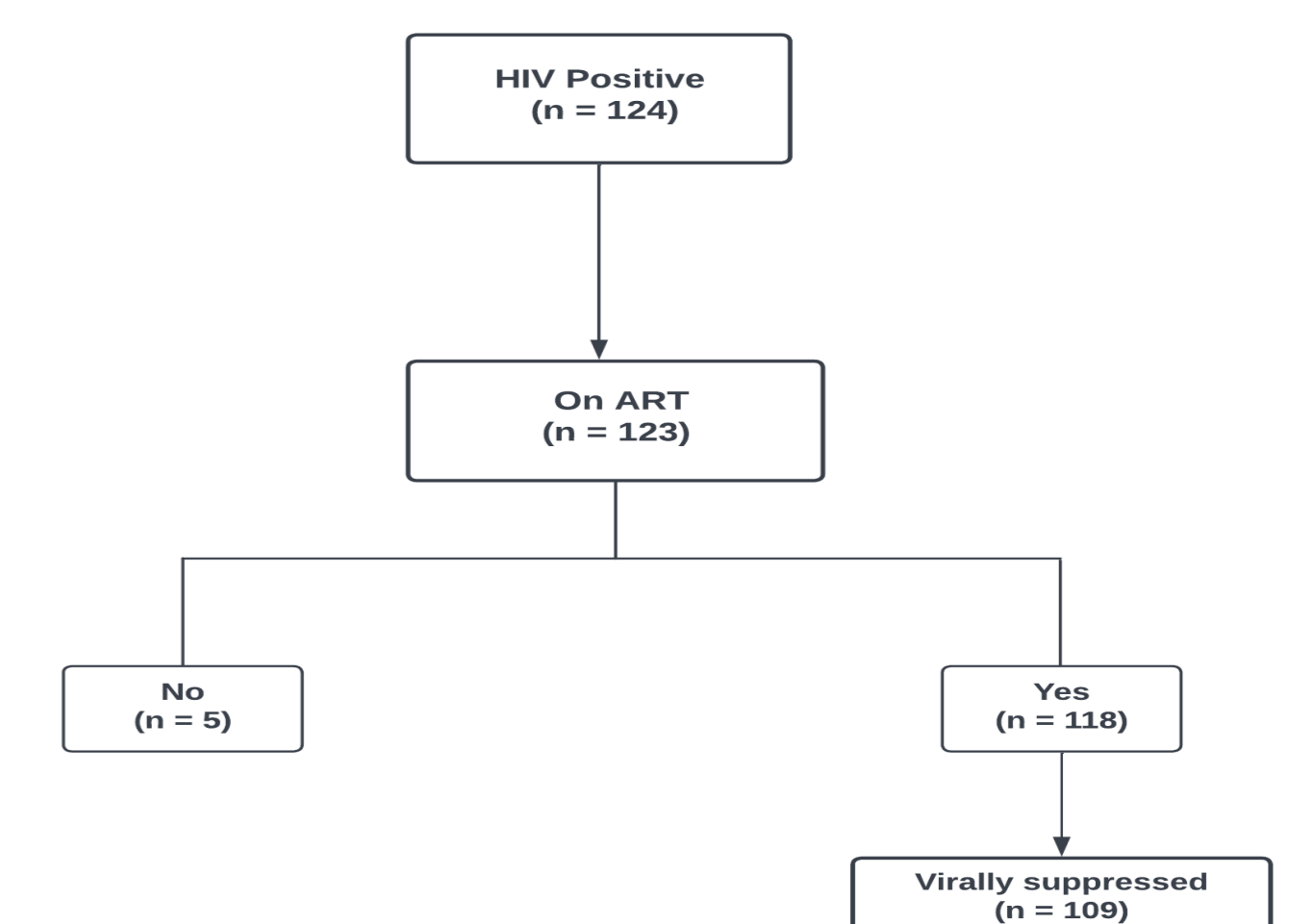


Figure 5: HIV prevalence and ART use

Conclusion

FSWs have a very high STI and HIV prevalence in this poor rural setting where there are currently minimal services targeted at FSWs. Whilst ART uptake is high and almost all FSWs were virally suppressed, access to HIV prevention and sexual health services is suboptimal. Models of differentiated care that improve access to condoms, STI diagnosis and treatment, and PrEP for FSWs in rural high HIV burden settings should be evaluated.

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