HIV Seroprevalence, Incidence, and Viral Suppression among Ugandan Males with Female Bar and Sex Worker Partners

Xinyi Feng[1], Gertrude Nakigozi[2], Caitlin E. Kennedy[3], Fred Nalugoda[2], Godfrey Kigozi[2], Robert Ssekubugu[2], Larry W Chang[1,2,3], Andrea Wirtz[3], Arthur G. Fitzmaurice[4], Hadijja Nakawooya[2], Grace Kigozi[2], Ronald M Galiwango[2], Steven J Reynolds[1,5], Aaron A. R. Tobian[1,3], Joseph Kagaayi[2], Kate Grabowski[1,3]

1122

BACKGROUND

- Female bar and sex workers (FBSWs) in Eastern Africa experience a high burden of HIV.
- However, there are limited population-level data on HIV seroprevalence, incidence, and viral suppression among their male partners.

METHODS

- Men who have sex with FBSWs were identified through longitudinal population-based HIV surveillance in southern Uganda via the Rakai Community Cohort Study between 2013 and 2020.
- Surveillance was conducted across four survey rounds in four high HIV prevalence (>35%) Lake Victoria fishing communities and 37 moderate HIV prevalence (~12%) inland agrarian and trading communities.
- The primary exposure of interest was self-reported sex in the past year with an FSW and/or FBW partner.
- Primary outcomes included laboratory-confirmed HIV seropositivity, incident infection, viral suppression (<200 copies/ml), and population prevalence of HIV viremia.
- Prevalence and incidence rate ratios (PR, IRR) were estimated using univariable and multivariable Poisson regressions with 95% confidence intervals (95% CIs).

RESULTS

- **17,438** male participants contributed **35,273** visits, with **2,420 (13.9%)** self-reporting FBSW partners at ≥1 visit.
- Men with FBSW partners tended to be **older, have less education and lower incomes, and be never married** compared to men without FBSW partners.
- Baseline HIV seroprevalence was **3.16 times higher** in men with FBSW partners (32.6% vs. 10.3%; 95% CI: 2.93-3.40) and increased with the number and duration of FBSW partnerships (**Figure 1**).
- Over 27,396 person-years, 154 HIV seroconversions occurred. HIV incidence was **4.37 times higher** in men with FBSW partners compared to those without (1.93 vs. 0.44/100 PYs; 95% CI: 3.04-6.16) (**Table 1**).
- Population prevalence of HIV viremia was **1.6 times higher** (95% CI: 1.41-1.84) among men with FBSW partners compared to those without after adjustment.
- Among 6,910 HIV-seronegative men in survey round 19, only **5.7%** reported current PrEP use.

In Uganda, **13.9%** of men reported engaging in sex with FBSW partners, experiencing a notably **higher HIV seroprevalence** (32.6% vs. 10.3%) and an **increased risk of HIV acquisition** (1.93 vs. 0 .44 per 100 PYs) compared to the general male population in the same communities.

Prioritizing this group of men into tailored HIV prevention strategies, such as the promotion and uptake of PrEP, is crucial for reducing the HIV burden in this region.

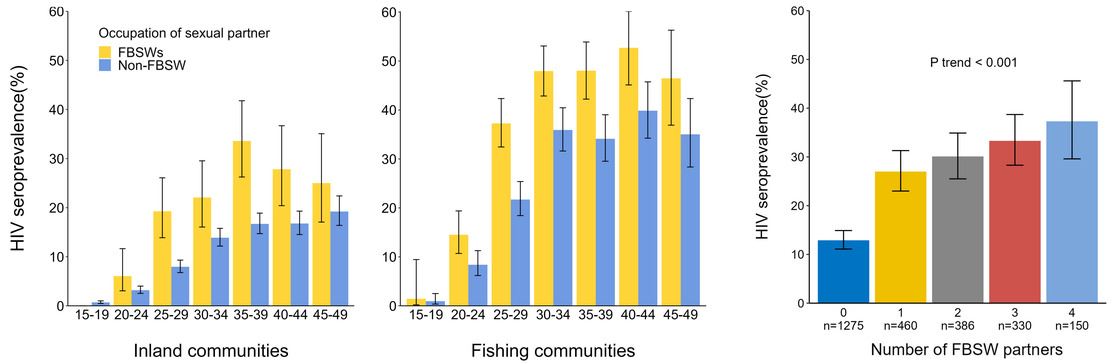


Figure 1. HIV seroprevalence by age group and community type among all male participants (N=17,438), and by number of FBSW partners among male participants reported four sexual partners during the past year (N=2,601).

Table 1. Incidence rates (IR) and ratios (IRR) of HIV seroconversion by the self-reported history of FBSW partner engagement (N=8,078)

Population	IR per 100 PY (cases/pys)	IRR (95% CI)	*P*-value	Weighted age-adjusted IRR (95%CI)	*P*-value
Overall	0.56 (154/27,396)				
Without FBSW partner	0.44 (0.36-0.53)	ref	-	ref	-
With FBSW partners	1.93 (1.39-2.59)	4.37 (3.04-6.16)	<0.001	4.40 (3.04-6.24)	<0.001
Inland community	0.36 (0.28-0.45)				
Without FBSW partner	0.32 (0.24-0.40)	ref	-	ref	-
With FBSW partners	1.49 (0.77-2.61)	4.73 (2.44-8.42)	<0.001	4.72 (2.40-8.51)	<0.001
Fishing community	1.39 (1.10-1.75)				
Without FBSW partner	1.11 (0.81-1.49)	ref	-	ref	-
With FBSW partners	2.17 (1.47-3.08)	1.95 (1.22-3.07)	0.004	1.95 (1.21-3.10)	0.005
Round 16-17	0.61 (0.50-0.73)				
Without FBSW partner	0.49 (0.39-0.61)	ref	-	ref	-
With FBSW partners	2.04 (1.35-2.94)	4.15 (2.66-6.29)	<0.001	4.05 (2.58-6.16)	<0.001
Round 18-19	0.47 (0.34-0.64)				
Without FBSW partner	0.34 (0.22-0.49)	ref	-	ref	-
With FBSW partners	1.75 (0.98-2.88)	5.20 (2.70-9.64)	<0.001	**6.00 (3.03-11.44)**	<0.001

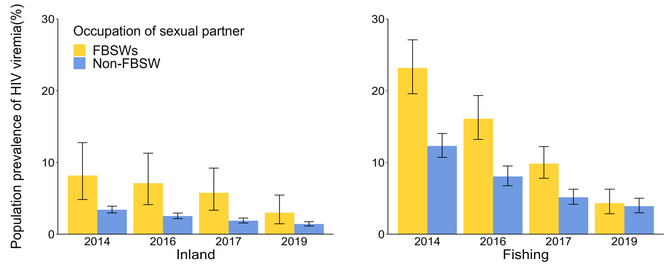


Figure 2. Population prevalence of HIV viremia by FBSW partner engagement

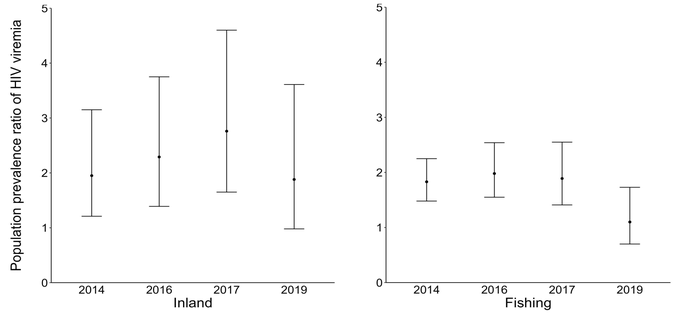


Figure 3. Population prevalence ratio of HIV viremia comparing men with FBSW partners to those without adjusting for age

CONCLUSIONS

- Men with FBSW partners have significantly **higher HIV seroprevalence and incidence**, while their **PrEP uptake was alarmingly low**, with only ~6% reporting current use.
- Despite improved viral suppression among all men living with HIV over the study period, men with FBSW partners exhibited a **higher population prevalence of HIV viremia** due to their high background seroprevalence.
- Including men with FBSW partners as a **key population** in prioritized HIV prevention and control strategies could play a pivotal role in reducing HIV incidence among them and their sexual partners.

ADDITIONAL KEY INFORMATION

Affiliations
1 Johns Hopkins University School of Medicine, Baltimore, MD, USA
2 Rakai Health Sciences Program, Kalisizo, Uganda
3 Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA
4 Division of Global HIV & TB, Global Health Center, US Centers for Disease Control and Prevention, Kampala, Uganda
5 National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, USA

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Author Contact Information

Xinyi Feng, xfeng29@jhu.edu