

**Trends in HIV incidence Among Female Sex Workers and Men  
Who Have Sex with Men in Nairobi, Kenya**

by

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22MP203

Master's Capstone Report submitted in partial satisfaction of the

requirements for the degree of

Master of Public Health

at

St. Luke's International University

Graduate School of Public Health

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2023/02/10

## Abstract

**Background:** HIV/AIDS is a generalized epidemic in Kenya with a prevalence of 4.8%.

However, the Female sex workers (FSW) and Men who have Sex with Men (MSM) are disproportionately burdened at 29.3% and 18.2% respectively. 30% of all new infections in Kenya are attributable to these populations. Our study aims to identify the trends in HIV incidence and identify characteristics associated with the rate of infection among FSW and MSM in Nairobi Kenya, which could inform better programmatic interventions.

**Methods:** Data on demographics and HIV testing history were collected at the Sex Workers Outreach Program (SWOP) from 2009 and 2021 during routine program operations. We included records with a negative HIV test at enrolment and defined entry into the cohort. Censor was defined as the last negative test. For the seroconverts, the mid-point of the last negative test and first HIV-positive test was used as censor. We compared time to HIV positivity between the MSM and FSW using Kaplan Meir and did log-rank test for the comparison. We used multiple poisson regression to estimate the incidence rate ratios. We used risk population, calendar year, age category, and the interaction between age and risk population as covariates in our model.

**Results:** A steady decline in HIV infection was observed from 2009 to 2019 but an increase was observed in 2020 and 2021. The crude incidence rate was 1.46 (95% CI: 1.29 - 1.65) cases per 100 person-years. The incidence rate among MSM was 8.1 (95% CI: 6.7- 9.7) per

100 person-years and 0.8 (95% CI: 0.7- 1.0) per 100 person years of follow-up among the FSW. In multivariate analysis, MSM had a 16-fold risk of HIV infection compared to FSW. For every successive year since 2009, the risk of HIV infection declined (0.73 -95% CI: 0.71, 0.75). Increase in age was associated with decrease in risk of HIV infection in both MSM and FSW.

**Conclusion:** A declining trend in HIV incidence rate was observed over the past decade in Kenya. However, continued and accelerated efforts are needed to target the FSW and MSM to achieved further meaningful reductions in HIV infections.

**Keywords:** Female sex workers, Men who have Sex with men, HIV/AIDS, Kenya