

Factors associated with behaviour change and time to infection with *Neisseria gonorrhoeae* and *Chlamydia trachomatis* in an observational cohort of sex workers in Nairobi, Kenya.

Nguti, R.¹, Mugo, N.¹, Kwatampora, J.¹, Kimani, P.², Muthama, E.² and Cohen, C.³

¹University of Nairobi, P.O. Box 30197, Nairobi, Kenya, ²Kenya Institute of Medical Research, Nairobi, Kenya, ³University of San Francisco, California, USA.

Study Background

The clinical objective of the study was to understand the host mucosal and systemic immune responses to *Neisseria gonorrhoeae* (GC) and *Chlamydia trachomatis* (CT) infections and their interaction with HIV infection.

Objective

To determine the associations of changes in sexual behavior with incident GC and CT in an observational cohort of female sex workers (FSWs).

Methods

- Eligible FSWs aged 18 years and above were enrolled into a 4 year observational cohort.
- At enrollment and every bimonthly visit, socio-demographic and sexual history were collected. For this study, associations and trends were calculated for condom usage and average number of clients per week.
- Cervical samples were collected for *N. gonorrhoeae* and *C. trachomatis* molecular testing every 2 months.
- HIV and syphilis serologies were performed biannually.

Results I

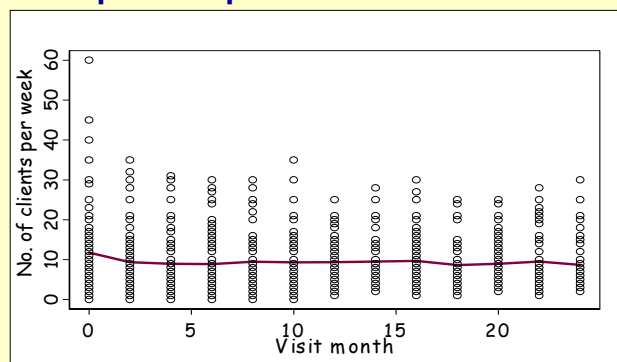
- 299 women recruited for a total follow-up time of 474.7 woman-years (mean 1.8 ± 1.0 years, range: 0.1 – 3.8).
- Mean age was 23.9 ± 5.3 while mean number of clinic visits per woman was 8.7 ± 5.3 (range: 1 – 23)

Results II

GC/CT Incidence

- GC and/or CT detected in 72 (15.2%) women for an incidence of 28.0 infections per 100 woman-years.

Figure 1. Distribution of average number of clients per week per individual FSW.



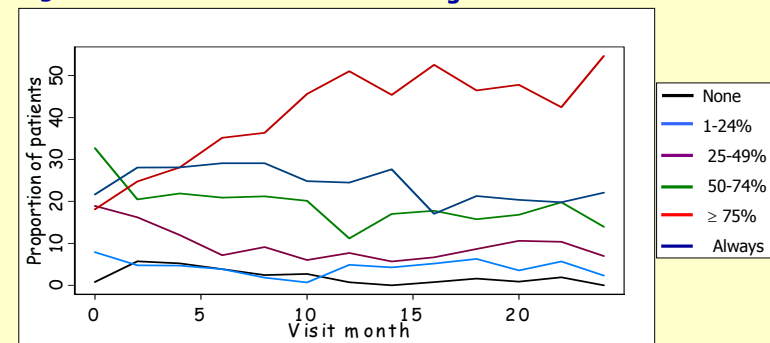
Factors associated with number of clients

Characteristic	Estimate (95% c.i.)
Average number of clients	7.92(4.75,11.09)
Time	-0.22(-0.35, -0.09)
Age	-0.15(-0.23, -0.06)
HIV Status	
- Positive	ref
- Negative	1.08 (0.11,2.05)
Condom usage	
None	ref
1-24%	4.86 (2.29, 7.46)
25-49%	6.18 (3.99, 8.36)
50-74%	6.57 (4.52, 8.62)
≥ 75%	5.34 (3.37, 7.31)

Factors associated with GC/CT recurrence

Characteristic	HR (95% c.i.)
Age	0.96 (0.9, 0.996)
Prostitution duration	0.91 (0.84,0.98)
Average weekly clients	1.04 (1.01,1.06)
Condom usage	
< 75%	ref
≥ 75%	0.63 (0.46, 0.86)

Figure 2. Distribution of condom usage.



Factors associated with condom usage

Characteristic	OR (95% c.i.)
Time	1.18 (1.08, 1.28)
HIV Status	
- Positive	- ref
- Negative	1.51 (1.08, 2.12)

Conclusions

- Female sex workers (FSWs) enrolled in an observational cohort increased condom use and decreased their number of clients per week over the course of the study.
- Increased condom use and decreased number of clients per week were associated with a reduced risk of incident GC and/or CT infections.
- It is important that condom promotion campaigns aimed at FSWs in Kenya, work to find ways to rapidly increase condom use among those who are HIV-infected.