HIV testing and undiagnosed fraction among adolescent girls and young women by engagement in sex work in Mombasa, Kenya

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Introduction and Objectives

- 33% of new HIV infections were acquired by adolescent girls and young women (AGYW) aged 14-24 years in Kenya in 2015[1]
- 3% of AGYW were estimated to be living with HIV as of 2012[2]
- Disproportionately higher levels of undiagnosed HIV among AGYW when compared to total population in Kenya in 2012[2]
  - **Total population (ages 15-64)**: 46.9% of people living with HIV were diagnosed and aware
  - **AGYW (ages 14-24)**: ≈25 % of people living with HIV were diagnosed and aware
- 78.6% of AGYW was reported to have undergone HIV testing compared to 87.9% of adults aged 25–49 years[2]

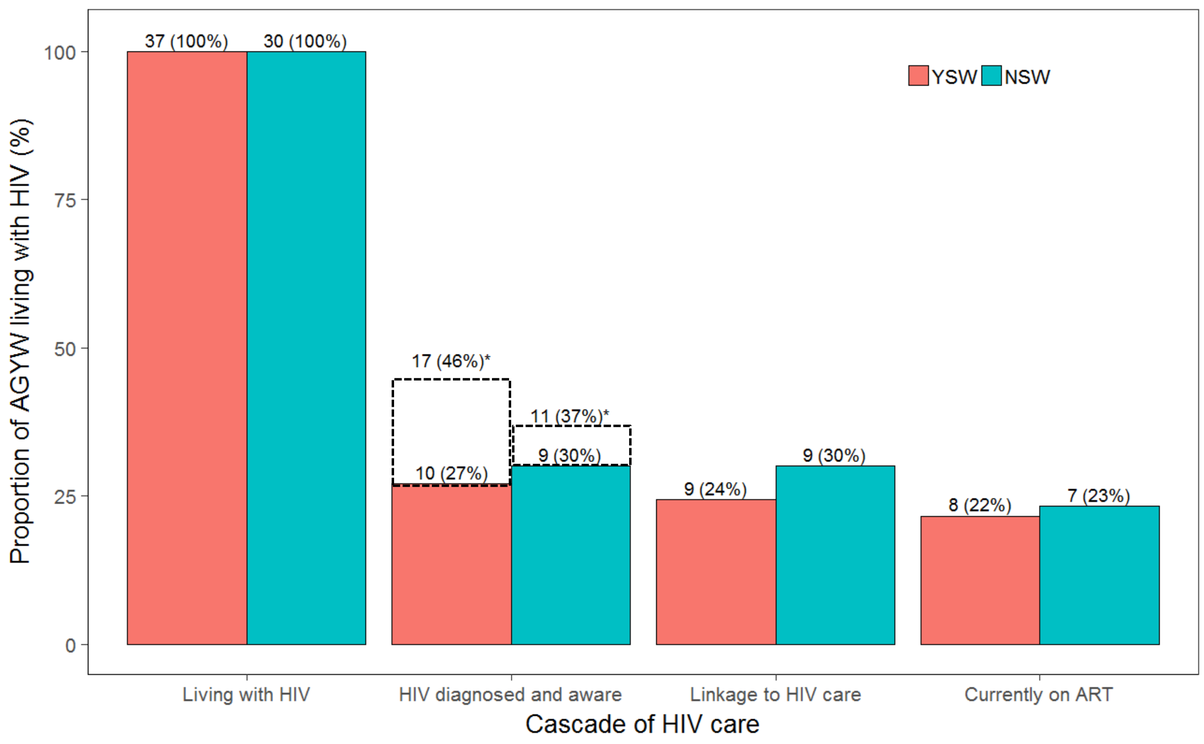
Aims: i) Examine the early elements of HIV cascade of care; ii) Compare patterns of HIV testing among AGYW by their engagement in sex work; and iii) Identify determinants of HIV testing among AGYW by their engagement in sex work

Methods

- Secondary data from a 2015 cross-sectional bio-behavioral survey of 1,299 sexually active cis-females aged 14-24 years living in Mombasa, Kenya
- Sampling → Probability sampling among women aged 14-24 years who congregate at the sex work hotspots in Mombasa[3]
  - Two groups:
    - **Young women engaged in sex work (YSW):** self-identified as a sex worker; **or** reported ever soliciting or receiving money, gifts, or other goods in exchange for sex, where the price or commodity was negotiated prior to sex
    - **Not engaged in sex work (NSW):** never had a sexual partnership where there was an expectation of money, gifts or other resources in exchange for sex; **or** had ≥1 sexual partnerships with expectation of money, gifts or other resources in exchange for sex, but the price of sex was not negotiated upfront
  - Sampling probability proportional to the estimated sizes of 6,127 [range: 4,793 to 7,462] YSW and 9,508 [range: 7,379 to 11,635] of NSW
- **Outcomes**: i) Cascade of HIV care among people living with HIV; ii) HIV testing in the past year (excluding those diagnosed >1 year ago)
- **Analyses**: We compared the cascade of HIV care among YSW vs. NSW using Chi-squared tests, and examined determinants of HIV testing in the past year using univariate and multivariate logistic regression
- We triangulated the number of AGYW that could be diagnosed via hotspot-based HIV testing programmes

Results

Figure 1. Comparison of cascade of HIV care among AGYW aged 14-24 years living with HIV based on engagement in sex work in Mombasa, Kenya



Abbreviations: ART (anti-retroviral treatment)

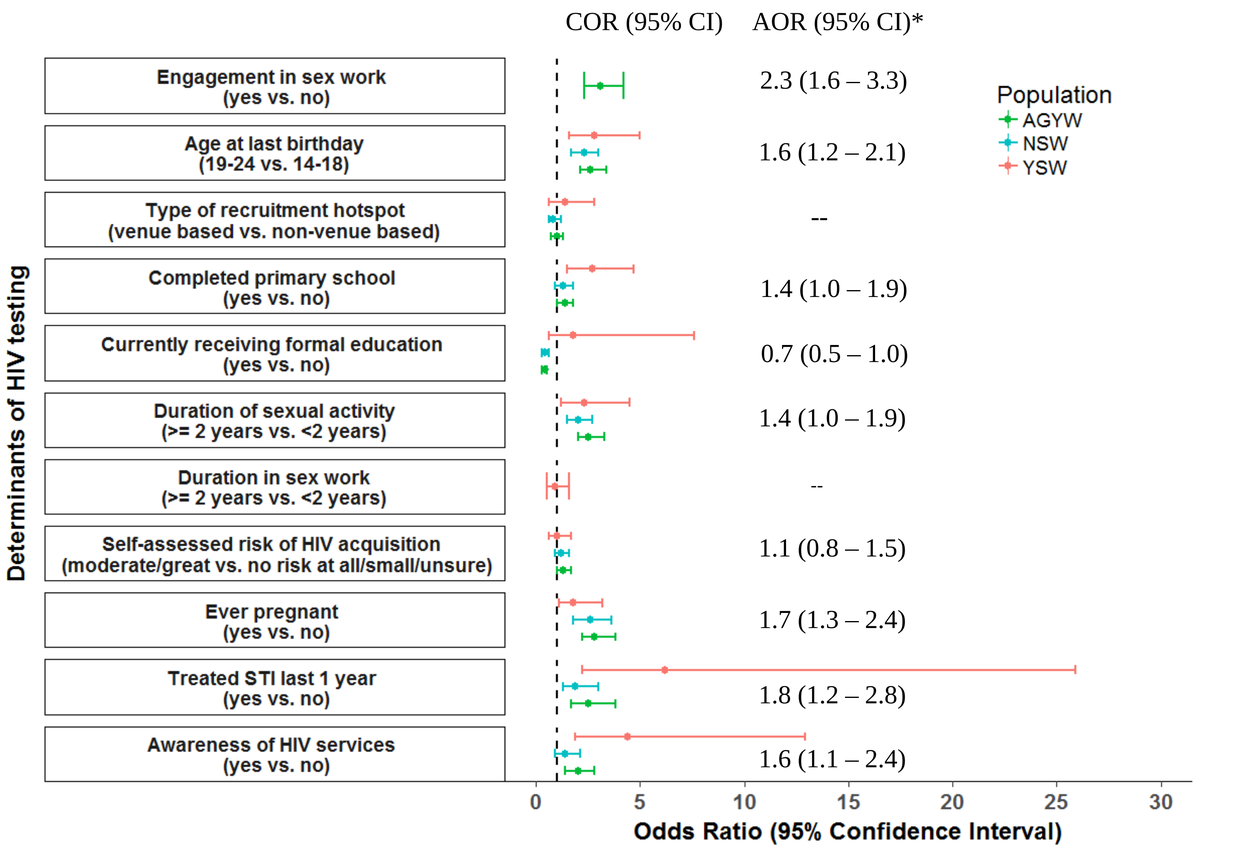
* If classified participants unwilling to disclose their HIV status as diagnosed and aware

Table 1. Characteristics of study participants stratified by their engagement in sex work in Mombasa, Kenya (N = 1299)

Characteristics (N (%))	Overall (N = 1299)	YSW (N = 408)	NSW (N = 891)	P-value
Age at last birthday				
14-18	522 (40.0%)	117 (28.7%)	405 (45.5%)	< 0.001
19-24	777 (60.0%)	291 (71.3%)	486 (54.5%)	
Type of recruitment hotspot				
Venue based[a]	1069 (82.0%)	348 (85.3%)	721 (80.9%)	0.06
Non-venue based[b]	230 (18.0%)	60 (14.7%)	170 (19.1%)	
Completed primary school	994 (76.5%)	284 (69.6%)	710 (79.7%)	< 0.001
Currently receiving formal education	266 (20.5%)	33 (8.1%)	233 (26.2%)	< 0.001
Duration of sexual activity				
<2 years	426 (34.9%)	63 (16.5%)	363 (43.2%)	< 0.001
>=2 years	796 (65.1%)	319 (83.5%)	477 (56.8%)	
Duration in sex work				
<2 years	200 (49.0%)	200 (49.0%)	--	
>=2 years	208 (51.0%)	208 (51.0%)	--	
Self-assessed risk of HIV acquisition[c] (N=1283)				
No risk at all/small/unsure	745 (58.0%)	222 (55.1%)	316 (35.9%)	< 0.001
Moderate/Great	538 (42.0%)	181 (44.9%)	564 (64.1%)	
Ever pregnant	493 (38.0%)	234 (57.4%)	259 (29.1%)	< 0.001
Treated STI last 1 year	223 (17.0%)	91 (22.3%)	132 (14.8%)	0.001
Awareness of HIV services	247 (19.0%)	105 (25.7%)	142 (15.9%)	< 0.001
Ever received an HIV test	1121 (86.0%)	383 (93.9%)	738 (82.8%)	< 0.001
Tested for HIV in the last 1 year[d]	924 (72.0%)	345 (85.4%)	579 (65.4%)	< 0.001

Abbreviations: STI (sexually transmitted infection); [a]Venue-based hotspots include bars, night clubs, hotels, guest houses, lodges, restaurants, local brew dens, sex dens and brothels; [b]Non-venue based hotspots include streets and other public places; [c]Excluding individuals who disclosed they are living with HIV; [d]Excluding individuals who were diagnosed with HIV >1 year ago

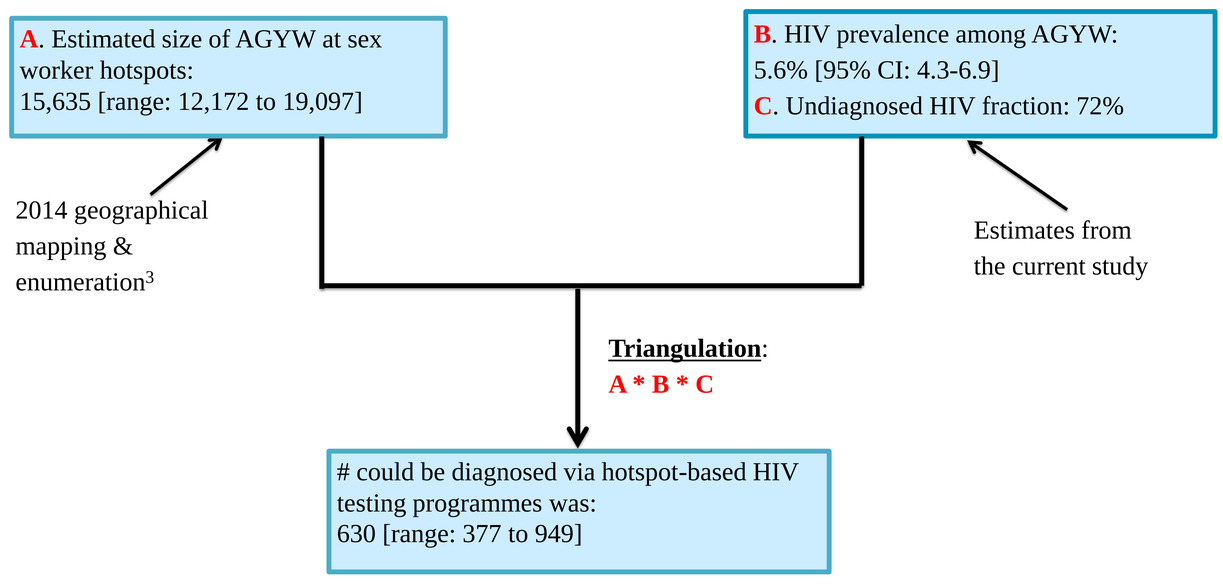
Figure 2. Univariate and multivariable analyses of determinants associated with HIV testing in the past year among AGYW aged 14-24 years in Mombasa, Kenya



Abbreviations: AOR (adjusted odds ratio); CI (confidence interval); COR (crude odds ratio)

* AOR based on the model among AGYW adjusting for all the significant covariates (COR significance of p<0.1)

Figure 3. Triangulating the number of AGYW living with HIV who could be diagnosed via hotspot-based HIV testing programmes in Mombasa



Conclusions

- HIV testing programmes are often designed to reach female sex workers and/or they are designed to target the wider population of AGYW, but not both
- Shared determinants of HIV testing suggest that reaching high-risk AGYW via hotspot-based HIV testing programmes could fill gaps left by traditional HIV prevention and testing services
- Delivering hotspot-based HIV testing programmes could be an effective strategy to increase HIV testing and HIV diagnosis among individuals who were previously unaware of their status

References

1. Ministry of Health. Kenya AIDS response progress report 2016. 2016.
2. Ministry of Health. Kenya AIDS indicator survey 2012. 2014.
3. Cheuk E, Isac S, Musyoki H. Adapting methods of key population programmatic mapping and enumeration to inform HIV prevention programs for adolescent girls and young women. *JMIR*. 2018. Preprints.