

Venue-Based HIV
Testing at Sex Work
Hotspots to Reach
Adolescent Girls and
Young Women
Living With HIV: A
Cross-sectional
Study in Mombasa,
Kenya

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IMPLEMENTATION SCIENCE

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Venue-Based HIV Testing at Sex Work Hotspots to Reach Adolescent Girls and Young Women Living With HIV: A Cross-sectional Study in Mombasa, Kenya

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Background: We estimated the potential number of newly diagnosed HIV infections among adolescent girls and young women (AGYW) using a venue-based approach to HIV testing at sex work hotspots.

Received for publication December 9, 2019; accepted March 15, 2020.

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Supported by the Canadian Institutes of Health Research operating Grant MOP13044 and foundation Grant FDN 13455. S.M. is supported by a Canadian Institutes of Health Research (CIHR) and Ontario HIV Treatment Network New Investigator Award. M.L.B. is supported by a CIHR New Investigator Award. The funders had no role in study design; in the collection, analysis, and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication. The authors have no funding or conflicts of interest to disclose.

H.M., L.W., and S.M. conceptualized and designed the study and developed the plan of analyses. M.L.B., S.M., H.K.M., and P.B. developed the study tools; M.L.B., P.G., G.M., H.K.M., and P.B. led the hotspot enumeration and Transitions study data collection. F.C. and P.S. led the serological testing and developed the reference testing algorithms. All authors contributed to interpretation of results and manuscript editing. S.M. and H.M. drafted the manuscript. H.M. conducted the analyses with input from L.W. and S.M.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (www.jaids.com). Correspondence to: Sharmistha Mishra, MD, MSc, PhD, MAP-Centre for Urban Health Solutions, St. Michael's Hospital, University of Toronto, 200 Victoria Street, Toronto, ON M5B 1T8, Canada (e-mail: sharmistha.mishra@utoronto.ca).

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J Acquir Immune Defic Syndr • Volume 84, Number 5, August 15, 2020

Methods: We used hotspot enumeration and cross-sectional biobehavioral survey data from the 2015 *Transitions Study* of AGYW aged 14–24 years who frequented hotspots in Mombasa, Kenya. We described the HIV cascade among young females who sell sex (YFSS) (N = 408) versus those young females who do not sell sex (YFNS) (N = 891) and triangulated the potential (100% test acceptance and accuracy) and feasible (accounting for test acceptance and sensitivity) number of AGYW that could be newly diagnosed through hotspot-based HIV rapid testing in Mombasa. We identified the profile of AGYW with an HIV in the past year using generalized linear mixed regression models.

Results: N = 37365 (10.1%) YFSS and N = 30828 (3.6%) YFNS were living with HIV, of whom 27.0% (N = 10237) and 30.0% (N = 930) were diagnosed and aware (P = 0.79). Rapid test acceptance was 89.3%, and sensitivity was 80.4%. There were an estimated 15,635 (range: 12,172–19,097) AGYW at hotspots. The potential and feasible number of new diagnosis was 627 (310–1081), and 450 (223–776), respectively. Thus, hotspot-based testing could feasibly reduce the undiagnosed fraction from 71.6% to 20.2%. The profile of AGYW who recently tested was similar among YFSS and YFNS. YFSS were 2-fold more likely to report a recent HIV test after adjusting for other determinants [odds ratio (95% confidence interval) 2.2 (1.5 to 3.1)].

Conclusion: Reaching AGYW through hotspot-based HIV testing could fill gaps left by traditional, clinic-based HIV testing services.

Key Words: sex work, adolescent girls and young women, HIV testing, hotspots, HIV cascade

J Acquir Immune Defic Syndr 2020;84:470–479

INTRODUCTION

Adolescent girls and young women (AGYW) aged 15–24 years face a disproportionate risk of HIV acquisition in sub-Saharan Africa (SSA).¹ In Kenya, AGYW comprise 18.4% of the adult population but acquired 23.7% of new infections in 2017, such that, by 2018, an estimated 2.6% of AGYW in Kenya were living with HIV^{2–5}; yet, most infections remain undiagnosed.⁴ The most recent data available on AGYW suggest that, in 2012, only 25% of AGYW living with HIV were diagnosed and aware of their HIV status.⁴ The consequence of undiagnosed HIV among AGYW

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Year of Publication: 2020

Access Resource Here: