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PhD thesis title:

Integrated Biological and Behavioural Assessment of Human Immunodeficiency Virus and Sexually Transmitted Infections among Tertiary Student Men Who Have Sex with Men in Nairobi, Kenya: Project Bespoke

Abstract

Aims: The aims of this study were to: assess the appropriateness and acceptability of using respondent-driven sampling (RDS) as a strategy for recruiting tertiary student MSM (TSMSM) in a HIV/STIs bio-behavioural survey, estimate HIV/STIs prevalence and associated risk factors among TSMSM, explore experiences of TSMSM with access and use of health services, and assess healthcare providers' (HCPs') attitudes and perspectives towards care for TSMSM.

Methods: The study was done in Nairobi, Kenya. During the first phase in September and October 2020, formative in-depth qualitative interviews were held with key personnel working in MSM-friendly health facilities ($n=3$), and TSMSM peer leaders ($n=13$), to assess the appropriateness and acceptability of using RDS to recruit TSMSM in a bio-behavioural survey. Subsequently, during the second phase in February and March 2021, six TSMSM selected from the 13 in the first phase, started off the RDS recruitment of another 242 TSMSM who participated in a cross-sectional bio-behavioural survey to estimate HIV/STIs prevalence and associated risk factors. The survey was digitally self-administered on REDCap® platform. Participants received serological testing for HIV and *Treponema pallidum*, and pooled molecular testing for *Chlamydia trachomatis*, *Mycoplasma genitalium*, *Neisseria gonorrhoeae*, and *Trichomonas vaginalis* using urethral, anorectal and oropharyngeal samples. The third phase in September 2021 involved qualitative work to assess health access and delivery for TSMSM. In-depth interviews were held with TSMSM ($n=22$) purposely selected from the TSMSM ($n=248$) who participated in the bio-behavioural survey. The interviews explored experiences of TSMSM with access and use of health services. During the same month, HCPs ($n=36$) took part in six focus group discussions to assess their attitudes and perspectives towards care for TSMSM. Qualitative data was analysed

thematically using NVivo v.11 (first phase) and v.12 (third phase), and quantitative data was analysed using Stata v.15 and RDS-Analyst v0.72 (second phase).

Results: Formative qualitative work demonstrated that RDS was both appropriate and acceptable for recruiting TSMSM in the bio-behavioural survey. The median age of TSMSM who participated in the bio-behavioural survey was 21 years (interquartile range 20-22 years). RDS-adjusted prevalence of HIV, at least one of the five STIs, chlamydia, gonorrhoea, *Mycoplasma genitalium* infection, trichomoniasis and latent syphilis were: 3.6%, 58.8%, 51.0%, 11.3%, 6.0%, 1.5% and 0.7%, respectively. Higher risk of HIV infection was independently associated with studying in private tertiary institutions, preferring a sex partner of any age, last sex partner being >25 years, meeting the last sex partner online and prevalent gonorrhoea infection. Inconsistent condom use, and the last sex partner being a regular partner were independently associated with testing positive for at least one of the five STIs. From the qualitative work in the last phase, TSMSM vocalized experiences of prejudice, stigma and discrimination in public and institution-based health facilities, but felt they were equitably handled in community pharmacies, private and MSM-friendly health facilities. A majority of HCPs articulated positive attitudes towards care for TSMSM, while a minority expressed discomfort and displayed attitudes that likely reflected on their lived biases as it related to offering care and services to TSMSM.

Conclusion: The demonstrated high HIV prevalence among TSMSM in Nairobi reflects the urgent need for tailored structural, biomedical and behavioural prevention interventions for this young key population. Structural interventions are required to address the environmental, social and economic factors that influence individual risk and protective behaviours in relation to HIV infection. Biomedical interventions such as pre-exposure prophylaxis are necessary to reduce the chances of transmission of HIV. The observed high prevalence of curable STIs calls for interventions to improve prevention, as well as prompt detection and treatment of these STIs. This is important because untreated STIs biologically potentiate the transmission and acquisition of HIV, and cause considerable morbidity on their own. Furthermore, there is a need for interventions that foster inclusive attitudes among, and improve the knowledge/skills of HCPs in tertiary institution-based health facilities, so as to make services more culturally competent, equitable and accessible for TSMSM.