

Sexual connectedness and HIV infection in disadvantaged communities around Cape Town

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The sexual network structure and the distribution of HIV remain inadequately understood, especially with regard to the role of concurrency and age disparity in relationships, and how these network characteristics correlate with each other and other risk factors. Additionally, sources of bias, such as social desirability bias and inaccurate recall, make it difficult to obtain valid, detailed information about sexual behaviour and relationship histories. The study we are currently conducting, aims to use novel research methods in order to determine whether HIV status is associated with age-disparity and sexual connectedness as well as to establish the primary behavioural and socio-demographic predictors of the egocentric and community sexual network structures.

To accomplish this, we are conducting a cross-sectional survey that uses a questionnaire exploring one-year sexual histories, with a focus on timing and age differences in relationships, as well as other risk factors such as unprotected intercourse and the use of alcohol and recreational drugs. We administer it in a safe and confidential mobile interview space, using audio computer-assisted self-interview (ACASI) technology on touch screen computers. The ACASI features a choice of languages—English, Afrikaans and Xhosa— and visual feedback of temporal information. The survey is taking place in three urban disadvantaged communities in the greater Cape Town area that have a high burden of HIV. The study communities participated in a

previous TB/HIV study, from which HIV test results will be anonymously linked to the survey dataset. Statistical analyses of the data will include descriptive statistics, linear mixed-effects models for the inter- and intra-subject variability in the age difference between sexual partners, survival analysis for correlated event times to model concurrency patterns, and logistic regression for association of HIV status with age disparity and sexual connectedness.

This study was designed in such a way that it facilitates more accurate recall of sensitive sexual history data and provides substantial insights into the relationship between key sexual network attributes and additional risk factors for HIV infection. Ultimately, we hope it will inform the design of context-specific HIV prevention programmes. For more information about the background and context of the study as well as about the study design, please see the reference below.

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Reference: Delva W, Beauclair R, Welte A, et al. Age-disparity, sexual connectedness and HIV infection in disadvantaged communities around Cape Town, South Africa: a study protocol. *BMC Public Health*. 2011;2(11):616.