QUANTIFYING SEXUAL MIXING BY HIV STATUS AND CONVECTION MIXING AND THE SOCIAL GEOGRAPHY

Data were from Methods using a balancing partnership approach. Network-level sexual mixing by HIV status and PrEP use do not account for attribute-concordance by chance. We quantified network-level sexual mixing by HIV status and PrEP use. After stratifying by respondents' HIV status (positive/negative/unknown) and P6M PrEP use (yes/no), we compared observed seroconcordance to that expected by chance among P6M-partnerships with known-status. Within HIV-negative discordant recent partnerships, we compared observed concordance in PrEP use at last sex to chance. Concordance by chance is calculated under proportionate-mixing assumption, which means the distribution of partnerships by partners' attributes equals that by respondents' attributes as a result of partnership balancing. We used chi-squared tests for all comparisons.

Results Of the 22,102 P6M-partnerships reported by 1881 respondents (17.0%, 74.5%, and 8.5% HIV-positive, negative and unknown, respectively), 60.2% comprised partners' of known-status. 64.3% of HIV-positive respondents' partnerships were HIV-positive (vs chance 24.6%, p<0.001). HIV-negative or status-unknown respondents had higher proportions of HIV-negative partners (87.0% and 87.5%, respectively, vs chance 75.4%, p<0.001). HIV-negative respondents on PrEP had a higher proportion of HIV-positive partners than those not on PrEP (20.6% vs 8.4%; p<0.001). HIV-negative respondents on PrEP had a higher proportion of HIV-negative partners on PrEP (55.8% vs 34.7%); those not on PrEP had a higher proportion of HIV-negative partners not on PrEP (78.6% vs 65.3%), than chance (p<0.001).

Conclusion Network-level serosorting and PrEP matching were evident after accounting for distribution of partnerships by chance. PrEP-mediated changes to mixing, such as less serosorting among MSM on PrEP, may indirectly influence the population-level HIV prevention impact of PrEP and should be included in the monitoring and evaluation of PrEP roll-out.

Disclosure No significant relationships.

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QUANTIFYING SEXUAL MIXING BY HIV STATUS AND PRE-EXPOSURE PROPHYLAXIS (PREP) USE AMONG MEN WHO HAVE SEX (MSM) WITH MEN

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Background Existing measures of preferential partner selection do not account for attribute-concordance by chance. We quantified network-level sexual mixing by HIV status and PrEP use using a balancing partnership approach.

Methods Data were from Engage, a cross-sectional survey of MSM ≥16 year-old in three Canadian cities (2017–2018). MSM with ≥1 anal/oral sex partners in the past six months (P6M) reported their own and partners' HIV status and PrEP use. After stratifying by respondents' HIV status (positive/negative/unknown) and P6M PrEP use (yes/no), we compared observed seroconcordance to that expected by chance among P6M-partnerships with known-status. Within HIV-negative discordant recent partnerships, we compared observed concordance in PrEP use at last sex to chance. Concordance by chance is calculated under proportionate-mixing assumption, which means the distribution of partnerships by partners' attributes equals that by respondents' attributes as a result of partnership balancing. We used chi-squared tests for all comparisons.

Results Of the 22,102 P6M-partnerships reported by 1881 respondents (17.0%, 74.5% and 8.5% HIV-positive, negative and unknown, respectively), 60.2% comprised partners' of known-status. 64.3% of HIV-positive respondents' partnerships were HIV-positive (vs chance 24.6%, p<0.001). HIV-negative or status-unknown respondents had higher proportions of HIV-negative partners (87.0% and 87.5%, respectively, vs chance 75.4%, p<0.001). HIV-negative respondents on PrEP had a higher proportion of HIV-positive partners than those not on PrEP (20.6% vs 8.4%; p<0.001). HIV-negative respondents on PrEP had a higher proportion of HIV-negative partners on PrEP (55.8% vs 34.7%); those not on PrEP had a higher proportion of HIV-negative partners not on PrEP (78.6% vs 65.3%), than chance (p<0.001).

Conclusion Network-level serosorting and PrEP matching were evident after accounting for distribution of partnerships by chance. PrEP-mediated changes to mixing, such as less serosorting among MSM on PrEP, may indirectly influence the population-level HIV prevention impact of PrEP and should be included in the monitoring and evaluation of PrEP roll-out.

Disclosure No significant relationships.

P513

CONVECTION MIXING AND THE SOCIAL GEOGRAPHY OF PARTNER SELECTION AMONG SEXUALLY MINORITY MEN IN TORONTO, CANADA

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Background The geographic distribution of sexually transmitted infections (STI) reflects the underlying social process of sexual partner selection. Our purpose was to explore the social geography of sexual partner selection among sexual minority men and use the results to develop a mid-level theory of urban-non-urban mixing patterns between sexual partners.

Methods This integrated mixed methods study involved in-depth interviews with 31 sexual minority men who lived, worked, or socialized in Toronto, Canada, during June and July 2016. We asked participants to describe how they found sexual partners and to reconstruct their egocentric sexual networks for the previous three months. Interviews were conducted iteratively and until theoretical saturation. A social constructionist approach to grounded theory was used to analyze the qualitative data. Egocentric maps were analyzed to determine and describe movement and mixing patterns between sexual partners.

Results Geography influenced the social process of partner selection in three important ways: (1) participants expressed a desire to travel the shortest distance possible to meet or hook up with partners (“geographic proximity”); (2) the density of sexual minority men in a participant’s community directly impacted participants social and sexual isolation, and thus how often they had sex (“degree of geosexual isolation”); and 3) geosexual isolation directly impacted the distance a participant was willing to search, and travel, to meet or hook up with partners, thus influencing the sexual mixing pattern (“convection mixing”). The geography of partner selection was also impacted by changes in sexual minority men use of space (“changing use of space”).