

## Explanations for the discrepancy in the mean number of sexual partners reported by men and women in the National Surveys of Sexual Attitudes and Lifestyles

Catherine H. Mercer\* & Anne M. Johnson

\* corresponding author: [c.mercer@ucl.ac.uk](mailto:c.mercer@ucl.ac.uk)

Centre for Sexual Health & HIV Research, Research Department of Infection & Population Health, University College London, Mortimer Market Centre, off Capper Street, London, WC1E 6JB UK

The discrepancy in the mean number of sexual partners reported by men and women has long been recognised[1] - and not just in the context of Britain's National Surveys of Sexual Attitudes and Lifestyles (Natsal).[2] The means should be identical if there are equal numbers of men and women in the population, and if all partners reside within the population. However, as analyses of the very first Natsal study show,[1] these assumptions in practice do not hold true.

In Britain, the sex ratio for the population as a whole is around 1:1, but this varies over the lifecourse, with more women than men at older ages.[3] As older people report fewer partners,[4] the mean for women is subject to greater influence from those of older age (who constitute a larger proportion of the population) than the mean for men. However, discrepancies in the mean also exist at younger ages because men, and to a lesser extent, women, have partners from outside of Britain, thus violating the assumption of a closed population.[4] More generally, over a person's lifetime, the sexually active-population changes due to population recruitment and loss, with discrepancies unsurprisingly smaller over shorter time-frames. Importantly, age mixing patterns also influence the discrepancy in the means. Men are on average two years older than their female partners, a difference which increases with age, so some participants' partners will be outside the sampled age-range - typically more women's partners than men's.

Finally, the population distribution of partner numbers is highly skewed, evident from the mean being consistently larger than the median[4] as the mean is sensitive to extreme values. Men are more likely than women to have larger numbers of partners,[4] including paid partners[4], and to 'round up' their estimates. Additionally, sex workers, who are more likely to be female and to have larger numbers of partners, have been shown to be under-sampled in probability sample surveys,[1] thus lowering the female mean. However, a narrowing of the gender gap in partner numbers among recent birth cohorts has been observed in Natsal,[4] suggesting that gender differences in response and reporting bias may be diminishing. This reflects generational changes but also methodological advances developed and adopted by Natsal, such as using computer-assisted self-interview for asking the more sensitive questions (including those on partner numbers)[5], enabling more accurate reporting, and thus more reliable data to be generated with which to inform policy and practice.

### References:

[1] Wadsworth J, Johnson AM, Wellings K, *et al.* What's in a mean?- an examination of the inconsistency between men and women reporting sexual partnerships. *J Roy Stat Soc* 1996; 159: 111-123.

[2] Wellings K, Collumbien M, Slaymaker E, *et al.* Sexual behaviour in context: a global perspective. *Lancet* 2006; 368(9548):1706-1728.

[3] Smallwood S, De Broe S. Sex ratio patterns in population estimates. *Population Trends* 2009; 137: 41-50.

[4] Mercer CH, Tanton C, Prah P, *et al.* Changes in sexual attitudes and lifestyles in Britain through the life course and over time: findings from the National Surveys of Sexual Attitudes and Lifestyles (Natsal). *Lancet* 2013; 382: 1780-1794.

[5] Johnson AM, Copas AJ, Erens B, *et al.* Effect of computer-assisted self interviews on reporting of sexual HIV risk behaviours in a general population sample: a methodological experiment. *AIDS* 2001; 15(1):111-115.