

Sexual concurrency: driver or passenger in the spread of sexually transmissible infections?

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Sexual concurrency refers to the situation where an individual has multiple sexual partnerships that overlap in time. In theory, and no doubt to some extent in practice, sexual concurrency is an important factor in the spread of sexually transmissible infections (STIs). For example, if an individual has concurrent relationships with three partners, should any one person in this arrangement be infected with an STI, the conditions exist for all four individuals involved to become infected in a very short period of time – governed by the frequency and type of sexual practices among the partnerships and the utilisation of risk reduction strategies. Should these relationships be maintained for, say, 6 months, the total number of people infected in this cluster is four. Let us contrast this outcome with one where the instigator of these relationships engaged in serial monogamy – in this case, three sequential relationships each of 2 months. If the index person were already infected with an STI at the beginning of this chain of events, the potential number of individuals infected at the end of 6 months will be at least four but the total will actually depend on the number of subsequent sexual partners acquired by the two individuals whose monogamous relationships with the index person were dissolved during this period. In a third scenario, each of the three people becoming concurrent sexual partners has three concurrent partners and each of those has three concurrent partners – a configuration for potentially explosive spread of an STI. Although the outcomes of these three scenarios are varied, they demonstrate the fundamentally important feature of sexual concurrency that will underline its contribution to the spread of STIs: at a population level as opposed to at an individual level, one's pattern of sexual relationships are only as important as one's partner's pattern of sexual relationships, their partners' patterns of sexual relationships and so on.

The fact that sexual concurrency can be observed in the wild only through capturing the entire sexual networks of populations as they unfold over time explains why it has never actually been observed to contribute to the spread of STIs in any meaningful sense. This has engendered robust debate about the likely contribution of sexual concurrency to the spread of HIV in sub-Saharan Africa.^{1–5} Indeed, it has led to asking the question

'If concurrency is important, why hasn't it been demonstrated empirically yet?'² However, the importance of concurrency has been demonstrated extensively through ever more realistic mathematical modelling.^{3–5}

Drawing on earlier work,⁶ in this issue, Hess and colleagues⁷ explore the prevalence and correlates of different types of concurrency – that is, forms of concurrency driven by either different motivations or characterised by different behavioural contexts. Reactive concurrency refers to the situation where one partner discovered that the other was nonmonogamous and acquired an additional partner in response. In transitional concurrency, an individual is in the process of moving from one to another notionally monogamous partner while having sex with both. Compensatory concurrency refers to the situation where an individual seeks an additional partner to compensate for some real or perceived lack in the primary partnership. Finally, experimental concurrency refers to having several short-term overlapping partnerships.

Hess and colleagues find that all four forms of concurrency are reasonably common in the three settings, with a prevalence of between 26% and 36%. The different types of concurrency have different correlates that are sometimes shared by men and women (e.g. a positive association between reactive concurrency and drug use, and between transitional concurrency and more than three lifetime partners), and sometimes not (e.g. compensatory concurrency was associated with African American race in men but with nothing in women). This provides an added layer of complexity to our understanding of concurrency at an individual level. It will be important to understand the contextual contributions to the associations observed between specific forms of concurrency and risk factors in particular settings such as different cities, among different racial or ethnic groups, and along the socioeconomic status gradient.

The next, and perhaps more important, step is to establish whether these different forms of concurrency lead to individuals selecting concurrent sexual partners who have patterns of sexual behaviour, including concurrency, that are likely to have an impact on the spread of STIs at a population level.

References

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