

## Preventing HIV: determinants of sexual behaviour

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**AIDS has invigorated and distorted the study of sexual behaviour. Because that study began so recently, there remain many unanswered questions about why we have sex at all, why we do sex one way rather than another, or even how we define sex. Yet in every instance in which well-designed and adequately resourced behavioural interventions have been implemented, these have netted success in the form of falling HIV incidences or prevalences. But, despite these successes, such interventions remain patchy and poorly supported. Perhaps humankind's traditional aversion for the public discussion of sexual matters underlies this reticence. Or maybe a new era of "creeping absolutism"—in which biomedical advances are given premature credit for what they can achieve in HIV control—has arrived.**

"Our understanding of the human brain is incomplete in one conspicuous way: nobody understands how decisions are made or how imagination is set free."<sup>1</sup>

When AIDS first made itself obvious in 1981 it caught humankind with its pants down, literally and scientifically. At that time the systematic study of sex and clinical practice in sexual health were seen as somehow dubious if not unseemly. Advocating sexual safety had long equated to being evil.<sup>2</sup> This aversion to unearthing sexual matters has lasting legacies: witness the failure by many of the political leaders of the most HIV-affected countries to embrace prevention through safer sex or even to concede that their cultures harbour the prerequisites for an epidemic. Being politicians, they may be merely reflecting sentiments that are widespread in their countries.<sup>3</sup> Even among AIDS advocates the enthusiasm with which new (dare we say marginal?) issues are made central to the debate, such as which is the best antiretroviral combination or how these combinations can be made freely available in less-developed nations, indicates a growing level of so-called prevention fatigue.

For the foreseeable future, limiting the impact of AIDS hinges on determining and modifying sexual behaviour wherever appropriate and possible. With time, biomedical advances have and will increasingly augment, and perhaps eventually replace, the need for behavioural intervention in HIV control. However, the illusion of those advances can easily backfire and give society, its leaders, and members of target communities the false impression that the HIV problem is solved well ahead of time. Sexual attitudes and behaviours also have other pervasive biological, social, and economic consequences beyond AIDS that justify basic and applied research in their own right. One of the positive spin-offs of the HIV pandemic has been the drawing together, for the first

time, of social scientists, research psychologists, biologists, epidemiologists, clinicians, community and industry representatives, public-health practitioners, and policy makers to assemble and address that dynamic mosaic called human sexual behaviour.

We will highlight some current issues in the determinants of sexual behaviour during the approach to the XIII International AIDS Conference in Durban, South Africa. The inherent message is that, despite the tensions that inevitably arise when multiple disciplines are drawn to the same issue, in the case of modifying sexual behaviour each discipline has an important role. Interventions cannot be designed and tested unless sexual cultures and behaviours are understood; and successful interventions are of little value unless they can be implemented, are sustainable, and can be evaluated over the long term.

### What is sex?

US President Clinton, who "never had sexual relations with that woman", provided us with a vivid example of our malleable construction of sex. "Sex" for a gay man may be perceived as mere "foreplay" by his heterosexual neighbour. The same incongruence may hold for women and men. At a major US university, only 40% of students thought that oral sex constituted "having sex", whereas 80% thought that peno-anal intercourse was "having sex". Genital touching was considered "having sex" by one in eight women and one in six men.<sup>4</sup> Elsewhere, a kiss from a girlfriend heralds an inevitable progression to vaginal intercourse.<sup>5</sup> Gendered prescriptions of what is appropriate have long been described. For example, Carrier<sup>6</sup> found that in Mexican society a man who has sex with another man was not considered homosexual as long as he only took the insertive role. Vaginal intercourse, but not homosexual contact, may be the only behaviour that earns the term equivalent to "sex" among Tanzanian street children.<sup>7</sup> Sexual fantasy in solitude or non-physical sexual harassment at the workplace may carry far greater psychological weight than a basic act of reproduction performed by a disinterested couple in a state of semi-slumber. There is much potential for social scientists, clinicians, legal policy-makers, and epidemiologists to use the same language for different concepts.

Whenever they are able to do so, sex workers throughout the world will use a male condom for commercial sex but commonly not for private (non-commercial) encounters.

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This selective use of condoms when at work cannot simply be explained in terms of risk perception because their private partners are at obviously high risk of sexually transmitted diseases (STDs) including HIV infection.<sup>8,9</sup> Rather, sex workers prefer condoms at work because condoms make commercial sex for them something less than real “sex”: the latex barrier is also a psychological barrier.<sup>8-10</sup> Differences in condom-use patterns between regular and casual sexual partners are also found among drug injectors.<sup>11</sup> The understanding that condoms alter our construction of “sex”, and not just during commercial sex,<sup>10</sup> may be something that should be exploited by our behaviour-modification programmes in more explicit ways. Perhaps people in other high-risk situations might also want to ration their psychological investment in sex. Conversely, the abandonment of condoms in an evolving sexual relationship, sometimes combined with HIV testing, signals a growing degree of commitment.<sup>11</sup>

Different people, and investigators from different disciplines, construct the concept of sex differently and this should be defined at the outset. Even when the language of sexual acts is agreed, we need to remain conscious that sex is interactive and its participants may think in terms of sexual “sessions” rather than “acts”.<sup>12</sup>

**Why do people have sex?**

Ask the man on the Clapham omnibus this question and, without thinking much about it, he will answer something like, “love or lust”. His wife may reply

**Young women proudly displaying their certificates on passing their virginity test in Mpumalanga, South Africa**

Sowetan

account. For example, many African women have little power to decline sex or to insist on safer sex, although they have often been the focus of HIV education campaigns. The coincidence of sex with power structures that are commonly based on gender<sup>13</sup> makes it clear that social justice and HIV prevention are intimately intertwined. Patriarchal ideologies and male heterosexuality are frequently absent from HIV preventive discourse.<sup>13</sup>

somewhat wryly, “purgatory and, occasionally, passion”. The suggested reasons why people have sex are much more diverse than this (panel 1) and are fluid within individuals and within relationships. More than one motive is often operating simultaneously. Although some of these motives may be uncommon (eg, prostitution and curiosity), they may be associated with high risk of STDs or HIV infection.

Sexual health promotion programmes have sometimes failed to take these diverse motives (panel 1) into account. The concept that HIV interventions for commercial sex need to be different to those provided for the general population seems to be better understood.<sup>14-16</sup> However, the context and reasons (panel 2) for engaging in commercial sex vary widely, and this may predict HIV risk.<sup>8</sup> The more essential that the next commercial encounter is for a sex worker, the less likely they will be able to negotiate condom use with their clientele. But even the most disadvantaged sex workers show a capacity to form supportive networks that can provide a platform for behavioural interventions.<sup>14,15,17</sup>

One of the major reasons for sexual behaviour is the fact that it is pleasurable. Surprisingly, research that explores the balancing of pleasure against the potential negative consequences of sex is rare. Nilsson-Schönnesson and Clement<sup>18</sup> reported that in Swedish and German gay men a conflict situation arises when people are asked to give up pleasurable sexual behaviours. They noted that if sexual behaviours alone, and not the importance of or pleasure associated with such behaviours, are considered then it is more difficult to explain a return to unsafe behaviour.

Underpinning the conscious and semiconscious motives in panel 1 we suggest that there may be other potential determinants of sexual behaviour (panel 3).

**Panel 1: Suggested psychosocial reasons why people have sex**

- Gain pleasure
- Procreate
- Nurture a relationship/express affection
- Satisfy a need for intimacy or physical contact
- Channel excess energy or get some exercise
- Overcome boredom
- Get to sleep
- Get rid of an erection
- Comply with a partner’s demands
- Provide or receive reward
- Comply with social roles or expectations
- Affirm gender or sexuality
- Affirm one’s desirability
- Gain social currency
- Demonstrate power (eg, rape or revenge)
- Entrap the other person
- Satisfy curiosity
- Satisfy a compulsive behavioural disorder
- Make money or its equivalent (see panel 2)

These reasons are not mutually exclusive, and have been derived from our patients, peers, prose, and poetry, with some suggestions by researchers.<sup>10</sup>

**Panel 2: Reasons why people may take money for sex**

- Survive (self or dependants) in societies without social security<sup>15</sup>
- Service a debt<sup>14,15</sup>
- Pay for drugs<sup>12</sup>
- Compelled by another person<sup>15</sup>
- Limited alternative employment opportunities<sup>15</sup>
- Improve material well-being or gain independence<sup>17</sup>
- Expected of the person because of social situation or class<sup>14,17</sup>
- Become part of a (sometimes supportive) subculture<sup>17</sup>

**Panel 3: Potential determinants of sexual behaviour****Psychosocial factors** (see panel 1)**Evolutionary factors**

Increased sexual activity could confer an individual selective advantage, but this may be offset by disadvantages at a group or societal level.

**History and culture**

To a large extent, our sexual behaviour seems to be determined by what we think our peers do.

**Individual developmental and physiological factors**

To what extent is our sexual behaviour governed by neurological and hormonal factors?

When is our sexual self programmed?

**Intoxicants**

The association between intoxicants—alcohol and other drugs—and sexual risk has been long recognised.

But is it a causal or a confounded relationship?

**Particular situation and opportunity**

Sexual behaviour seems to vary according to the duration and type of relationship. Logistic factors such as condom availability or a private space can also affect sexual behaviour. Dislocation from normal social structure—eg, military service, travel, or working in a mining camp—may affect sexual behaviour including partner choice.

**Education, and knowledge of partners' (real or potential) infection status**

To what extent is our sexual behaviour ruled by our chromosomes, hormones, personality, or environment? For example, extroversion and sensation-seeking are strongly associated with sexual behaviour and sexual risk. Eysenck<sup>19</sup> found that extroverts will have intercourse earlier, more frequently, with more partners, and in more positions than introverts; they will also engage in more varied sexual behaviour outside intercourse and engage in longer foreplay. Kalichman and colleagues<sup>20</sup> found that, even controlling for substance use, sexual adventurousness and sensation-seeking were major predictors of unsafe sexual behaviour among homosexual men. Bogaert and Fisher<sup>21</sup> were able to predict a significant proportion of the variance of partner numbers in heterosexual men using sensation-seeking measures. Socially, the development of narrative patterns (scripts) for sexual behaviour, whether culturally determined or based on modern sexual-interaction modes such as the Internet, may prime or fix risk behaviours into the sexual repertoire.<sup>22</sup>

Adequate investigation of the factors suggested in panel 3 would require substantially more input from other disciplines such as social evolutionary theorists, physiologists, historians, and social anthropologists. Economists and corporate jurists may be necessary to estimate the considerable sexual-health costs of dislocating large numbers of men from their families to, say, mining camps in South Africa.

**Do people change their sexual behaviour with HIV in mind?**

The short answer is yes. A better answer is that some of the people do, some of the time. Although it may be fashionable to focus on why certain groups or individuals have not changed their behaviour or have returned to risk behaviour, substantial change has occurred globally, particularly among people near one of the many epicentres

of the HIV pandemic. Thailand and Uganda have been models among less-developed nations, and the Netherlands and Australia among more-developed countries.

Everywhere that appropriate programmes have been implemented sex workers have moved toward safer sex and incidences of STD and HIV have fallen.<sup>16,23</sup> Such progress seems to work best when AIDS awareness is linked with something tangible (eg, sexual health checks, treatment, condom supply) and the workers' more general concerns are acknowledged.<sup>14,16</sup> In general, these behavioural changes have been sustained. Among homosexual men in more-developed countries, although trends may have faltered toward the end of the 1990s, most have adhered to a safer sex regimen most of the time. Of recent concern has been the rise in gonorrhoea among homosexually active men and reports of increased unsafe sex.<sup>24–26</sup> However, to date there is no firm evidence that perceptions of improved treatment for HIV infection are contributing to this trend.<sup>26,27</sup>

Even among a general US population sample, 62% of adults in 1996 reported using condoms at last intercourse outside of an ongoing relationship.<sup>28</sup> But in erotophobic social climates, where sexual behaviour is demonised and not openly discussed for personal or ideological reasons, lack of knowledge and preparation for sex can thwart opportunities for safety.<sup>29</sup>

Underwriting, but sometimes undermining, condom use in high-risk situations is a wide spectrum of complementary strategies used by individuals to avoid infection.<sup>30,31</sup> Many of these practices are ancient and so embedded in our cultures that we are scarcely aware of their existence. Nor have we adequately documented their prevalences or their meaning for their practitioners. Some of these strategies (eg, partner selection, topical or systemic chemoprophylaxis, circumcision and infibulation, non-penetrative sex, coitus interruptus, and sexual displacement activities including masturbation) are so common that, even though some may be less efficacious, their public-health impact exceeds that of male condoms in many cultures. Such alternative strategies warrant a closer look if for no other reason than that they may be providing false reassurance.

**Your invitation to the party**

A poster designed for the waiting room walls of Asian brothels in Sydney, Australia, and Auckland, New Zealand. This represents one of the few attempts to target sex workers' clients as well as the sex workers themselves (courtesy of the Sex Workers Outreach Project).

### Why don't people change their behaviour?

Although knowledge of what HIV is and how it can be avoided is essential, it is now axiomatic that knowledge alone is insufficient for most individuals to change a behaviour that they value.<sup>5</sup> Most models for behaviour change have been developed in North America and emphasise individual agency. However, most of the world's population lives in collectivistic rather than individualistic societies and thus the emphasis on and opportunity for individual agency is reduced. Situational models of risk,<sup>32</sup> which emphasise both risk situations<sup>33</sup> and the reduced levels of self-efficacy in contexts in which the individual may have little power to alter their behaviour, need to be further developed.

The advantage of the use of the concept of risk situations, as opposed to risk behaviours, is that social, structural, and affective components of the occasion of risk can be quantified. Using this approach in gay men, Kelaher and colleagues<sup>34</sup>

#### Australian AIDS prevention poster

could account for over a third of the variance of unsafe sex, and found that most of the contribution to risk was affective—feelings for the sexual partner and reciprocation of these feelings. This has been referred to as “affective override of cognition”<sup>32</sup> and unless intervention models are developed to account for the processes that occur in the heat of the moment, it will be difficult to explain why the same person may be safe in one situation and not another, let alone affect behavioural change. Of all human behaviours, sex is the one most likely to generate powerful affects, and models that have been derived from studies of less emotionally invested behaviours may need to be modified.

Perhaps the most immediate barrier to safer sex is inaccurate risk perception. Weinstein<sup>35</sup> referred to the “downhill phenomenon” in which people always compare their own risk with someone who is at much greater risk than themselves. This leads to an assessment of oneself as being at substantially lower risk than dispassionate evidence would suggest. Theoretical approaches that have been shown effective in modifying risk intentions and behaviours include the theory of reasoned action/planned behaviour.<sup>36</sup> But unless the cultural and normative structures around safer sex are also modified, altering risk perceptions alone may be ineffective.

Consideration of the wider context of sexual behaviour reveals a number of barriers to change. Mann and colleagues<sup>37</sup> suggested that removal of gender inequalities could be the single most effective step in preventing HIV transmission, given the powerlessness of women to negotiate their sexual safety in so many societies. Nevertheless, although women in patriarchal societies may have little sexual decision-making power, social and economic changes affecting women's role and status are occurring that may partially redress the balance.<sup>38</sup>

Using economic analyses of sex-for-drugs and drugs-for-sex interactions, Basemen and colleagues<sup>39</sup> found that

where there are few opportunities for financial advancement and membership of mainstream consumer society, sex and recreational drugs form some of the most widespread means of social exchange and derivation of pleasure. Where sex and drugs are a major form of currency in underground economies, attempts to modify them from outside are unlikely to be successful.

In many parts of sub-Saharan Africa, pluralistic and fatalistic attitudes toward death and the limited number of situations in which condom use is acceptable

compound the problems of silence about AIDS at all levels.<sup>5</sup> Caldwell<sup>5</sup> recommended that the major focus of HIV education in sub-Saharan Africa should shift to those situations where change is most achievable: commercial sex and adolescent relationships. Perhaps Caldwell is right in his recommendation; this needs to be debated broadly. But, whatever the outcome of the debate, integrated STD/HIV control

priorities should be developed locally depending on factors such as opportunity, culture, epidemiology, and stage of the epidemic.

### Where to from here?

The fledgling field of sexual-health promotion<sup>40</sup> still has a long way to go to define itself; however, much has been achieved. Just as wars selectively advance certain technologies, the urgent need for HIV/AIDS prevention has both invigorated and distorted organised inquiry into sexual behaviour. To better address the motives and contexts of priority populations, future research and interventions in sexual behaviour will need to more fully integrate HIV control with the control of other STDs, fertility, gender inequality, sexual coercion, social exclusion, and economic exploitation. Of course these issues will not be solved in our life-times, but we should know better than to expect absolute solutions for AIDS.<sup>41</sup> However, even modest gains through behaviour change in key subpopulations can produce substantial gains for the entire population, so sexual-health promotion and HIV control have much to gain by staying in bed together.

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