

Maurit Kalthoff

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## DETERMINANTS OF SAFE AND RISK-TAKING SEXUAL BEHAVIOR AMONG GAY MEN: A REVIEW

Harm J. Hospers and Gerjo Kok

Since the outbreak of the AIDS epidemic, gay men have made impressive changes in their sexual behavior. Notwithstanding these changes, there are several studies that show considerable within-subject variability in risk categories, indicating that for a substantial number of gay men it is difficult to be consistently safe. A large number of studies have examined the relationship between sexual behavior and determinants of that behavior. This review reports and discusses the findings with regard to demographic, situational, behavioral, and psychosocial determinants.

Since the outbreak of the AIDS epidemic in the beginning of the 1980s, an estimated 12.9 million people around the world have been infected with the Human Immunodeficiency Virus (HIV) by early 1992 (Mann, Tarantola, & Netter, 1992). In several parts of the world, gay men comprise the group that has been hit hardest by the disease. Estimated proportions of gay men of the total number of HIV-infected people per region are 47% for Western Europe, 54% for Latin America, 56% for North America, 80% for Eastern Europe, and 87% for Oceania (Mann et al., 1992).

At this moment primary prevention is the only possible way to limit the spread of HIV. In their effort to influence the course of the disease, social scientific researchers have devoted considerable attention to the identification of determinants that distinguish between safe and risk-taking sexual behavior of gay men, because insight into these determinants is vital for the development of effective AIDS prevention interventions. In this review we present the knowledge that is currently available. Before giving an overview of determinants we briefly recapitulate the behavioral changes among gay men that have occurred as a result of the epidemic.

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Address reprint requests to Harm Hospers, Department of Health Education, University of Limburg, P.O. Box 616, 6200 MD Maastricht, The Netherlands.

## BEHAVIORAL CHANGES AS A RESULT OF AIDS

Once the routes of viral transmission were known, two major recommendations for gay men to prevent infection were given: 1) reduce the number of partners, 2) refrain from insertive and receptive anal intercourse, or use condoms when having insertive or receptive anal intercourse (McKusick, Conant, & Coates, 1985; Solomon & DeJong, 1986).

Many studies have documented drastic reductions in the number of partners (Centers for Disease Control, 1985; Joseph et al., 1987a; McKusick, Conant, & Coates, 1985; Martin, 1987; Schechter et al., 1988; van Griensven et al., 1987; Winkelstein et al., 1987). This reduction has resulted in a considerable decrease of the probability of infection at an aggregate level. However, compared with consistent condom use, reducing the number of sexual partners is far less effective (Reiss & Leik, 1989). Especially in high-prevalence areas, reducing the number of partners only leads to a marginal reduction of risk (Handsfield, 1985). Thus, the 'reduce-your-number-of-partners' approach may have the serious drawback that individuals might use their compliance with this recommendation to justify the high-risk behavior in which they still engage.

The majority of studies report impressive changes with respect to unprotected anal intercourse (see Becker & Joseph [1988]; Stall, Coates, & Hoff [1988] for reviews). Siegel, Bauman, Christ, and Krown (1988) showed that 22% of their sample shifted to safer-sex behavior over a period of six months. Winkelstein et al. (1987) reported a decrease of 60% in the prevalence of risk-taking sex over a two-year period and Martin (1987) found a reduction of 70% in risk-taking sexual episodes since respondents heard about AIDS. These changes in risk-taking behavior were accomplished by either refraining from anal intercourse or using condoms with anal intercourse. Although condom use with anal intercourse is now generally accepted as an adequate means of reducing risk, failure rates of condoms (breakage, improper use) vary around 10% (Ross, 1987; Valdiserri et al., 1988; van Griensven & de Vroome, 1987) and thus do not totally eliminate risk of HIV infection.

## BEHAVIORAL CHANGES ACROSS TIME

A less promising picture emerges when the available data are inspected on an individual level rather than on an aggregate level. A considerable number of people continue to engage in risk-taking sexual behavior. It also seems that people may shift from one risk category to another over time. Table 1 provides an overview of longitudinal studies that examined these kinds of changes. All studies compared individual sexual behavior at two points in time, with varying intervals. Respondents were categorized as either low or high risk at both time 1 and time 2. Cross-tabulation of time 1 with time 2 behavior results in four categories: low risk at both time 1 and time 2 (stable low risk), high risk at time 1 and low risk at time 2 (change to low risk), low risk at time 1 and high risk at time 2 (change to high risk), and high risk at both time 1 and time 2 (stable high risk).

Despite the differences in study characteristics, some general conclusions may be drawn from these studies. First, it is clear that a great number of gay men have either maintained safe sex behavior or have changed to safer sexual behavior. In fact, many of them have successfully maintained this behavior for long periods of time. Second, a substantial number of men reported one or more instances of risk-taking

Table 1. Individual Behavioral Patterns at Two Points in Time. Each Entry Lists the Percentage of Respondents with Stable Low or Stable High Risk at Both Time 1 and Time 2, and the Percentage of Respondents Who Changed from High to Low Risk or Vice Versa from Time 1 to Time 2.

Author(s)	Time 2	N	Interval	Stable Low Risk	Change to Low Risk	Change to High Risk	Stable High Risk
Adib et al. (1991)	1987	482	1 year	52.3	10.2	31.3	6.2
Ekstrand & Coates (1990)	1988	686	4 years	31.0	47.0	12.0	10.0
Joseph et al. (1990)*	1986	601	6 months	52.6	13.5	7.8	26.1
Martin (1986)**	1985	744	4 years	11.3	28.8	8.2	51.7
McKusick et al. (1990)	1988	419	4 years	47.0	40.6	2.6	9.8
Robert & Rosser (1990)	1987	139	6 months	71.2	12.2	5.0	11.5
Siegel et al. (1988)	1986	162	6 months	30.2	21.6	9.9	38.3
Stall et al. (1986)	1985	311	1 year	14.8	30.5	17.4	37.3
Stall et al. (1990)	1988	389	4 years	48.1	30.6	19.0	2.3
de Wit et al. (1992)***	1988	637	1 year	41.3	18.4	7.8	32.5

\*Ambiguous categories evenly divided between stable and change categories

\*\*Pre-AIDS behavior compared with post-AIDS behavior

\*\*\*Study reports four 1-year periods (1984-1988)

sexual behavior at both time 1 and time 2. If we assume that men in this category were aware of the risks, then we can conclude that a number of men are unwilling or unable to modify their sexual behavior. It should be noted, however, that in most of the studies in Table 1, one instance of unprotected anal intercourse during the measurement period puts men in the stable high-risk category. Third, a relatively small, but nevertheless important, proportion of men were identified who changed from safe to risk-taking sexual behavior. It is important to note that classification in this category is not tantamount to total relapse. Men in this group showed one or more occurrences of risk-taking sexual behavior during the period of study. Hence, within this category a further distinction can be made between men who relapsed to risk-taking behavior, men who alternated between safe and risk-taking behavior, and men who showed a temporary slip to risk-taking sexual behavior and who thereafter returned to safe sexual behavior. The reported studies do not supply data on the proportion of men in each subgroup.

In short, there have been major changes in the sexual conduct of gay men as a consequence of the AIDS epidemic. We should, however, bear in mind that protective behaviors against HIV infection (practicing safe sex with all partners for an unknown but probably long period of time) are extremely difficult to maintain. Consequently, it is not surprising to find that a substantial number of gay men still expose themselves to situations in which they are at risk of becoming infected with HIV. Therefore, intervention programs are needed that focus on change towards consistent safe sexual behavior. Understanding the determinants of safe and risk-taking sexual behavior is crucial in the development of such interventions.

**DETERMINANTS OF SAFE AND RISK-TAKING SEXUAL BEHAVIOR?  
CHARACTERISTICS OF REPORTED STUDIES**

Table 2 presents the main findings of the determinant studies included in this review. In order to be included in Table 2, a study had to report on determinants of safe and risk-taking behavior. A study also had to include a comparison of a low-risk group to a high-risk group using a cross-sectional design, or a comparison of changes in safe or risk-taking behavior using a longitudinal design. Furthermore, we included only those studies that examined behaviors related to anal intercourse, because it is the most prominent risk factor related to HIV infection among homosexual men (Chmiel et al., 1987; Deets et al., 1983; Glasner & Kaslow, 1990; Kingsley et al., 1987).

A great variety of possible determinants has been studied. For this review we have selected demographic variables (age, income, race, and educational level), relationship status, drug and/or alcohol use, knowledge, risk perception, attitudes, social influence and norms, and self-efficacy.

**SAMPLE CHARACTERISTICS**

There are several serious sampling problems in any study that investigates male homosexual behavior. First, defining the population from which samples are drawn. In this review, we use the terms *determinant*, *predictor*, *factor*, *variable*, and *correlate* interchangeably to denote concepts that are studied in relationship to AIDS-related sexual behavior. Although the terms predictor and determinant may suggest causation, the research design of most presented studies permits correlational rather than causal inferences.

**Table 2. Studies on Determinants of Safe and Risk-taking Sexual Behavior among Gay Men**

Study and behavioral comparison	C/L	N	Demographic				Relation-ship	Alcohol/drug use				Risk		
			Age	Income	Race	Education		Alcohol	Drug	Both	Nitrites	Knowledge	Perception	Attitude
<b>Abid et al. (1991)</b> (change to URAI versus maintenance of SB)	L	402	0	0	0	0	-			0		0	+	+
(change to UIAI versus maintenance of SB)	L	402	0	0	0	0	0			0		0	+	+
<b>Bauman &amp; Siegel (1987)</b> (from SB to RTB, three levels)	C	153										0		
<b>Buchow (1990)</b> (UAI versus AI with condom)	C	333					-							
<b>Connell et al. (1990)</b> (UAI versus no UAI)	C	394	0	0		0				0			+	+
<b>Dallas (1990)</b> (AI versus no AI)	C	70											+	+
<b>Ekstrand &amp; Coates (1990)</b> (UAI versus no UAI)	C	686	+											
(Maintenance of URAI or UIAI versus maintenance of SB or change to SB)	L	592	+							0				
<b>Fitzpatrick et al. (1989)</b> (AI versus no AI)	C	225					-							
<b>Fitzpatrick et al. (1990)</b> (RAI versus no RAI)	C	356	+	0			-					0	0	
<b>Gold et al. (1991)</b> (UAI versus no UAI)	C	181					-		0	0	0		+	
<b>Hays, Kegeles &amp; Coates (1990)</b> (UAI versus no UAI)	C	99			0	0		0				+	+	0 +/0

Study	CL	N	Demographic				Relation-ship	Alcohol/drug use				Knowledge	Risk		
			Age	Income	Race	Education		Alcohol	Drug	Both	Nitrites		Perception	Attitude	Norms Self-Efficacy

Table 2. Continued

Study	CL	N	Demographic				Relation-ship	Alcohol/drug use				Knowledge	Risk		
			Age	Income	Race	Education		Alcohol	Drug	Both	Nitrites		Perception	Attitude	Norms Self-Efficacy
Seage et al. (1992) (URAI versus no URAI)	C	481						0		-					
Siegel et al. (1989) (consistent SB versus con- sistent RTB)	L	100						0		-			0	+	+
Stall et al. (1986) (low versus medium versus high RTB score)	C	463						-		-					
Valdisseri et al. (1988) (consistent CU versus never CU)	C	955	0		0	0				-		0	0	+	0
de Wit, Sandfort et al. (1991) (AI versus no AI)	C	611	+											+	+
(consistent CU versus in- consistent CU)	C	611	+										0	+	+

For each study is listed which behavioral comparison was made, whether this comparison was cross-sectional or longitudinal (CL), the number of subjects for the comparison (N), and the relationship with determinants. For each determinant that was studied, is listed whether there is a positive relationship (+), no relationship (0), or a negative relationship (-) with safe sexual behavior (see coding legend below for detailed information).

Abbreviations: SB = safe behavior, RTB = risk-taking behavior, CU = condom use, AI = anal intercourse, UAI = unprotected anal intercourse, URAI = unprotected receptive anal intercourse, URAI = unprotected insertive anal intercourse.

Notes: \*communication skills +, self-efficacy scale 0  
\*\*emotional support +, network affiliation 0

**CODING LEGEND**

**Demographic variables:**

age: + means older age related to SB  
income: + means higher income related to SB  
race: + means white more SB than other ethnical groups  
education: + means higher educational level related to SB  
Relationship status: + means sex with regular partner safer

**Alcohol/drug use:**

alcohol: + means (more) alcohol use related to SB  
drugs: + means (more) drug use related to SB  
both: + means (more) alcohol and/or drug use related to SB  
nitrites: + means (more) nitrite use related to SB

Knowledge: + means higher knowledge related to SB

Risk Perception: + means men who behave safe perceive less risk to getting infected with HIV or perceive more risk of unsafe sexual practices

Attitude: + means either positive attitude towards SB related to SB or positive attitude towards RTB related to RTB

Social norms: + means either positive social norms towards SB related to SB or positive social norms toward RTB related to RTB

Self-efficacy: + means higher self-efficacy related to SB

Table 2. Continued

Study	CL	N	Demographic				Relation-ship	Alcohol/drug use				Knowledge	Risk		
			Age	Income	Race	Education		Alcohol	Drug	Both	Nitrites		Perception	Attitude	Norms Self-Efficacy

Kelly, St. Lawrence & Brafield (1991) (change to UAI versus maintenance of SB)	L	68	+		0	0		0		-		0	0	+	0
Lemke et al. (1990) (risk-index score)	C	481	+		0	0		0		0		0	0	+	+
Kelly, St. Lawrence, Brafield, Siegferson et al. (1990) (UAI versus no UAI)	C	352						0				0	0	+	+
Kelly et al. (1991) (UAI versus no UAI)	C	352						0				0	0	+	+
Ulin et al. (1989) (from SB to RTB, four levels)	C	812	+		0	0		0		+		0	0	+	+
McCusker, Stoddard et al. (1989) (maintenance of URAI ver- sus change to SB)	L	78			0	0		0		+		0	0	+	0
McCusker, Zapka et al. (1989) (change to SB)	L	99			0	0		0		0		0	0	+	0
McCusker, Zapka et al. (1989) (no CU versus CU)	C	129	0					0				0	0	+	+
McCusker et al. (1990) (UAI versus no UAI)	C	308	+		0	0		0				0	0	+	+
McCusker et al. (1990) (maintenance of UAI versus change to SB)	L	146	0		0	0		0				0	0	+	0
Ostrom et al. (1990) (change to UAI)	L	?	0		0	0		0				0	0	+	0
Ross & McLaws (1992) (change to SB versus main- tenance of RTB)	L	2130	+					+				0	0	+	0
(CU index)	C	173										0	0	+	0

is complicated. Although homosexual behavior is not limited to the segment of the population that labels itself as homosexual (Kinsey, Pomeroy, & Martin, 1948), it is usually this segment that is studied. As Doll et al. (1992) have demonstrated, there are important differences between homosexually and non-homosexually identified men who have sex with men. In their study, homosexually identified men were more likely to belong to gay organizations. Furthermore, significantly more heterosexually identified men reported engaging in unprotected anal intercourse. Second, the majority of studies included in this review reported on samples that consisted of self-selected individuals. As Davies and colleagues (1993) have argued, those samples may overrepresent self-confident open homosexuals, as homosexual behavior continues to be stigmatized. In addition, studies that looked at differences between volunteers and non-volunteers found substantial differences in sexual behavior and attitudes toward sex (see Catania, Gibson, Chitwood, & Coates [1990] for an overview). Furthermore, within studies included in this review, samples are predominantly white and overrepresent individuals with higher education and income. For example, according to the 1990 U.S. census, whites make up 80% of the United States population (Bureau of the Census, 1992). By contrast, in all U.S. studies shown in Table 2 (except Hays, Kegeles, & Coates [1990], and Linn et al. [1989]), the proportion of whites exceeds 90% (range 91–96%). Finally, the majority of studies were conducted in geographical areas with high AIDS prevalence rates among gay men. These biases may constitute drawbacks for the generalizability of results. The sampling strategy employed in some studies to reduce the effects of selection bias, is to target as many segments of the gay community as possible, such as members of gay organizations, patrons of gay bars, saunas and discos, and health and STD clinics with a high proportion of gay clientele.

#### VALIDITY AND RELIABILITY OF SELF-REPORTED BEHAVIOR

Without exception, the studies that were selected for this review had to rely on self-reports from respondents concerning their sexual behavior. As Catania et al. (1990) have noted, a solid validity index for individual sexual behavior does not exist. One could use other data to corroborate self-reported sexual behavior, such as incidence of sexually transmitted diseases (STDs) or number of condoms sold. However, the authors conclude that these indices are also biased, since STDs do not have a one-to-one relationship with frequency of sexual behavior and condom sales do not have a one-to-one relationship with use.

Several methods have been used to get an impression of the validity of data on self-reported sexual behavior. Firstly, studies used sexual behavior data from partners of respondents. One study found moderate to high respondent-partner agreement with respect to frequency of receptive and insertive anal and oral sex (Spearman's  $r$ : 0.56–0.81) (Seage et al., 1992). A similar study investigated the agreement on frequencies of sexual activities between men with either AIDS or AIDS-related condition and their sexual contacts (Coates et al., 1988). Agreement on the frequencies of 17 sexual activities was moderate to high (Spearman's  $r$ : 0.49–0.91). However, agreement significantly decreased as the lapsed time between the interview and the date of the last sexual encounter increased. The authors of both studies conclude that the results indicated that self-reported sexual behavior data were reasonably valid for use in epidemiological analyses.

A few studies have examined the reliability of self-reported sexual behavior by either using a test-retest procedure or comparing retrospective reports of sexual

activity for different timeframes. The test-retest procedure for frequency as well as number of partners for several practices were moderate (kappa's: 0.47–0.62) (Saltzman et al., 1987). Kauth, St. Lawrence, and Kelly (1991) obtained self-reports of the frequency of several sexual practices for three overlapping timeframes in the past: two weeks, three months, and twelve months. They found that the frequency of infrequent sexual practices showed the greatest consistency across timeframes. They further found that the average correlation over all practices decreased significantly as the period of recall increased: the average correlation between two weeks and three months was 0.73 while the correlation between two weeks and twelve months was 0.31. They conclude that self-report measures of sexual behavior should use relatively short retrospective periods. Based on a review of studies of response bias in sex research, Catania, Gibson, Martin, Coates and Greenblatt (1990) advise the use of 1- or 2-month recall periods. Another study compared agreement between 1- and 12-month recall periods with several cognitive strategies used to recall sexual practices and partners. They found that the degree of consistency was lowest for non-person-oriented strategies (such as thinking of places or locations where partners were met), and highest for person-oriented strategies (such as names or faces of partners) (Blake, Sharp, Temoshok, & Rundell, 1992).

To summarize, the few studies which were conducted on validity and reliability of self-reported sexual behavior highlight the limitations of these measures. More methodological research is needed to optimize our measures of AIDS-related behaviors. Meanwhile, researchers in this field should try to increase recall accuracy by using relatively short recall periods. One way to do this is to use person-oriented strategies to estimate the frequencies of sexual practices and the number of partners. To reduce self-presentation bias, Catania, Gibson, Chitwood et al. (1990) suggest the construction of a nonjudgmental context, the use of open-response formats, the use of a sexual terminology that the group under study is comfortable with, and maximizing respondent privacy.

#### DESIGNS

Research on determinants of safe and risk-taking sexual behavior among gay men usually used cross-sectional designs, longitudinal designs, or a combination of both. Cross-sectional studies generally report comparisons between respondents who practice safe sex and respondents who engage in high-risk sexual acts (with varying definitions of these behaviors). Longitudinal studies usually use data from cohorts that were established in the AIDS epicenters (e.g., San Francisco, New York, Amsterdam). These studies generally report correlates that are associated with changes in these sexual behaviors over time.

#### BEHAVIORAL MEASURES

While all the studies in Table 2 examined self-reported safe and risk-taking sexual behavior, there is considerable variation in the operational definitions of these behaviors. The majority of cross-sectional studies compared men who had engaged in unprotected anal intercourse with men who had not engaged in anal intercourse or who had consistently used condoms. Some of these studies differentiated between receptive and insertive anal intercourse. Another group of studies examined the differences between men who consistently used condoms and men who did not consistently use condoms. Finally, one study used a risk-index

(frequency of unprotected anal intercourse  $\times$  number of intercourse partners) (Kelly et al., 1990), and two studies used a condom use index (proportion of anal intercourse occasions when condoms were used (Kelly, St. Lawrence, Brasfield, Lemke et al., 1990); sum of frequency of condom use during receptive and insertive oral and anal intercourse (Ross & McLaws, 1992)).

Most longitudinal studies compared men who maintained high-risk behavior over a period of time with men who maintained low-risk behavior or changed to low-risk behavior. It is apparent that this variety in operational definitions provides us with detailed information on the sexual behavior of gay men and the changes in this behavior as a result of AIDS. However, it also limits the comparability of results across studies.

#### DEMOGRAPHIC VARIABLES

The value of sociodemographic variables for behavior change interventions is limited, because these factors themselves are, in general, not easily influenced. Demographical characteristics of target groups are primarily used to guide the development and implementation of interventions. Relatively few sociodemographic factors have been investigated and even fewer seem to pertain to risk behavior. For example, studies in general find no relationship between risk-taking or preventive behaviors and income (Adib et al., 1991; Connell et al., 1990; Fitzpatrick et al., 1990), or educational level (Adib et al., 1991; Connell et al., 1990; Hays et al., 1990; Kelly, St. Lawrence, & Brasfield, 1991; Kelly, St. Lawrence, & Brasfield, Lemke et al., 1990; McCusker, Zapka, Stoddard, & Mayer, 1989; Valdiserri et al., 1988).

With respect to the relationship between risk-taking behavior and ethnic origin of respondents, it must be concluded that little is known. With respect to the studies in Table 2, all studies conducted outside the United States and a minority of studies conducted in the United States do not report the racial or ethnic origin of their respondents. Of those studies that do provide such information (12 studies), four included it as a variable in their analyses. These analyses showed no relationship between ethnic origin and risk-taking behavior in two of the four studies (Adib et al., 1991; Valdiserri et al., 1988). In the study by Hays et al. (1990) a higher percentage of non-whites engaged in high-risk behavior compared with whites (30% versus 14%, respectively). This difference approaches significance (OR = 1.61, 95% CI = 0.98-2.64,  $p < .06$ ). Finally, the study by Linn et al. (1989) showed a highly significant relationship between race and level of risk-taking behavior. Their unsafe category contained 59% of whites, 69% of African Americans, and 81% of Latin Americans. It is possible that these dissimilar findings are a result of the varying proportions of non-whites in these samples. The percentage of non-whites was 8% in the study from Adib et al. (1991), 4% in Valdiserri et al. (1988), 21% in Hays et al. (1990), while non-whites made up one third of the sample of Linn et al. (1989). Low proportions of non-whites result in relatively wide confidence intervals around association estimates which may account for the nonsignificant results.

Two demographic factors, age and geographical location, seem related to AIDS risk behavior. They will be discussed below.

#### AGE

Several studies have found younger age to be related to risk-taking sexual practices. Ekstrand and Coates (1990) found in a longitudinal study that younger

respondents showed higher levels of unprotected anal intercourse ...an older respondents in both 1985 and 1988. De Wit and colleagues (1991) found that the younger men in their sample had more anal sex and used condoms less consistently than older men. Similar results were reported by Fitzpatrick et al. (1990), Kelly et al. (1990), Kelly, St. Lawrence, and Brasfield (1991), Kelly et al. (1991), McKusick et al. (1990), and Ostrow et al. (1990).

Few authors have tried to explain why younger men have this tendency. As a possible answer, Ekstrand and Coates (1990) suggest that younger men might have less social support for practicing safe sex, they might perceive themselves to be invulnerable, or they might have poorer skills for buying condoms or negotiating safe sex.

The abovementioned studies reported an association between age and risk-taking behavior. It is important to note that men who engaged in risk-taking sex were younger, but not necessarily young. There are two studies that specifically looked at sexual behavior of young gay males. Rothcrum-Borus and Koopman (1991) studied sexual behavior of 59 black and Hispanic gay adolescents (ages ranging from 14 to 18 years old). Fourteen adolescents (24%) had engaged in unprotected anal intercourse in the previous three months. Hays and associates (1990) compared low versus high risk-taking among gay men aged 18-25. They also found high levels of risk-taking behavior: 43% of their sample had engaged in unprotected anal intercourse in the previous six months. A comparison of low risk takers with high risk takers showed that the latter group reported more enjoyment of anal intercourse without condoms, perceived less risk with regard to unprotected anal intercourse, and reported poorer communication skills with sexual partners.

Hays and colleagues (1990) conclude that special efforts should be made to reach younger gay males. They also add that if interventions succeed in reaching young gay males, the likelihood of low-risk behavioral maintenance might be higher than usual since young gay men with relatively little sexual experience have had less opportunity to develop anal sex as a habitual behavior.

#### GEOGRAPHICAL LOCATION<sup>2</sup>

Several authors have suggested that gay men in low AIDS prevalence areas engage in more risk-taking behavior (Jones et al., 1987; Kelly, St. Lawrence, Brasfield, Stevenson et al., 1990). While these studies looked at low-prevalence areas only, there are two studies which compared data from low-prevalence areas with data from high-prevalence areas: one in the United Kingdom (Weatherburn et al., 1991), the other in the United States (St. Lawrence et al., 1989). The results of the British study showed that men in London were significantly more likely to use condoms compared with men who live outside London (49% compared to 37%). The results from the American study showed significantly more occurrences of unprotected anal intercourse, and significantly fewer occurrences of low-risk sexual practices in low-prevalence cities.

The authors of the abovementioned studies relate these findings to the fact that many health education initiatives are targeted at homosexual men who live in AIDS epicenters, while men who live outside these areas have less access to organizations for information and support. Furthermore, both St. Lawrence et al. (1989) and Jones

<sup>2</sup>Since there are only two studies available that compare low-prevalence areas with high-prevalence areas, this determinant is not shown in Table 2.

et al. (1987) presume that the relatively low number of persons with AIDS in these areas results in an underestimation of risk of infection which in turn leads to persistence of high-risk behavior.

## SITUATIONAL AND BEHAVIORAL VARIABLES

### RELATIONSHIP STATUS

With respect to safe and risk-taking sexual behavior three forms of relationships are usually distinguished: 1) one regular partner, exclusive; 2) one regular partner, non-exclusive; and 3) casual partners only.<sup>3</sup> Studies that include measurements of relationship status generally find that men who are in a primary relationship show significantly lower levels of risk-taking behavior with casual partners than with their regular partner (Bochow, 1990; Fitzpatrick et al., 1989; Fitzpatrick et al., 1990; McKusick et al., 1990; Valdiserri et al., 1988). More specifically, Doornbos (1992) reports that 47% of the men who had one regular exclusive partner, 28% of the men who had both a regular partner and casual partners, and 9% of the men who only had casual partners, had engaged in unprotected anal intercourse in the previous six months. De Wit, de Vroome et al. (1991) have shown that, while 37% of their respondents quit having anal intercourse with casual partners, 91% continued this practice with their regular partner. Thus, sexual behavior partly depends on the type of partner involved.

One other point to keep in mind is that in some instances, the labeling of sexual behavior as unsafe is unjustified. If men entered a monogamous relationship in the pre-AIDS era or if both men in a monogamous relationship have been tested HIV negative, it is clear that unprotected intercourse within their relationship carries no risk of HIV infection.

Summarizing, it appears to be the case that a considerable proportion of gay men have not only limited their number of sexual partners but have also reserved unprotected anal intercourse exclusively for their primary relationship. Although this might seem to be a sensible way to cope with the threat of HIV infection, it also should be noted that as long as the HIV status of the partner is unknown, this coping strategy does not guarantee that one will not get infected.

### DRUG AND ALCOHOL USE

A large number of studies have examined the relationship between substance use (alcohol, drugs, alcohol *and/or* drugs, and nitrite inhalants) and risk-taking sexual behavior. As can be seen in Table 2, almost all studies (there is one exception) either report a negative relationship with protective behavior or fail to find a relationship.

With respect to drug use, both Siegel and associates (1989), and Stall and colleagues (1986) reported a relationship between marijuana use during sex and subsequent risk behavior. Men who used marijuana were more likely to fall in the high-risk category. Ostrow et al. (1990) found that men who used three or more drugs were more likely to continue risk-taking sexual behavior than men who used

<sup>3</sup>It is important to note that there are, of course, more ways of classifying the variety of gay male relationships. The level of refinement depends, in part, on the kind of research questions under study. For example, with respect to non-regular partners it might be useful to distinguish between anonymous and non-anonymous sex partners.

none. In other studies the relationship between drug use and high-risk sexual behavior was absent (Gold et al., 1991; Seage et al., 1992). A number of studies found that alcohol *and/or* drug use was associated with more risk-taking sexual behavior (Kelly et al., 1991) and less condom use (Valdiserri et al., 1988), while two other studies did not find an association (Adib et al., 1991; Connell et al., 1990).

With respect to the relationship between alcohol use and sexual behavior, the results are not straightforward either. Some studies have found that alcohol use prior to or during sex was related to risk-taking sexual behavior (e.g., Stall et al., 1986), other studies could not discover this relationship in their data (e.g., Hays et al., 1990). In a detailed analysis of sexual diaries of 430 gay men, Weatherburn (1992) found that in 250 sexual encounters that involved alcohol use during sex, 58 included anal intercourse. Of these encounters, 46 were with the regular partner (35 exclusive), and in 10 of the 12 remaining encounters condoms were used. The authors reject the hypothesis that alcohol use and risk-taking behavior are related. One study found, contrary to expectations, that higher alcohol consumption at the first measurement was related to the adoption of safer sex practices at follow-up (McCusker, Stoddard, Zapka, Zorn & Mayer, 1989). Another study asked subjects to recall their most recent safe encounter and their most recent risk-taking encounter. Analyses showed that being under the influence of alcohol at the start of sex, and the amounts of alcohol used during sex, did not distinguish between type of encounter (Gold et al., 1991).

Investigations into the relationship between the use of inhaled nitrites and protective sexual behavior have found either a negative relationship (Ostrow et al., 1990; Seage et al., 1992; Stall et al., 1986) or no relationship (Gold et al., 1991; Kelly et al., 1991; McCusker, Stoddard et al., 1989).

It is clear that we do not yet fully understand the relationship between substance use and risk-taking sexual behavior. Some authors who found a relationship suggest that this relationship might be causal (e.g., Stall et al., 1986). The same point of view can be found in several publications on HIV-prevention policy (e.g., Adib & Ostrow, 1991; Peterman, Cates, & Wasserheit, 1992; Peterson, Ostrow, & McKirnan, 1991; Shernoff & Bloom, 1991). However, other authors have expressed doubts about a direct causal relationship between substance use and engaging in risk-taking sex (Gold et al., 1991; Siegel et al., 1989). They suggest that substance use and risk-taking sex might be manifestations of some unknown variable, such as desire for excitement or a predisposition to risk-taking behavior. Finally, a number of authors explicitly doubt whether there is any association at all (Weatherburn et al., 1993).

Summarizing, research on substance use shows equivocal results with regard to its influence on risk-taking sexual behavior. Although a disinhibition explanation seems appealing (it is in fact the reason that many men give for having engaged in risk-taking sex), there is still uncertainty whether there is a direct causal relationship between substance use and subsequent risk-taking sexual behavior.

### PSYCHOSOCIAL VARIABLES

In most instances psychosocial variables are explicitly derived from prevailing (health) behavior theories like the Theory of Reasoned Action (Fishbein & Ajzen, 1975), the Health Belief Model (Janz & Becker, 1984), Social Learning Theory (Bandura, 1986), and the Theory of Planned Behavior (Ajzen, 1988). In the following section we will summarize research that included one or more of the following

psychosocial variables: knowledge, risk perception, attitudes, social norms, and self-efficacy.

#### KNOWLEDGE

AIDS knowledge has been assessed with respect to a variety of domains. Most frequently, studies have looked at knowledge of modes of HIV transmission related to sexual practices, public health guidelines, and risk-reduction measures. Some studies included measures of knowledge regarding the interpretation of HIV test results, misconceptions about HIV and AIDS, and prevalence of HIV and AIDS among gay men.

AIDS education efforts have undoubtedly had a positive influence on gay men's knowledge about the disease. Without exception, studies show very high levels of knowledge (Dallas, 1990; Emmons et al., 1986; Joseph et al., 1987b; Kelly, St. Lawrence, Brasfield, Lemke et al., 1990; McKusick et al., (1990); Siegel et al., 1989; St. Lawrence et al., 1989; Valdiserri et al., 1988). However, the available data on the relationship between knowledge level and risk behavior do not show one clear tendency. Although some studies have shown that knowledge is related to initial behavior change, especially when AIDS was first discovered, it seems that at present it has little predictive value for behavior change or maintenance. Due to ceiling effects, knowledge levels can hardly change, which is probably why an increasing number of researchers have stopped including knowledge as a variable in their studies.

In sum, gay men are well informed about the modes of HIV transmission, public health guidelines, and risk reduction measures. However, the most important conclusion is that, given the complexity of the behavior change that is required, it is not surprising to find that knowledge alone, though a prerequisite for change, is not sufficient to enable behavior modification and maintenance. As has been demonstrated with other health related behaviors as well, within any target group the first distinction one has to make is between adopters and non-adopters (E. M. Rogers, 1983). Among adopters a further distinction can be made with respect to behavior change. A number of people will indeed change their behavior on the basis of health information that gets to them. However, the majority of this group requires more than information to change their behavior. Supportive social norms and the acquisition of necessary skills are examples of what is needed for them to change (E. M. Rogers, 1983).

#### RISK PERCEPTION

Some behavioral theories, especially the Health Belief Model, explicitly hypothesize that a sense of personal susceptibility to a disease (i.e., a perception of risk), among other factors, influences decisions to undertake actions. Several studies have investigated this presumed influence (see Table 2).

There are two types of risk estimates that are generally asked for in this type of research: 1) absolute risk estimates (e.g., "What are your chances of getting infected with HIV?"); 2) relative risk estimates in comparison to others (e.g., "What are your chances of getting infected with HIV, compared to an average gay man your age?"). In both instances it is found that people systematically underestimate their risk. This finding is usually referred to as 'optimistic bias' and is found with regard to many (health-related) behaviors (Weinstein, 1987). For example, Bauman and Siegel

(1987) found that the risk estimates of respondents who practice risk-taking sex were only slightly higher in comparison with safe and low risk groups in their sample. Furthermore, they found that 51% of their sample rated their risk as below average. The group mean of the estimated risk of getting AIDS relative to other gay men was  $-0.35$  (range  $-1$  to  $+1$ ), showing the optimistic bias described above.

Although the finding that risks are underestimated is worrisome in itself, the implications for prevention are not very clear. Mixed results have been found when looking at the relationship between risk perception on the one hand and behavior or behavior change on the other hand. Several studies found that risk perceptions differed between low and high risk-taking groups. Hays et al. (1990) found that high-risk takers, compared to low-risk takers, perceived unprotected anal intercourse to be less risky, while they estimated that their current behavior placed them more at risk for HIV infection. Kelly, St. Lawrence, Brasfield, Lemke et al. (1990) report similar results, that is, men who practiced unprotected anal intercourse with multiple partners regarded their sexual behavior as more risky than men who practiced safe sex. They also found that the risk-estimate decreased as the proportion of protected anal intercourse (i.e., condoms were used) increased. McCusker, Stoddard, et al. (1989) found that greater perceived susceptibility at pretest was the strongest predictor of the adoption of consistent safe behavior at posttest.

A number of studies found that risk perceptions did not distinguish between safe and risk-taking behavior (McKusick et al., 1990; Siegel et al., 1989) or changes in risk-taking behavior (Fitzpatrick et al., 1990; McKusick et al., 1990). In these studies men who showed risk-taking behavior underestimated their risk to such extent that their actual estimates did not differ significantly from men who practiced safe sex.

A review of risk perception research does not clarify whether a relationship with behavior or behavior change exists. There are several possible explanations for the variation in results. First, the operational definitions of risk perceptions vary across studies. While in some studies respondents were asked to rate the riskiness of their current sexual behavior (e.g., Kelly et al., 1991), other studies asked respondents to rate their absolute chance of developing AIDS (Fitzpatrick et al., 1990), or their chance of developing AIDS compared with other gay men (Siegel et al., 1989). Although the number of studies is limited, it seems that respondents have a more realistic appraisal of their risks when they are asked to judge their current or recent sexual behavior than when they are asked to judge possible long-term consequences of their behavior (i.e., developing AIDS). Also, motivation to protect oneself should be framed in terms of susceptibility to the risk behavior (Janz & Becker, 1984; R. W. Rogers, 1983; Ronis, 1992). Thus, when studying AIDS-protective behavior, a question could be: "What is your risk of contracting HIV if you engage in unprotected anal intercourse". If questions are framed in this way, one would hypothesize that those respondents who engage in unprotected anal intercourse have lower risk estimates than those respondents who do not engage in anal intercourse or who consistently use condoms (which, in turn, explains current behavior).

Second, the majority of studies have used cross-sectional designs. As Weinstein (1989) has argued, even if a positive relation between risk perception and behavior is found, the direction of causation is unclear. It could well be that behavior change influences risk perception rather than vice versa.



## ATTITUDES

Research on attitudes related to risk behavior shows the importance of anal intercourse for many gay men. Comparisons between men who engage in risk-taking sexual behavior and those who do not, show that the former regard anal intercourse as more important and enjoyable (Connell et al., 1990; Hays et al., 1990; Kelly et al., 1991), consider anal sex more as "ultimate intimacy" (Dallas, 1990), experience oral sex as less satisfying (Dallas, 1990; Hays et al., 1990), and are less inclined to avoid anal intercourse (de Wit, Sandfort et al., 1991). Men who reported that unprotected anal intercourse is their favorite technique, were more likely to engage in unprotected anal intercourse (McKusick et al., 1990). Gold and colleagues (1991) showed that the desire to have intercourse without a condom, to have exciting sex, and to have excitement in any way possible, were significantly greater in subjects' most recent unsafe encounter compared with subjects' most recent safe encounter. Finally, Connell and Kippax (1990) report that 54% of their sample rated intercourse without a condom as the most physically satisfying form of sex. Thirty-six percent of their sample rated it as the most emotionally satisfying practice.

In sum, men who have positive attitudes toward anal sex are more likely to practice unprotected anal sex. The qualitative studies of Prieur (1990; 1991) show that anal sex is more than just an alternative from the whole gamut of sexual activities. Whenever it is incorporated in the sexual repertoire it becomes valuable to and part of what might be called a gay identity. Connell et al. (1990) argue that for many men anal intercourse is a central part of being gay.

Similar results have been found with regard to attitudes toward condoms. That is, men who have negative attitudes toward condom use are more likely to engage in unprotected anal intercourse (Valdiserri et al., 1988). Using factor analysis, Ross (1988) interprets the most prominent factor (accounting for over a quarter of the total variance) as a negative attitude toward condoms. Items with high loadings on this factor reflect the view that condoms are unerotic, unreliable and uncomfortable. Clearly, neither a positive attitude toward anal intercourse, nor a negative attitude toward condom use promotes safer sex.

There are two possible avenues one may take if one wants to promote safer sex through attitudinal change. First, one might try to change these positive attitudes toward anal sex. The aim of such interventions would be to have gay men refrain from anal sex. Second, one might try to change attitudes toward condom use in a positive direction and preserve positive attitudes toward anal sex. The obvious advantage of the former is that refraining from anal sex would eliminate the risk for HIV infection (assuming that no other risk behavior is prevalent). However, given the significance of anal intercourse, many have questioned the feasibility of this approach and have relied on the latter strategy, that is, promoting condom use. The advantage of this approach is that the positive attitude toward anal intercourse can be left unaffected. This is in line with E. M. Rogers' (1983) argument that innovations have to be compatible with existing values, past experiences, and needs of potential adopters to facilitate adoption. The disadvantage of this approach is that men might judge their behavior as completely safe, while it is known that condom failure rates are substantial.

## SOCIAL INFLUENCE AND NORMS

Norms and values that are supported by peers can have a substantial influence on one's behavior (see Fishbein & Ajzen, 1975). One of the best examples of the

influence of social networks is the swiftness with which safe sex recommendations became known and adhered to by large numbers of gay men. It has also been demonstrated that norms that prevail in peer groups influence the degree of AIDS preventive behavior. A group norm prescribing safe sex has been found to relate to a decrease in number of sex partners (Emmons et al., 1986), avoidance of anonymous partners (Joseph et al., 1987a), safer sexual behavior (Kelly, St. Lawrence, Brasfield, Lemke et al., 1990; Kelly, St. Lawrence, Brasfield, Stevenson et al., 1990), an intention to behave more safely in the future (Fisher, 1988), avoidance of anal intercourse (de Wit, Sandfort et al., 1991), an intention to use condoms (Ross & McLaws, 1992), and consistent condom use (de Wit, Sandfort et al., 1991). Adib and colleagues (1991) report that the absence of peer support was a significant predictor of relapse to unprotected anal intercourse. Prieur (1990) found that the most noticeable difference between men who do not engage in high-risk sex and those who do, is that many of the men that belong to the latter group have a loose social network. Similar results are reported by Connell et al. (1990). They report that involvement with gay community organizations is low for men who engage in unprotected anal intercourse with casual partners. Fishbein et al. (1992) investigated the influence of attitudes and social norms on the intention to engage in 11 sexual behaviors, varying in AIDS risk. The study was conducted in three cities in the U.S. (Seattle, Denver, and Albany). They found that the influence of social norms was greatest in Seattle and smallest in Albany. They attribute this difference to the fact that the gay community in Seattle is larger and better organized, which results in well-linked interpersonal networks and more interpersonal interactions.

Hence, stimulating the development of social networks as well as integration in a social network that enhances safe-sex norms may be a very powerful safeguard against HIV infection.

Influencing social norms is easier said than done. Continuous efforts on a community level, advocating adherence to safe sex recommendations are necessary but not sufficient. Concurrent to this, small-scale activities have to be carried out to support men seeking help in changing their high-risk behavior. This can be done through small group interventions or face-to-face counseling. An example of this is the "Stop AIDS" community discussion groups that have been conducted in many AIDS epicenters (Miller et al., 1990). Another promising approach that Kelly et al. (1992) have applied is the use of peer leaders who are trained to communicate about safe sex with their peers. The results show impressive reductions in unprotected anal intercourse.

## SELF-EFFICACY

Self-efficacy is a person's evaluation of the extent to which he is capable of exerting a certain control over his behavior (Bandura, 1986). The value of self-efficacy estimates is more than a reflection on one's past behavior; it also has a predictive value for future behavior. With respect to AIDS related behavior, self-efficacy is a person's evaluation if, and to what extent, he has the skills to exercise control over sexual situations (Bandura, 1989). The relationship between self-efficacy and AIDS risk behavior has repeatedly been demonstrated. De Wit, Sandfort, et al. (1991) found that self-efficacy in using condoms was the strongest predictor of consistent condom use. Other studies have shown that a non-assertive attitude predicted relapse to unprotected anal intercourse (Adib et al., 1991), and that men who engaged in unprotected anal intercourse rated their sexual communication

skills lower than men who only practiced safe sex (Hays et al., 1990). A comparison of gay men who consistently practiced safe sex with gay men who consistently engage in risk-taking behavior, showed that the latter group expressed more difficulty in changing their sexual behavior (Siegel et al., 1989). Dallas (1990) asked respondents to rate their self-efficacy with respect to behaving safely for the subsequent ten years. Of the respondents who did not engage in anal intercourse, 27% stated they thought it would be difficult, while 47% of the respondents who actually engaged in anal intercourse stated likewise. One important point that has been made is that AIDS risk behavior is special in the sense that it always involves an interaction with one (or more) other individual (Davies & Weatherburn, 1990). In connection to self-efficacy Bandura has noted:

Translating health knowledge into effective self-protection action against AIDS infection requires social skills and a sense of personal power to exercise control over sexual situations. . . . Problems arise in following safer sex practices because self-protection often conflicts with interpersonal pressures and sentiments. . . . The weaker the perceived self-efficacy, the more such social and affective factors can increase the likelihood of risky sexual behavior. (1989, p. 129)

Thus, interventions designed to enhance self-efficacy should be well aware of the interpersonal nature of AIDS risk behavior. One potent strategy is the development of social skills to cope with these interpersonal situations. The desired effects of learning social skills are the ability to cope effectively with high-risk situations and to build up self-assurance. After assessment of existing coping skills for situations where self-efficacy is low (i.e., high-risk situations) adequate coping skills are identified and acquired skills are practiced, preferably by means of role plays. Finally, ample feedback should be given on achievements.

Again, small group interventions or face-to-face counseling are suitable settings to apply these techniques (Kelly, St. Lawrence, Betts, Brasfield, & Hood, 1990).

## CONCLUSIONS

To a certain extent the threat of HIV infection has prompted changes toward safer sexual behavior among gay men: many have reduced their number of partners and have increased their use of condoms. Despite these changes, however, a significant number of gay men still put themselves at risk. This is similar to other health related behaviors. That is, some people adopt protective behaviors faster than others, and some people experience more difficulty in maintaining changes they have made in their behavior. Continuous efforts to improve and innovate interventions are warranted. In order to be able to develop effective interventions, a good understanding of the determinants of safe and risk-taking sexual behavior is needed. We will conclude with general recommendations for future research on determinants of AIDS-related sexual behavior and related methodological issues.

## RECOMMENDATIONS FOR RESEARCH ON DETERMINANTS

1. To benefit the development of prevention activities, studies need to be conducted that increase our knowledge with respect to the observed

relationship between age and risk-taking behavior. Whether being gay men constitute a high-risk group that needs special attention is a question that needs to be addressed.

2. More research is needed among ethnic minorities and gay men with lower SES status.
3. Future research should try to answer questions on the possible (causal) role that substance use may play in AIDS-related behavior. If substance use is related, either causal or non-causal, it becomes important to understand the underlying processes of the relationship.
4. Future research should answer unresolved questions with respect to the influence of AIDS-risk perceptions on AIDS-related behavior.
5. The nature of the disease demands behavioral changes that have to be maintained for long periods of time. It may well be that determinants that are related to initial behavior change differ from determinants that are related to long-term maintenance or relapse. For this reason, more research should be conducted that provides insight in factors that enable gay men to maintain behavior change or cause gay men to return to risk-taking sexual behavior. This implies long-term monitoring of sexual behavior and possible determinants.

## RECOMMENDATIONS WITH RESPECT TO METHODOLOGICAL ISSUES

1. In our opinion it is vital for the generalizability and comparability of results of studies that greater consensus is reached on the operational definitions of behavioral measures. In addition, as mentioned before, efforts should be made to increase the validity and reliability of self-reported sexual behavior.
2. The use of theories that explain behavior or behavior change is recommended. The results of determinant studies are extremely valuable for the development of effective interventions. As Fisher and Fisher (1992) have demonstrated in their review of AIDS-risk-reduction interventions, interventions that are conceptually based appear to have the greatest impact. Therefore, intervention development based on theories will most likely benefit from determinant studies that are also conceptually based (see also Kelly & Murphy, 1992). In addition, we recommend that researchers use and test complete theories instead of isolated concepts, as most behavior is determined by a combination of different determinants. Only complete theories contain a sufficient number of determinants to explain complex behavior such as AIDS-related sexual behavior.
3. Researchers are encouraged to provide ample information on the measures they used in their research.

In this contribution we have reviewed the literature on determinants of safe and risk-taking behavior among gay men. Our recommendations show that efforts have to be made to expand our understanding of AIDS-related sexual behavior and enhance the quality of the research in this area. At the same time we hope that concurrent to this endeavor, efforts will also be made to develop, implement, and evaluate prevention interventions for gay men that are based on the theoretical concepts that seem to pertain to risk behavior change and maintenance.

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# High HIV risk-taking among young gay men

Robert B. Hays, Susan M. Kegeles and Thomas J. Coates

Previous research has shown younger age to be correlated with greater HIV sexual risk-taking among gay men. The purpose of this study was to identify variables associated with HIV risk-taking among younger gay men. Ninety-nine gay men aged 18–25 in three medium-sized West Coast communities completed self-report questionnaires regarding HIV-related behaviors and attitudes. Of the respondents, 43% reported having engaged in unprotected anal intercourse during the previous 6 months. Men who engaged in unprotected anal intercourse reported greater enjoyment of unprotected anal intercourse, perceived less risk of unprotected anal intercourse, labeled themselves as more at risk for AIDS, reported poorer communication skills with sexual partners, and were more likely to have a boyfriend/lover than men who had not engaged in high-risk sex. In addition, respondents perceived the likelihood of acquiring HIV from unprotected anal intercourse with young gay men to be significantly lower than with older gay men. These findings highlight the need for HIV risk-reduction interventions designed specifically for young gay men and identify critical areas to be targeted in such interventions.

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**Keywords:** HIV risk-taking, gay men, sexual behavior, AIDS-related attitudes.

## Introduction

While older gay men in urban areas have dramatically decreased sexual behaviors that can transmit HIV infection, evidence from a variety of studies suggests that high percentages of younger gay men continue to engage in unsafe sex [1–3]. For example, data from the San Francisco Men's Health Study, a population-based sample of gay and bisexual men in San Francisco who have been followed since 1984, show age to be the most consistent predictor of high-risk behavior [1]. Younger men were significantly more likely to engage in unprotected anal intercourse and to do so with more partners than were older men. Similarly, in a survey of 526 gay bar patrons in Seattle, Tampa and Mobile, younger men were more likely to engage in unprotected anal intercourse than were older men [2].

While a number of studies have documented the association between age and HIV risk-taking, we are not aware of any study that has specifically examined factors associated with risk-taking among gay men in the 18–25-year age range. The experience of this age group is very different from that of previous generations of gay men since their sexual careers were initiated in an era when information about AIDS was widely disseminated. AIDS pre-

vention programs that are effective for older gay men may be less appropriate for younger gay men for whom issues specific to their generation will need to be addressed.

A variety of factors may contribute to high HIV risk-taking among young gay men. First, men in this age group may still be in a 'coming out' stage with regard to their sexual identity [4,5]. They may not fully identify themselves as 'gay', and therefore may not perceive themselves to be in a 'risk group' for AIDS. Due to their relative inexperience in personal and sexual relationships, young men may be less socially skilled, and so may be less likely to communicate openly about sexual matters and less competent in negotiating low-risk sexual interactions. Young people in general have heightened feelings of invulnerability [6,7] which may cause younger men to engage in more HIV risk behaviors than older men. Finally, since the bulk of AIDS cases among gay men are in the 30–40-year age group [8], younger men may perceive AIDS to be a problem of older gay men. For example, in focus groups we conducted with young gay men in the San Francisco Bay area, young men expressed a stereotypical view of gay men who were likely to have AIDS as 'older men with moustaches who go to leather bars'. Young men therefore may feel that it is safe to have unprotected intercourse with other young men. The prolonged incu-

From the Center for AIDS Prevention Studies, Division of General Internal Medicine, University of California, San Francisco, USA.

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Requests for reprints to: Center for AIDS Prevention Studies/Box 0886, University of California, San Francisco, CA 94143-0886, USA.

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bation period of HIV infection feeds this misperception since men who become infected in their early twenties are not likely to show symptoms until they are in their thirties.

The purpose of this study was to identify factors associated with HIV risk-taking among gay men aged 18–25. This information is essential in designing AIDS prevention programs specifically targeted to the special needs and situations of young gay men.

## Method

### Procedure

The study was conducted in three medium-sized West Coast cities with low to moderate AIDS prevalence rates (Santa Cruz, California; Santa Barbara, California; and Eugene, Oregon). Self-report questionnaires regarding HIV-related behaviors and attitudes were distributed to men between the ages of 18 and 25 as they left settings identified by local gay leaders as frequented by young gay men (for example, gay bars, adult bookstores, gay student union campus events, public parks and beaches). Gay male field workers approached men individually as they left the target settings and invited them to participate in the study, which was described as a university-based research survey to examine 'how young men were coping with the AIDS epidemic'. Potential respondents were handed the surveys to complete at their convenience and mail back to the researchers in the stamped, addressed envelopes provided. Two hundred and forty-three surveys were distributed in this manner; 86 (35%) were returned. In an attempt to increase the response rate, we repeated the same procedure in one city (Santa Cruz) using a shortened questionnaire and offered to mail respondents \$10 upon receipt of their completed questionnaire. Eighty-six surveys were distributed in this manner; 27 (31%) were returned. Since there were no significant differences in the data collected through the two procedures, we pooled the data sets. The data from 14 men who either (1) were not within the 18–25-year age range, or (2) identified themselves as heterosexual and reported never having engaged in sexual activity with a man were not used in the analyses reported here.

### Survey instrument

Respondents completed a 90-item self-administered questionnaire which assessed sexual behaviors, individual characteristics and attitudes hypothesized by the AIDS Risk Reduction Model [9] to be relevant to HIV risk-taking behavior.

### Sexual behaviors

Respondents were presented with a checklist of sexual behaviors and asked to indicate which behaviors they had engaged in with men and with women during the previ-

ous 6 months. Activities listed included anal intercourse with and without condoms, vaginal intercourse with and without condoms, mutual masturbation, oral–anal contact and oral–genital sex. Numbers of male and female sexual partners during the previous 6 months were also requested. In addition, respondents were asked to report the settings in which they had met their male sexual partners during the previous 6 months and the frequency with which they had used alcohol or drugs before or during sex in the past 6 months.

### Individual characteristics

Respondents were asked to report their age, ethnic identification, amount of education, whether they currently were involved in a boyfriend/lover relationship (and, if so, whether either partner had sex with others), and whether they had ever been tested for HIV antibodies (and if so, the results). In addition, respondents were asked to indicate whether they would describe themselves as gay, bisexual or heterosexual; the age at which they first had sex with a man; and their degree of openness with other people about their sexual feelings toward men (rated on a five-point scale ranging from 'completely out of the closet' to 'definitely in the closet').

### HIV-related attitudes

A series of brief scales (presented in the Appendix) was used to assess the following HIV-related attitudes: self-efficacy (beliefs that one can successfully perform safer-sex behaviors), perceived social norms (perceptions that one's friends support safer-sex behaviors), sexual communication skills (perceptions that one can effectively communicate about safer-sex behaviors with partners), self-labeling (perception that one's current sexual behavior places one at risk for HIV infection), safer-sex efficacy (belief that safer sex behaviors can effectively prevent HIV transmission), interpersonal barriers to safer-sex (perceptions of undesirable consequences of attempting to engage in safer-sex behaviors). Items for each scale were rated on six-point Likert scales ranging from 'strongly agree' to 'strongly disagree'. Respondents were also asked to rate their degree of enjoyment of high-risk activities (anal intercourse without condoms) and low-risk activities (mutual masturbation) on six-point Likert scales ranging from 'enjoy very much' to 'dislike very much'. Similarly, respondents rated their perceptions of riskiness of the same high- and low-risk activities on a five-point scale which ranged from 'not at all risky' to 'extremely risky'. Cronbach alphas for all scales ranged from 0.60 to 0.85. In addition, respondents were asked to rate the chances of becoming infected with HIV by having unprotected intercourse with young gay men (25 years old or less) versus gay men in their thirties on six-point Likert scales ranging from 'no chance at all' to 'definitely would happen'.

### Reasons for sexual risk-taking

Respondents were asked to rate the likelihood that young men in their community 'might have unsafe sex (for example, anal intercourse without a condom)' in a variety of circumstances using a five-point Likert scale ranging from 'not at all likely' to 'extremely likely'.

Finally, a series of free-response questions asked for the respondents' perceptions of how their behavior had been affected by the AIDS epidemic, reasons why young gay men might have unsafe sex, and ideas on how to prevent the further spread of AIDS among young gay men in their community.

## Results

### Sample description

Usable questionnaires were returned from 99 men. Their mean age was 22.57 (s.d. 2.02, range 18–25). The sample was 79% white, 13% Hispanic, 4% Asian, and 4% other. Thirty-five per cent were college graduates; an additional 50% had some college education. Eighty-eight per cent described themselves as gay; 12% as bisexual. The average age of their first gay experience was 16.35 (s.d. 3.12). Sixty-three per cent described themselves as mostly or completely 'out of the closet' about their gayity, while 37% described themselves as 'in the closet' at least half the time. One quarter reported having had sex with both men and women during the past 3 years. Sixty-four per cent reported that they had been tested for HIV antibodies and six (6%) reported that they were seropositive. Two per cent had had gonorrhoea and 2% syphilis during the previous year. Forty per cent of the men reported currently having a boyfriend/partner, but 43% of those relationships were not monogamous.

### Sexual activities

Table 1 presents the percentages of men who engaged in each of the various sexual activities during the preceding 6 months. Forty-three per cent of the respondents reported engaging in unprotected anal intercourse during the preceding 6 months (32% receptive, 34% insertive). Forty per cent had had oral-anal contact; 28% had engaged in oral sex with ejaculation into the mouth. Six per cent reported having had sex with a woman in the

previous 6 months; two had engaged in unprotected vaginal intercourse. The median number of male partners in the past 6 months was three (range 0–50); the median number of female partners was zero (range 0–2). Sixty-one per cent reported using alcohol/drugs during sex in the past 6 months. Thirty-seven per cent said they did so half or more than half the time they had sex. The most common places the men reported meeting male sexual partners were gay bars (65%), parties (44%), public parks/beaches (30%), adult bookstores/bath-houses (19%) and school (17%).

### Low versus high risk-takers

Table 2 represents a comparison of men who had engaged in high-risk sex (unprotected insertive or receptive anal intercourse) during the preceding 6 months versus men who had not. Multiple analysis of variance (MANOVA) was used to test for differences between high- and low-risk takers. The 10 HIV-related attitudes and frequency of combining drugs/alcohol with sex were included as dependent variables. The significant MANOVA [ $F(11, 87) = 5.82, P < 0.001$ ] was further examined with univariate analyses of variance (ANOVA). Compared with men who did not engage in unprotected anal intercourse, men who engaged in unprotected anal intercourse: reported more enjoyment of anal intercourse without condoms [ $F(1, 97) = 29.76, P < 0.001$ ]; perceived less risk of unprotected anal intercourse (especially of insertive anal intercourse) [ $F(1, 97) = 6.66, P < 0.02$ ]; labeled themselves as more at risk for AIDS [ $F(1, 97) = 13.22, P < 0.001$ ] and reported poorer communication skills with sexual partners [ $F(1, 97) = 4.04, P < 0.05$ ]. In addition, chi-square analyses revealed that high-risk men were more likely to have a boyfriend/partner (chi-square = 5.83, d.f. = 1,  $P < 0.01$ ).

Ten of the men who had engaged in unprotected anal intercourse reported being HIV-negative and in mutually monogamous relationships. Since one might argue that unprotected anal intercourse for these men was not a high-risk behavior, we repeated the above analyses ex-

Table 1. Percentages of young gay men ( $n = 99$ ) engaging in various sexual activities during preceding 6 months.

Sexual activities with men		Sexual activities with women	
Anal intercourse		Vaginal intercourse	
Receptive without condoms	32%	Insertive without condoms	2%
Insertive without condoms	34%	Insertive with condoms	6%
Receptive with condoms	46%	Anal intercourse	
Insertive with condoms	40%	Insertive without condoms	0%
Oral-genital sex		Insertive with condoms	0%
Receptive with ejaculation	19%	Oral-genital sex	
Insertive with ejaculation	24%	Receptive with ejaculation	0%
Receptive without ejaculation	82%	Receptive without ejaculation	4%
Insertive without ejaculation	83%	Cunnilingus	2%
Oral-anal		Oral-anal	
Active	22%	Active	1%
Passive	31%	Passive	0%
Mutual masturbation		Mutual masturbation	
Active	82%	Active	3%
Passive	86%	Passive	4%

43%  
activity

Table 2. Comparisons between young gay men who engaged in unprotected anal intercourse (high risk-takers) versus men who did not (low risk-takers), including 95% confidence intervals.

	Low risk-takers n = 56 (95% CI)	High risk-takers n = 43 (95% CI)
<b>Individual characteristics</b>		
Age	22.7 (22.2, 23.2)	22.4 (21.8, 23.1)
Years since first homosexual sex	5.8 (4.8, 6.8)	6.4 (5.2, 7.6)
Ethnicity (% non-white)	14% (1%, 27%)	30% (16%, 45%)
Education (years of school)	14.7 (14.3, 15.1)	14.4 (13.9, 14.9)
% having boyfriend/lover	24% (10%, 39%)	62% (45%, 79%)
Number of male sex partners (past 6 months)	3.9 (2.6, 5.1)	6.8 (3.9, 9.8)
% taken HIV-antibody test	58% (45%, 71%)	72% (59%, 85%)
% tested HIV-positive	10% (0%, 27%)	10% (0%, 27%)
% bisexual (self-labeled)	11% (0%, 24%)	14% (0%, 28%)
Openness with regard to homosexuality	3.5 (3.2, 3.8)	3.8 (3.4, 4.2)
<b>HIV-related attitudes</b>		
Enjoyment of unprotected anal intercourse	3.00 (2.5, 3.5)	4.8 (4.4, 5.2)
Enjoyment of mutual masturbation	5.6 (5.4, 5.8)	5.3 (5.0, 5.6)
Perceived riskiness of unprotected anal intercourse	4.6 (4.4, 4.8)	4.2 (3.9, 4.5)
Perceived riskiness of mutual masturbation	1.3 (1.2, 1.5)	1.4 (1.3, 1.6)
Self-labeling	2.7 (2.3, 3.0)	3.7 (3.2, 4.2)
Sexual communication skills	5.0 (4.7, 5.2)	4.5 (4.2, 4.9)
Self-efficacy	5.6 (5.4, 5.7)	5.5 (5.3, 5.7)
Perceived social norms	5.0 (4.7, 5.3)	4.8 (4.4, 5.2)
Safer-sex efficacy	4.5 (4.2, 4.9)	4.6 (4.2, 5.0)
Interpersonal barriers to safer sex	2.3 (2.0, 2.6)	2.6 (2.3, 3.0)
Drug/alcohol use during sex	1.3 (1.0, 1.7)	1.5 (1.1, 2.0)

cluding those men. When these men were excluded from the analyses described above, the results did not change.

#### Reasons for risk-taking

Respondents perceived the likelihood of acquiring HIV from unprotected anal intercourse with young gay men to be significantly lower than from older gay men ( $t = 7.59$ ,  $df = 95$ ,  $P < 0.001$ ). To gain further insight into factors contributing to sexual risk-taking among young gay men, we asked respondents to rate the likelihood that young men in their community might have 'unsafe sex' with another man in a variety of circumstances. Table 3 presents the mean ratings of each circumstance for high and low risk-takers. While high risk-takers rated the likelihood of each item higher than did the low risk-takers (reflecting their own tendency to engage in high risk activities), the relative ranking of items by high and low risk-takers was the same. On the average, respondents consid-

ered it 'very likely' a young man would engage in unsafe sex if he were 'in love with his partner' or using alcohol or drugs prior to having sex. Unsafe sex was considered 'somewhat likely' if: both partners were HIV-positive; he was 'too sexually turned on to stop'; his partner was 'really good looking'; his partner said he was not infected with HIV; the partner 'talked him into it'; there were no condoms available, or 'he didn't want to disappoint his partner'.

#### Discussion

This study found a high rate of HIV sexual risk-taking among gay men aged 18-25 and identified factors which characterize young gay men who engage in high-risk sex. Young gay men who engaged in unprotected anal inter-

Table 3. Perceived likelihood of engaging in unsafe sex in various circumstances for high- and low-risk-taking men, including 95% confidence intervals\*.

	Low risk-takers n = 56 (95% CI)	High risk-takers n = 43 (95% CI)
Being 'in love' with partner	3.6 (3.2, 3.9)	4.2 (3.8, 4.5)
Using drugs/alcohol	3.4 (3.0, 3.8)	4.1 (3.8, 4.3)
Being too 'sexually turned on' to stop	3.1 (2.7, 3.6)	3.9 (3.6, 4.2)
Both partners are HIV-positive	3.2 (2.8, 3.7)	3.7 (3.2, 4.1)
Partner is 'really good-looking'	2.9 (2.5, 3.3)	3.6 (3.3, 4.0)
Partner says he is HIV-negative	2.9 (2.6, 3.2)	3.4 (3.1, 3.8)
Partner talks him into it	2.9 (2.5, 3.3)	3.0 (2.7, 3.3)
No condoms available	2.6 (2.2, 3.0)	3.4 (3.1, 3.7)
Don't want to disappoint partner	2.6 (2.2, 3.0)	3.0 (2.7, 3.3)

\*1, not at all likely; 3, somewhat likely; 5, extremely likely.



course were found to differ from men who did not on five dimensions: they reported greater enjoyment of unprotected anal intercourse; perceived less risk of unprotected anal intercourse (especially of insertive anal intercourse); labeled themselves as more at risk for AIDS; reported poorer communication skills with sexual partners, and were more likely to have a boyfriend/lover. In addition, respondents rated the chances of acquiring HIV from unprotected anal intercourse with young gay men to be significantly less than with older gay men.

These findings have important implications for the design of effective HIV risk-reduction interventions for young gay men. First, HIV prevention programs must reduce the perception that sex with younger men is 'safer' than with older men. As expressed in the free-response comments of one HIV-positive 21-year-old, 'Especially in people under 18 there seems to be an attitude that "It can't happen to me". When I was that age I saw a lot of men in their thirties who had AIDS but hardly ever heard about someone my age getting it'. Heightening awareness of young gay men that HIV infection does exist among their peers is critical. Further, in contrast to older gay men who tend to be highly knowledgeable about AIDS and safer sex [2], younger men appear to need more didactic presentations of AIDS information. As one man stated, 'I meet a lot of 19-20-year-olds who don't know what is or isn't safe or how to use a condom'. Another wrote, 'When I started to experiment with sex with men 3 years ago, I never played safe. But as I learned about AIDS, I began to play safe and have since changed my behavior'. Young gay men, whose initial 'coming out' period often includes a flurry of sexual experimentation [4], cannot afford that early period of AIDS ignorance. Several specific areas of misinformation regarding HIV risk were identified: young men need to be educated that insertive anal intercourse without condoms is risky and that safer sex guidelines should be followed even if both partners are HIV-positive or in an emotionally committed relationship. In addition, the mistaken belief that anal intercourse without condoms was safe if they withdrew before ejaculation was expressed by several in their free-response comments.

While important starting points, increasing awareness and knowledge are clearly insufficient in preventing HIV infection among young gay men given our finding that men who engaged in unprotected anal intercourse *did* recognize that their behavior places them at risk for AIDS. To some degree, this may reflect feelings of personal invulnerability characteristic of youth [6,7]. Young gay men may recognize the riskiness of their behavior but feel the negative consequences 'won't happen to me'. However, knowingly engaging in high-risk sex may also reflect motivational and/or skill deficits among young gay men. As postulated by the AIDS Risk Reduction Model [9], an analysis of the costs and benefits of engaging in safer sex influences one's commitment to low-risk activities. As we found, a potent cost for young gay men is the reduced enjoyment associated with using condoms. In the words of one respondent, 'Even if condoms are readily available, there is still a deep feeling that sex without condoms is more fun'. Another wrote, 'I know a lot of guys

my age just coming out and are having too much fun to worry about AIDS'. Effective HIV risk-reduction programs for young gay men must therefore help them to develop ideas and skills to heighten the enjoyment value of low-risk activities (for example, exercises designed to eroticize safer sex activities).

Efforts to increase motivation for safer sex among young gay men must also consider the broader social context within which young gay men's sexual behavior occurs. Sex within dating and primary relationships must be discussed, emphasizing that being 'in love' or committed to one's partner does not make unprotected intercourse 'safe'. Using sex as a way to attract a partner or gain affection must also be addressed. As one HIV-positive respondent wrote, 'gay youths are also incredibly in need of love and attention and oftentimes would do anything (including unsafe sex) if they thought they were getting that love and attention. I have a lot of bitterness over the fact that as a gay teenager all I wanted was to be loved and all I got was dick up the butt and the HIV infection. I got over it but it happens all too often to gay youth'. Feelings of isolation and alienation common among gay youth [10] may also reduce their motivation to engage in safer sex. As one respondent wrote, 'It seems like nobody cares if I die anyway'.

The finding that men who engage in unsafe sex rated their communication skills significantly lower than men who did not suggests that skill deficits are an additional contributor to high risk-taking among young gay men. Due to their relative inexperience in interpersonal relationships, young men may need training in communication skills necessary for negotiating safer sex. Assertiveness training in ways to resist being 'talked into' doing something unsafe may also be critical. Further, our findings suggest that issues of impulse control must also be addressed for young men. Being 'too sexually turned on to stop' or being overwhelmed by a good-looking partner were prominently cited as possible causes of unsafe sex. In free-response comments, one man admitted occasionally being unable to control himself during sex, adding 'I always feel guilty and emotionally disturbed once it is over though'. Strategies which young men can use to direct their sexual energies to low-risk activities would be useful.

In view of the poor communication abilities of many young men, skills training should also emphasize methods of structuring situations in which sex is likely in ways that maximize the likelihood of safer sex. For example, the high percentage of young men who reported combining drugs and alcohol with sex is problematic in view of research showing drug and alcohol use as a contributor to HIV risk-taking [11]. Young men must be made aware of the dangers of engaging in sexual activity while under the influence of artificial substances. Likewise, taking responsibility for having condoms readily available must be emphasized ['More than once I would have practiced unsafe sex if not for the free condoms' (given out at the bar)].

There are several limitations of this study. First, our sample was not a random sample of the young gay men in

these communities. Although we distributed the surveys in a variety of settings where young men who have sex with other men congregate, the men who completed the survey were predominantly gay-identified and described themselves as fairly 'out of the closet'. While this population is vitally important for AIDS prevention efforts, the findings obtained may not generalize to gayly active young men who do not identify themselves as gay or bisexual or who do not frequent the public settings we targeted. Although an extremely difficult population to reach, investigations of this subgroup would be very important. In addition, the sample was predominantly white and college-educated; the results may not generalize to gay men who are from ethnic minorities or less educated. Further, the experience of young gay men in larger urban areas where AIDS is more prevalent may differ in important ways from that of men in smaller communities such as those studied here. Finally, the 35% response rate obtained in this study is less than ideal. However, given that the primary purpose of the study was to examine correlates of high-risk sex among young gay men, since the sample did include sufficient numbers of both high and low risk-taking men, we feel the findings are useful in identifying differences between young men who do and do not engage in high-risk sex. Nonetheless, strategies for increasing the response rates in future studies of this nature would be invaluable.

In conclusion, this study shows that intervention with young gay men must be a high priority in efforts to halt the AIDS epidemic and identifies critical areas to be targeted in such interventions. On the bright side, if young gay men can be socialized to engage in safer sex from the outset of their sexual careers, the likelihood of their maintaining low-risk behavior is high since their risky habits are likely to be less entrenched than among older men. This study has identified the need and necessary content of AIDS prevention interventions for young gay men; research into the most effective formats for such intervention is an important next step.

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### Appendix

Scales used to assess HIV-related attitudes (with Cronbach alphas).

#### Self-efficacy (alpha = 0.67)

- (a) I can get a man I'm having sex with to use condoms if I want him to.
- (b) If someone I'm having sex with doesn't want to follow safe sex guidelines, there is little I can do about it.
- (c) If someone I'm having sex with does not want to use a condom, there is little I can do about it.
- (d) If someone I'm having sex with starts to do something unsafe, there is little I can do about it.

#### Perceived social norms (alpha = 0.67)

- (a) Most of my friends think you should always use condoms when having anal intercourse.
- (b) Most of my friends think that condoms are too much of a hassle to use.
- (c) Most of my friends think you should avoid anal intercourse without condoms.

#### Sexual communication skills (alpha = 0.61)

- (a) It is easy for me to tell a sex partner I won't have anal intercourse without a condom.
- (b) I find it difficult telling a sex partner not to do something I think is unsafe.
- (c) It's easy for me to tell a sex partner what I do or don't like to do during sex.

#### Self-labeling (alpha = 0.85)

- (a) There is little chance that I could catch or spread AIDS from what I do sexually.
- (b) My sexual behavior is risky for catching AIDS.

- (c) I don't do things that could cause me to catch AIDS.

#### Safer-sex efficacy ( $\alpha = 0.64$ )

- (a) People who follow 'safe sex guidelines' can usually avoid getting the AIDS virus.  
 (b) People who always use condoms will probably not get the AIDS virus.

#### Interpersonal barriers ( $\alpha = 0.75$ )

- (a) If I suggested using condoms to a man I was having sex with, he might be offended.  
 (b) If I wanted to use a condom, my sex partner might think that I am infected with the AIDS virus.  
 (c) If I requested a man I was having sex with to use a condom, he might think that I suspect him of being infected with the AIDS virus.

#### Enjoyment

Instructions: for each sexual activity, circle the number that best shows how much you enjoy or think you might enjoy doing that activity with a man. Please circle the number for each sexual activity whether you have done it or not.

#### Unprotected anal intercourse ( $\alpha = 0.71$ )

Anal intercourse where:

- (a) you put your penis in your partner's anus without a condom;  
 (b) your partner puts his penis in your anus without a condom.

#### Mutual masturbation ( $\alpha = 0.78$ )

Masturbation where:

- (a) you masturbate your partner;  
 (b) your partner masturbates you.

#### Perceived riskiness

Instructions: how risky (for you to get AIDS) do you think the various sexual activities listed below are, if you were to do them with a man whose antibody status was unknown to you?

#### Unprotected anal intercourse ( $\alpha = 0.60$ )

Anal intercourse where:

- (a) you put your penis in your partner's anus without a condom;  
 (b) your partner puts his penis in your anus without a condom.

#### Mutual masturbation ( $\alpha = 0.81$ )

Masturbation where:

- (a) you masturbate your partner;  
 (b) your partner masturbates you.

## Sex-work harm reduction

Michael L. Rekart

Sex work is an extremely dangerous profession. The use of harm-reduction principles can help to safeguard sex workers' lives in the same way that drug users have benefited from drug-use harm reduction. Sex workers are exposed to serious harms: drug use, disease, violence, discrimination, debt, criminalisation, and exploitation (child prostitution, trafficking for sex work, and exploitation of migrants). Successful and promising harm-reduction strategies are available: education, empowerment, prevention, care, occupational health and safety, decriminalisation of sex workers, and human-rights-based approaches. Successful interventions include peer education, training in condom-negotiating skills, safety tips for street-based sex workers, male and female condoms, the prevention-care synergy, occupational health and safety guidelines for brothels, self-help organisations, and community-based child protection networks. Straightforward and achievable steps are available to improve the day-to-day lives of sex workers while they continue to work. Conceptualising and debating sex-work harm reduction as a new paradigm can hasten this process.

Sex work and injection drug use are among the most perilous activities worldwide. Harm reduction has stimulated global debate about drug use, and the application of harm-reduction principles to interventions such as needle exchange has reduced HIV spread and improved the lives of drug users.<sup>1</sup> Since drug users might participate in sex work to pay for drugs, drug-user harm reduction includes condom promotion, and sex workers could use drugs to cope with psychological, emotional, and physical stress.<sup>2-4</sup> Safe-sex campaigns and social marketing of condoms are based on harm-reduction principles. The process of harm reduction is not new to the study of sex work. Harm-reduction and risk-reduction strategies have been adopted by health authorities, sex worker organisations, and sex workers themselves. This Review aims to (1) examine studies of sex work, by concentrating on peer-reviewed publications, and classify harms and harm-reduction strategies into overall themes; and (2) focus on simple, available strategies to improve sex workers' lives. Male and trans-sexual sex workers face harms and can benefit from harm-reduction strategies; however, this Review will not focus on these topics or the specific issues of clients outside of the general theme of sex-work harm reduction.

Sex-work harm reduction has been proposed by the International Harm Reduction Development (IHRD) programme as a framework for discussion, action and research.<sup>6</sup> Sex-work harm reduction has also been conceptualised in newsletters, booklets, reports and conference abstracts.<sup>7-11</sup>

### Sex-work harms

Differences in social context need to be considered for sex-work harms to be meaningful. In some societies, sex work is legal or decriminalised; sex workers have access to health and social services; and they are not heavily stigmatised or economically destitute.<sup>11</sup> Alternatively, sex work could be a survival tactic during severe societal disruption when no services are available and life necessities are scarce.<sup>11</sup> Most societies exist between

these extremes and sex-work harms thus vary from place to place.<sup>2</sup> Poverty, war, globalisation, and neocolonialism are important causes of the international sex-work trade<sup>1</sup> but these issues are beyond the realm of harm reduction.

### Drug use

Injection drug use is common in sex workers in many locations.<sup>12-17</sup> Sex workers who inject drugs might use condoms less consistently and, for more money, they might agree to unprotected sex or anal sex.<sup>13,16,18,19</sup> Individuals who share needles, syringes, and drug injection paraphernalia are at risk of HIV, hepatitis B and C, and syphilis.<sup>20,21</sup> Female sex workers could be in relationships with male injectors who mix the drug and inject the women, increasing their HIV risk.<sup>22</sup> Physical and sexual abuse by customers has been associated with drug use in sex workers.<sup>15,21</sup> Injection drug use can cause

### Search strategy and selection criteria

For peer-reviewed publications, I searched MEDLINE (from 1966) and EMBASE (from 1980) using the MeSH terms "prostitution" and "risk reduction". UN, UNAIDS, and WHO publications were searched online with "sex work", "sex worker", "sex trade", "prostitution", "prostitute", "survival sex", "transactional sex", "harm reduction", "risk reduction", "trafficking", "decriminalization", and "human rights". The same terms were used to search psychological, social sciences, and social work publications (from 2000) from PsycInfo, Social Work Abstracts, Social Science Abstracts, and the Web of Science. EMBASE, MEDLINE, and a comprehensive social scientific and psychological review on sex work (1990-2000) were also used. Reference lists from selected articles and widely used textbooks on sexually transmitted disease were also reviewed. With the same key words, I searched non-peer-reviewed work using an online search engine (Google), abstracts from International AIDS Conferences (1996-2004); UN, UNAIDS, and WHO websites and publications; and information from non-governmental organisations. Peer-reviewed work and UN publications were reviewed to establish overall themes. All harms and harm-reduction strategies were listed and grouped under general headings. Selected articles best represented specific themes according to the following hierarchy: analytical studies, descriptive studies, UN publications, and commentaries or editorials. Randomised, controlled, or large studies were preferred. The Journal Citation Reports database was used to select high-impact journals. Non-peer-reviewed work was searched for additional issues.



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 British Columbia Centre for  
 Disease Control, University of  
 British Columbia, Vancouver  
 V5Z 4R4, BC, Canada  
 (Prof M L Rekart MD)  
 Correspondence to:  
 Prof Michael L Rekart  
 michael.rekart@bccdc.ca

skin infections, thrombosis, sepsis, endocarditis, overdoses, and other serious illnesses.<sup>20</sup>

Sex workers could use non-injection drugs such as cocaine, crack, and crystal methamphetamine,<sup>5,16,17,19,24-27</sup> leading to poor judgment, unsafe sex, immune suppression, cardiovascular and neurological disease, overdose, and addiction.<sup>16-20</sup> In Guyanese sex workers, cocaine was significantly associated with inconsistent condom use.<sup>17</sup> Alcohol, probably the most important drug in the sex-work industry,<sup>15,16,26-28</sup> has been associated with violence, abuse, unsafe sex, HIV infection, and liver damage.<sup>5,16,20,29</sup>

**Disease**

Sex workers have an increased risk of sexually transmitted infections (STIs), including HIV.<sup>2,16,17,30-36</sup> Condom use varies among sex workers,<sup>2-4,15,16,28,32</sup> and the decision to use condoms is often controlled by the customer or brothel owner.<sup>2,16,18,24,28,37</sup> Descriptive and analytical studies show that sex workers commonly use condoms less often with regular partners, spouses, and non-paying customers.<sup>2,16,17,19,24,32,38-40</sup>

STI complications are common in sex workers, including pelvic inflammatory disease and ectopic pregnancy.<sup>16,30,38</sup> STIs are cofactors in HIV transmission,<sup>30,38,41</sup> and frequent intercourse can cause genital trauma, greatly increasing HIV risk.<sup>16,42,43</sup> Sex workers sometimes douche, or use drying or astringent substances that remove the lubricating vaginal fluid to increase a sense of tightness or induce "dry sex". These practices have been associated with an increased risk of STIs or HIV infection.<sup>2,44-46</sup> Sex workers could also acquire hepatitis A or herpes through anal-oral contact.<sup>47</sup>

**Violence**

Violence<sup>2-5,15,16,18,21,27,48-50</sup> against sex workers is an important issue in many communities. Violence includes physical, verbal, and sexual abuse; gang rape; traumatic intercourse; emotional trauma; robbery; confinement; and murder. Street-based sex workers have an increased risk of violence.<sup>48</sup> Violence results in morbidity, disability, emotional scarring, psychological stress, and low self-esteem. Significantly raised overall mortality and homicide mortality have been shown in active and former sex workers.<sup>49</sup> Violence by an intimate partner has also been associated with an increased risk of HIV infection.<sup>51</sup>

**Discrimination**

Sex workers are easy targets for discrimination, the overtly expressed corollary of stigmatisation.<sup>2,16,18,52-55</sup> These individuals are devalued in many societies and often blamed for the breakdown of the traditional family, epidemics of STIs and HIV/AIDS, escalating crime, and the subversion of youth.<sup>1,16,28,52,53</sup> Stigmatisation can lead to abuse, violence, criminalisation, denial of services, and low self-esteem, which affects sex workers'

health.<sup>2,4,16,38</sup> Sex workers with HIV/AIDS could be doubly stigmatised.<sup>16</sup>

**Debt**

Young people sometimes enter sex work to support their families but soon acquire personal debts for transportation, accommodation, clothes, cosmetics, condoms, food, medical care, drugs, and fines.<sup>2-4,16,24,56-58</sup> Risk-taking in sex workers has been statistically correlated with financial need.<sup>59</sup> Brothels can hold sex workers in debt bondage, allowing them to keep a small proportion of their earnings.<sup>16,44</sup> As debts accumulate, the likelihood of individuals leaving sex work falls.<sup>1</sup>

**Criminalisation**

Prostitution, or some aspect of it such as soliciting, is illegal in many countries, but the law is an ineffective means of eliminating its negative aspects, often resulting in the criminalisation of sex workers.<sup>2,10,16,38,51,60</sup> Even if prostitution is not illegal, sex workers can be treated as criminals.<sup>2,18,53</sup> Criminalisation leads to violence; police harassment; increased HIV and STI risk; reduced access to services; psychological disease; drug use; poor self-esteem; loss of family and friends; work-related mortality; and restrictions on travel, employment, housing, and parenting.<sup>10,16,18,24,38,61-65</sup>

Estimated yearly occurrence	
<b>Adverse health effects in prostituted children*</b>	
Infectious disease	
STDs	2 000 000
HIV infection	300 000
HPV infection	4 500 000
HBV infection	500 000
Pregnancy	
Maternal deaths	4 752
Spontaneous abortions	900 000
Induced abortions	1 224 000
Abortion-related complications	367 200
Abortion-related deaths	710
Mental illness	
PTSD	6 700 000
Attempted suicide	1 640 000
Substance abuse	
All substances	9 000 000
Violence	
Physical assault	2 500 000
Rape	2 500 000
Murder	6 900
Malnutrition	Unable to estimate
<b>Adverse health effects in infants born to prostituted children†</b>	
Infant deaths	190 080
Complication of STDs	237 000
HIV infection	249 480
Deaths from HIV infection	54 886
HBV infection	8316

STD=sexually transmitted disease. HPV=human papillomavirus. HBV=hepatitis B virus. PTSD=post-traumatic stress disorder. \*Based on an estimated 9 million girls and 1 million boys prostituted per year. †Based on an estimated 2 376 000 infants born to prostituted children per year. Table reproduced from reference 67, with permission from Elsevier.

**Table 1: Estimated yearly occurrence of adverse health effects of child prostitution**

## Exploitation

Child prostitution, human trafficking for sex work, and the abuse of migrant sex workers are important examples of exploitation.<sup>16,24</sup> UNICEF has estimated that 1 million children enter the sex trade every year.<sup>66</sup> Children can be sold or led into prostitution by their families.<sup>116,67</sup> Customers frequently prefer young girls, especially virgins, believing that there is less risk of diseases such as HIV/AIDS or that sex with virgins will enhance their sexual potency, cure disease, or extend their lifespan.<sup>16,24,67,68</sup> Children brought into prostitution have little power to negotiate condom use<sup>16,67</sup> and the immature vagina and cervix are more susceptible to STIs.<sup>60</sup> Child prostitutes are at high risk of HIV and STIs, violence, sexual abuse, rape, substance use, mental illness, tuberculosis, hepatitis, malnutrition, suicide, and death (table 1).<sup>16,23,34,67,69</sup> Pregnant adolescent sex workers are at increased risk of pregnancy complications, maternal morbidity and mortality, and the complications from safe and unsafe abortions.<sup>67</sup>

The UN defines human trafficking as "recruitment, transportation, transfer, harboring or receipt of persons, by coercion for the purpose of exploitation including prostitution".<sup>70</sup> Although trafficking and sex work raise different issues, trafficking for sex work is associated with HIV infection, STIs, discrimination, illegal immigration status, reduced access to medical and legal assistance, violence, and drug use.<sup>16,71-75</sup> Once trafficked, girls might be reluctant to return home.<sup>72</sup> Human trafficking is the fastest growing international trafficking business.<sup>70,76</sup>

A migrant is an individual who is engaged in a remunerated activity in a state where he or she is not a national. Migrants can be at risk of discrimination, violence, HIV and STIs, criminalisation, poor medical care, and drug use.<sup>1,16,40,52,57,58,77-81</sup> Female economic migrants are targeted by sex work recruiters.<sup>82,52</sup> Migrant sex workers have become a bridge population in the global spread of HIV/AIDS,<sup>82,84,84</sup> and their mobility causes problems for the establishment of support networks and going medical care.<sup>30,48,80,85</sup> An Australian study showed a higher risk of STIs and lower condom use for international sex workers than for local sex workers.<sup>86</sup>

## Strategies for sex-work harm reduction (table 2)

For centuries, sex workers have faced the harms of sex work. They have developed strategies for understanding their options, modifying their risks, and coping with their situations. Social science publications, especially the autobiographical writings of sex workers, show the logic and power they use in their day-to-day lives.<sup>2,5,18,54,55,57,80,87,88</sup>

Sex workers' coping strategies are based on personal knowledge, tradition and culture, experience, and future plans. Although intended to reduce risk, some strategies could worsen the situation or have no effect (panel 1). Harm-reduction initiatives for sex workers should build

	Initiatives	Harms reduced
Education	Peer education, outreach programmes, accessible and appropriate materials, sex worker involvement	Drug use, disease, violence, debt, exploitation
Empowerment	Self-esteem, individual control, safe sex, solidarity, personal safety, negotiating skills, refusal to clients, service access, acceptance by society	Drug use, disease, violence, debt, discrimination, exploitation
Prevention	Male and female condoms, lubricant, vaccines, behavioural change, voluntary HIV counselling and testing, participation in research	Drug use, disease
Care	Accessible, acceptable, high-quality, integrated care; prevention-care synergy; prophylaxis; STIs, HIV/AIDS, and psychological care; social support	Drug use, disease, violence, exploitation
Occupational health and safety	Control exposures and hazards, treatment for injuries and diseases, employer duties, worker rights	Drug use, disease, violence, debt, exploitation
Decriminalisation of sex workers	Sex worker organisations, sex work projects, non-governmental organisations	Criminalisation, discrimination, violence
Rights-based approach	Education, telephone hotlines, training targeted and user-friendly services, government action, media, PREVENT,* refugee package, community development	Exploitation (ie, child prostitution, human trafficking, exploitation of mobile populations)

\*PREVENT=psychological counselling, reproductive health services, education, vaccinations, early detection, nutrition, treatment.

Table 2: Interventions for sex-work harm reduction

on their own strategies, value their distinctive differences, not conflict with their culture and traditions, and increase their options for self-determination, autonomy, and control.<sup>2,18,54,57,59,87,88</sup> The social, behavioural, and professional heterogeneity of sex worker subgroups often needs different individual and structural interventions.<sup>91,94</sup> WHO's Sex Work Toolkit<sup>92</sup> delineates the key principles and issues for HIV prevention, care, and empowerment, and the best practices against the inherent challenges in interventions for sex-work harm reductions (panel 2).

## Education

Education for sex workers can improve healthy behaviour by delivering the basic facts about disease,

### Panel 1: Personal coping strategies of sex workers

- Keep working and personal lives separate<sup>88</sup>
- Prioritise positive roles, such as motherhood<sup>87</sup>
- Dissociate emotionally and physically from work and clients (eg, douching, condom use, drug use)<sup>5,19</sup>
- Use degrees of intimacy to distinguish between work and non-work sex (eg, no kissing at work, no condom use with regular partners)<sup>18,31,87,88</sup>
- Undertake self-programming, internal dialogue, and meticulous management of time and space<sup>2</sup>
- Maintain a positive and professional attitude towards work<sup>2</sup>
- Acknowledge that they are sex workers, making condom use easier to negotiate with clients<sup>55</sup>
- Practise good genital hygiene<sup>18,40</sup>
- Undertake self-assessment for STIs, and assess STI risk in clients<sup>18</sup>
- Use antibiotics before and after sex<sup>85,89,90</sup>
- Use two or three condoms at the same time,<sup>91</sup> extra lubricant,<sup>92</sup> or both
- Switch to non-vaginal sex practices<sup>2</sup>

**Panel 2: Principles and issues for effective HIV interventions in diverse sex work settings**

**Key principles**

- Adopt non-judgmental attitude
- Ensure that interventions do no harm
- Respect sex workers' rights to privacy, confidentiality, and anonymity
- Respect sex workers' human rights and accord them basic dignity
- Respect sex workers' views, knowledge, and life experiences
- Include sex workers, and, if appropriate, other community members in all stages of the development and implementation of interventions
- Recognise that sex workers are usually highly motivated to improve their health and wellbeing, and that sex workers are part of the solution
- Build capacities and leadership among sex workers to facilitate effective participation and community ownership
- Recognise the role of clients and third parties in HIV transmission—ie, targeting the whole sex work setting, including clients and third parties, rather than only sex workers
- Recognise and adapt to the diversity of sex work settings and of participating individuals

**Key issues**

- **Assessment:** follow ethical guidelines and good research practice
- **Planning:** build local support, identify potential partners
- **Prevention outcomes:** safer sex and increased condom use, increased sex worker participation and control over working and social conditions, reduced STI burden
- **STI treatment:** at a minimum, provide management of symptomatic STIs and either screening for asymptomatic STIs or presumptive treatment for STIs if accurate screening is not feasible
- **HIV testing and counselling:** training to provide a sensitive, non-judgmental service; strict confidentiality; pre-test and post-test counselling and informed consent; referral to psychological support and clinical care if possible
- **HIV care:** counselling and peer support; if possible, establish self-help groups and improve access to treatment, care, support, home care, and antiretroviral treatment
- **Harm reduction for sex workers:** discourage injection, needle-sharing, and overall use of drugs
- **Management:** mentoring and support to adopt organisational transparency and open communication, community participation, clear policies, flexible and adaptable structure
- **Training:** schedule training so that sex workers can attend, develop policies on incentives and payment for attendance, write reports for future use
- **Monitoring and assessment:** use feedback information from stakeholder groups to change, develop, and expand projects; use assessment results to lobby for funding, replication, expansion, or social or policy changes

Panel adapted from information in reference 82, with permission.

dispelling myths, and offering healthy lifestyle and work options.<sup>24</sup> Education can effectively reduce drug use, disease, violence, debt, and exploitation.<sup>2,16,12,86,95-100</sup>

Peer education has resulted in substantial increases in STI and HIV knowledge, condom use, and safer sex practices, and reduced incidence of HIV and STIs.<sup>2,16,96-101</sup> Peer educators need training, support, protection, and standards of conduct. Experienced sex workers can counsel other, often younger, sex workers about how to live safely. Peer education of sex workers in Chad was shown to be the most cost-effective option for the prevention of HIV/AIDS at under US\$100 per infection

prevented.<sup>102</sup> Outreach programmes delivered by educators, social workers, nurses, and respected community members have also had success.<sup>2,16,99,101</sup>

Many groups associated with sex work can benefit from education.<sup>16,49,95,96,100,101</sup> Successful materials are simple, clear, consistent, non-judgmental, attractive, and culturally sensitive.<sup>16,21,95</sup> Positive reinforcement can deal with prevailing practices, values, and beliefs.<sup>105</sup> Challenges include mobility, brothel manager control, criminalisation, language, culture, and traditions.<sup>16,21,78,95,97,106</sup>

**Empowerment**

Sex work harms can be mitigated by empowerment—ie, provision of the means and opportunity for self-assertion.<sup>2,16,37,95,107</sup> Personal empowerment is the awareness and strengthening of personal skills and options to control and improve sex workers' lives. Community empowerment strengthens the community's ability to participate in positive changes. Social empowerment enables sex workers to fight for their rights and acceptance in society.<sup>16,99</sup>

The aim of empowerment is to reduce vulnerability. Sex workers could be vulnerable because of poor self-esteem, lack of education and skills, negative societal attitudes, poverty, family responsibilities, poor health, mobility, and cultural and legal restrictions.<sup>2,16,40,52,85,108-111</sup> This vulnerability can result in difficulties for sex workers accessing and using condoms, negotiating safe sex, refusing clients, seeking redress, organising, parenting, using contraception, having abortions, and accessing public services.<sup>2,16,85,95,111-116</sup> The sex-worker community could be vulnerable because of invisibility and internal competition.<sup>118,54</sup>

Successful initiatives have resulted in enhanced self-esteem; improved negotiating skills; ability to refuse clients; access and use of condoms; training to recognise, avoid, and escape violence; STI and HIV preventive services; safe houses; drop-in centres; and STI treatment through pharmacies.<sup>2,9,16,95,107,115,117</sup> Civil society organisations have promoted practical safety tips to empower street-based sex workers (panel 3).

There are structural examples of how policy and law can empower sex workers. In Santo Domingo, Dominican Republic, sex establishment support for condom use and HIV or STI prevention was a significant predictor of consistent condom use (odds ratio 2.16; 95% CI 1.18–3.97).<sup>17</sup> Thailand's 100% condom campaign increased condom use in commercial sex from 14% to 94% by making condoms freely available, sanctioning against non-compliant brothels, and advising men through the media to use condoms with prostitutes.<sup>119</sup> A report of significant decline in condom use by brothel-based female sex workers in Thailand underscores the need for interventions to be sustained.<sup>120</sup>

Community development has been successful in the promotion of safe sex, identification of injustice,

provision of child care, support for HIV-infected workers, enhancement of self-esteem, co-operation with police and controllers, provision of legal and financial training, initiation of alternative income-generation schemes, and support for migrants and human rights.<sup>16,75,107,114,115,121,122</sup> In Johannesburg, South Africa, hotel-based sex workers have united to reduce risk and to educate newcomers.<sup>54</sup> When dealing with authorities, the community development model could be more effective and safer than actions by individual sex workers.<sup>16,107,114,121</sup>

### Prevention

Male condoms reduce HIV and STI transmission in sex workers<sup>12,41,98,119</sup> and prevent STI complications such as pelvic inflammatory disease.<sup>123</sup> A reliable and accessible supply of good-quality condoms is essential.<sup>16,79,124</sup> Condom promotion, distribution, and social marketing result in increased condom use and reduced STI and HIV infection rates, especially in female sex workers.<sup>79</sup> Local culture, language, and traditions should also be considered.<sup>125</sup>

Female condoms have successfully prevented pregnancy and reduced STI transmission in analytical studies,<sup>126-128</sup> and there is in-vitro evidence and biological plausibility for HIV prevention.<sup>127</sup> Female condoms empower women by enabling them to negotiate safe sex, by promoting healthy behaviour, and by increasing self-effectiveness and sexual confidence.<sup>129</sup> A simulation model in South Africa concluded that a well-designed female condom programme for sex workers would be highly cost effective.<sup>130</sup> Female condoms do not need an erect penis, are reusable, and can be inserted ahead of time and left in after sex. Since they are made of polyurethane, female condoms can be used with water-based or oil-based lubricants. Female condoms are accepted by sex workers<sup>127,131</sup> but major difficulties include cost and poor availability.

Data have shown significantly reduced breakage rates without added slippage when more than one male condom was used.<sup>91</sup> When both male and female condoms were available to brothel-based sex workers in Thailand, unprotected sex fell by 17% ( $p=0.16$ ) and STI incidence by 24% ( $p=0.18$ ).<sup>126</sup> Lubrication is especially important for female condoms.<sup>127,72</sup> Dental dams and condoms that are cut lengthwise are plausible barriers during cunnilingus, but controlled trials are scarce. The availability of an effective and safe microbicide will be an important advance in sex-worker safety.<sup>132,133</sup>

Sex workers could benefit from the early use of an HIV vaccine.<sup>114</sup> Vaccine-feasibility studies in Thai and Kenyan sex workers have shown ongoing high rates of HIV incidence, substantial interest, and good compliance.<sup>135,136</sup> Hepatitis B vaccination programmes for sex workers can be effective, especially in the outreach setting and when the interval between the second and third dose is shortened.<sup>128,131,137</sup> However, coverage rates could be low

### Panel 3: Safety tips for sex workers

Appearance	Wear shoes that you can run in Avoid scarves, necklaces, and bags that can be used to hold or choke you Wear clothing that can be left on during sex in case you have to run away
Negotiations	Stick to a price list and time limit Pick your own parking spot or hotel Have a supply of condoms and lubricant Get money up front Use the same stroll
The car	Approach from the driver's side Arrange service and location while outside car Circle the car looking for other passengers Take down the licence plate (or pretend to) Do not fasten the seatbelt Wave goodbye to someone and shout the time of your return (or pretend to)
Oral sex	Learn to put on condom with your mouth At ejaculation, keep pressure on condom with your lips to prevent leakage Gargle with mouthwash or liquor afterwards, but do not brush your teeth
Vaginal sex	Use birth control Keep genital area well lubricated with water-soluble lubricant Do not douche or use vaginal-drying substances Position yourself on top, facing customer Keep hand on base of penis to keep it hard and to avoid spillage
Anal sex	After ejaculation, remove penis from vagina immediately Try to negotiate out of it Charge too much for the customer to afford Use extra lubricant Use female condoms
Self-defence	Do not carry weapons Use your voice and speed (eg, scream, hit car horn) Attack body areas that are easily injured (eg, throat, eyes, testicles) Run away against traffic, towards lights and people Work with friends Tell workmates about bad customers

Panel adapted from information in references 8, 12, and 118, with permission.

because of little perceived risk and inappropriate delivery systems.<sup>138</sup>

Meta-analysis has shown that behaviour change interventions effectively reduce HIV transmission for sex workers.<sup>79</sup> Douching, dry sex, kissing, and unprotected oral-genital contact should be discouraged.<sup>44,45,139</sup> Nonoxynol-9-containing products offer no additional protection to latex condoms and could predispose to HIV acquisition.<sup>140,141</sup>

Voluntary HIV counselling and testing has been associated with increased condom use, reduced number of partners, and decreased HIV in sex workers and clients.<sup>79</sup> This effect results from behaviour change



subsequent to education, support, and the knowledge of one's HIV status. Care programmes and participation in research can have a similar effect.<sup>79,142</sup> Integration of STI and HIV services into family planning has been espoused,<sup>16,124,143</sup> but there is little published evidence of effectiveness.<sup>144</sup> Additional success factors include links to community agencies, financial incentives, and support for childcare, transportation, and meals.<sup>145</sup>

**Care**

Sex workers need accessible, acceptable, and good-quality medical care. Prevention and care are most successful if delivered together, which is referred to as the prevention-care synergy.<sup>16,71,107</sup> Integrated services are important because sex workers could be exposed to many health risks, and follow-up is difficult.<sup>16,85,146</sup> Referral to specialised services such as those for safe abortion and drug treatment is essential.<sup>85,146</sup> Meta-analysis shows that STI treatment is highly effective in the reduction of disease transmission.<sup>98,99,147</sup>

Accessibility, acceptability, and quality care for sex workers are challenging issues in both developed and developing countries because of mobility, discrimination, criminalisation, poverty, vulnerability, illegal status, lack of health insurance, and unfamiliarity with the local language and culture.<sup>4,16,114</sup> Sex workers should participate in decision-making about service location and opening hours of operation.<sup>107,114</sup> Innovative access strategies include mobile delivery, hotel-room and home-based

clinics, roadside clinics at police checkpoints, drop-in centres, and general clinics in sex-work areas.<sup>16,10,51,121,148,149</sup>

Acceptability often depends on staff attitudes,<sup>436,112</sup> which can be improved through sensitivity training.<sup>16,107,112</sup> Childcare and the opportunity to rest, bathe, and talk with other sex workers enhance acceptability.<sup>75,107,112</sup> Waiting times and clinic distance are also important. Sex workers will choose clinics that are welcoming with appropriate testing and treatment.<sup>16,95,107</sup> In Managua, Nicaragua, vouchers redeemable at private, public, or non-governmental organisation clinics were positively received by sex workers and clinics.<sup>10</sup> Communication can be addressed by cultural mediators and information in different languages.<sup>16,57,107,150</sup>

Care and support for sex workers with HIV/AIDS is important. The UNAIDS (Joint UN Programme on HIV/AIDS) basic package for HIV and AIDS includes: voluntary HIV counselling and testing, psychological support, palliative care, treatment (for pneumonia, oral thrush, vaginal candidiasis, and pulmonary tuberculosis), prophylaxis with co-trimoxazole, and facilitating community activities that reduce the HIV effect.<sup>71,124</sup> Antiretroviral prophylaxis during pregnancy, chest radiographs, Mantoux PPD skin tests for tuberculosis, and Pap smears should be available to sex workers.<sup>124,151,152</sup> Since HIV viral load relates to HIV transmission, HIV-infected sex workers should be offered highly active retroviral therapy (HAART) when possible,<sup>153</sup> or be given viable options for leaving sex work.

**Panel 4: Australian health and safety guidelines for brothels and the sex work industry**

**Employer duties**

- Assess and control risks: screen, examine, and refuse clients; provide panic buttons, good lighting, safe equipment, and good hygiene; ensure safe handling of cleaning substances and ensure safe-sex practices
- Consult with employees, identify hazards, comply with fire laws, adhere to electrical safety
- Allow employees to access support organisations, join unions, have staff amenities, and receive health services

**Working conditions**

- Track hours and days worked; allow adequate breaks, vacation, and leave; provide safe and comfortable clothing
- Ensure no coercion and no inducement to practise unsafe sex; proper and consistent use of barriers
- Keep risks to a minimum for pregnant employees; ensure no smoking, or smoking only outside
- Handle waste, and prepare food and drink safely (handwashing, refrigeration, cleaning)

**Protection and prevention**

- Provision of accessible, properly stored, good-quality condoms, dams, and gloves, with their safe disposal
- Provide water-based lubricants, clean towels and linens; clean up body fluid spills
- Provide training to avoid condom breakage and slippage, and inform what to do if condom breaks
- Ensure regular, voluntary staff-health monitoring and employer-paid education; ergonomically designed furniture and supplies
- Identify high-risk procedures and areas, and develop control strategies to combat violence
- Provide regular maintenance of spas, sex aids, and (lightweight) bondage and discipline equipment

**Care and support**

- First-aid kits and trained personnel, alcohol and drug treatment programmes, safety for escorts
- Provide workers' compensation: accident reporting, injury management, return-to-work programmes, employer-paid insurance, access to occupational-health clinics and services

Panel adapted from information in references 159-161, with permission.

Sex workers and clients sometimes use antibiotics before or after sexual contact to prevent STIs and HIV.<sup>167,85,89,90</sup> Pre-exposure antibiotic prophylaxis warrants investigation,<sup>85</sup> especially for individuals heavily exposed for short periods such as seafarers on shore leave and part-time sex workers. However, prophylactic antibiotic use by sex workers has been linked to unsafe sex and presumptive periodic treatment of STIs in female sex workers has shown only transient success.<sup>90,154</sup> Sexually assaulted sex workers should be offered postexposure prophylaxis.

#### Occupational health and safety

Occupational health and safety refers to workplace issues that can affect employees. These principles are rarely applied to sex work, despite many occupational exposures, hazards, injuries, and diseases, including: harassment, violence, musculoskeletal injuries, bladder problems, stress, depression, alcohol and drug use, respiratory infections, latex allergy, the removal of children, and death.<sup>2,48,75,155-157</sup> Occupational health and safety standards are justifiable only if participation in sex work is voluntary and does not allow the participation of children.<sup>158</sup> Health and safety guidelines for brothels and the sex industry have been developed in Australia (panel 4).

Where prostitution is legal, progress of occupational health and safety could be hampered by owner or manager disinterest and the so-called one-hazard approach, focusing exclusively on STIs and HIV/AIDS. Employers argue that sex workers are independent contractors or casual employees responsible for their own health insurance, social security, pension, and benefits. However, workplace safety can be improved, if sound policies and standards are in place and if sex workers are allowed to organise and lobby.<sup>37,114,156,162</sup> Environmental and structural support for condom use and STI prevention has been shown as an important predictor of consistent condom use in female sex workers.<sup>49</sup> Forced brothel closures and treatment of sex workers as political scapegoats make the workplace more dangerous.<sup>161</sup>

#### Decriminalisation of sex workers

Decriminalisation refers to the removal of criminal laws. The UN, UNAIDS, and WHO support decriminalisation of adult sex work if no victimisation is involved;<sup>163</sup> however, no consensus exists among sex workers, non-governmental organisations, and advocates.<sup>164</sup> Drug-use harm reduction focuses on decriminalisation of drug users rather than the illicit drug industry. Sex workers should not be treated as criminals. Sex-worker organisations, non-governmental organisations, and research projects have been effective in decriminalising sex workers, by protecting their legal rights, lobbying for rational legislation, and working at the grass roots to protect them.<sup>95,107</sup>

Police are often blamed for criminalising prostitutes, but education, training, and lobbying can improve relations so that sex workers view the police as supportive and protective.<sup>16,61,107</sup> The courts should assess sex worker testimonies objectively and sex workers need the opportunity to seek redress for rights violations.<sup>165</sup> Courts can interpret the law to improve the lives of sex workers. In 2000, the High Court of Bangladesh declared that sex work was not illegal and that sex workers had the right to earn a living.<sup>95</sup> The Court censured state agencies for closing brothels.

Incarceration and a criminal record can interfere with housing, social assistance, travel, employment, education, food aid, and parenting.<sup>61,165</sup> Illegal immigration status drives sex workers underground, which results in poor access to health services, discrimination, violence, STI or HIV acquisition, and exploitation.<sup>2,16,58,61,75,79,114</sup> Decriminalisation of migrant sex workers would help them access services, seek redress for rights violations, and protect themselves and their customers from disease.

The health-care system can treat sex workers like criminals, which affects access to services and health education and leads to raised rates of HIV, STIs, hepatitis, disability, and death.<sup>61,62,165</sup> Mandatory HIV testing is an example.<sup>65</sup> Educational and training efforts can be successful.<sup>61,107,165</sup> The media can shape public attitudes to support either criminalisation or compassion.<sup>1107,166</sup> Society disapproval of sex workers could promote low self-esteem, risk-taking, drug dependency, and hopelessness. Literacy, education, empowerment, and unity can reverse this downward spiral.<sup>107</sup>

#### Human-rights-based approaches

UNAIDS has adopted a human-rights-based approach to HIV/AIDS.<sup>167,168</sup> Extension of this approach to sex work and STIs would allow a supportive environment enabling sex workers to participate in, contribute to, and enjoy economic, social, cultural, and political development.<sup>168,169</sup> Child prostitution, human trafficking for sex work, and exploitation of migrant and mobile sex workers are serious abuses of human rights.

Peer education, outreach programmes, and appropriate educational materials have effectively improved the lives of women trafficked for sex work, child prostitutes, and migrant sex workers.<sup>16,95,104,150,170,171</sup> *Siren's story*,<sup>81,171</sup> which depicts a Filipina sex worker in Australia who manages her private and working life successfully, is a popular booklet containing information on health, management of money, and negotiation for safe sex. The media can also raise public awareness. *Meninas da noite* (Little girls of the night),<sup>172</sup> a collection of investigative reports by Gilberto Dimenstein, exposes child trafficking for sexual exploitation in the Amazon region and northwest Brazil.<sup>171</sup> Dimenstein exposes sexual abuses of girls as young as 9 years and as small as 15 kg.

**Panel 5: Harm-reduction strategies best suited to government action**

- Enact and enforce sex tourism laws
- Establish national databases of child sexual offenders
- Share information across jurisdictions and foster international collaboration
- Provide legal migration opportunities
- Increase and enforce penalties for exploitation
- Provide legal visa options for victims of trafficking
- Enact and enforce child pornography laws, including on the internet
- Monitor employment agencies
- Facilitate photoshop reporting of pornographic pictures, especially of children
- Provide witness protection for victims willing to testify against their exploiters
- Outlaw methods used to circumvent the illegality of trafficking (eg, fake marriages, temporary wives, serial sponsorship, and the bride trade)
- Require government agencies to report on the status of human trafficking and child prostitution
- Link international aid with progress against child prostitution, human trafficking, and exploitation
- Support a UN-sponsored international campaign to prevent child prostitution

Telephone hotlines provide confidential access to information for potential or actual victims of exploitation and for family members and friends.<sup>170,174</sup> Education and training are important for agencies, individuals, and officials that interact with victims including youth-serving agencies, health-care workers, police, politicians, taxi drivers, hotel staff, and tour guides.<sup>67,95,104,174</sup> Sex work customers can be educated through the media, information at airports and travel clinics, and John School (educational classes for sex-work customers, focusing on STIs, HIV, and sex workers' rights), where former victims educate offenders to reduce recidivism.<sup>184</sup>

User-friendly drop-in clinics, open-door counselling centres, camps, and shelters have been successful.<sup>121,170,171</sup> Services at high mobility sites such as transit stations and border crossings and in high-risk zones such as markets,

harbours, truck stops, and bus and train stations can reach migrant sex workers.<sup>150,175</sup> A global moratorium should be undertaken on mandatory HIV testing, which increases the risk of discrimination, violence, exploitation, and disease, and promotes a false sense of security among clients, controllers, and governments.<sup>14,176</sup>

Non-governmental and sex-work organisations and their projects are at the forefront of the fight against exploitation.<sup>107,121,171,171</sup> CARAM Asia (Coordination of Action Research on AIDS and Mobility) produces educational information, advocates local and national issues, and develops interventions throughout the migration process.<sup>171</sup> TAMPEP (Transnational AIDS/STI Prevention among Migrant Prostitutes in Europe Project) supports women, transvestites, and transsexuals from eastern Europe, Latin America, Africa, and southeast Asia working as sex workers in Europe.<sup>171</sup> The Maiti Project in Nepal provides safe spaces for returned trafficked women and educates the so-called sending communities to prevent other girls from being trafficked.<sup>170</sup> In rural Cambodia, 52 villages have established a community-based child protection network that educates the community about trafficking and intervenes for children at risk.<sup>177</sup> The health needs of children coerced into prostitution is summarised as PREVENT—psychological counselling, reproductive health services, education, vaccinations, early detection, nutrition, and treatment.<sup>67</sup>

Sex work is a common survival tactic for refugees and displaced people to earn money for food.<sup>14</sup> Women and children refugees are highly vulnerable to sexual violence, rape, and trafficking. Refugee sex workers need condoms, protection, access to household bleach and needle exchange, and basic HIV/AIDS and STI information in the language of the refugee and host community.<sup>14</sup> Radio is an important medium for communication. Governments are in the best position to implement specific strategies (panel 5).

**Conclusions**

The figure shows a conceptual framework for sex-work harm reduction. Poor determinants of health<sup>178</sup> are often predisposing factors for individuals entering sex work. Sex workers' personal vulnerability might then act synergistically with a risky environment, exposing them to harms that lead to a reduced quality of life.<sup>179</sup> Vulnerability, a risky environment, sex work harms, and diminished quality of life often amplify each other in an ongoing cycle. An objective of harm reduction might be to enable sex workers to move into a more positive cycle of empowerment, supportive environment, harm prevention and mitigation, and improved quality of life. This cycle could enable sex workers to eventually leave prostitution.

This summary of peer-reviewed, scientific work substantiates the many serious harms of sex work and presents simple, safe, and inexpensive strategies to avoid

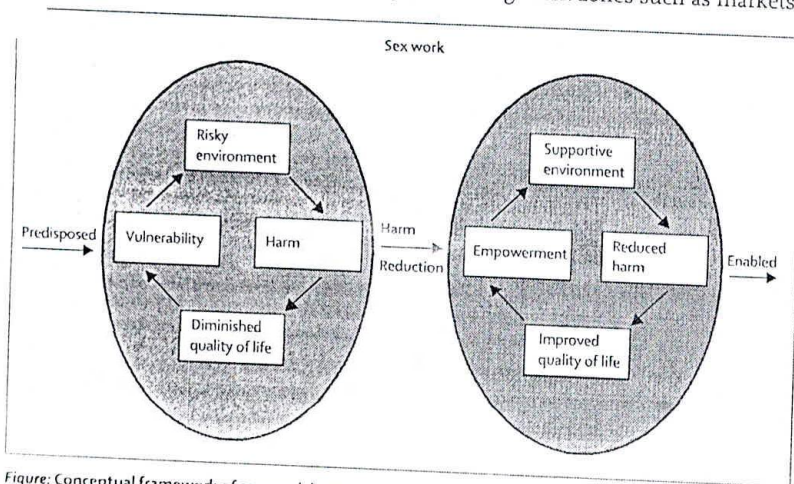


Figure: Conceptual framework of sex-work harm reduction

risk, mitigate harm, and save lives. Sex-work harm reduction should be viewed as a new paradigm to improve the lives of sex workers through debate, discussion, and action, in the same way that drug users' lives have been improved by drug-use harm reduction.

The sex-work industry should not be condoned, especially if it participates in victimisation. However, the global focus on the sex work industry could result in individual sex workers becoming the unintended targets of elimination and control efforts. Civil society, especially sex work organisations, is deeply involved in improving the day-to-day lives of sex workers, and the scientific community can take an active role by using evidence-based research to pilot innovative initiatives, assess existing strategies, and develop a database of proven interventions. The participation of sex workers in this effort will ensure its success.

#### Conflict of interest statement

I declare that I have no conflict of interest.

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## Etic and Emic Categories in Male Sexual Health: A Case Study From Orissa

MARTINE COLLUMBIEN, NABESH BOHIDAR, RAM DAS,  
BRAJ DAS, AND PERTTI PELTO

### INTRODUCTION

This chapter presents a case study from intervention research on male sexual health in eastern India. The research was commissioned by the Department for International Development (DFID) who started funding contraceptive social marketing in the state of Orissa in 1995. Making use of commercial distribution channels, the intervention sells branded condoms and oral contraceptives at subsidized prices. The focus of the advertising campaign was on the promotion of the concept of child spacing and the increased use of reversible methods of contraception. Research among the target group in urban areas showed that men reported higher levels of condom use than women (AIMS-Bhubaneswar 1996). Male use for extra-marital sex and under-reporting by women due to cultural sensitivities was suggested as reasons for this discrepancy. With the rising concerns about the growing AIDS epidemic in India, there was need for more research on sexual behaviour, condom use, and the perception and recognition of sexually transmitted diseases. Starting from the public health paradigm of control of STD/HIV, a study was designed to learn about the sexual health problems as perceived by men in the community and to measure the need for condoms by identifying and quantifying sexual risk behaviour among single and married men.

The data presented focuses on sexual health concerns, and on the way the local, emic perspective of male sexual health is at odds with the biomedical model of sexual health, which underlies current public health efforts to halt the spread of HIV/AIDS. Based on focused ethnographic research which preceded a carefully constructed quantitative survey, we show that men's concerns about sexual health comprise a complex array of symptoms, of which a major portion are not directly related to sexual transmission, but rather a reflection of their worries about semen loss. On the other hand, the data indicate general, widespread awareness of sexually transmitted

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infection, including at least superficial knowledge of AIDS. The study suggests that programmes of sexual health information, as well as clinical services for males, should be equipped to provide counselling and other services that go beyond simply concentrating on diagnosis and treatment of sexually transmitted infections (STIs).<sup>1</sup>

We start by describing the setting of the study, followed by a discussion of the focused ethnography methods and the survey data used in the research. We then set out the biomedical model of sexually transmitted diseases, as currently used in public health interventions of STD control, with details on the Indian context. The data collected reflect the emic perspective, using men's own vocabulary and criteria for categorizing illness. The symptoms and perceived causes of the main conditions are described and the local categories of sexual health concerns are analysed. The prominence of psychosexual concerns of semen loss in the qualitative data are confirmed with use of the population based survey data and differentials in reported experience of semen loss are presented. Semen anxiety is then discussed in the context of the ethnophysiology of sex as understood in South Asia, drawing on the existing anthropological and psychiatric literature. The chapter concludes challenging the categorical paradigms adopted in international health, and calls for more holistic healthcare.

#### THE SETTING

Orissa is a state in East India, with a coastline on the Bay of Bengal. It borders West Bengal and Bihar in the North, Madhya Pradesh in the West, and Andhra Pradesh in the South. Its coastal plains have for centuries served as a link between north and south India and are a more developed region than the mountainous areas. Of all states in India, Orissa has the second highest concentration of tribal people: the sixty-two different Scheduled Tribes make up 22 per cent of its population. Of the total population of 32 million enumerated in the 1991 census, 86 per cent was classified as rural.

Orissa is one of poorest states in India. Using the Planning Commission poverty line, (Datt 1998) estimated that over 40 per cent of Orissa's urban and rural population was living in absolute poverty,<sup>2</sup> compared with a national average of 35 per cent. The adult literacy rate is one of the lowest at 49 per cent, though rates are higher in the coastal developed districts (60 per cent). Women are less likely to be literate than men and strong social norms on women's mobility prevail. About 95 per cent of the Orissa population is Hindu, with 2 per cent Muslim, and 2 per cent Christian. The general condition of poverty in Orissa contributes to poor reproductive and child health. The total fertility rate (TFR) in urban areas is 2.5, and around 3 for rural women. Infant and child mortality rates in Orissa are among the highest in India. Morbidity in small children is equally high, with diarrhoea and malaria as main contributors (PRC Bhubaneswar and IIPS 1993).

The study area for the research on sexual health and behaviour was limited to the four coastal districts<sup>3</sup> with low concentrations of tribal people: Puri, Cuttack, Balasore, and Ganjam districts. The distinctly different cultures of the scheduled

tribes in Orissa suggest the need for a separate, in-depth study in the tribal areas. Such study was not feasible in the project reported here.

#### METHODS AND DATA

The strategy adopted for the qualitative data collection broadly followed the guidelines for doing Focused Ethnographic Studies (FES) (Pelto 1994; Pelto and Pelto 1997). The focus of the data gathering was on information needed to answer programmatic questions in sexual health and condom promotion interventions. The fieldworkers were trained in in-depth interviewing, social mapping, and the various structured interviewing techniques.

In total, 17 sahis (localities: colonies, neighbourhoods or hamlets) were studied in-depth by a study team of four male and two to three female researchers. The average number of days spent in one location varied from 7 to 10 days, depending on the availability of the informants, and initial time taken for rapport building. Though locations were studied in all four districts, nine were in Puri district, in and around the state capital Bhubaneswar and Puri town, famous for its beaches and the Lord Jaganath Temple, which attracts thousands of pilgrims and tourists throughout the year. Certain sahis in Puri are known to have a high prevalence of casual sex and men having sex with men. Sahis were thus selected according to expected variations in sexual behaviour and access to condoms. Four localities studied were rural. Each sahi was treated as a separate case and a detailed study of the various role players in each location was carried out. Data gathering and analysis took about four months to complete from May to September 1997.

Participatory mapping exercises were carried out with informal groups of men and women in the community. It was used for introducing the research topic in a sahi and for motivating local people to participate in ongoing activities. Mapping involved drawing a social and resource map of the community with identification and marking places of health providers, places of recreation, places where liquor is available, where condoms are available and places where men go to find or meet partners for sex (Pelto et al. 1998). Other informal group discussions were held to obtain further situational data and to identify appropriate key informants for more in-depth interviews.

In-depth individual interviews were done with both key informants, and case study informants. Key informants were selected for their extensive knowledge about local cultural beliefs and practices and the conversation focused on local perceptions and behaviours. They included ordinary community members, outreach workers, medical practitioners, traditional healers, and retailers selling condoms. Case study informants included individuals who had experienced sexual ill-health and others who engaged in risky sexual behaviour. The conversation focused on their personal lives, to elicit illness episodes, case histories, and sexual histories. Each case was contacted several times in order to build up rapport and to permit probing of sensitive issues.

Information on peoples' own explanatory models of sexual illness and local vocabulary was generated through various structured qualitative techniques like free listing, pile sorting, rating and ranking, and time-lines (Weller and Romney 1988). This chapter draws heavily on these data for understanding the cultural perceptions of men's sexual health problems.

Free lists were done to help isolate and define the domain of sexual illnesses. By asking key informants and case study informants during in-depth interviews 'what are all the sexual health problems men experience in this community?' a list of sexual health concerns is defined by the informants in their own language, using culturally relevant categories. Given that there is no exact Oriya term for 'sexual health concern', it was defined as 'problems relating to, or affecting, the genital area'. The usual key terms in Oriya language included *asubidha jounanga* (problem of sexual organs), *jouno rog* (secret disease) and *jouno sambandhya rogo* (disease relating to sex).

Pile-sorting was the next step. A selection of conditions produced by the free lists were written on slips of paper and informants were asked to sort the conditions into separate piles of similar illnesses. The criteria for similarity were left to informants to decide and the reasons mentioned for grouping revealed details of explanatory models. After the pile sort exercises the same cards were used for severity ranking of sexual health concerns. The men were asked to group the concerns/illnesses into three groups 'severe', 'intermediate', and 'mild, not severe'.

Fieldworkers took notes during the group and in-depth interviews. These were expanded and written out immediately afterwards. Transcripts of all interviews were coded and analysed in Ethnograph. The software program ANTHROPAC (Borgatti 1996) was used to analyse the free list and pile sort data. The Multi-dimensional Scaling procedure was adopted to provide a visual representation of how conceptually close or far the different illnesses were. Cluster analysis was a second method used to interpret the pile sort data.

The structured survey to estimate the extent of sexual risk behaviour and the need for condoms in the general male population followed the qualitative fieldwork. The findings from the qualitative study were used in the design and refinement of the survey instrument, mainly in terms of using the correct local vocabulary and defining coding categories (e.g. categories of partners, locations where people have sex). A free listing question on sexual health concerns in the community was also included in the questionnaire. The free list was included towards the beginning of the interview, mainly as a rapport-building question before moving on to the more sensitive personal questions on sexual behaviour.

This survey covered a large population-based random sample ( $n = 2087$ ) of single and married men in urban and rural areas of the four coastal districts in Orissa. A multi stage random sample was obtained by randomly selecting two community development blocks and two urban areas in each district; the second stage listed the villages in the blocks and the wards in the urban areas and from these four sampling clusters (villages or wards) were selected with a probability proportional to size. In each village/ward all houses were mapped and numbered. After enumeration, thirty-two households in each sample cluster were randomly selected. All members

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age 15 or over in the household were listed. All eligible members for individual interview—men age 18–35—were ranked by age. According to the number of eligible men in the household, the youngest, second youngest, etc. . . . was selected in strict rotation in consecutive households to ensure randomization.<sup>4</sup> The selected respondent was then invited for an interview in privacy outside his home. The pretest indicated that the interview needed to be preceded by a rapport-building chat of about half an hour. Refusal rate for interview was as low as 1 per cent.

The statistical analysis of survey data was done using SPSS software. The data file was weighted according to urban/rural residence and the size of the district, to make it truly representative of the four coastal districts.

#### THE ETIC PERSPECTIVE OF SEXUAL HEALTH IN THE HIV/AIDS ERA

Sexual health has been defined as the integration of the somatic, emotional, intellectual, and social aspects of sexual being (World Health Organization 1975). However, this holistic definition of sexual well-being is in practice not adhered to by public sector health programmers and health planners. Before the emergence of AIDS as a serious public health problem, the sexual health of men in low income countries received very little attention indeed. While sexual health gained attention since the AIDS pandemic, the focus has been primarily on disease transmission. There has been increased interest in the public health importance of the 'classic' STIs since they are shown to facilitate the transmission of the human immunodeficiency virus (HIV) (Laga et al. 1991; Grosskurth 1995). Control and prevention of these STIs are also important goals in their own right. According to the World Development Report of 1993, STIs are the second most important cause of loss of healthy life years in women of childbearing age worldwide (World Bank 1993). In India, there are an estimated 40 million new STI infections a year; prevention programmes and facilities for diagnosis and treatment are seriously neglected (Ramasubban 1999).

While HIV/STIs are a major burden to health in India and elsewhere, the control of these infections has been problematic, even from a purely clinical point of view (let alone the social barriers to access of care). There are no simple accurate diagnostic tests, and comprehensive laboratory services for microbiological diagnosis are very expensive. Common reported symptoms can be caused by different pathogens. To address the problems of clinical diagnosis and low specificity of symptoms, syndromic management has been widely propagated, and WHO developed standardized protocols for the treatment of men and women in basic health care services in less developed countries (World Health Organization 1997; Mayaud et al. 1998). These flowcharts of clinical algorithms offer diagnosis on the basis of syndromes (group of symptoms and easily recognized signs) reported by the patient, and treatment is recommended for several possible causative organisms.

International planners and donor agencies now tend to regard STD control and syndromic management as a valuable strategy for HIV control, partly because of the

challenges faced trying to enforce condom use (Lambert 1998). In India, the use of the syndromic approach has been opposed by qualified medical practitioners who consider it as not comprising 'real' medicine, and because of competitive concerns about training practitioners who are not biomedically qualified (Lambert 1998). According to Indian guidelines, clinicians diagnose cases on an aetiological basis only and they do not recommend co-treatment when the aetiology is uncertain. A study on the adequacy of STD case management in public and private health facilities in India (Mertens et al. 1998) shows that only 10 per cent of the STD patients were satisfactorily managed. The study concludes that by promoting the syndromic approach to STD management and thereby simplifying existing guidelines, doctors in India could provide better care.

With the introduction of STDs into the framework of reproductive healthcare, the provision of syndromic STD management for women attending family planning or antenatal clinics has received high priority on the international health agenda. However, in general populations with relatively low STD prevalence the indiscriminate application of syndromic management may lead to overtreatment on a large scale (Hawkes et al. 1999) and more recently the integration of family planning and STD treatment has been critically reviewed (Lush et al. 1999; O'Reilly et al. 1999). The diagnosis of STIs in women is very complex, not only because of the relatively low specificity of symptoms of possible infections, especially vaginal discharge, but also because of the high rate of asymptomatic infections. Fifty per cent of women with STIs will not have any symptoms, whereas their infected male partners will usually experience pain and other signs of infection (Hook and Handsfield 1999; Stamm 1999). Consequently, it has been concluded that the resources for STD control should be concentrated on individuals at higher risk and men should be targeted (Cleland and Lush 1998; Hawkes 1998). Symptoms are more specific in men compared with women, and the cost associated with overtreatment is therefore likely to be lower in men than in treating equivalent symptoms in women. Policies to provide clinical services for men may as a consequence reach asymptomatic but infected women through partner notification strategies. Moreover, it is reasonable to assume that in South Asian societies, men are the ones who are more likely to initially contract STDs and transmit them to their wives (Mundigo 1995).

From the discussion above it is clear that the rising concern and need for HIV/STI control programmes provided a biomedical rationale to target men with sexual health services (Collumbien and Hawkes 2000). However, the public health paradigm focuses quite narrowly on the disease category of sexually transmitted infections. Within the biomedical treatment framework subcategories are thus identified as syndromes, or symptoms of disease: for example, 'urethral discharge and pain passing urination' as the syndromic diagnosis of gonorrhoea and chlamydia, and 'genital ulcers' as an indication of syphilis or chancroid. The incidence of these syndromes are also used to monitor the success of AIDS programmes in reducing risk behaviour by increased condom use and adoption of other safe sex practices. Two standard questions on self-reported symptoms of STIs are routine in national HIV/AIDS monitoring surveys. One question asks about the incidence of sores and ulcers on the penis, the other about pain during urination with discharge from the penis.

This etic framework of STD case management, a problem-frame defined by biomedicine and based on a symptom-based syndromic approach informed our research design. Despite this predetermined focus on sexually transmitted diseases, as relevant to the intervention of condom social marketing and STD treatment seeking, we started the fieldwork by investigating the local categories of sexual health concerns to ensure the correct use and understanding of the local terms for the symptoms we wanted to capture.

#### THE EMIC CATEGORIES OF SEXUAL HEALTH IN ORISSA

To define the boundaries of the cultural domain of sexual health concerns in local terms, free lists were obtained from thirty five male informants deemed knowledgeable about sexual health related issues. The most commonly mentioned problems are presented in Table 11.1. The concerns are ranked by the number of informants listing them, and the local terms have been given an approximate English 'equivalent'.

The number of respondents mentioning a condition—or the frequency—is one indication of the importance of a health concern in that community. When a condition is mentioned first or second it is also more 'on the person's mind' than when it comes lower down the list. The frequency and rank order combine in a measure

Table 11.1. *Most Commonly Mentioned Sexual Health Problems in Free Listing*

Sexual health problem		Frequency (n = 35)	Average rank	Saliency
Local term	English translation			
Dhatu Padiba	Semen discharge	28	2.750	0.424
Jadu	Itching	22	4.636	0.195
Swapnadosh	Nocturnal emission	19	3.211	0.242
AIDS	AIDS/HIV	17	2.529	0.353
Handling	Masturbation	14	5.000	0.106
Gonoriha	Gonorrhoea /generic term for STI	13	2.231	0.285
Linga-gha	Ulcer/sores on the penis	9	3.222	0.106
Parishra-poda	Burning during urination	9	3.333	0.095
Hernia	Hernia	7	4.714	0.093
Fileria	Swollen penis, scrotum, leg, and foot	6	5.500	0.035
Hydrocele	Swollen scrotum	6	5.333	0.066
Katchu	Itching—scabies	6	3.667	0.090
Syphilis	Syphilis or generic term for STI	4	3.500	0.061
Bata	Rheumatism	4	3.250	0.040
Linga-ghimiri	Eruptions on penis ~ herpes	3	1.000	0.086
HIV	HIV	2	5.000	0.024
Ulcer	Ulcer	2	4.000	0.014
Malakantaka	Fistula	2	2.000	0.046
Chau	White patches—skin infection	2	3.500	0.029

of salience. *Dhatu padiba* (semen discharge) was the most frequently mentioned problem, with 80 per cent of informants listing it. On average, it was the second or third concern mentioned by the individual informant and it is thus clearly the most salient concern. Although *jadu* (itching) was the second most listed concern, on average it was further down the lists than *swapnadosh* (excessive nocturnal emissions) and AIDS. In fact, AIDS comes out as the second most salient concern.

From this simple listing exercise it is clear that the emic perspective of sexual health in Orissa includes sexually transmitted infections. However, it is also evident that there are a range of other conditions that seem important concerns. Most items on the list refer to symptoms rather than specific diseases. To avoid mistranslation from local into biomedical terms we need to explore the categories in terms of the local understanding of disease aetiology. How and why men perceive different conditions to be related to one another can illuminate local explanatory models of disease.

Pile sort data give a better understanding of categories of 'similar' diseases. The more often two illnesses or symptoms are grouped together by different informants, the closer they are conceptually. In multidimensional scaling (MDS) similarities are translated into distances and concerns considered very similar appear close to each other while illnesses that are not related will be furthest apart. Figure 11.1 gives an example of a cognitive map by two-dimensional scaling of sexual health concerns. The encircling of the four groups of illnesses/conditions is based on cluster analysis (Johnson's hierarchical clustering). The multidimensional scaling picture (stress < 0.15) together with the cluster analysis indicate that the Orissa men make fairly clear distinctions among the types of sexual problems, particularly separating the infectious conditions (group C) from the non-contact, semen-loss problems in group D. They also recognize that hernia/hydrocele (group A) are a different kind of problem, with different aetiology.

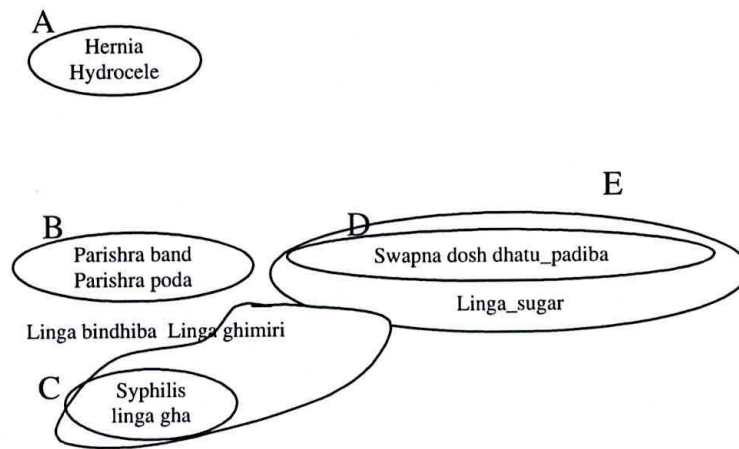


Figure 11.1. Multidimensional Scaling of Sexual Health Concerns in Orissa

These maps are a means of exploring patterns among illnesses and this is supplemented by the information given by the sorters on reasons for grouping items together. In other localities other cards were sorted, which resulted in different conceptual maps (not presented). One common feature to all maps was the clear distinction men had made between sexually transmitted diseases and others. In their mind they have no doubts that *linga cancer* (wounds on the penis) and *jouna gha/linga gha* (*jouna gha* can be translated as sores on the penis) can be clubbed together with *syphilis* or *gonorrhoea*.

Five broad categories emerged from these data: sexually transmitted conditions, conditions related to semen loss, skin infections, anal conditions, and a final category grouping other diseases which affect other parts of the body besides the genital area. We discuss these categories in more detail, especially the first two, giving indications of reasons why conditions were grouped together, mainly reflecting indigenous explanatory models of disease aetiology.

Starting with the sexually transmitted diseases it is clear that local Oriya vocabulary is influenced by allopathic terminology, with the use of medical terms like *Gonorrhoea* and *Syphilis*. However, these terms do not necessarily translate directly into the specific medical diseases. They more broadly indicate conditions which are sexually transmitted, and can thus be understood as generic terms for STDs. When probed with questions about sexual diseases (*jouno rog*), most informants directly mentioned 'gonorrhoea'. They described the symptoms like *linga-gha* (ulcers in penis) or *ling-ghimiri* (small eruptions on penis) which correspond more to the medically defined infections syphilis and herpes, respectively. Men did attribute symptoms within this group to sex with sex workers.

AIDS was frequently mentioned in the free lists and came up as the second most salient concern. Sexual transmission was clearly understood, though many informants stressed the fact that it was due to sex with 'many' partners 'If a person is having sex relation with many women then AIDS may be transmitted (*jadi kehi adhika mahila sange samparka rakhe, tebe aids heba*)'. It is generally described as dangerous and very serious. There are indications, however, that the term 'AIDS' is becoming another generic term for sexually transmitted disease. This is illustrated by an informant expressing anxiety about having AIDS:

I had Lingare Gha (sores on penis) which used to be painful. It also had pus. Now there is no pus but the Gha is still there. It is not getting healed. I do not know what to do . . . . when I got this disease, I went to Dr. Nanda, he said and wrote on my prescription that it was AIDS. He then prescribed both medicines and injections and said it can be cured.

The contradiction of 'curable AIDS' suggest that the informant suffered another STD which was labelled as AIDS. In locations where AIDS had been mentioned, most informants in the pile-sorting exercise grouped it as a separate category. When it was associated with other items, it was grouped with sexually transmitted illnesses, and this was confirmed by in-depth interviews.

A second category of concerns are related to semen loss. The most salient condition was *dhatu padiba* (or *meha padiba*), which is best described as involuntary semen loss.



Symptoms include secretion of semen during urination or defecation, and secretion of semen during erection. It is associated with thinning of semen or the quality of semen. Men mention *dhatu padiba* as a secretion of milky, or chalky watery or semi-liquid substance from the penis. Several informants relate their personal experience and the following extract points to the fact that it 'overcomes' men as they seem to lose semen 'without their knowledge'.

*informant*: During defecation dhatu comes out. Not all the time but some time even a large amount of dhatu comes out during urination. Even I am having this problem. Most of the time dhatu comes out without my knowledge.

*interviewer*: How long you are suffering from this problem?

*informant*: It will be around last seven year I have been suffering from this dhatu padiba

In the same category, men mentioned *swapnadosh* or nocturnal emissions which are thought to be abnormal if they occur more than two or three times a month. It is a common concern among youths. Men associate *swapnadosh* with both *dhatu padiba* and with *handling* (masturbation). The difference with *dhatu padiba* is that *swapnadosh* occurs during sleep and after erotic dreams. An informant asked to differentiate between the two said 'in both the cases dhatu comes out spontaneously without our knowledge, but night fall sometimes is related to dream problem (*Swapna pai*)'. The link with masturbation follows from this quote 'since boys watch blue-films and always think about erotic acts, they indulge in masturbation when alone. Excessive dwelling on sexual thoughts results in erotic dreams and seminal emissions'. The result is weakness, loss of weight, and memory loss.

Most people attributed *dhatu padiba* to various physiological factors. The general causes stated are: excessive heat in the stomach (*peta garam*), improper diet and strain due to hard physical labour. Other informants attributed semen loss to excessive masturbation. One of the key informants states 'Excessive masturbation cause widening of the urethral opening making dhatu padiba easier (*Besi muthimariley parisra dwara chouda hoi jaye o dhatu padiba sahaja huey*)'. Another explanation for *dhatu padiba* is the absence of sex because of which the accumulated semen gets discharged. One informant states: 'Long days of abstinence causes accumulation of semen which produces heat in the body and semen discharge occurs during urination. (*Bahuta din kichi nakaley bija jami jaye o deha heat hoi jaye. Parisra kala bele dhatu padey*)'. The immediate result of this situation is irritation and pain during urination, physical emaciation, weakness, body pain, head reeling, or even 'death'. One respondent states 'Dhatu padiba results in complete loss of physical power (*Dhatu padiley deharu sabu bala palai jaye*)' and thus it interferes with a healthy sex life. Many of the informants indicated anxiety over the loss of *dhatu* (semen) and perceived it as affecting their married life.

Skin infections formed a third emic category of disease. *Jadu* was most frequently mentioned as a very common skin infection, usually affecting the inner thigh and groin. It also affects the testes and leads to severe itching. Other skin infections are *chau* and *kachhu*. Men made a distinction between *bayasa chau*, which is common

among elder people, and not perceived as an illness and *dhala chau*, which are white patches on the skin. *Kacchu* is scabies and this can affect any part of the body. Skin infections generally are explained by unhygienic conditions 'If a person doesn't clean his body after the day's hard work then there are chances of having these problems'.

A fourth group are anal conditions, such as *malakantaka* which are wounds (fistula) and *arsa* which leads to severe pain during defecation. In contrast to *malakantaka*, bleeding occurs in *arsa* and this agrees with the medically recognized piles or haemorrhoids. The final group of concerns affecting the sexual organs are *filaria* (elephantiasis) with swelling of the feet and legs which extends to swelling of the penis and scrotum. In *hydrocele*, there is enlargement of the testicles due to water accumulation.

The severity of illnesses was elucidated by ranking exercises. Informants were asked to rank order the sexual health conditions in terms of severity as follows: 3 = 'severe', 2 = 'intermediate' and 1 = 'mild, not serious'. All informants rated AIDS as severe, so it has a mean severity of 3.00. Other conditions suggesting sexually transmitted infections, such as *jouna gha*, *linga cancer*, *syphilis*, *gonorrhoea* with mean values of 2.00. The various psycho-sexual concerns received more varied severity rankings. Among them *dhatu padiba* was considered most severe with a mean ranging from 1.50 to 2.42. For *swapnadosh* it ranged from 1.50 to 1.92. Skin infections, like *jadu* and *kacchu* were generally ranked as not severe (a mean ranging from 1.00 to 1.38. With average ratings between of 1.50 and 2.00, the anal conditions were considered more severe than skin infections.

These relatively simple structured qualitative methods taught us a lot about the emic categories of sexual health. It also drew our attention to conditions we had not anticipated and indeed had not incorporated in our conceptual model of sexual health concerns. The dominance of involuntary semen loss problems was so striking that it needed further exploration in the survey data.

### *Relative importance of sexual health concerns*

The informants contacted in the qualitative phase of the research are a 'convenience sample' of men who are probably more knowledgeable and approachable concerning sexual matters. While we believe the main culturally constructed ideas to be broadly applicable to the population, we also collected free lists from the respondents in the quantitative survey. The results of this large-scale collection of free lists was expected to be somewhat different from the qualitative phase, mainly because less time was given to building of rapport and probing for further responses. Thus, we anticipated shorter lists, but we still expected that the same general picture would emerge concerning types of sexual health problems. Table 11.2 compares the lists of items from the qualitative phase with results from four different groups of respondents in the survey: single and married men in urban and rural areas. The table shows the differences in the salience ranking (salience is the frequency of mention of each item, weighted by the average rank order in which it appeared in peoples' lists).<sup>5</sup>

Table 11.2. Rank Order of Salience of Sexual Health Concerns Among Informants and Survey Respondents

	Informants (n = 35)	Survey respondents			
		Urban		Rural	
		Single (n = 196)	Married (n = 203)	Single (n = 189)	Married (n = 202)
<i>Dhatu Padiba</i>	1	5	8	6	6
AIDS	2	3	5	7	11
<i>Gonoriha</i>	3	4	3	11	8
<i>Swapnadosh</i>	4	11	15	12	>15
<i>Jadu</i>	5	2	2	1	1
<i>Handling</i>	6	>15	>15	>15	>15
<i>Linga-gha</i>	7	12	12	10	10
<i>Parishra-poda</i>	8	>15	>15	14	13
<i>Hernia</i>	9	9	9	8	7
<i>Kachu</i>	10	6	10	5	5
<i>Linga-ghimiri</i>	11	>15	>15	>15	>15
<i>Hydrocele</i>	12	1	1	2	2
<i>Syphilis</i>	13	14	11	>15	>15
<i>Bata</i>	14	>15	>15	>15	12
<i>Filaria</i>	15	>15	>15	>15	>15
<i>Malakantaka</i>	>15	7	4	4	3
<i>Machala</i>	>15	8	7	3	4
<i>Arsa</i>	>15	10	6	9	9

We note immediately that *dhatu padiba*, which was the most salient item in the qualitative sample, falls to lower salience (from fifth to eighth on the lists of survey respondents). AIDS, which was second in salience in the qualitative sample drops slightly for urban single men, but drops more sharply among rural men (seventh and eleventh). Thus, the survey results give a clear indication of the greater impact of AIDS information programmes in the urban sector. In a similar way, *gonoriha* salience drops quite sharply in the rural population. Overall, the free lists in the survey give more prominence to several types of itching (*jadu*, *machala*, and *kacchu*). *Jadu* (itching) turns out to be the most salient item in rural populations, and ranks second in the urban population. In addition the salience of *hydrocele* in both urban and rural populations is notable. Since they affect the genital area, the inclusion of *hydrocele*, *hernia*, and *filaria* among men's reported sexual health problems is widespread in India. Perhaps the most striking result of the triangulation is in the salience of *swapnadosh* and *handling* (masturbation). These are somewhat more sensitive or embarrassing, we believe, and most of the respondents in the surveys did not mention them in their lists. In this part of the study we feel that the qualitative data give a more realistic measure of salience of those items. The concerns and anxieties about nocturnal emissions confirm the preoccupation about sex among youths and

unmarried men. This is understandable given the patterns of late marriage and the fact that more than 70 per cent of men in the general population sample experience their first intercourse at marriage. It was estimated from the data on age at first intercourse that 80 per cent of men are still virgin at age twenty, and 44 per cent at age twenty-five (Collumbien et al. 2000).

### Reported experience of semen-related concerns

Some further questions on sexual health concern in the questionnaire included the personal experience of *dhatu padiba*, *swapnadosh*, and *jadu*. These questions were added because of the anxiety expressed among the qualitative informants about semen loss and to test whether survey respondents would report on their own experience of it. *Jadu* was added since it is a prevalent rash, which is 'innocent' and considered not severe. When asking about the nocturnal emissions, the question referred to 'excessive' *swapnadosh*, that is, more than two to three night emission a month. Table 11.3 presents the differentials in reported life time experience of these three conditions.

The first observation is the relative lack of differential observed. On average 27.4 per cent of men reported personal experience of *dhatu padiba*. Though it was

Table 11.3. Differentials in Reported Personal Experience of Dhatu Padiba, Swapnadosh, and Jadu

	N <sup>a</sup>	Dhatu padiba	Swapnadosh	Jadu
<i>Total</i>	2087	27.4	52.3	40.1
<i>Marital status</i>				
Single	1054	26.7	55.6	39.6
Married	1033	28.2	49.0	40.5
<i>Residence</i>				
Urban	296	25.4	51.7	33.2
Rural	1791	27.8	52.4	41.2
<i>District</i>				
Puri	513	34.2	69.6	36.6
Ganjam	386	34.8	52.7	34.2
Balasore	400	25.7	46.1	44.7
Cuttack	788	20.3	44.0	42.8
<i>Education</i>				
No/primary education	679	29.7	50.8	41.7
Secondary education	723	29.3	51.7	40.8
Higher education	685	23.2	54.5	37.7
<i>Household income</i>				
Low	1110	29.0	52.2	40.9
Medium	658	26.6	52.1	39.2
Higher	319	23.6	53.3	39.0

<sup>a</sup> Weighted number in each category.

experienced less among the more educated, richer and urban, the differentials were not stark. The district-wise variations were the largest: nearly 35 per cent of men in Puri and Ganjam reported they had ever had *dhatu padiba*, compared to 20 per cent of men in Cuttack. Since men in Cuttack have a better education and are more likely to live in urban areas, multivariate analysis was done to look at the independent effect of these factors (not presented). For *dhatu padiba*, district was the only factor which had an independent effect. For *swapnadosh*, both marital status and district had an independent effect, with single men reporting more problems of excessive nocturnal emissions than married men. In Puri nearly 70 per cent of men had a lifetime experience of night emissions compared to an overall average of about 52 per cent.

Drawing on the existing psychiatric and anthropological literature, we will now discuss semen anxiety in the context of the ethnophysiology of sex as understood in South Asia, looking at Ayurvedic and folk explanatory models.

### *Ethnophysiology as explanatory model for semen loss*

The ethnographic and psychiatric literature documents other studies which relate the importance and associated anxieties of involuntary semen loss in South Asia (Bottero 1991; Caplan 1987; Dewaraja and Sasaki 1991; Edwards 1983; Kakar 1996; Malhotra and Wig 1975; Nichter 1981; Weiss et al. 1986). Semen leakage is often referred to as 'Dhat Syndrome' and invariably associated with fears over weakness. *Virya*, the Hindi word for semen, also means 'vigour'. Among slum dwellers in Mumbai, *virya* was also equated to money, and *dhat girna* (the local term for semen loss) was referred to as 'loss of money' drawing a parallel between a poverty stricken man without money and a sexually weak person without semen (Verma et al. 1998). The sexual anxieties about loss of strength are encoded in the ethnophysiology of sex in South Asia, which bears similarity to the Chinese concepts of health and sex (Kleinman 1980; Edwards 1983). Semen is considered to be the ultimate vital force, the source of physical as well as spiritual strength. Mahatma Gandhi, India's great political leader and social reformer, was preoccupied with the transformation of sexual potency into psychic and spiritual power, a core issue of Hindu metaphysics. For this reason Gandhi took the vow to observe celibacy at the age of thirty (Caplan 1987). The loss of *virya* through sexual acts or imagery is thought to be harmful both physically and spiritually (Nag 1996). Contemporary beliefs about the power associated with seminal fluid are based on Vedic scriptures. They all link food to health and sex through transformational processes. It is believed that the consumption of 60 lb of food is needed to replace the loss of semen in each ejaculation. Another variant of this age-old belief is that each coitus is equivalent to an energy expenditure of 24 h of concentrated mental activity or 72 h of hard physical labour (Kakar 1996).

In Ayurvedic medicine, health depends on the balance of three body humours, and sexual health may be seen to depend both on a proper diet and an appropriate use of semen (Edwards 1983). Bottero, who studied Ayurvedic doctors in an Oriya town, reports that the main cause of *dhatu padiba* is overheating due to an unbalanced diet of too many heating food, such as meats, fish, garlic, pepper, and eggs. These foods

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increase the internal fire which burns the semen and melts it as ghee (clarified butter). As a result of becoming liquid, the semen is discharged spontaneously, without the patient being aware of it. And semen is all the more vulnerable to this overheating as it is not localized in the testicles but stored throughout the body.... Thus they believe that 'sperm is in the body as butter is in milk', i.e., as a dissolved constituent which is expelled through a churning-like process at the moment of the ejaculatory convulsion;... (Bottero 1991: 307)

The general cultural ideas of relationships between pervasive hot-cold qualities/events and conceptualizing of semen as distributed widely in the body, give us a clearer perspective on the indigenous models of semen loss. Pool (1987) has pointed to the central importance of the hot-cold belief system in organizing understandings of physiological processes, particularly those related to disease. While the folk medical discourse is only partly related to the Ayurvedic theory of humors they are rooted in the same Hindu cosmology (Lambert 1996). In our data from Orissa—as presented above—multiple aetiologies were suggested for semen loss, with excessive heat, improper diet and masturbation as frequent explanations.

Semen as a vital essence and refined form of life energy exists in both sexes and indeed there are strong parallels between Dhat Syndrome in men and vaginal discharge (leukorrhoea) in women (Nichter 1981). The local terminology for several discharge complaints in women included the term *dhatu* or semen (Patel and Oomman 1999). *Dhatu* is an essential body humor associated with vitality and a source of positive health. According to Nichter, *dhatu* has a role in the control of emotions

In the body, *dhatu* controls heat and thus all processes of transformation. In the mind, *dhatu* facilitates *buddhi* (intellect) which controls and gives direction to *manas* (desire) which is provoked by a quantum of heat. In order to be able to think clearly, focus one's attention, or have control over one's emotions, enough *dhatu* must be present to counterbalance heating influences' (Nichter 1981: 390).

Complaints of excessive heat often communicate an unbalanced emotional state and serve as a sign of general distress, as explained in the psychiatric literature. 'Emotions are exacerbated by heating influences such as heating foods, alcohol, and sexuality. Conversely suppressed emotional states are expressed somatically by reference to overheat' (Nichter 1981: 390).

The association of semen loss with excessive heat indicates that the emic category of white discharge may be more related to psychosocial problems rather than infection. Indeed, white discharge in both men and women are now recognized as idioms of distress and associated with feelings of weakness. Complications of supposed consumption by semen loss are mental exhaustion with constant negative thoughts (or depression) and hypochondria, mainly due to the extreme anxieties a diagnosed patient suffers about his condition (Bottero 1991). The complaints of weakness are the same as the diagnostic symptoms of anxiety and depression (Patel and Oomman 1999). Somatization seems an important idiom through which both men and women communicate distress, but an important distinction is that vaginal discharge does not interfere with sexual capacity, whereas semen loss does (Edwards 1983).

For the lay person, feelings of weakness and distress are attributed to or explained by the loss of vital fluid. In a comparative study among psychiatric patients in Sri Lanka and Japan, Dewaraja and Sasaki (1991) show how attitudes and cultural beliefs become incorporated into patients' explanations of their subjective feelings of distress and anxiety, both to the therapist and to themselves. In Sri Lanka, psychological problems were self-attributed to semen loss, whereas in Japan stress and overwork prevailed as explanations. Similarly, women presenting at psychiatric clinics in Bangalore, frequently attribute their physical problems to the passing of vaginal fluids leading to depletion of energy (Chaturvedi et al. 1993).

Although our data found little evidence of social differential in the ever experience of semen loss (Table 11.3), Edwards (1983) reported that lower socio-economic groups were more likely to consider semen loss as harmful to health. He notes that recommended foods for maintaining semen and health are the more expensive ones, while the prohibited ones are the staple foods of the lower castes (Edwards 1983: 61).

Malhotra and Wig (1975) describe semen loss as a specifically Indian culture-bound syndrome, while Edwards (1983) sees it as a South Asian syndrome affecting Muslims and Buddhists as well as Hindus across the subcontinent. Bottero (1991) points to a much wider distribution of semen anxiety beyond South Asia, at least in earlier history. He goes back to Hippocrates on 'consumption of the back', but the most striking parallel he quotes from the work of Tissot in 1760. This French physician became famous for his work on diseases caused by masturbation. He describes something very similar to *dhatu padiba*:

loss of 'a very liquid seminal liqueur' during urination, defecation an nocturnal emissions, masturbation and also through spontaneous discharges, which constitute 'gonorrhoea simplex', 'a flow of semen without erection', described in 'true gonorrhoea' as opposed to 'bastard or catarrhal gonorrhoea' (which corresponds to our modern blennorrhagia, a purulent urethritis). (Tissot in Bottero 1991: 312)

Edwards notes that sexual anxieties, regarding masturbation and semen loss are still present in contemporary Western societies, but that 'revisions in the "scientific" medical interpretation of sexual physiology have reduced and altered its manifestation and severity' (Edwards 1983: 60). One could argue that if AIDS had been around in the eighteenth century with the corresponding interest for STD control, Tissot might have made the point we want to make about syndromic management.

#### ETIC AND EMIC CATEGORIES: CONFOUNDING INFECTION WITH DISTRESS?

So what are the implications of this emic category of semen anxiety for syndromic management of STIs? Men in Orissa did not associate *dhatu padiba* with sexual transmission, but another concern sometimes mentioned in conjunction with *dhatu padiba* was *parishra-poda* denoting a burning sensation during urination. Both conditions are believed to be caused by *peta garam* (heat in the stomach) as a result

of excessive heat. One respondent states 'Parisra poda occurs due to peta garam. Prolonged parisra poda leads to dhatu padiba.' As discussed above the cultural hot/cold belief system underlie the physiology of leaking semen. Of course a white discharge together with painful urination is the syndromic diagnosis for gonorrhoea and chlamydia, raising the potential for confounding semen loss with pus discharge.

It is important to consider how *dhatu padiba* gets diagnosed and whether men suffering from it will consult allopathic providers. As Bottero (1991) points out *dhatu padiba* is diagnosed either directly or indirectly. In the first case the patient reports a white discharge from his penis while urinating or defecating, or the discovery of a stain on his clothes. In the other case the doctor diagnosed it on the basis of a set of complaints about weakness, persistent fatigue, and skinny appearance, a combination of mental and physical weakening. Semen loss is thus implied during indirect diagnosis. The indirect diagnosis of semen loss through complaints about weakness was far more common than the direct diagnosis of reported white discharge (Bottero 1991). This leaves us pondering whether the 27 per cent of men in our survey who reported personal experience of *dhatu padiba* actually observed a discharge or attributed an episode of weakness and fatigue to semen loss.

When asked about self-reported symptoms of STIs in the survey, men who reported painful urination together with discharge, were probed to distinguish between semen discharge, *dhatu padiba* and pus discharge, *pujo padiba*. In total 132 men reported ever experience of pain during urination (*parishra poda*) concurrent with discharge: 110 specified *dhatu padiba* with painful urination, 15 *pujo padiba*, and 7 reported both *pujo* and *dhatu*. So when probed more on the nature of discharge, 87.7 per cent reported semen discharge and only 16.7 per cent specified the discharge as pus. This raises the question of whether there is a huge over-reporting of penile discharge, and also the extent to which men confuse pus and semen in the discharge. Men with semen loss were more likely to report having sought medical treatment (30 per cent versus 26 per cent for pus discharge). Among those going to a provider, men complaining about semen loss were as likely as those with a pus discharge to have consulted an allopathic provider (68 per cent: doctor or medicine store), while 8 per cent went to see folk healers and 24 per cent Ayurvedic doctors. Modern Ayurveda is less involved in the treatment of mental disorders than other healing traditions (Weiss et al. 1988) and despite popular ethnomedical understanding based on humoral aetiologies, Western biomedicine was often shown to be the first preference in the pluralistic system in rural Rajasthan (Lambert 1996). Thus when clinical services for men become more widely available in the public sector, men will present with these psychosexual concerns.

As we have seen before, more often than not semen loss is *implied* in the diagnosis of *dhatu padiba*. In the assumption of a move towards adopting syndromic management in primary healthcare settings in India, the implications could be twofold. There is the potential for both under- and overtreatment. Reported or implied discharge could be treated as gonorrhoea and chlamydia, leading to overtreatment. Good training of health workers with insistence on substantiating evidence of discharge, that is, observed during consultation through milking of the urethra (Mayaud et al. 1998) may overcome this. Another suggestion could be to



include a 'risk assessment step' based on sexual behavioural risk factors similar to those proposed by WHO to reduce the overtreatment for vaginal discharge (Mayaud et al. 1998) though this has not proven successful among women in South Asia (Hawkes et al. 1999). Men may also confuse discharge due to infections with semen loss. If those men with white discharge diagnose themselves as having *dhatu padiba* and they do not seek appropriate care, this would result in undertreatment. With the benefit of the research experience on self-reported symptoms of gynaecological morbidity over the past decade,<sup>6</sup> further research on male sexual morbidities needs to consider both pathological and somatic causes.

### CONCLUSIONS

This study on male sexual health in Orissa started off with a clear assignment to learn more about the local perceptions of sexually transmitted infections in order to inform condom promotion and sexual health services. We discovered that the focus of Oriya men was clearly more towards non-infectious conditions, that seem to reflect psychosexual concerns and psychosocial distress. The salience of involuntary semen loss in the minds of Oriya men is unmistakable in these data. The frequency and promptness with which *dhatu padiba* emerged in the process of free association when men were asked about sexual health concerns is reinforced by the survey results. More than a quarter of men in a representative sample reported personal experience of the condition.

Although we started from the categorical frameworks of biomedicine and public health interventions in HIV/STI control, the deceptively simple structured qualitative methods adopted in this study have proven invaluable in getting at the emic categories of sexual health. The free listing and pilesorting exercises were very useful for beginning to understand the local explanatory models. We also relied heavily on the existing ethnopsychiatric literature to interpret the importance of semen loss, linking it to the ethnophysiology of sex and understanding it as a somatic idiom of distress. That we did not know this literature before the study reflects the narrow paradigms adopted in international sexual health research.

The biomedical reductionism employed in current sexual health interventions, especially when focusing on syndromic management is inadequate to understand and treat sexual health problems of Indian men. From a clinical STD and biomedical perspective *dhatu padiba* may not be seen as a 'real' disorder since there is no organic pathology. From the psychosomatic perspective in contemporary psychiatry it is real, as indeed from the more holistic viewpoint of Ayurvedic and folk perspective of humoral balances in health. Public health interventions aimed at HIV/STD control will benefit from considering the Indian holistic view of sex, health, and well-being. It goes beyond treatable symptoms and draws attention to the root causes of ill-health.

We thus challenge the categorical paradigms of sexual health in current programmes and clinical services. What Patel and Oomman (1999) point out for women

'health needs increasingly involve problems beyond reproduction, and it is our contention that mental health already is and will continue to grow to become a core health issue for women. The intersection of reproductive health and mental health provides an avenue for exploring these issues... is equally valid for men. Health needs of men go beyond prevention and treatment of infections, and addressing semen anxiety may provide the opportunity to discuss issues of sexuality and sexual behaviour. Because of the inherent conceptual link of health with sexuality communication about sex and sexual behaviour can most appropriately be done through the language of health (Lambert 2001).

More flexible models of sexual healthcare incorporating physical symptoms as well as their psychosocial context are called for. We would urge that programmes that pay adequate attention to those other aspects of men's sexual health concerns will have a stronger likelihood of success is dealing with new ideas of safer sex, use of condoms and other messages relevant to the campaign against STIs and the spread of HIV infection. Presentation of information about these 'facts of sex life' can be effectively integrated with HIV/AIDS health promotion. From within the STD/HIV paradigm we will be tempted to advocate communication strategies that would bring men's concepts of sexual health problems into a more realistic relationship with biomedical facts about male physiological/sexual processes. The understanding of normal psychosexual development may take some fears away about masturbation, nocturnal emissions, and involuntary semen loss.

It is important not to dismiss the concerns about semen anxiety since mental health forms an integral part of (sexual) health. We are at the initial stages of recognizing the magnitude of mental ill-health, and starting to think about potential interventions (Patel and Oomman 1999). Since common mental disorders in women have been shown to be associated with poverty—not only in India (Patel et al. 1999) but also in Britain (see the pioneering study by Brown and Harris 1978)—cultural expressions of psychosocial distress and the implications of mental ill-health needs further exploration.

#### Notes

1. For the purpose of this chapter the terms STIs and STDs (sexually transmitted diseases) are considered synonymously and used interchangeably.
2. The poverty line was defined as the per capita monthly expenditure of Rs 49 for rural areas and Rs 57 for urban areas at 1973/74 prices. There are Rs 42 to 1 US \$.
3. This refers to four of the thirteen un-divided districts. In 1992, the thirteen districts were divided into thirty new districts.
4. This does mean that we under-sampled men living in larger households, and effectively under-represented single men in the sample: they make up 56% of the de facto household sample, whereas only 50% in the sample of individual respondents. However, since most results are presented separately for single and married men, this does not greatly influence the results.
5. Not all freelists from the survey were entered, limiting the analysis to 50 per category (urban/rural and married/single) in each district. Freelist are considered stable from 30 to 50 respondents.

6. Following a pioneer study in rural Maharashtra showing the hidden burden of reproductive tract infections (RTIs), including STDs, in rural women (Bang et al. 1989), several community-based studies of women's reproductive ill-health showed high level of self-reported vaginal discharge, which were interpreted as an indication of RTIs. Levels of gynaecological problems were believed to be underestimated by self-reported symptoms due to the culture of silent suffering among Indian women (Koenig et al. 1998). However, there is very poor agreement between reported morbidity and clinically diagnosed STI/RTIs (Hawkes et al. 1999), and now part of the aetiology of 'medically unexplained' vaginal discharge is suggested to be a somatic idiom for depression and psychosocial distress (Patel and Oomman 1999; Trollope-Kumar 1999).

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