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## Understanding childhood sexual abuse as a predictor of sexual risk-taking among men who have sex with men: The Urban Men's Health Study<sup>☆</sup>

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### Abstract

**Objective:** The prevalence and characteristics of childhood sexual abuse (CSA) among men who have sex with men (MSM), and links with sexual risk are explored. A model linking CSA and sexual risk among MSM is proposed.

**Method:** A telephone probability sample of urban MSM ( $n = 2881$ ) was recruited and interviewed between November 1996 and February 1998. The interview covered numerous health issues, including history of sexual victimization.

**Results:** One-fifth reported CSA, primarily by non-family perpetrators. Initial CSA experiences are characterized by high levels of force (43% involved physical force/weapons), and penetrative sex (78%; 46% reported attempted or actual anal intercourse). Such men are more likely than never-coerced men to engage in high risk sex (unprotected anal intercourse with a non-primary partner or with a serodiscordant male). In multivariate analyses, the effect of childhood sexual coercion on sexual risk is mediated by substance use, patterns of sexual contacts, and partner violence, but not by adult sexual revictimization or by depression.

**Conclusions:** Findings are interpreted within the context of social learning theory and prior research

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on sexual risk-taking. The high risk for CSA among MSM, which can predispose such men to patterns of HIV sexual risk, warrants new approaches in HIV prevention. © 2001 Elsevier Science Ltd. All rights reserved.

*Keywords:* Childhood sexual abuse; Sexual coercion; Gay men; HIV; Sexual risk

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## Introduction

Prior studies, utilizing primarily opportunistic samples, have found prevalence levels of childhood sexual abuse (CSA; defined here as prior to age 18) among adult men who have sex with men (MSM) that are close to levels reported by adult heterosexual women (25–39%; Doll et al., 1992; Finkelhor, 1994; Jinich et al., 1998). The current study extends this earlier work in estimating CSA prevalence in a large probability-based sample of adult MSM in four large urban centers of the United States (New York, Los Angeles, San Francisco, and Chicago). In addition, we provide data describing characteristics of the CSA experiences of MSM.

As with heterosexual women (e.g., Choi, Binson, Adelson, & Catania, 1998), the observed relationship between CSA and adult sexual behavior has led investigators to consider CSA's role in the transmission of Human Immunodeficiency Virus (HIV) among MSM. High HIV prevalence (>20%; Catania et al., 1998) and incidence rates (consistently 1–2% over the past decade; Catania et al., in press) among MSM in the United States underscore the continuing health threat HIV poses to MSM. To address continuing HIV risk, research on antecedents—which has focused on proximal causes of sexual risk (see reviews: Hospers & Kok, 1995; Flowers, Sheeran, Beail, & Smith, 1997)—has expanded to include such developmental antecedents as CSA (e.g., see the Spring 1998 issue of *AIDS and Behavior*).

Prior studies have shown that a history of CSA is associated with HIV prevalence and sexual risk behavior among MSM (Bartholow et al., 1994; Carballo-Diéguez & Dolezal, 1995; Doll et al., 1992; Holmes, 1997; Jinich et al., 1998; Lenderking et al., 1997). These findings, however, are based on samples (e.g., patients at clinics for sexually-transmitted diseases, street youth, those seeking HIV testing) for which estimates of sexual risk behaviors and other pertinent associated behaviors (e.g., substance use) may be inflated. We extend this prior work by examining the CSA/sexual risk behavior relationship and potential mediators of that relationship in a representative sample of MSM.

### *A social learning model of CSA and its relationship to sexual risk*

This research is guided by a social learning model of the CSA/sexual risk behavior relationship that we have developed specific to MSM. Models based upon samples of women may be overly influenced by gender-specific patterns and roles (e.g., compliance, passivity, internalized patterns of distress) that are less common among men. Furthermore, gender differences have been found in important details of childhood sexual coercive experiences, how these relationships are understood, and their long-term impact upon adult interpersonal and sexual functioning (Holmes & Slap, 1998). CSA has been related to higher levels of

eroticism, lower levels of sexual anxiety, and more sexualized behaviors among male victims of CSA than among female victims (Feiring, Taska, & Lewis, 1999; Watkins & Bentovim, 1992). Males who have been sexually abused are more apt than their female counterparts to exhibit aggressive, hostile behavior (Watkins & Bentovim, 1992), and to victimize others, possibly due to identifying with the aggressor (Becker, Cunningham-Rathner, & Kaplan, 1987; Burgess, Hazelwood, Rokous, Hartman, & Burgess, 1988; Carmen, Rieker, & Mills, 1984; Groth, 1979; Stevenson & Gajarsky, 1991).

This model integrates prior research findings on the overlap between specific long-term sequelae of CSA and observed correlates of HIV risk behavior (albeit primarily with heterosexual adult women; e.g., Fergusson, Horwood, & Lynskey, 1996; Fergusson & Horwood, 1998; Miller, 1999; Whitmire, Harlow, Quina, & Morokoff, 1999) with other empirical findings and theoretical formulations (Browne & Finkelhor, 1986; Catania & Paul, 1999; Hoier et al., 1992). The proposed model hypothesizes relationships between CSA and emotional, cognitive, and interpersonal outcomes that impact directly or indirectly upon two key components of HIV sexual risk-taking models (Catania, Kegeles, & Coates, 1990; Fisher & Fisher, 1992): (a) the appraisal of potential risk, and (b) the capacity to enact behaviors necessary to reduce risk. Among the proposed mediators of this CSA/risk behavior process are motivational factors (e.g., social motives, including need for social acceptance; sexual feelings; sexual impulse control; affective states and emotions, such as interpersonal anger, depression, and anxiety), coping strategies (e.g., over-reliance on escape-avoidance coping), risk appraisal processes (e.g., inattention to danger cues), interpersonal regulatory abilities (e.g., low sexual assertiveness), and sexual scripts (e.g., established patterns of sexual passivity or aggression). The severity of these long-term outcomes of CSA-related trauma may vary from minimal symptomatology to such diagnoses as post-traumatic stress disorder or various personality disorders.

Our mediational model proposes a variety of pathways whereby key behavioral, cognitive, and emotional patterns are related to sexual risk-taking, and is framed by the following theoretical considerations with respect to CSA. Consistent with Hoier and her colleagues (1992), we conceptualize CSA (particularly severe CSA) as a painful experience on many levels (e.g., physiological, psychological, emotional), which arouses flight/fight responses under conditions that deter physical escape or effective avoidance, and which may also punish any efforts by the victim to change or evade the situation. The overgeneralization of the loss of control experienced during the traumatic event can effectively result in “learned helplessness” (Abramson, Seligman, & Teasdale, 1978; Seligman, 1971), powerlessness, and low self-efficacy, associated with poor interpersonal regulation of adult sexual relationships. In extreme situations, learned helplessness may lead to depressive and self-destructive tendencies (Boudewyn & Liem, 1995; Briere & Runtz, 1987; Browne & Finkelhor, 1986). These tendencies indirectly deter enactment of health-promoting sexual practices by influencing key belief systems such as risk perceptions (e.g., being “unconcerned” about health risks). Poor adult interpersonal regulation (and consequent poor enactment of sexual health practices) may also stem from the fact that some CSA perpetrators use control techniques that denigrate the victim and lead victims to blame themselves for being abused. These conditions may result in the development of a negative self-concept that, in turn, impairs

appropriate assertiveness in adult sexual relationships (e.g., the ability to refuse sexually aggressive partners).

Importantly, CSA differs from other forms of traumatization in that such early experiences may directly shape a victim's subsequent sexuality and sexual relationships. "Traumatic sexualization" may lead to aversive, anxious/hostile reactions to sex, as well as poor impulse control. In addition, subjective positive aspects of these childhood sexual experiences (e.g., obtaining attention, nurturance) may reinforce the use of sexual behavior as a mechanism of relief/soothing, or a "commodity" to meet non-sexual interpersonal needs. For example, clinical studies of adults CSA survivors have described sexual "promiscuity" as a compulsive behavior motivated by anxiety and other disturbing emotions, which is reinforced by outcomes such as orgasm-related tension reduction (e.g., see Timms & Connors, 1992). Compulsive sexual patterns (Dimock, 1988; Krug, 1989) are one explanation for CSA victims reporting higher numbers of sexual partners than do the non-victimized (for MSM, see Jinich et al., 1998). Numbers of sexual partnerships may also be elevated due to CSA-related outcomes that disrupt the development of long-term relationships (e.g., impaired interpersonal trust and attachment capacities), leading to a pattern of short-term sexual liaisons. In the absence of consistent condom use, these higher numbers of sexual partners increase risk for HIV infection. CSA experiences may not only impact the number of sexual partners, but sexual partner selection as well. Adult CSA survivors may be attracted to partners with "high-risk" psychological characteristics that are familiar to the victim and satisfy certain needs that arise from the CSA-perpetrator relationship. (Paradoxically, as Browne & Finkelhor [1986] point out, the betrayal involved in CSA may impair accurate appraisal of later relationships due to an emotional need to perceive a given relationship as trustworthy.) For example, people with a history of CSA are more likely to be attracted to (or to attract) dominating, overly controlling partners. Such partners have less concern about the well-being of others, which in extreme situations may extend to physical brutality, including rape (i.e., adult sexual "revictimization;" see, for example, Muehlenhard, Highby, Lee, Bryan, & Dodrill, 1998).

Furthermore, there may be other long-standing effects of CSA on victims' adult sexual relationships. As noted previously, CSA perpetrators model sexually aggressive behavior and poor anger control; their victims may learn and subsequently display similar patterns of emotional response and anti-social behavior in their adult sexual relationships. Conversely, perpetrators may reward compliance and passivity in the face of aggression, which reinforces more passive responses in sexual situations by CSA victims. Long-term patterns of sexual aggression or sexual helplessness often result in the establishment of rigid, invariant sexual scripts that promote sexual risk-taking (e.g., through an inability to either insist on healthy sexual practices, or care about the health of others).

Although numerous aspects of CSA experiences may directly influence sexual risk practices, there are also indirect effects mediated by the influence of CSA on coping strategies. In general, CSA victims show an over-reliance on cognitive or behavioral escape-avoidance coping strategies (e.g., substance use, dissociation). This reliance on relatively primitive coping strategies may be a consequence of their learned utility in managing the emotional distress of CSA experiences (Chu & Dill, 1990; Miller, 1999), as well as CSA-related long-term negative outcomes (e.g., anxiety, depression, impaired inter-

personal functioning). Psychological or emotional distance is provided (in these coping strategies) by dissociating or compartmentalizing aspects of one's conscious experience, or by the use of alcohol or drugs to dull dysphoric states. These escape-avoidance coping strategies, however, reduce attention to danger cues that impair accurate risk appraisal, and inhibit self-regulatory processes needed for negotiating and enacting safer sexual practices.

### *Testing the proposed CSA/Risk Behavior Model*

The analysis in this paper is a first effort at verifying some of these proposed relationships. We are constrained by the original purpose of the study (a broad-based general health assessment of MSM) to using proxy variables that suggest, but do not fully test, the theoretical constructs and underlying hypothetical relationships. In the current paper, we examine depression, alcohol/drug use during sex, occurrence of "one-night stands," abusive relationships, and adult sexual revictimization (coerced sex after age 17). These variables are believed to reflect underlying motivational, cognitive, and interpersonal factors that we have hypothesized to mediate the link between CSA and sexual risk-taking.

Depression, as noted, is a common outcome of CSA (Browne & Finkelhor, 1986), and negative affective states have been noted as a correlate of sexual risk behavior among gay men (Marks, Bingman, & Duval, 1998). Depression is linked to motivational deficits and "learned helplessness" beliefs; the subsequent sense of low self-efficacy may negatively influence the ability to regulate sexual encounters so as to avoid sexual risk (see de Vroome, de Wit, Stroebe, Sandfort, & van Griensven, 1998). Depression often elicits the use of coping strategies such as substance use that impair accurate assessment of risk by reducing attention to danger cues (Miller, 1999; see below). Finally, depression can precipitate self-destructive impulses that can lead to sexual risk-taking.

Substance use has been noted both as an outcome of CSA (Miller, 1999; Stein, Golding, Siegel, Burnam, & Sorenson, 1988), and as a correlate of sexual risk-taking (e.g., Beltran, Ostrow, & Joseph, 1993; Ekstrand & Coates, 1990; Kelly et al., 1991; McKirnan, Ostrow, & Hope, 1996; Stall, Coates, & Hoff, 1988). As a behavioral escape-avoidance coping strategy, substance use may lead to high-risk sex by undermining interpersonal regulatory abilities that prevent unsafe sex, by reducing perceptions of risk or concerns about safety, or by facilitating sensation-seeking.

CSA victims, relative to non-victims, tend to report higher frequencies of brief sexual relationships in adulthood. (As noted earlier, this is multiply determined by compulsive sexual patterns, the use of sex to meet other interpersonal needs, and interpersonal difficulties.) Among MSM, such frequent sexual partnerships increases the likelihood of having a "one-night stand" (where essential strangers briefly get together for the primary purpose of having sex). Such a scenario increases the likelihood of encountering a partner who demands unsafe sex, is exploitative, or who may be HIV-positive. Difficulties arising in "one-night stand" situations include the failure to make accurate risk appraisals, deficits in the capacity to negotiate sexual interactions, or an emphasis on pleasure at the expense of sexual health, all of which contribute to a failure to enact low-risk sexual activities. Thus, "one-night stands" are not just indicative of certain psychological traits, but a proxy measure for key situational factors.

Having an abusive partner in adulthood (another long-term outcome of CSA) may reflect poor interpersonal regulatory abilities and/or a submissive role in sexual relationships, either of which can lead to a failure to avoid sexual risk. As noted previously, misjudging risks may lead to sexual revictimization in adulthood, which has a high likelihood of involving unsafe sex.

In general, we hypothesized that men with a history of CSA, particularly more severe CSA, will report higher rates of depression, use of substances during sexual encounters, one-night stands, abusive sexual partners, and adult sexual revictimization (relative to non-CSA men). Further, after controlling for other developmental variables (e.g., childhood physical abuse, parental substance abuse) and demographic variations on the dependent variable, we hypothesized that the correlates of CSA will mediate the CSA/sexual risk relationship.

## Methods

### *Sample*

The data reported here come from the Urban Men's Health Study, a telephone probability sample of men who have sex with men (MSM) in four US cities (San Francisco, New York, Los Angeles, and Chicago), conducted between November 1996 and February 1998. Data from the Federal Communications Commission and the 1990 US Census indicate that telephone coverage in these four cities is at least 93% (Lavrakas, 1987; US Bureau of the Census, 1995). In addition, research has found that households with telephones do not appear to differ from households in general on health characteristics (Anderson, Nelson, & Wilson, 1998). The study cities were selected based on (a) their importance as regional centers and as sources of MSM/MSM-IDU AIDS cases (combined they account for approximately two-thirds of such cases in the US), and (b) estimated size and residential clustering of each city's gay/bisexual population. Preliminary work identified areas of moderate to high MSM residential density within each city. This involved site visits and geographic mapping of data from multiple sources (e.g., MSM AIDS caseload data, 1990 US Census data); the process of identifying these areas is described in more detail elsewhere (Binson et al., 1996; Mills et al., in press). Within each city, zip codes estimated to yield cases at less than \$1000 per case were identified. Disproportionate sampling (Kalton, 1993) and adaptive sampling techniques (Blair, 1999) were used to construct a random digit-dial (RDD) sample within these zip codes in each city. The obtained MSM household prevalence across zip codes was 8.5% (range: 1.3% to 30.8%). Sample weights were developed to reflect probability of selection, non-response (of households that were called), and non-coverage (of households within the selected zip code areas that were not phoned), as well as to maintain proportionality between cities based upon each city's estimated total MSM population. All data presented in this paper are weighted.

### *Procedures*

After conducting pre-survey community awareness programs (publicity and organized meetings), households were screened by telephone (in either English or Spanish) to deter-

mine geographic (zip code) and gender (at least one male aged 18 or older) eligibility. An adult male informant was then used to screen the household for MSM eligibility. "MSM" were operationalized as those who self-identify as gay or bisexual or who report any sexual contact with other men since age 14. Despite concerns about the sensitivity of this requested information on same-gender sexual behavior, prior research comparing telephone and face-to-face interviews has found similar rates of disclosure in the general population (Binson et al., 1995). Based upon prior research suggesting that men are more likely to disclose homosexual behavior to male interviewers (Catania et al., 1996), this process of screening households for MSM eligibility was performed exclusively by male interviewers. A total of 195,152 telephone numbers were called, and 63,411 households were successfully screened, from which 2881 completed interviews were obtained (a participation rate of 78% of all MSM eligible households). Despite an average interview length of 75 minutes, no degradation of the data was found (i.e., the proportion of "don't know" and "declined to answer" responses did not increase over the course of the interview). This suggests a high level of cooperation by respondents, which is further emphasized by the fact that, when asked at the very end of the interview, 89% of respondents expressed a willingness to participate in a follow-up interview.

All interviews were conducted using computer-assisted telephone interviewing (CATI) technology. However, a mode experiment was conducted for one section of the interview (involving most of the measures listed below) which contrasted CATI interview procedures with telephone-automated, computer-assisted self-interviewing (T-ACASI). Prior studies have suggested that self-reporting of sensitive personal information may vary based upon the presence or absence of a live interviewer (Aquilino, 1994; Catania, Binson, Van Der Straten, & Stone, 1995). Thus, the experiment with T-ACASI methods was meant to identify and help correct for any potential reporting biases for key behaviors in the telephone interviews. Approximately one-sixth of the respondents were randomly assigned to use the automated T-ACASI system for this one section of the survey. In this mode, computer-controlled, pre-recorded questions were read to the respondent, who answered by pressing keys on a touch-tone telephone. Respondents were allowed to opt out of the T-ACASI interview format and return to a live interviewer if desired at any time.

### *Measures*

Measures used in this study were either standardized measures, items developed to fit the specific topic areas of the study, or measures revised to suit the population or needs of the survey. Through a 6-month iterative process, measures were field-tested using procedures developed by Cannell, Oksenberg, Kalton, Bischooping, and Fowler (1989) that combine qualitative and quantitative methods of evaluating problematic items for respondents or interviewers. The breadth of this survey instrument permitted the identification of indicators of many possibly pertinent long-term sequelae of sexual abuse (e.g., self-destructive behavior, problematic substance use, disturbed/distorted relationship patterns).

### *Dependent variables*

*Sexual risk-taking:* Sexual risk behavior was measured in several ways. Respondents were asked both “global” items about the number of partners with whom they engaged in various sexual activities (e.g., receptive anal intercourse to ejaculation without a condom, receptive anal intercourse with a condom), and “partner-specific” items (about sexual acts with each of up to four of their last sexual partners in the prior 12 months). Two dichotomized operationalizations of sexual risk were created. Using the global measures of sexual behavior, if respondents either (a) reported any unprotected anal sexual behavior (e.g., unprotected insertive or receptive anal intercourse, either to ejaculation or with withdrawal) and did not have a primary partner, or (b) reported any specific unprotected anal sex activity with more than one partner, they were defined as having had “unprotected anal sex with a secondary male partner” (hereafter referred to as “non-primary partner sexual risk”). The partner-by-partner assessment was used for a second measure of sexual risk-taking, based not only on sexual behavior, but on HIV seroconcordance/serodiscordance between the respondent and his partner. HIV-positive respondents who reported unprotected insertive anal intercourse with an HIV-negative or serostatus unknown male partner were defined as reporting “serodiscordant sexual risk” behavior. Similarly, HIV-negative respondents who had unprotected receptive anal intercourse with an HIV-positive or serostatus unknown male partner were defined as engaging in “serodiscordant sexual risk” activity. These two outcome measures each have their own advantages and disadvantages as operationalizations of sexual risk behavior. The first dependent variable, based on global measures of sexual risk without adjusting for the seroconcordance or serodiscordance of the partners, may yield a higher rate of false positives. However, the second dependent variable, while sensitive to HIV serostatus, is limited to behavior with no more than the most recent four male partners, and may yield a higher rate of false negatives.

### *Independent variables*

*Demographic variables:* Variables included city of residence, race/ethnicity, age (by decade), formal educational attainment, employment status (working full-time vs. working part-time vs. not working—e.g., unemployed, disabled, retired), household income (in \$20,000 increments), self-defined sexual orientation (gay/homosexual vs. heterosexual vs. bisexual vs. other—e.g., “don’t use labels,” “inactive”), and self-reported HIV status. Standardized assessment procedures came from both general population surveys and prior work with this population.

*Sexual abuse:* Operational definitions of CSA have a strong influence on rates reported across studies (Finkelhor, 1994; Fromuth & Burkhart, 1987; Haugaard & Emery, 1989; Roosa, Reyes, Reinholtz, & Angelini, 1998; Watkins & Bentovim, 1992). Typically, these definitions are based upon either direct queries about coercion (either general self-report or more specific descriptions of the actions the perpetrator took to pressure the respondent into sex), or by inferred power inequities between partners based upon age differences or status/role differences (e.g., between parental figures and child). Some utilize an either/or approach to their operationalization of CSA, and others require that both criteria be met. In

this study, inquiries focused on self-reported coercive sexual episodes (“Thinking back from your childhood to the present, have you ever been forced or frightened by someone into doing something sexually that you did not want to do?”). Respondents who answered in the negative were queried again (“Sometimes people’s views about their experiences change over time. Did you ever have an experience when you felt at the time that you were forced or frightened into doing something sexually that you did not want to do?”). Given the sensitivity of the material, it was thought that this might capture some respondents whose first response would be to avoid any self-disclosure on this topic. This practice is supported by a review of research findings by Peters, Wyatt, and Finkelhor (1986), which found that multiple queries to ascertain any potential sexual abuse led to higher reported rates (and presumably greater disclosure of such victimization) in otherwise comparable studies. Despite acknowledged measurement problems in asking respondents to judge sexual experiences as coercive (e.g., self-presentation bias among males making it more difficult to disclose victimization; problems in assessing whether coercion was involved in some circumstances of sexual victimization), our prior work suggested that this would be preferable in this population to basing the operationalization on more conventional age differentials. In earlier research with gay/bisexual males who reported sexual experiences between the ages of 13 and 15 years with partners at least 10 years their senior, 44% reported that no coercion was involved (Jinich et al., 1998). While this may be influenced by reporting bias, it is possible that such experiences had not been experienced as detrimental and/or had been sought out by some of these youth, given issues involved in gay identity development and socialization.

Respondents were asked for number of sexual coercion experiences, number of perpetrators, and detailed information about experiences with the first and last (if multiple) coercive partner(s). The detailed perpetrator-specific information included respondent’s and perpetrator’s ages at the time this first occurred, whether this happened more than once, the period of time over which the abuse occurred, the perpetrator’s relationship to the respondent, the type of coercion used (e.g., physical force or weapons, threats of use of physical force, or other kinds of pressure), sexual activities involved (particularly whether penetrative sexual acts occurred), and subjective level of distress about this experience. For the purpose of this analysis, subjects were first categorized as “never coerced,” “sexually coerced by age 17” (hereafter referred to as “childhood sexual abuse” or “CSA”), or “sexually coerced only after age 17 (hereafter referred to as “adult sexual victimization”), based upon information about the first coercive episode.

We examined each of these variables and their interaction effects (age of first CSA experience, number of experiences, number of coercive partners, length of the first coercive relationship, type of coercion or pressure used, identity of coercive partner, and type of sexual activity involved in the coercive experience) with respect to a variety of adult social and psychological outcome variables that would be anticipated to vary according to level of sexual traumatization (including sexual risk behavior, “one-night stands,” boyfriend/partner abuse, heavy/frequent alcohol use, multiple drug use, frequent drug use, frequency of sex under the influence of alcohol or illicit drugs, any reported sexual problems, depression, and adult sexual revictimization). Number of CSA occasions (relative to other severity indices) was consistently the most powerful correlate in 9 of 13 CSA-relevant adult outcome

regression models examining each of these outcome variables (considering indicator main effects and interactions). Duration of CSA was significant in five models, but was essentially redundant with number of coercion episodes ( $r = .66$ ). Based upon this initial exploration of the data, this study used a trichotomous measure of the number of abuse experiences (never, 1–5 times, 6 or more times) as an index of CSA severity.

*Adverse familial experiences:* Due to the importance of disentangling the effects of CSA from the effects of aspects of the family environment (Boney-McCoy & Finkelhor, 1996; 1998; Fergusson & Horwood, 1998; Fergusson et al., 1996; Nash, Neimeyer, Hulsey, & Lambert, 1998; Schaaf & McCanne, 1998), we included survey items asking about other adverse familial experiences prior to the age of 17. A global question on parental substance abuse asked “Did a parent, step-parent, or foster-parent have problems with drugs or alcohol?” (yes/no). To assess interparental violence, we asked “Did you see one of your parents hit or beat up your other parent? Would you say never, once, two to three times, or four or more times?” Similarly, to assess childhood physical abuse, we asked “Did a parent, or some other adult in charge of you beat you up?” (with the same choice of categorical responses). These items only provide a crude measure of the constructs of concern, as they rely on a certain level of interpretation (e.g., differentiating getting “beaten up” from “corporal punishment;” defining parental “problems with drugs or alcohol”) as well as recall and willingness to self-disclose a sensitive matter. Given the limitations in these measures, these analyses used a count of such adverse familial experiences, ranging from 0 (for none) to 3 (for co-occurrence of all three problems). Interparental violence and childhood physical abuse each added a point to this composite score if reported to occur two or more times (versus never or once only), to better ensure that these one-item measures reflected a pattern of violence.

*Substance use:* In the partner-by-partner assessment of sexual behavior within the prior 12 months, respondents were asked how often they engaged in anal sex under the influence of alcohol, as well as a separate question about the frequency of anal sex under the influence of other drugs. The response categories (never, sometimes, about half the time, almost all the time, every time) were assigned numerical values (0, .25, .50, .75, 1), which were then multiplied by the frequency of anal intercourse with a given partner to obtain a frequency of intercourse under the influence for that partner. Frequency of anal intercourse under the influence summed across all assessed male partners who were not identified as primary partners (up to four), divided by the frequency of anal intercourse summed across these male partners, yielded an overall proportion of anal sex under the influence with non-primary partners. The majority of those reported no anal sex under the influence with a secondary partner (alcohol: 76%; drugs: 83%); however, a large number of these respondents reported either no secondary partners or no anal intercourse with secondary partners. Approximately 10% of men reported a proportion of 40% or more of their anal sexual encounters with non-primary male partners being “under the influence” of alcohol and approximately 10% were under the influence of drugs 40% of the time or more. These two proportions (one for anal sex under the influence of alcohol and one for under the influence of drugs) were then dichotomized into “infrequent” (less than 40%) and “frequent” (40% or more).

*Depression:* Depressive features were measured using The Center for Epidemiologic Studies-Depression (CES-D) scale (Radloff, 1977). This measure was dichotomized in

analyses, with those scoring at or above 16 (the conventional cut-off score) defined as “depressed.”

*Abusive relationships:* A series of 12 items asked about having been the victim of a variety of experiences involving “unwanted physical or emotional violence” in an intimate relationship over the prior 5 years (e.g., being hit “with fists or an open hand,” “verbally threatened,” “pushed or shoved”). For the purposes of this analysis, a dichotomous variable was defined that identified whether or not respondents had reported two or more of these experiences. This was seen as a marker for some of the potential disturbances in intimate relationships found among those who have been sexually victimized in childhood (as well as noting the potential for revictimization in adulthood).

*“One-night stands:”* Respondents were asked how many of the men with whom they’d had sexual relations in the prior year were someone they had sex with only once (colloquially, “one-night stands”). This was dichotomized as none vs. one or more, due to the fact that the distribution of this variable was extremely skewed, and almost half of the respondents reported no “one-night stands.”

*Adult sexual revictimization:* As noted in the description of the sexual abuse measure, we asked about age of first and last sexual victimization experience. Among those reporting CSA, we operationalized sexual revictimization in adulthood to mean that more than one sexual victimization experience was reported, and that last experience was at or since the age of 18.

### Analyses

Prevalence of sexual abuse prior to age 18 is reported for the total sample ( $n = 2881$ ) and descriptive data of the initial CSA event is provided ( $n = 497$ ). Analyses were conducted to assess the hypothesized relationships, first between CSA and the proposed mediator variables, then between CSA and the proposed mediators with the two dependent variable outcome measures of sexual risk. Having established these key linkages, we then proceeded to examine if the hypothesized mediators accounted for the observed relationship between CSA and sexual risk. Analyses examining long-term sequelae of CSA compare those reporting sexual victimization by age 17 and those who did not report ever being coerced (combined  $n = 2311$ ). Those who had experienced sexual victimization for the first time after the age of 17 were excluded, so that the effects of CSA could be more clearly identified and to allow for a more straightforward use of the CSA severity index. Univariate analyses (chi-square statistics) were used to evaluate the statistical associations among CSA, adverse familial experiences (e.g., parental drug or alcohol abuse; childhood physical abuse), demographics, mediating variables (anal sex under the influence of alcohol and other drugs, adult sexual revictimization, “one-night stands,” and abusive relationships), and the dependent variables representing risk behavior (non-primary partner sexual risk and serodiscordant sexual risk). (The use of the term “mediating variables” in this paper is derived from Baron & Kenny [1986], where a mediator is defined as “the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest” [p. 1173], as distinguished from moderator variables, which differentiate the impact of another variable.)

Two hierarchical logistic regressions (one for each operationalization of sexual risk) assessed these groups of predictors in the following order: 1) adverse familial circumstances, 2) CSA severity, 3) the interaction between adverse familial circumstances and CSA severity, 4) the set of proposed mediating variables, 5) interactions between mediating variables and CSA severity, 6) demographics, and 7) interactions between demographic variables and CSA severity. The last four steps were executed using a forward stepwise procedure within each step, with entry/exit criteria set such that all variables in the step entered the model. The final logistic models include all variables that were statistically significant ( $p < .10$ ) upon entry in these initial models. Elimination of clearly non-significant covariates maximized the fit of the models as assessed by the Hosmer-Lemeshow goodness-of-fit test (Hosmer & Lemeshow, 1989). Both models achieved excellent fit ( $p > .50$ ). Due to the disproportionate sampling design, data had to be weighted, which in turn necessitated adjustment of the estimated standard errors of the obtained regression coefficients. This was accomplished using the SVYLOGIT procedure in Stata (Stata Corp., 1999).

## Results

We first examined for mode effects. No differences by mode of interview were found for any self-reported history of sexual victimization (CATI 35.5% vs. T-ACASI 36.6%), childhood sexual abuse (CATI 20.6% vs. T-ACASI 21.0%), or high number (6+ times) of CSA events (CATI 5.0% vs. T-ACASI 4.7%). Thus, prevalence of CSA, despite being sensitive information, was unaffected by the presence of a live telephone interviewer.

The prevalence of CSA was estimated to be 20.6% (95% confidence interval [CI] = 18.8%, 22.5%). Another 14.7% (95% CI = 13.1%, 16.6%) reported adult sexual victimization (age 18 or older), and 64.7% (95% CI = 62.4%, 66.9%) reported no sexual coercion experiences. As the prevalence of CSA has been noted to be strongly influenced by the operational definition used, and age differentials are commonly utilized in other reports of CSA, we report two more restrictive definitions of CSA (which adjusted for age differences between victim and perpetrator in addition to the subjective experience of having been coerced into sex). We found CSA prevalence estimates to be only slightly reduced by this additional step (16.7% using a 5 or 10 year minimum differential based upon whether one was age 12 or less, or older; 17.3% using a graduated differential with four age periods).

On average, CSA victims were pre-teens at their first CSA experience, and perpetrators were approximately 16 years older than their victims (see Table 1). Over half of the victimized men reported being sexually victimized by more than one person.

Perpetrators were typically male, and although not likely to be family members (17.7% were in the victim's immediate family; 31.9% were at least extended family members of the victim), they were unlikely to be strangers to their victims. More than half the respondents reported multiple victimization experiences, and those experiences involved more than one occasion. Over 27% reported an initial CSA relationship that extended for one year or more. These initial coercive experiences involved a high degree of physical threat (over two-fifths involved the use of weapons or physical force), as well as a high degree of penetrative sex (with almost half involving attempted or actual anal intercourse). Respondents reported

Table 1  
Descriptive characteristics of CSA in Urban Men's Health Study ( $n = 497$ )

	%	Mean ( <i>sd</i> )
Total number of perpetrators:		2.3 (2.4)
One perpetrator only	46.2	
Three or more perpetrators	25.9	
First coercive experience		
Respondent's age		10.7 (4.1)
Perpetrator's age		26.2 (11.6)
Perpetrator was male	92.3	
Duration of abuse by first perpetrator		
One incident only	45.8	
At least 2 years	17.9	
First perpetrator's relationship to respondent		
Parent	3.9	
Step-parent/Foster-parent/Guardian	5.1	
Sibling	8.7	
Other relative	14.2	
Date/Boyfriend	1.5	
Friend/Acquaintance/Neighbor/Roommate	33.7	
Authority figure (doctor/teacher/employer/clergy)	4.6	
Stranger	25.2	
Other	3.1	
Type of coercion used*		
Physical force/weapons	42.5	
Threats of violence	34.3	
Other kinds of pressure	56.6	
Type of sexual activity		
None specified	3.5	
Touching/fondling only	18.7	
Penetrative acts (oral/anal/vaginal)	77.8	
Specific sexual acts*		
Forced to watch	11.7	
Forced to touch	72.1	
Fondled sexually	85.1	
Anal penetration-digit/object	35.1	
Oral sex (respondent receptive)	45.0	
Oral sex (respondent insertive)	42.5	
Anal intercourse	28.5	
Attempted anal intercourse only	17.1	
Vaginal intercourse	2.4	
Level of distress over event		
Moderately/Extremely upsetting at time?	66.0	
Moderately/Extremely upsetting at present?	47.7	

\* Percentages do not sum to 100% because multiple affirmative responses are possible.

overwhelmingly that the initial CSA experience was “moderately” or “extremely” upsetting at the time, and approximately half reported these events to still be extremely or moderately upsetting.

The men who reported CSA were different with respect to several demographic characteristics from men who were never sexually victimized. Those reporting CSA (when compared to the never-coerced) were less likely to be white (73% vs. 82%) or Asian/Pacific

Table 2

Prevalence of risk behaviors and proposed mediating variables by level of CSA severity and by level of adverse familial experiences

	CSA severity <sup>a</sup>			Adverse familial experiences <sup>b</sup>			
	Never	1–5 times	6+ times	0	1	2	3
	%	%	%	%	%	%	%
Non-primary partner sexual risk <sup>c</sup>	18.4	24.1	45.7***	16.5	25.0	27.1	31.1***
Serodiscordant sexual risk <sup>d</sup>	2.3	5.0	12.1***	2.4	3.9	6.6	4.7**
Frequent anal sex under influence of alcohol <sup>e</sup>	8.6	15.6	13.4***	9.0	12.0	10.6	12.8
Frequent anal sex under influence of drugs <sup>e</sup>	6.5	12.5	17.0***	6.3	9.6	11.9	9.5**
Depressed (CES-D > 16)	24.3	41.5	40.5***	23.8	31.6	35.3	44.1***
“One-night stand” in past year	49.4	53.9	64.7**	48.7	53.3	55.0	52.9
Boyfriend/Partner abuse in past 5 years	31.4	55.4	63.8***	30.9	42.0	55.0	51.8***
Adult sexual revictimization	–	23.7	24.3	3.9	5.8	13.2	9.7***

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

<sup>a</sup> CSA severity = number of coercive experiences.

<sup>b</sup> Adverse familial experiences = count of *types* of familial difficulties (range-0–3) experienced prior to age 17; the three types of experience are parental substance abuse, parent-parent physical abuse, and parent-child physical abuse.

<sup>c</sup> Non-primary partner sexual risk = respondent had unprotected insertive or receptive anal intercourse with a man who is not his primary partner in the past year.

<sup>d</sup> Serodiscordant sexual risk = HIV-positive respondent had unprotected insertive anal intercourse with HIV-negative/sero-unknown partner or HIV-negative respondent had unprotected receptive anal intercourse with HIV-positive/sero-unknown partner in past year.

<sup>e</sup> With non-primary male partners only in past year.

Islander (1% vs. 4%), to have lower levels of formal education (38% vs. 26% with less than a college degree), and to have lower levels of household income (48% vs. 35% with an annual household income of \$40,000 or less). They were also more likely to be younger (23% vs. 20% were less than 30 years old), unemployed (24% vs. 18%), HIV-positive (24% vs. 14%), and to not self-identify as gay (79% vs. 85%). The higher prevalence of HIV seropositivity among the CSA men relative to the never-victimized is a biological marker suggesting a more extensive history of sexual risk behavior.

The data in Table 2 examine the effects of CSA severity and other adverse familial experiences on the two operationalizations of risk behavior (non-primary partner sexual risk and serodiscordant sexual risk), as well as the predicted mediators in the relationship between CSA and sexual risk behavior. There are strong univariate relationships between both CSA and adverse familial experiences and sexual risk behaviors. (It should be noted that adverse familial experiences were also intercorrelated with CSA, with those who reported CSA reporting twice the rates on these variables for men who were never victimized.) In addition, CSA severity is significantly associated with five of the six hypothesized mediating variables (adult sexual revictimization could not be assessed, as by definition, the “never abused” cannot be revictimized). The measure of “adverse familial experiences” is associated with four of the six proposed mediators, as frequent anal sex under the influence of alcohol and “one-night stands” failed to reach significance ( $p < .05$ ).

Table 3 summarizes the univariate relationships between demographic and proposed mediating variables and the two sexual risk dependent variables. The most powerful univariate predictors of both sexual risk variables are frequency of anal sex under the influence of alcohol and under the influence of other drugs, engaging in “one-night stands” with other men, and having been emotionally and/or physically abused in a partnered relationship with another man within the previous 5 years. Depression and adult sexual revictimization are significantly associated with non-primary partner sexual risk, but only weakly related to serodiscordant sexual risk. Among the demographic variables, HIV-positive status, relative youth, and lower income are associated with both measures of sexual risk. Less formal education, part-time employment status, and self-identification as gay or bisexual are associated with reporting non-primary partner sexual risk, but not significantly related to serodiscordant sexual risk.

We examined the relationships among the mediator variables, and found that the interrelationships were very small for 14 of the comparisons ( $\phi$  values = .04 to .26), and modest for the relationship between the use of drugs and the use of alcohol during sex ( $\phi$  = .43). Thus, redundancy between the mediators is relatively small.

Tables 4 and 6 summarize the results of separate logistic regression analyses for each measure of sexual risk behavior. The odds ratios at entry (and  $p$ -value for the improvement chi square) are provided for each step in the regression. Variables that failed to achieve significance ( $p < .10$ ) upon entry have been excluded from the final models.

As expected, higher numbers of reported adverse familial experiences and greater CSA severity are associated with an increased likelihood of reporting non-primary partner sexual risk. With respect to CSA severity, only the highest level (6 or more experiences) was associated with higher levels of sexual risk, while respondents reporting fewer coercion experiences could not be differentiated from the “never coerced” with respect to prevalence of risk. In addition, there is a significant interaction between CSA events and adverse familial experiences (see Table 5). In the absence of any adverse familial experiences, any CSA experience is associated with increased likelihood of risk behavior. In cases where one or two adverse familial experiences are reported, those reporting the highest level of CSA severity (at least 6 coercion experiences) have a greater likelihood of engaging in risk behavior. Among men reporting all three adverse familial experiences events, however, CSA severity has no differential impact on non-primary partner sexual risk. These findings suggest a “ceiling effect” to the joint influences of CSA and adverse familial events on non-primary partner sexual risk.

The effects of CSA severity and adverse familial experiences became non-significant upon entry of the proposed set of mediator variables. Significant main effects were found for one-night stands and anal sex under the influence of drugs. Those respondents who engaged in one-night stands or engaged in frequent anal sex under the influence of drugs were more likely to report non-primary partner sexual risk. There was also an interaction between CSA severity and being in an abusive relationship. Reporting an abusive relationship in the past 5 years is associated with reporting sexual risk, but only among respondents reporting 6 or more CSA experiences (OR = 9.67, 95% CI = 2.16, 43.19). Among demographic variables, significant main effects were observed for age, income, self-defined sexual orientation, and self-reported HIV status. More 18–29 year olds reported sexual risk than any other age group

Table 3  
Prevalence of risk behaviors by demographic characteristics & presence of proposed mediating variables

	Non-primary partner sexual risk		Serodiscordant sexual risk	
	%	<i>p</i> -value	%	<i>p</i> -value
<b>Demographics</b>				
Age		<i>p</i> < .001		<i>p</i> < .05
18–29	28.7		5.6	
30–39	21.1		2.4	
40–49	19.0		3.4	
50+	13.9		2.7	
Formal education		<i>p</i> < .05		<i>ns</i>
High school diploma or less	23.2		3.7	
College degree	21.7		3.9	
Graduate degree	16.8		2.1	
Household Income		<i>p</i> < .001		<i>p</i> < .01
\$20,000 or less	23.1		2.4	
\$20,001–\$40,000	25.7		5.5	
\$40,001–\$60,000	23.1		4.1	
\$60,001–\$80,000	19.4		1.8	
\$80,001–\$100,000	11.0		4.1	
Over \$100,000	14.3		1.0	
Employment status		<i>p</i> < .05		<i>ns</i>
Full-time	20.1		3.2	
Part-time	16.6		3.0	
Not working	25.8		4.4	
Self-defined sexual orientation		<i>p</i> < .001		<i>ns</i>
Gay/Homosexual	21.8		3.6	
Heterosexual	4.4		3.0	
Bisexual	22.7		2.4	
Other	11.8		2.0	
HIV serostatus		<i>p</i> < .001		<i>p</i> < .001
HIV+	36.1		11.0	
HIV-/Untested	17.7		2.0	
<b>Proposed mediating variables</b>				
	%	<i>p</i> -value	%	<i>p</i> -value
Anal sex under influence of alcohol		<i>p</i> < .001		<i>p</i> < .001
Less than 40% of the time	17.7		2.5	
40% or more of the time	43.3		8.5	
Anal sex under influence of drugs		<i>p</i> < .001		<i>p</i> < .001
Less than 40% of the time	17.1		2.4	
40% or more of the time	55.2		10.7	
Depression (CES-D)		<i>p</i> < .001		<i>ns</i>
Not depressed (0–15)	19.0		3.2	
Depressed (16–60)	25.6		3.6	
Abusive relationship in past 5 years		<i>p</i> < .001		<i>p</i> < .001
No	16.4		2.1	
Yes	28.5		5.6	
Adult sexual revictimization		<i>p</i> < .01		<i>p</i> < .10
No	20.3		3.2	
Yes	30.5		6.2	
“One-night stand” in past year		<i>p</i> < .001		<i>p</i> < .001
No	4.9		0.6	
Yes	36.2		6.1	

Note: *ns* = *p* > .10.

Table 4  
Results of hierarchical multiple logistic regression on non-primary partner sexual risk

Step	Variable	Odds ratio at entry	Improvement chi-square <i>p</i> -value
1	<i>Adverse familial experiences</i>		<.001
	One vs. zero	1.55***	
	Two vs. zero	2.01***	
	Three vs. zero	2.24***	
2	<i>CSA Severity</i>		<.001
	1–5 times vs. never	1.27	
	6+ times vs. never	2.87***	
3	<i>CSA by familial experiences interaction</i>	(see Table 5)	<.05
4	<i>Mediator variables</i>		<.001
	One-night stand		
	Yes vs. no	11.28***	
	Anal sex under influence of drugs		
	40%–100% vs. <40%	2.56***	
	Abusive relationship in past 5 years		
	Yes vs. no	1.33*	
5	<i>CSA by abusive relationship interaction</i>	(see text)	<.01
6	<i>Demographic variables</i>		<.001
	Age		
	18–29 vs. 50+	1.91**	
	30–39 vs. 50+	1.34	
	40–49 vs. 50+	1.10	
	Household income		
	\$20K or less vs. \$80K–\$100K	2.02*	
	\$20K–\$40K vs. \$80K–\$100K	2.75**	
	\$40K–\$60K vs. \$80K–\$100K	2.38**	
	\$60K–\$80K vs. \$80K–\$100K	2.47**	
	Over \$100K vs. \$80K–\$100K	2.12*	
	Employment status		
	Full-time vs. part-time	1.30	
	Not working vs. part-time	2.10*	
	Self-identified sexual orientation		
	Homosexual vs. other	1.94	
	Heterosexual vs. other	1.20	
	Bisexual vs. other	3.14**	
	HIV serostatus		
	HIV+ vs. HIV–/untested	2.26***	
7	<i>CSA by employment status interaction</i>	(see text)	<.05

Note: \* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001.

(based on the final model, vs. 30–39 year olds: OR = 1.44, 95% CI = .97, 2.13; vs. 40–49 year olds: OR = 1.75, 95% CI = 1.12, 2.75; vs. age 50 or above: OR = 2.01, 95% CI = 1.20, 3.35). Proportionally fewer respondents with household incomes in the \$80,000 to \$100,000 range reported sexual risk with a non-primary partner than did all other income groups other than those with less than \$20,000. Self-identified bisexuals were more likely to report sexual risk than respondents in the “other” category of sexual orientation. Self-reported HIV-seropositives were more likely to report risk behavior than those untested or HIV-seronegative. Finally, there was a significant interaction between CSA history and employment status. Among those reporting at least 6 coercion experiences, proportionally

Table 5

Post-hoc analyses of the interaction between adverse familial experiences and CSA severity on non-primary partner sexual risk

Adverse familial experiences	CSA severity	Odds Ratio	95% C.I.	<i>p</i> -value
None	1–5 times vs. never	1.76	(1.13, 2.73)	.012
	6+ times vs. never	2.05	(0.86, 4.91)	.106
	6+ times vs. 1–5 times	1.17	(0.45, 3.01)	.750
One	1–5 times vs. never	0.87	(0.46, 1.67)	.684
	6+ times vs. never	2.24	(0.78, 6.47)	.136
	6+ times vs. 1–5 times	2.56	(0.80, 8.17)	.111
Two	1–5 times vs. never	0.78	(0.34, 1.78)	.552
	6+ times vs. never	5.54	(1.67, 18.39)	.005
	6+ times vs. 1–5 times	7.11	(1.94, 26.04)	.003
Three	1–5 times vs. never	2.12	(0.64, 7.05)	.219
	6+ times vs. never	2.45	(0.48, 12.58)	.283
	6+ times vs. 1–5 times	1.16	(0.21, 6.42)	.869

more of those working full-time (OR = 9.63, 95% CI = 1.14, 81.12) or not working (OR = 30.61, 95% CI = 3.63, 258.04) report non-primary partner sexual risk (relative to those working part-time). It is important to note that in this multivariate model, adult sexual revictimization was not a predictor of sexual risk behavior.

In the logistic model for serodiscordant sexual risk behavior, CSA severity and adverse

Table 6

Results of hierarchical multiple logistic regression on serodiscordant sexual risk

Step	Variable	Odds ratio at entry	Improvement chi-square <i>p</i> -value
1	<i>Adverse familial experiences</i>		<.05
	One vs. zero	1.22	
	Two vs. zero	2.97***	
	Three vs. zero	1.92	
2	<i>CSA severity</i>		<.01
	1–5 times vs. never	1.96*	
	6+ times vs. never	3.17**	
3	<i>Mediator variables</i>		<.001
	One-night stand		
	Yes vs. no	7.18***	
	Abusive relationship in past 5 years		
	Yes vs. no	1.95*	
	Anal sex under influence of alcohol		
	40%–100% vs. <40%	1.42	
	Anal sex under influence of drugs		
	40%–100% vs. <40%	1.97*	
4	<i>CSA by sex under influence interactions</i>	(see text)	<.001
5	<i>Demographic variables</i>		<.001
	HIV serostatus		
	HIV+ vs. HIV–/untested	3.50***	

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

familial experiences operate independently (i.e., without interacting). A greater likelihood of discordant sexual risk is associated with any CSA (regardless of severity), and is associated with higher numbers of adverse familial experiences. Although statistically significant upon entry, the main effects for CSA severity and adverse familial experiences were no longer significant once the proposed mediating variables entered the equation. Significant two-way interactions between CSA severity and both anal sex “under the influence” variables were found. Having more frequent anal sex under the influence of alcohol (40% of the time or more) is significantly associated with serodiscordant risk behavior, but only in the group reporting the highest number of CSA experiences (OR = 10.49, 95% CI = 1.16, 94.59). Having more frequent anal sex under the influence of illicit drugs is also associated with serodiscordant risk behavior, but only in the intermediate CSA severity group (OR = 8.85, 95% CI = 2.30, 24.08). Significant main effects indicate that having a one-night stand, having been in an abusive relationship, or being HIV-positive are associated with serodiscordant risk behavior. Again, sexual revictimization as an adult did not remain as a predictor in the final multivariate model.

These contributions of some of the mediating variables in explaining two different operationalizations of risk behavior, and the complexity of the interactions, provide some confirmation of this attempt to “explain” the relationship between aversive childhood developmental experiences (including CSA) and adult sexual risk behavior through intervening variables.

## **Discussion**

Our study confirms and extends prior research indicating high prevalence levels of childhood sexual abuse (CSA) among MSM. Such prevalence levels might be higher if we had elicited data about experiences involving only non-contact sexual victimization (i.e., sexual exposure or exhibitionism). Overall, these men’s CSA experiences were characterized by high levels of penetrative sex, physical force, and perceptions of these events as distressing. A substantial subgroup reported multiple perpetrators and/or having been sexually coerced by a perpetrator over an extended period of time. These findings suggest that a large segment of the MSM population has been subjected to potentially severe CSA trauma. Comparisons of our findings to prevalence estimates for men in general are potentially misleading—due to differences in definitional criteria and how questions are asked, as well as the fact that estimates for men in general do not differentiate MSM and heterosexuals. Nevertheless, it is notable that CSA prevalence estimates for men in general are 2 to 4 times lower than the levels we have found for men who have sex with men. Risin and Koss (1987) found a rate of 7.3% for their national male sample, and Finkelhor’s (1994) review of the literature suggested that a conservative prevalence estimate of males who have experienced CSA is between 5% and 10%. We have mentioned the problems with comparing prevalence rates in studies with different methods and different operationalizations of “childhood sexual coercion.” To corroborate these prevalence findings, we examined unpublished data from a national general population telephone survey of individuals 18 years or older, collected between June 1995 and April 1996 ( $n = 8466$ , male subsample = 3746; National Sexual

Health Survey, 2000). The National Sexual Health Survey or NSHS data allow a comparison of the prevalence of reported CSA (defined in a comparable manner to the UMHS about being “forced or frightened by someone into doing something sexually that you did not want to do?”) among MSM and those males who had reported no same-gender sex since age 13. The rate found for the MSM subgroup was 17.1% (95% C.I.: 11.5, 24.8) as opposed to 2.8% (95% C.I.: 2.3, 3.5) in the subgroup of men who had not had sex with men since the age of 13 (Chi square = 143.2;  $p < .0001$ ).

We also examined the effects of CSA on sexual risk behavior in adulthood. As HIV seroprevalence among MSM in the United States continues to be high (Catania et al., 1998), identifying factors contributing to this continuing epidemic are of substantial import. Our findings suggest that CSA is an important correlate of risk behavior, and that the influence of CSA on sexual behavior is mediated by diverse social psychological variables. We explored this mediation model of CSA on risk behavior using two different measures of sexual risk-taking (non-primary partner sexual risk and serodiscordant sexual risk). The models derived in multivariate analyses were relatively consistent in demonstrating that engaging in a “one-night stand,” frequent substance use during sex, and any recent experience with an abusive relationship mediate the link between CSA and sexual risk. However, two other proposed mediators frequently cited in the CSA literature, depression and adult sexual victimization, were not significant in either model. Significant interactions between CSA severity and the mediators suggest CSA also influences current sexual risk behavior through variables not assessed in this project.

Some differences were found between the multivariate models, which may be a consequence of the differences in the operationalizations of sexual risk. “Serodiscordant sexual risk,” although based upon more limited data (i.e., involving no more than four sexual partners), is a more precise measure of risk-taking than non-primary partner sexual risk, as it excludes unprotected anal sex within sero-concordant relationships. The multivariate model using serodiscordant sexual risk (as opposed to the model of non-primary partner sexual risk) may, therefore, be not only more parsimonious, but a more meaningful representation of the relationships between early experiences, mediating variables, and sexual risk. The logistic regression model of non-primary partner sexual risk is more complex, including both more variables and interactions between CSA and several other variables. The interactions between CSA severity and other types of adverse familial experiences in the first model do not permit easy interpretations. These relationships require further exploration, as it is clear that both types of developmental events must be considered in dealing with sexual risk prevention. Examination of the odds ratios suggest that in general, the effects run in consistent directions. The failure to achieve statistical significance may, therefore, be a problem related to statistical power, and larger samples may be necessary to confirm the possibility that CSA effects are consistent across levels of other forms of familial adversities. Alternatively, the explanation of such findings may involve consideration of variables not measured in this study. One such key variable would be subsequent help-seeking. It is likely that subsequent participation in key services (e.g., psychotherapy) would not be randomly distributed among this population, but linked to behavioral signs of more severe distress. Thus, those with histories of multiple developmental traumas may have been more likely to

receive referrals for services to cope with problems associated with such histories. Subsequent studies assessing help-seeking patterns would address this issue.

The substance use variables also showed variability across models, with alcohol use significant in only one model (interaction), while drug use was significant in both models (albeit as a main effect in one model and as an interaction in the other). The use of event-specific assessments (e.g., examining the most recent high-risk sexual encounter) might clarify the nature of these relationships (for a review of the issue of measurement of substance use and HIV risk, see Leigh & Stall, 1993). More rigorously operationalized variables and event-specific research designs may enable us to disentangle some of these variables and permit identification of the complex pathways through which CSA experiences continue to influence current sexual behaviors. Situation-specific assessments are likely to be important not only with respect to substance use variables, but affective state variables as well, as both negative affect (Marks et al., 1998) and self-esteem injury (Martin & Knox, 1997) may influence coping strategies (e.g., escape-avoidance) and use of alcohol and/or drugs during sexual encounters. Although depressive symptoms were not associated with sexual risk-taking in our findings, negative affect may indirectly influence other key variables relevant to risk behavior.

Our findings have some general fit with the broader theoretical framework described in the introduction. High levels of substance use in sexual situations may well serve as a coping tool to manage intrusive negative affect and cognitions associated with a CSA history (see Epstein, Saunders, Kilpatrick, & Resnick, 1998). The presence of “one-night stands” as a mediator in the model may be indicative of sexual preoccupation, low interpersonal regulatory abilities, poor risk appraisals, and deficiencies in attachment and interpersonal trust. Boyfriend abuse may be an important marker of distortions in power dynamics in relationships or in the capacity to accurately evaluate others and interpersonal risk. Our current findings do not touch on the issue directly, but preliminary analyses suggest men with a history of CSA may be more likely to participate in “S&M”/bondage and discipline sexual practices (28% vs. 13% of those never victimized,  $p < .001$ ), suggesting learned sexual scripts that emphasize submissive or aggressive sexual roles.

This study highlights the value of further research that (a) assesses childhood sexual victimization experiences with measures that allow for greater precision in defining level of trauma, (b) more precisely measures the social and psychological constructs that are potentially impacted by these experiences, (c) includes measures of such mediating variables as coping strategies and sexual negotiation skills, (d) assesses potential variables that may identify those who are resilient to such traumas, and (e) is designed specifically to utilize available data analytic strategies of modeling the pathways by which early sexual abuse leads to HIV sexual risk-taking.

The present study, as well as earlier reports (Jinich et al., 1998) suggest the importance of considering childhood sexual abuse history in developing and delivering HIV interventions. Even as research explicates the linkages between sexual risk behavior and CSA in this population, work can be done to identify CSA-relevant intervention strategies for reducing sexual risk behavior. The influence of a CSA history on use of alcohol and/or other drugs in conjunction with sexual activity and the potential for involvement in intimate relationships with skewed power dynamics (as suggested by the abusive relationship experiences), perhaps

exacerbated by multiple casual sexual contacts, are potentially fertile grounds for interventions. While the best arenas for intervention may continue to be those which are familiar to HIV prevention workers (e.g., substance use in conjunction with sexual activity, sexual negotiation skills-building), what differs is the emphasis necessary on the enduring impact of childhood victimization within those spheres. Substance abuse treatment services, for example, may be a critical point of entry to services for gay/bisexual men who have been sexually coerced in childhood. Given the link between engaging in sex under the influence of alcohol/drugs and a history of childhood sexual victimization, intervention strategies and prevention messages should recognize that the use of alcohol and/or drugs may serve a coping function (Epstein et al., 1998). Thus, substance use treatment messages that direct individuals to discontinue all use, and prevention advice to avoid sexual activity while under the influence of alcohol and drugs, are likely to be ineffectual if individuals with CSA histories are not provided alternative means of managing potentially disturbing and intrusive CSA-related memories and feelings. This is consistent with much of the current re-evaluation of HIV prevention efforts, which emphasizes understanding the context and subjective meaning of target behaviors, how these risk-related behaviors fit into an individual's hierarchy of needs, and how interventions can provide alternative pathways to meeting these needs. Further explication of the mediated relationship between CSA and sexual risk behavior can facilitate this process.

There is a need to review community services to ensure that the special needs of MSM with CSA histories are identified, and that appropriate referrals and services are offered at various points at which these men may contact mental health, substance use, social service, and medical services. It is recommended that referral programs, staff training, and patient evaluations for childhood sexual victimization and other adverse developmental experiences be carried out by facilities offering services to gay and bisexual men.

The shortcomings of this dataset should be acknowledged. Since our measures are retrospective in nature, there are limitations imposed on the interpretation of findings. This is not meant to impugn the accuracy of such measures, as prior research has found that retrospective reports of both CSA (see, for example, Whitmire et al., 1999) and sexual risk behavior (Coates et al., 1988; Saltzman, Stoddard, McCusker, Moon, & Mayer, 1987) have good reliability and validity. However, the cross-sectional nature of the study precludes disentangling temporal and causal relationships particularly between proposed mediating variables and behavioral outcomes. Second, it must be acknowledged that our questionnaire items and operationalization of CSA (focusing on acknowledging coercive sexual experiences), may miss some portion of those who may have been manipulated into sexual activities as children who do not see those experiences as having been the result of being either "forced" or "frightened." If this were true, it would lead to under-reporting of prevalence rates; furthermore, this could influence the linkages found between CSA and sexual risk. Third, this study provided only gross proxy measures of the various hypothesized mediating influences of CSA on sexual risk among MSM. Key variables potentially implicated in risk-taking were not directly assessed (e.g., the use of cognitive escape-avoidance coping), and important moderating influences on the long-term impact of sexual victimization were not measured (e.g., disclosure history, reactions and level of support from others; see Browne & Finkelhor, 1986; Conte & Schuerman, 1987; Romans, Martin, Anderson,

O'Shea, & Mullen, 1995). As time frames associated with these variables may differ from the time frame for our risk assessment, some assumptions must be made about the stability of certain patterns (e.g., depressive features, substance use behaviors) to relate them to risk behavior. Furthermore, defining a representative sample is problematic when eligibility is determined by self-disclosure of information of a sensitive nature (e.g., specific sexual behaviors). As such screening procedures require candid responses to a stranger over the phone and some MSM may chose to not self-identify as such, there is a potential for some systematic sample selection bias. However, this is unavoidable in any survey, and the UMHS sample shows considerable variation in levels of disclosure of sexual orientation to others, and study findings are consistent with what might be anticipated from other sources. As an example, we noted earlier that the prevalence of CSA among MSM is within the 95% confidence intervals of rates for MSM who participated in a national general population survey on sexual behavior. Despite these limitations, these data from the Urban Men's Health Study offer some initial insights into the application of a social learning model of the relationship between CSA experiences and sexual risk.

In conclusion, given the prevalence of a history of sexual victimization among gay/bisexual men, it appears that there is a sufficient need (both in terms of affected population size and in terms of the multiple health risks linked to these experiences) for specialized interventions that address long-term sequelae of such childhood experiences. Although a variety of treatment approaches have been used and evaluated for women, we know of no such ongoing efforts among men, much less any efforts specific to gay and bisexual men. Stepping up efforts in designing and evaluating treatment models for MSM could have a powerful impact on prevention of HIV and other health problems in this population.

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## Résumé

**Objectif:** Explorer la fréquence et les caractéristiques des abus sexuels subis dans l'enfance (CSA) chez des hommes qui ont des relations sexuelles avec des hommes (MSM) et leurs liens avec les comportements à risque. Un modèle est proposé reliant CSA et comportements à risques chez ces hommes.

**Méthode:** Un échantillon probabiliste urbain d'hommes MSM a été recruté et interviewé par téléphone ( $n = 2881$ ) entre novembre 1996 et février 1998. L'entretien couvrait de nombreux sujets concernant la santé, y compris les antécédents d'abus sexuels.

**Résultats:** Un cinquième des abus sexuels avaient eu une origine essentiellement extra-familiale. Les expériences initiales sont caractérisées par un haut niveau de violence (43% comportaient force physique/armes), et par la pénétration sexuelle (78%; 46% ont fait état de tentatives ou de réalisation de rapports anaux). Ces hommes sont, plus que ceux qui n'ont pas subi de violences, susceptibles de s'engager dans des pratiques à haut risque (rapport anal avec un partenaire qui n'est pas le partenaire principal ou avec un homme serodiscordant). Dans les analyses à plusieurs variables, l'effet de la violence sexuelle subie durant l'enfance est influencé par l'usage de stupéfiants, les patterns de contacts sexuels et la violence du partenaire, mais pas par la revictimisation ou par la dépression.

**Conclusion:** Les résultats sont interprétés dans le contexte de la théorie de l'apprentissage social et d'une recherche précédente sur les conduites sexuelles à risque. Le haut risque présenté de trouver des hommes qui ont été victimes d'abus sexuels dans leur enfance (CSA) parmi les hommes qui ont des relations sexuelles avec des hommes (MSM), ce qui les prédispose à des conduites à risque VIH, justifie de nouvelles approches dans la prévention du SIDA.

## Resumen

**Objetivo:** El objetivo es explorar la prevalencia y las características del abuso sexual infantil entre varones que tienen relaciones sexuales con varones y conocer las conexiones con las conductas

sexuales de riesgo. Se propone un modelo para conectar el abuso sexual infantil con las conductas de riesgo sexual entre varones que tienen relaciones sexuales con varones.

**Método:** Una muestra probabilística de sujetos varones que tienen relaciones sexuales con varones ( $n = 2881$ ) fue seleccionada por teléfono y entrevistada entre Noviembre de 1996 y Febrero de 1998. La entrevista cubrió numerosas cuestiones de salud, incluyendo la historia de victimización sexual.

**Resultados:** Uno de cada cinco sujetos notificó episodios de abuso sexual infantil fundamentalmente de tipo extrafamiliar. Las experiencias iniciales de abuso sexual infantil se caracterizan por elevados niveles de utilización de la fuerza física o la amenaza con armas de fuego (43% de los casos) y de intento (78%) o consumación (46%) de penetración anal. Estos varones son más proclives que los que nunca han sido forzados a implicarse en actos sexuales de alto riesgo (relación sexual anal sin protección con pareja no conocida o con un varón serodiscordante). En los análisis multivariados se observa que el abuso sexual infantil ejerce su influencia en la conducta sexual de riesgo a través del efecto mediador de abuso de drogas, los patrones de contacto sexual y la violencia de pareja, pero no a través de la revictimización sexual adulta o la depresión.

**Conclusiones:** Los resultados son interpretados en el contexto de la teoría del aprendizaje social y de las investigaciones precedentes sobre conductas sexuales de riesgo. El alto riesgo de abuso sexual infantil entre varones que tienen relaciones sexuales con varones, que puede predisponer a tales varones a patrones sexuales comportamentales de riesgo para el HIV, merece nuevas aproximaciones en la prevención del síndrome de inmunodeficiencia adquirida.