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Childhood Sexual Abuse and Sexual Risk-Taking
Among Men Who Have Sex with Women:
The Roles of Alcohol, Mental Health Symptoms, and Sex Motives

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Abstract

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Several studies have suggested that those who have experienced childhood sexual abuse (CSA) are at greater risk for sexually-transmitted infections later in life than are their non-abused counterparts. For the most part, the populations investigated to date have consisted of women, men who have sex with men, and high-risk clinical or homeless populations. As such, little is known in this domain about men who have sex with women (MSW). Furthermore, even among the most frequently studied populations, research that has been devoted to identifying and examining potential mediators in the CSA – sexual risk relationship is scarce. To address these gaps, the current studies evaluated the presence and possible mediators of the CSA – sexual risk relationship among a community sample of MSW. Paper I reviews the research on CSA and sexual risk-taking that has been conducted to date among MSW and highlights the role that

alcohol consumption may play as a mediator in such a relationship. Paper I goes on to present a longitudinal study that examined the effect of CSA on several later sexual risk indices and evaluates the extent to which alcohol-related variables factor into this relationship. Paper I also presents findings related to idiosyncratic CSA characteristics and how such characteristics may affect alcohol- and sexual risk-related outcomes. Paper II extends Paper I by introducing and reviewing additional, non-alcohol-related variables that may play a mediational role in the CSA – sexual risk relationship. Paper II then proceeds to present a longitudinal study that examined mood and anxiety symptoms and sex motives as mediators in the relationship between CSA and number of sexual partners. The results from these studies extend previous findings concerning the relationship between one's history of CSA and one's subsequent sexual risk-related behaviors. Furthermore, the current studies underscore the importance of ongoing research to further refine our understanding of sexual risk-taking in the wake of sexual abuse.

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Overview

This dissertation report results from two studies investigating the relationship between child sexual abuse (CSA) and sexual risk-taking. This research was derived from a longitudinal study of over 300 participants that were recruited between July 2010 and May 2011. The results reported herein stem from data collected at baseline as well as at a six-week follow-up. Both time points utilized survey methodology.

This document is divided into two primary components (Paper I and Paper II). Each of these two papers is formatted as a stand-alone empirical study that addresses distinct research questions. However, Paper II is conceptually related to, and extends, Paper I. Both papers consist of an introduction and brief literature review, a summary of study methods and findings, and a complete discussion section. Paper I introduces the evidence for a CSA and sexual risk-taking relationship and presents a study in which this overarching relationship is assessed, as is the role of alcohol as an outcome of CSA and as a potential mediator of the CSA-sexual risk relationship. Paper I also examines CSA history as a dichotomous variable (yes/no) and in terms of its severity and idiographic characteristics. Paper II reviews research on CSA as a precursor to mental health problems and presents a study in which CSA is associated with mood and anxiety symptoms, which are then associated with specific motives for sexual behavior that, in turn, are associated with having an increased number of sexual partners at the follow-up time point.

Papers I and II are preceded by a General Introduction that provides an overarching description of the material to be covered. This document concludes with a General Discussion that first provides a concise summary of the present findings and closes with a section devoted to future research direction.

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DEDICATION

This work is dedicated to my fantastic family and to my faithful friends who have seen me through the times, both tough and terrific.

A special dedication to the late psychologist, Stephen E. Jones, PhD. He is no doubt impressed, although I hope not shocked, by this achievement.

Most importantly, I dedicate this dissertation to my wife Margaret. She is the most beautiful and incredible wife in the Universe. Any universe.

General Introduction

Sexually-transmitted infections (STIs) and childhood sexual abuse (CSA) each exact enormous tolls on the physical, emotional, and economic health of the population of the United States. It is estimated that STIs cost the U.S. nearly \$15 billion annually (Chesson, Blandford, Gift, Tao, & Irwin, 2004) with perhaps half of that cost stemming from STIs other than HIV (Eng & Butler, 1997). There are roughly 19 million new STIs diagnosed each year (Weinstock, Berman, & Cates, 2004) and the point prevalence of having at least one STI in the U.S. is estimated to be 65 million people (Cates et al., 1999).

The national prevalence of CSA is difficult to estimate. The most recent nationally-representative data available suggests that roughly 30% of girls and approximately 14% of boys are victims of CSA (Briere & Elliott, 2003). However, due to the fact that abuse often goes unreported, especially among males (Holmes & Slap 1998), it is likely that the true prevalence is markedly higher. Because of the non-specific nature of CSA-related outcomes generally, it is difficult to estimate the economic fallout from CSA. However, an impressive body of literature suggests that CSA is related to a host of later psychological, behavioral, and physical problems (Chartier, Walker, & Naimark, 2007; Felitti et al. 1998; Joiner et al., 2007; Maniglio, 2009). Thus, the cumulative financial impact is surely extensive.

Given the scope of their consequences, clearly these two phenomena are worthy of a substantial amount of research attention. Furthermore, an increasing amount of research suggests that CSA and one's risk for acquiring an STI may not be independent of one another (see Senn, Carey, & Vanable, 2008 for a review) and that survivors of CSA engage in more risky sexual behaviors compared to people without a history of CSA (e.g. Schraufnagel, Davis, George, &

Norris, 2010; Senn et al., 2006; 2007). While most researchers are in agreement regarding the presence of an overarching relationship between CSA and later increased sexual risk indices, there exists a tremendous amount that remains poorly understood. For instance, the generalizability of extant findings is unknown because men who have sex with women (MSW) have largely been omitted from research (Senn, Carey, & Venable). This is unfortunate due to the fact that the Centers for Disease Control (CDC, 2008) report that 31% of all new HIV infections are due to heterosexual contact, suggesting the role of MSW is substantial. Similarly, research has also focused on extremely high risk populations such as homeless persons or those seeking treatment at an STI clinic. As such, what is known about members of the society at large could be significantly improved upon. Uncertainty also surrounds the nature of the relationship. That is to say, how and why are the two phenomena (often separated by years) connected? Extremely few studies have taken up the question of what may mediate the relationship between CSA and later sexual risk. Taken together, these limitations suggest that a fine-grained and methodologically sound investigation of CSA and sexual risk-taking among a community sample of MSW should be a high priority.

However, only two studies have been conducted that have examined what variables might mediate the relationship between CSA and later sexual risk-taking among MSW (Schraufnagel et al., 2010; Senn et al., 2006). Findings from these studies suggested that alcohol either fully (in the case of the latter) or partially (in the case of the former) mediated the relationship between CSA and sexual risk (operationalized as a greater number of partners in both studies). The generalizability of findings from the Senn and colleagues' study is somewhat limited however, as their sample was drawn from a population of STI clinic users. The 2010 study by Schraufnagel and colleagues suggested an important role for alcohol-related variables

but in their final model, CSA remained positively and directly associated with number of partners, suggesting that alcohol mediation does not fully account for the CSA – sexual risk association. Nonetheless, additional mediators remain largely unexamined among MSW. Senn and colleagues (2006) explored other possibilities (e.g. drugs, intimate partner violence) but their data suggested no other significant mediators. The Schraufnagel et al. (2010) did not test non-alcohol mediators but did speculate that the direct relationship between CSA and number of partners might reflect the instrumental use of sex itself as an affect regulation strategy.

Although the research evidence for a CSA – sexual risk-taking relationship is considerable, there are sizeable portions of said relationship that remain obscure and not well understood. In fact, there have been explicit calls in the literature for researchers to increase their focus on male CSA survivors and to frame research questions less in terms of *whether* CSA and sexual risk-taking are associated and more in terms of *how* these two phenomena are related (Senn et al., 2008). The same authors also appeal to investigators to increase the methodological rigor of future research in order to optimize our scientific inferences. It is the goal of the current research to answer these calls and to simultaneously address many of the limitations that are characteristic of this literature to date. By conducting longitudinal research to examine the mediators of the CSA – sexual risk relationship among a community sample of MSW, the present studies aim to not only address the extant knowledge gaps, but also to add considerably to the expanding literature base regarding CSA and sexual risk-taking in general.

Paper I

Childhood Sexual Abuse, Alcohol Use, and Sexual Risk-Taking among
Men Who Have Sex with Women

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Introduction

Many men and women in the United States were sexually victimized as children. While the preponderance of research evidence suggests that women experience childhood sexual abuse (CSA) more commonly than do their male counterparts (e.g. Briere & Elliott, 2003), it is becoming increasingly clear that CSA among males should not be overlooked. Abuse disclosure, however, is notoriously poor among male survivors (Holmes & Slap 1998; Saewyc, Pettingell, & Magee, 2003; Valente, 2005; O'Leary & Barber, 2008) and, as a result, precise prevalence figures are difficult to ascertain. Imperfections noted, the most recent study in which a nationally representative sample was used suggested that approximately 15% of males in the U.S. have a history of CSA (Briere & Elliott).

There is substantial research support for the assertion that CSA is associated with a diverse array of later psychological and behavioral maladjustment domains (see Maniglio, 2009 for a recent meta-review). Sexual risk-taking is one such domain. Indeed, research suggests that survivors of CSA are at an increased risk of acquiring and spreading sexually-transmitted infections (STIs), including HIV (for a review, see Senn, Carey, & Venable, 2008). However, as a research population, men who have sex with women (MSW) have been sorely neglected compared to both women and men who have sex with men (MSM; Senn et al.). Despite being underrepresented in the literature, the findings that are available indicate that MSW with histories of CSA have elevated sexual risk indices compared to their non-abused counterparts.

CSA and Sexual Risk-Related Outcomes among MSW

In terms of biological outcomes, several studies have documented that men with a CSA history are more likely to have been diagnosed with an STI than men with no such history; a

finding that has been shown for both adolescents and adults (Futterman, Hein, Reuben, Dell, & Shaffer, 1993; Holmes & Slap; Paul, Catania, Pollock, & Stall, 2001; The NIMH Multisite HIV/STD Prevention Trial for African American Couples Group [NIMHPT], 2010). Research suggests that other elevated sexual risk indices may take root early in life and persist into adulthood. For example, Chandy et al. (2006) found that consensual sexual activity was initiated significantly earlier among boys with a CSA history than those that did not report abuse. Moreover, while the same was true for girls, these researchers found a gender interaction such that abused males were *especially* young when they became sexually active (12.9 years old for males vs. 13.9 years old for females). In adolescence, male survivors of CSA have reported more sexual partners (e.g. Saewyc, Magee, & Pettingell, 2004) and more infrequent latex condom use (Brown, Lourie, Zlotnick, & Cohn, 2000). Findings among adult men mirror the results of the research with adolescents (DiIorio, Hartwell, & Hansen, 2002; Schraufnagel, Davis, George, & Norris, 2010; Senn, Carey, Vanable, Coury-Doniger, & Urban, 2006, 2007). For instance, in a study with an ethnically and racially diverse sample of over 2500 men at elevated risk for HIV infection, DiIorio et al. found that men with a history of CSA reported an average of 31.9 sexual acts without a condom and 6.4 sexual partners over the prior 90-day period of time. In contrast, non-abused men reported an average of 26.5 acts and 5.0 sexual partners, both of which represent statistically significant differences. Beyond unprotected sex and more partners, MSW survivors of CSA also report exchanging sex for drugs or money (e.g. DiIorio et al.; Van Dorn et al., 2005) and have also been shown to use alcohol more frequently prior to sex (e.g. Senn et al., 2006) than those without a history of abuse. These findings, taken together, suggest that experiencing CSA increases risky sexual behaviors among MSW and that this effect is both early and enduring.

Alcohol as a Mediator in the CSA – Risk-taking Relationship among MSW

Of the models that have been proposed to account for the relationship between CSA and subsequent sexual risk-taking, only one was generated with male survivors specifically in mind (Purcell, Malow, Dolezal, & Carballo-Die'guez, 2004). Stated simply, Purcell et al. propose that CSA results in proximal outcomes, which then mediate CSA's relationship to the distal outcome (risky sexual behavior). One of the primary proposed paths is through substance use. Substance use, and in particular alcohol use has, indeed, received substantial research support as an important link in the chain. Maladaptive or increased alcohol consumption is an especially appropriate target for mediational investigation due to its well-documented status as an outcome of CSA (DiIorio et al., 2002; Dube et al., 2005; Garnefski & Arends, 1998; Hamburger, Leeb, & Swahn, 2008; Nagy, Adcock, & Nagy, 1994; Senn et al., 2006; Wolfe, Francis, & Straatman, 2006) and as a precursor (e.g. Neal & Fromme, 2007), correlate (e.g. Kim, De La Rosa, Trepka, & Kelley, 2007), and putative cause (Davis, Hendershot, George, Norris, & Heiman, 2007; George et al., 2009; Maisto, Carey, Carey, & Gordon, 2002; Maisto, Carey, Carey, Gordon, & Schum, 2004; Stoner, et al., 2008) of risky sex (for reviews on the link between alcohol intoxication and sexual risk-taking, see Cooper, 2002 and Hendershot & George, 2007). Also notable is the fact that multiple studies in which both male and female participants were included have suggested that the role that alcohol plays in the CSA – risk relationship is greater for male survivors than it is for female survivors (Chandy et al., 1996; Garnefski & Arends; Senn et al.).

Despite the compelling evidence for a probable alcohol pathway between CSA and sexual risk-taking, only two studies have conducted sophisticated analyses in order to test such a role. The first, conducted using a high-risk sample drawn from an STI clinic in Rochester, New York reported that, among a sample consisting mostly of MSW (although MSM were not

excluded from this study), alcohol use prior to or during intercourse mediated the relationship between CSA and number of sexual partners reported by men during the prior three month follow-up period (Senn et al., 2006). Importantly, as referenced earlier, alcohol use did not act as a mediator among the women in this sample. The finding that gender moderated the mediated relationship again suggests that perhaps alcohol use is an especially meaningful component in this relationship for men and underscores the value of continued research attention on male samples. A more recent analysis was conducted utilizing a community sample of 21 – 30 year old MSW who reported being social drinkers (Schraufnagel et al., 2010). Using structural equation modeling to test the relationships, CSA was associated with earlier drinking initiation, which was associated with increased quantities of alcohol consumption, which was associated with more frequent use of alcohol during intercourse, which was, in turn, associated with having more sexual partners. The findings from these two studies highlight the important role alcohol seems to play in the relationship between CSA and subsequent sexual risk-taking among MSW.

Not a Simple Matter of Yes or No: Abuse Characteristics and Severity

It is obvious that no two people are sexually abused in exactly the same manner or to the same degree. As such, another potential approach for gauging CSA is to assess abuse characteristics and to consider abuse along a continuum of severity instead of dichotomously. The dimensions by which CSA may vary are multiple and may include: the age of the victim, the victim-perpetrator age discrepancy, type of act (e.g. acts involving physical contact versus non-contact acts), use of force/coercion by the perpetrator, the victim's relationship to the perpetrator, duration of abuse, number of CSA episodes, number of perpetrators, and gender of perpetrator. Perpetrator gender may be especially important among males because the rate of female perpetrators is much higher than among samples of female victims (e.g. Newcomb, Munoz, &

Vargas Carmona, 2009). This list is not exhaustive but does illustrate the complexity of CSA and the myriad ways in which severity may be characterized. In one of the few studies to attempt the calculation of a CSA “severity score”, Zink, Klesges, Stevens, and Decker (2009) reported that a score based on age of first sexual abuse, having had more than one perpetrator, degree of coercion, invasiveness of abuse (e.g. penetration is more invasive than touching), and the number of abusive experiences was predictive of increased trauma scores and somatic complaints. Another study conducted by Hulme (2007) calculated a CSA Multiple Characteristics Index based on duration of abuse, level of force used by the perpetrator(s), level of invasiveness, relationship of perpetrator, and the total number of perpetrators. She found that scores on this index were moderately positively related to psychosocial symptomatology and depressive symptoms. A 2007 study of men attending an STI clinic (Senn et al.) indicated that CSA men with force and penetration experiences had greater sexual risk indices than did men who were abused but did not experience the use of force or penetration. While these recent efforts suggest that abuse characteristics may indeed moderate outcome, there remains no consensus regarding the precise or “correct” manner by which to gauge abuse severity. As such, it behooves future researchers to gather as much detail as possible regarding abuse characteristics in order to more completely explore what aspects of abuse contribute to problematic outcomes.

Inadequacies in the Current Body of Literature

While the available evidence suggests that CSA may elevate the sexual risk indices for MSW, this evidence is relatively sparse and underdeveloped. MSW have largely been omitted from research in this domain and the extent to which findings among other demographic segments generalizes to MSW is not clear. This has led some researchers to call explicitly for more research among MSW (Senn, Carey, & Venable, 2008). Moreover, even researchers who

have investigated these issues in MSW have tended to focus on specific sub-populations. Specifically, homeless men, men seeking treatment from STI clinics, and male adolescents have received considerably more (though still inadequate) research attention than men in the general community. As such, virtually nothing is known about the CSA – alcohol – risky sex relationships among the vast majority of adult males. One study that investigated this path that was referenced earlier (Schraufnagel et al., 2010) did use a community sample of men, however the participants were also part of an experimental physiological arousal study. It has been suggested that volunteers for physiological sex research may not be representative of the general population (Strassberg & Lowe, 1995) and, as a result, may not generalize to a broader group of men.

The Present Study

Guided by the model proposed by Purcell and colleagues (2004), the purpose of the present study was to bolster the research that has been conducted to date by investigating the CSA – alcohol use – sexual risk-taking relationships on an a priori basis and by addressing several of the limitations that remain in the extant literature. The present study assessed the relationship between CSA and sexual risk-taking and examined the role of alcohol-related factors as possible mediators in this relationship among a community sample of MSW. Further, CSA was assessed in a behaviorally-specific and detailed manner. Such assessment allows analyses to be conducted with CSA as a dichotomous predictor as well as along several continua of severity and characteristics. Behaviorally-specific descriptions also reduce measurement error by decreasing the reliance on a person to consider the experience “abusive”. The present study also used longitudinal methods. More specifically, modified timeline follow-back methods (Sobell &

Sobell, 1995) were used to gather data over a six-week period. Such methodological rigor fosters improved recall.

Prior to collecting this data, four hypotheses were generated: 1) Childhood sexual abuse will be positively associated with sexual risk-taking. Specifically, MSW with a history of CSA will report a greater number of sexual partners, higher rates of STI diagnoses, and less frequent condom use. The positive association between CSA and sexual risk-taking variables was hypothesized to be present using both the cross-sectional and the follow-up data; 2) CSA will be associated with earlier drinking initiation, increased alcohol consumption, more frequent alcohol-related problems, and more frequent use of alcohol prior to sexual intercourse. The positive association between CSA and alcohol use variables will be present using both the cross-sectional and the follow-up data; 3) Alcohol-related variables will mediate the effect of CSA on sexual risk-taking; and 4) Men that were subjected to more severe forms of abuse (e.g. more invasive, greater duration/frequency, etc.), as measured by an index of various abuse characteristics, will show increased alcohol-related problems and more sexual risk-taking than those who reported less severe abuse. Additionally, exploratory analyses will investigate the potential associations between specific markers of abuse severity and alcohol- and sexual risk-related outcomes. However, because of the relative dearth of research in this domain, no hypothesis is offered regarding *which* markers of abuse severity will have the strongest associations.

Method

Participants

Print and online advertisements stating that single male social drinkers were needed for a study on decision-making were used to recruit participants ($N = 321$). Interested individuals

telephoned for eligibility screening. Inclusion requirements consisted of a) being a male between the ages of 21 and 30; b) being interested in sexual activity with women; c) being a moderate social drinker (defined as consuming 3 to 35 drinks per week, on average); and d) having had vaginal or anal intercourse without a condom at least once in the past year. Exclusion criteria consisted of a) scoring five or higher on the Brief Michigan Alcohol Screening Test (Pokorny, Miller, & Kaplan, 1972); or b) having an alcohol contraindication such as a health condition or medication regimen (this was due to an alcohol-administration protocol that was also employed though not addressed in the present study).

The average age of participants was 25.5 ($SD = 3.5$). The sample was 67.4% Caucasian, 8.1% Asian American, 7.8% African American, 1.0% Native American/Native Alaskan, and 15.8% of participants indicated that they were multiracial or “other”. The sample was 6.5% Hispanic. In all, 35.0% of the participants identified themselves as full- or part-time students, and 49.7% were employed at least part time. On average, participants reported consuming 14.6 ($SD = 8.6$) standard drinks per week.

Procedure

Initial Laboratory Visit. Eligible callers were scheduled for a visit to the laboratory. After arriving at the lab, the potential participant was met by a male research associate (RA) who, in a private office, guided the participant through the process of informed consent. After participants had the opportunity to ask questions and had provided written consent, they were left alone in a private office to complete a series of background questionnaires. Data were collected using the online data collection and management software DatStat Illume (version 4.7). The questionnaires primarily assessed behaviors and attitudes regarding sex and alcohol. The questionnaire session lasted an average of 1 hr 39 min ($SD = 30$ min). After participants had

completed their participation in the initial visit, the same male RA debriefed them, confirmed their contact information, and reminded them of their forthcoming follow-up survey. Participants were informed that the follow-up would be available online and that they were free to complete it from a computer of their choice or were welcome to return to our lab to complete it. After they had been reminded about the follow-up survey timeline and procedures, participants were compensated by check for the time they spent in the lab at a rate of \$15 per hour.

Follow-up Procedure. Five weeks after their laboratory visit, participants were contacted via email and reminded of several details regarding the follow-up survey. Specifically, they were informed that their follow-up survey would be ready to complete in one week, that once the survey was ready they would have one week in which to begin, and that once started, participants had one week in which to finish. A card sent via postal mail at the same time contained the same information, as well as a gift card that could be redeemed for a digital song download, and served as a priming incentive. Also within these priming letters, participants were informed that if they completed the follow-up survey, they would be entered into a monthly drawing to win a \$100 Visa gift card. Participants were also notified that they could complete the survey on their own from any computer with an internet connection, or they could return to the laboratory to do so. Progress on the survey could be saved so that it did not need to be completed in one session.

Participants who wished to complete the survey online were sent a unique URL with which to gain access. Periodic survey reminders were made by email and/or telephone if a participant's window to begin or to complete the survey was in danger of lapsing. When project staff received electronic confirmation that a completed survey had been submitted, compensation was issued to the participant. For completing the follow-up, participants received either \$30 in the form of an electronic Amazon.com gift certificate or a \$30 check mailed to their home,

depending on their preference. The few participants that chose to return to the lab for their follow-up completed the survey in a private office and, upon completion, they were compensated with a \$30 check. Approximately five participants returned to the lab in order to complete the follow-up survey.

The follow-up survey employed methods similar to those described by Sobell and Sobell (1995; data were collected via online survey, not interview). Specifically, the Timeline Follow-Back method (TLFB; Sobell et al., 1979) was used to gather detailed information on sex and drinking behaviors over the six intervening weeks between the baseline assessment and the follow-up. This method allows participants to report information with the assistance of multiple memory aids, such as a visual calendar with significant dates indicated, as well as their own personal calendar. Participants were further assisted by the provision of a graphic standard-drink conversion chart. The follow-up was designed to last around one hour.

All methods and procedures described herein were approved by the Human Subjects Division at the University of Washington.

Measures

Measures and assessments are described here by general construct. For a detailed account of many of the sexual risk- and alcohol-related items, please see the Appendix.

Baseline Assessment

Child sexual abuse. CSA was assessed using a modified version of a measure originally published by Hulme (2007) that was designed to assess CSA solely among women. One of the strengths of this measure is that it utilizes behaviorally-specific language and does not rely on

respondents to self-define experiences as “abuse”. Another strength of this measure is the depth in which abuse-related characteristics are assessed. Information regarding each of the following aspects was ascertained: type/invasiveness of act, extent of perpetrator force, the number of perpetrators (up to five), perpetrator gender, age when abuse first occurred, age differential between victim and perpetrator, duration of abuse, frequency of abuse, relationship to perpetrator. For the current study, participants ($n = 30$) were included in the CSA group if they reported sexual contact before the age of 14 with someone three or more years older than them, or before the age of 14 when any form of coercion or force was used. Sexual contact included fondling, oral-genital contact, and any vaginal or anal penetrative acts. This is consistent with prior research in which both age differentials and the use of force are considered when defining CSA (e.g. Finkelhor, 1979; Senn et al., 2007).

For analyses in which abuse characteristics were considered along a continuum, type or invasiveness of the abuse was coded: Contact only; oral contact only; contact involving vaginal or anal penetration. Use of force was gauged on four levels: No use of force; the use of verbal pressure, shame, lies, or threats; the use of physical force (holding you down, tying you up, etc.); the use of violence (hitting, twisting your arm, etc.). The number of perpetrators for each participant was calculated based on the number of people they identified as having perpetrated activities that met the criteria for CSA described earlier. Relationship to the perpetrator was assessed after an introduction stating we were going to collect information about the person they identified. The single item “Who was this person?” was used. Participants had 14 options (e.g. parent, stranger, child care provider, etc.) to choose from and these data were later recoded into four levels: A stranger or unknown person; someone known but not a family member; a family member but not a parent; a parent, stepparent, or foster parent. The age differential for each

perpetrator was assessed by asking “Approximately how many years older than you was this person?” for each perpetrator, with a maximum allowed value of “20 or more years”. If more than one perpetrator was indicated, the greatest difference was used. The age at which abuse occurred was assessed by a single item asking “How old were you the first time these things happened to you?” Duration of abuse was assessed by the single item: “About how long did this continue?” (for each perpetrator) and response options included: One time only; for less than 1 year; more than 1 year but less than 2 years; more than 2 years but less than 3 years; 3 or more years. Again, if more than one perpetrator was reported, the maximum value was utilized. Frequency of abuse was assessed by the single item “While this was going on, how often did it happen?” There were eight response options that ranged from “one time only” to “at least every day”.

A composite severity score was also calculated based on the CSA Multiple Characteristics Index (MCI) created by Hulme (2007). The score equaled the sum of the scores in the following domains: type/invasiveness of act (scores ranged from 1-3); duration (1-4; the two highest scores for duration were combined for consistency with Hulme); force (1-4); relationship (1-4); number of abusers (1-4). As such, total scores could range from 5 to 19.

The dichotomous variable of perpetrator gender was based on participants’ report of each perpetrator as either male or female. If there was more than one perpetrator, the gender that they had the greatest number of experiences with was entered. In the event of a tie (e.g. two male perpetrators and two female perpetrators), the gender of the person that perpetrated the most invasive act was used.

General Alcohol-Use Assessments. Current alcohol consumption levels and patterns were assessed using a drinking calendar and history questionnaire developed by our research team that is similar to the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Quantity, frequency, duration, and patterns of recent alcohol consumption were assessed. This drinking measure also assessed early experiences with alcohol. Example items include “At what age did you first drink enough alcohol to feel drunk?” and “During the past month, how many drinks would you typically have on a weekend evening?” Six questions that are recommended by the National Institute on Alcohol Abuse and Alcoholism were also administered (NIAAA, 2003). These questions assess alcohol use over the past year. This is an example item: “During the last 12 months, how often did you have 5 or more drinks containing any kind of alcohol within a two-hour period?”

Alcohol-related Problems. The Rutgers Alcohol Problems Index (RAPI; White & Labouvie, 1989) was used to assess the frequency with which participants experienced alcohol-related negative consequences over the past three months. The 23 items are answered on a 5-point Likert scale (0 = *never*; 4 = *more than 10 times*) and responses are summed across items. For example The RAPI assesses how often one has “Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking?” and how often, while drinking, one has “Suddenly found yourself in a place that you could not remember getting to?” The RAPI has demonstrated good convergent and discriminant validity, as well as reliability (current sample $\alpha = .88$).

Consensual Sexual Behavior. Participants completed the Sexual Experiences Inventory (SEI, George et al., Unpublished measure). The SEI assesses wide range of sexual experiences, such as the number of lifetime sexual partners and the number of sexual episodes over the past

month. It also assesses whether these episodes involved alcohol and whether a condom was used. Additional questions assessed participants' history of unwanted pregnancies, STI testing and diagnoses, trading sex, as well as the age at which they initiated consensual sexual activity.

Follow-up Assessment

Sexual risk-taking. Participants began the survey by listing women with whom they had had “vaginal, anal, or oral sex” with over the preceding six weeks. They then indicated on an interactive calendar each day (over the past 42 days) they had participated in sexual activity. For each day on which they engaged in sexual activity, participants provided information about the type of sexual activity that took place and whether or not a condom had been used. Further, for each partner reported, participants also responded to the question “Is your relationship with {partner} monogamous (i.e. you both have sex only with each other)?” Response options for this item included: Yes; no; and I don't know. Participants were also asked if they were tested for a STI during the six-week time period and, if they were tested, whether or not they were diagnosed with a STI.

Alcohol Use. Using a measure similar to the one used during the in-lab assessment, participants also indicated their typical drinking habits (e.g. quantity and duration of alcohol consumption) over the six week follow-up period. Frequency of heavy drinking over the follow-up time period was assessed with the following item: “In the past six weeks, how many days did you get drunk?” Response options ranged from “0” to “42”. Finally, event-level data on alcohol use was collected by asking participants whether or not they consumed alcohol on each of the days that they reported engaging in sexual activity. If they did report drinking on a given day,

participants were also asked what their peak intoxication level was while they were with their sexual partner.

Analyses

Several of the alcohol- and sexual risk-related variables were heavily skewed. Furthermore, some of the data also violated the assumption of homoscedasticity, according to Levene's test. Because of the highly unequal sample sizes for the two-group comparisons (CSA vs. non-CSA), the importance of homoscedasticity is underscored. To address these issues, a \log_{10} transformation was performed on the problematic variables in order to approximate normality. The transformed variable was then reinspected and if the new variable was normally distributed it was used in subsequent analyses. If transformation was unsuccessful, extreme values were either Winsorized (Howell, 2007) or trimmed to reduce their effect on the distribution. However, if none of these corrective measures were successful, variables were recoded into categories based on a visual inspection of the distribution and on score percentiles. Of the 29 background sexual risk- or alcohol-related variables that were analyzed, 2 were log-transformed, 12 were either dichotomized or trichotomized, 9 had outliers either Winsorized or trimmed, and 6 were left unadjusted due to approximate normality. Of the 10 follow-up sexual risk- or alcohol-related variables, 3 were dichotomized, 1 had outliers trimmed, and 6 were left unadjusted.

To determine whether CSA was associated with sexual risk-taking behavior and alcohol use factors, several different tests of statistical significance were used. For data that met parametric assumptions, *t*-tests and Pearson product-moment correlations were conducted. Point-biserial and biserial (if an underlying continuity is present) correlations were used for data in

which one of the variables was dichotomous. Non-parametric data were analyzed using Mann-Whitney *U* tests and Chi-square tests. Correlations for non-parametric data were assessed using Spearman's rho or Kendall's tau, the latter being an appropriate test of correlation if the data possess a large number of tied ranks (Howell, 2007). Analyses of relevant covariates (e.g. age, education, etc.) were conducted using ANCOVA for continuous outcome variables and sequential logistic regression for binary outcome variables. Mediation analyses were conducted within a structural equation modeling framework using methods described by Bryan, Schmiede, & Broaddus (2007).

Results

Descriptive and Preliminary Analyses

Two participants were withdrawn from the study prior to the follow-up survey and were not included in the final dataset. Five additional participants were dropped from the dataset because they failed experimental manipulations that were part of the protocol for the larger study. The final dataset was then examined for strings of missing data and other data anomalies. Data from two participants was deleted due to excessive missing data. Therefore the final sample size for cross-sectional analyses was 312. In terms of attrition, 33 (10.6%) of participants never began the follow-up interview. Further, because of incomplete data we were unable to ascertain the status of some participants' sexual partners (whether the partner should be considered a vaginal or anal partner). In turn, follow-up partner data from those 24 participants (7.7%) was set to missing. Participants with a history of CSA were no more and no less likely to have data missing at follow-up.

Prevalence of CSA. Approximately one-tenth (9.6%) of the sample reported at least one CSA experience ($n = 30$). Of these 30, 18 (60%) reported at least one episode that involved vaginal or anal penetration; 3 (10%) reported oral-genital contact as the most invasive experience; and 9 (30%) reported a CSA episode involving physical contact that did not include oral-genital contact or penetration. Two participants who reported a perpetrator age difference of less than three years were included in the CSA group because they reported perpetrator coercion. One of these participants reported that the perpetrator used “pressure, shame, lies, or threats” and the other reported the use of “violence” on the part of the perpetrator.

Preliminary analyses determined that multiple demographic variables were associated with CSA. Specifically, participants in the CSA group were more likely to be African American, $\chi^2(1, N = 313) = 10.20, p < .01$, or to be Native American, $\chi^2(1, N = 313) = 4.72, p < .05$. Participants in the CSA group were also older, $\tau = .151, n = 312, p < .01$ and had less education, $r_s = -.187, n = 312, p < .001$. The small number of participants that reported CSA precluded more nuanced investigation of race as a covariate (there were only 5 and 10 self-identified Native Americans and African Americans in the CSA group, respectively). Of note, CSA participants were no less likely to be white, $\chi^2(1, N = 313) = 2.45, p > .10$, compared to those that did not report CSA. For CSA group-based analyses of primary outcome variables (e.g. number of sexual partners, lifetime pregnancy/STI diagnoses, etc.), age and educational status were entered as covariates.

Comparisons between CSA and Non-CSA Groups

CSA and Indices of Sexual Risk – Hypothesis 1

Background Data. Data collected during the initial in-lab appointment suggested that CSA and non-CSA groups differed on only a few sexual risk-related variables. Of the 16 comparisons that were made, two reached statistical significance. Significant differences between the groups are described below, however a full description of findings (including the many null findings) is provided in Table 1. Compared to those without a history of CSA, participants that reported CSA had initiated consensual sexual intercourse earlier, $t(305) = -4.59$, $p < .001$, Cohen's $d = 0.85$, $CI = -2.82$ to -1.13 . Participants who reported CSA were more likely to report a past unintended pregnancy, Wald $\chi^2(1, N = 301) = 15.06$, $p < .001$, adjusted odds ratio (AOR) = 5.55, $CI = 2.33$ to 13.17 . After controlling for age and education, CSA accounted for an additional 7% of the variance in reporting an unwanted pregnancy (as gauged by the change in Nagelkerke R^2). There was a trend toward significance for CSA participants be more likely to report a lifetime STI, Wald $\chi^2(1, N = 304) = 3.15$, $p = .076$, adjusted odds ratio (AOR) = 2.32, $CI = 0.92$ to 5.89 . Preliminary analyses suggested that CSA was associated with a greater number of lifetime sexual partners (both vaginal and anal) as well as having had a lifetime STI. However, these relationships ceased to remain significant after controlling for age and education.

Follow-up Data. At follow-up, one of the five sexual risk comparisons reached statistical significance. Compared to those without a history of CSA, participants who reported CSA were more likely to report having had sex with two or more people over the preceding six-week period $\chi^2(1, N = 255) = 5.17$, $p < .05$. Based on the odds ratio, those with CSA were 2.78 times more

likely to report having two or more sexual partners than non-CSA participants. Please see Table 2 for more information regarding CSA and sexual risk-taking at follow-up.

CSA and Alcohol Use – Hypothesis 2

Background Data. Fourteen alcohol-related comparisons were made using the background data. Of these, as shown in Table 3, only one reached the level of statistical significance. Participants with a history of CSA were more likely to report consuming alcohol prior to anal intercourse than were non-CSA participants, $t(9.28) = -3.42, p < .01, d = 0.82, CI = -5.63$ to -1.16 . However, there was a trend for CSA participants ($M = 7.37, SE = .33$) to report more days of heavy episodic drinking in the past year compared to non-CSA participants ($M = 6.73, SE = .12$), $t(309) = 1.75, p = .08, d = 0.33, CI = -0.08$ to 1.36 .

Follow-up Data. Among the five alcohol-related variables assessed at follow-up, there were no significant associations found between CSA and alcohol use. Means and standard deviations for the CSA group and the non-CSA group are shown in Table 2.

Alcohol as a Mediator in the CSA – Sexual Risk Relationship – Hypothesis 3

Because the results presented above suggested that alcohol-related variables are not related to CSA, no mediational analyses were conducted.

Comparisons within the CSA Group

Descriptives regarding Abuse Characteristics. Preliminary analyses indicated that there were no demographic variables that were significantly associated with any of the assessed abuse characteristics. Among those in the CSA group ($n = 30$), in terms of the degree of coercion used by the perpetrator, 11 (38%) reported no coercion used, 9 (30%) reported “pressure, shame,

lies, or threats”, 3 (10%) reported force, and 6 (20%) reported that the perpetrator used violence. None of the participants reported that the perpetrator used drugs or alcohol as a method of coercion. In terms of duration, 6 (20%) participants reported that the abuse happened on one occasion only, 14 (47%) reported “less than one year”, 3 (10%) reported “more than one year, but less than two”, 4 (13%) reported “more than two years, but less than three”, and 2 (7%) reported that the abuse lasted longer than 3 years. Regarding frequency of abuse, 6 (20%) participants reported “only once”, 5 (17%) reported that abuse occurred about once a year, 3 (10%) reported “several times a year”, 3 (10%) reported “about once a month”, 2 (7%) reported “about once a week”, 4 (13%) reported “two to three times a week”, 3 (10%) “almost every day”, and 1 (3%) reported that abuse occurred “at least every day”. Regarding relationship to the perpetrator, 2 (7%) reported that the perpetrator was a stranger, 19 (63%) that they were known, but not family, 7 (23%) that they were family, but not a parent, and 2 (7%) reported that they were abused by a parent. In terms of the number of perpetrators, 19 (63%) reported one perpetrator, 7 (23%) reported two perpetrators, and 4 (13%) reported three perpetrators. In terms of age differential, 8 (27%) participants reported an age difference of less than five years, 5 (17%) reported from five to nine years, 6 (20%) reported a difference from 10 to 19 years, and 11 (37%) reported an age difference of 20 or more years. Regarding perpetrator gender, 16 (53%) participants reported a primary perpetrator that was male while the other 14 (47%) reported a female primary abuser. As mention earlier, 18 (60%) CSA participants reported at least one episode that involved vaginal or anal penetration; 3 (10%) reported oral-genital contact as the most invasive experience; and 9 (30%) reported a CSA episode involving physical contact that did not include oral-genital contact or penetration. Scores on the composite MCI ranged

from 7 to 17 ($M = 11.48$, $SD = 2.81$). Please see Table 4 for a correlation matrix showing the bivariate correlations among the independent characteristics of abuse.

Abuse Severity and Sexual Risk- and Alcohol-related Outcomes – Hypothesis 4

Background Data. Correlations between the MCI and 30 sexual risk- and alcohol-related background variables were conducted. Of those, as shown in Table 5, one reached statistical significance. Those with higher scores on the MCI were more likely to be at or above the 90th percentile in terms of the number of sexual episodes they reported in the past three months that did not involve a condom ($r_s = .37$, $p < .05$). The MCI was also marginally related to having used a condom less than 50% of the time in the past three months ($r_s = .38$, $p < .06$). Scores on the MCI were not related to any of the alcohol variables assessed during the background questionnaires.

Follow-Up Data. Due to attrition as well as the fact that some participants reported no sexual partners during the follow-up period, the correlations between abuse severity (and the individual characteristics) were conducted among a relatively small number of participants. As such, the number of participants included in each analysis is provided (there were no significant differences between those that completed the follow-up and those that did not in terms of demographics, baseline typical drinking quantity, or severity of CSA as gauged by the MCI [all p values $> .1$ for chi square tests, t -tests, and bivariate correlations]).

Of the 10 outcome variables assessed at follow-up, score on the MCI was positively associated with number of sexual episodes without a condom in the past six weeks ($r_s = .59$, $p < .05$, $n = 13$) and was negatively associated with typical quantity of alcohol consumed per week ($r_s = -.70$, $p < .01$, $n = 19$), typical duration of alcohol consumption per week ($r_s = -.63$, $p < .01$, n

= 19), and number of days the participant reported getting drunk in the past six weeks ($r_s = -.49$, $p < .05$, $n = 20$). Correlation coefficients for each of the 10 tested correlations are shown in Table 6.

Exploratory Analyses

Abuse Characteristics and Indices of Sexual Risk: Background data. As can be seen in Table 7, level of invasiveness was positively correlated with number of sexual partners in the past year ($r_s = .52$, $p < .01$) and with the number of partners per sexually active year ($r_s = .52$, $p < .01$). Frequency of abuse was related to decreased condom use on a first date or with a person known for less than a day ($r_s = .47$, $p < .05$). A greater age difference between the victim and the perpetrator was associated with ever having traded sex ($r_s = .38$, $p < .05$). Number of perpetrators was associated with ever having traded sex ($r_s = .50$, $p < .01$) and ever having contracted an STI ($r_s = .44$, $p < .05$), and reporting less than 50% condom use in the past three months ($r_s = -.40$, $p < .05$). Perpetrator coercion/force was associated with three or more partners with whom they have had sex on only one occasion ($r_s = .46$, $p < .05$). Duration was marginally associated with ever having traded sex ($r_s = .33$, $p = .085$). Within the CSA group, perpetrator gender and relationship to the perpetrator were not significantly related to any of the sexual risk indices assessed cross-sectionally.

Abuse Characteristics and Alcohol Use: Background data. Having a closer relationship to the abuser was associated with earlier drinking initiation ($r_s = .38$, $p < .05$). Being abused by a male (versus a female) was associated with increased alcohol consumption on a “typical” drinking day ($r_{pb} = .40$, $p < .05$), and with a greater number of drinks on the heaviest drinking occasion they’ve had in the past year ($r_s = .39$, $p < .05$). Level of invasiveness,

frequency of abuse, duration of abuse, perpetrator coercion/force, perpetrator-victim age differential, and number of perpetrators were not associated with any alcohol-related variables assessed cross-sectionally. Please see Table 8 for all correlation coefficients.

Abuse Characteristics, Sexual Risk-Taking, and Alcohol Use at Follow-up. In terms of sexual risk- and alcohol-related variables assessed at the six-week follow up, as shown in Table 9, level of invasiveness was negatively related to typical quantity of alcohol consumed per week ($r_s = -.59, p < .01, n = 20$), typical duration of alcohol consumption per week ($r_s = -.56, p < .05, n = 20$), and number of days the participant reported getting drunk in the past six weeks ($r_s = -.53, p < .05, n = 21$). A closer relationship to the perpetrator was negatively related to typical quantity of alcohol consumed per week ($r_s = -.54, p < .05, n = 20$). Perpetrator coercion/force was positively associated with less condom use during the prior six weeks, both in terms of the number sexual episodes without a condom ($r_s = .60, p < .05, n = 13$) and in terms of percentage of sexual episodes without a condom ($r_s = .59, p < .05, n = 13$). Number of perpetrators was positively associated with number of sexual episodes without a condom ($r_s = .58, p < .05, n = 14$), percentage of sexual episodes without a condom ($r_s = .54, p < .05, n = 14$), and was negatively associated with typical quantity of alcohol consumed per week ($r_s = -.58, p < .01, n = 20$), typical duration of alcohol consumption per week ($r_s = -.52, p < .05, n = 20$), and number of days the participant reported getting drunk in the past six weeks ($r_s = -.45, p < .05, n = 21$). Frequency of abuse, duration of abuse, age differential, and perpetrator gender were not significantly correlated with any of the follow-up assessments of sexual risk or alcohol use.

It is important to note that, cumulatively, out of the 312 exploratory correlations that were investigated, only 23 of them (7.4%) reached statistical significance. With a p value equal to .05, we would expect 5% of comparisons to be significant based on chance alone.

Discussion

The present study investigated the relationships between CSA and later sexual risk-taking and alcohol-related variables among a community sample of MSW. The primary objective of this study was to augment the current literature that suggests that, among MSW, CSA is related to both variables and that alcohol may mediate the relationship between CSA and sexual risk indices (e.g. Senn et al., 2006, 2007; Schraufnagel et al., 2010). Results from the present study suggest that CSA is associated with a handful of sexual risk indices but the overall pattern of findings provided limited support for study hypotheses. However, there were several exploratory findings regarding abuse characteristics that may shed a bit of light on these relationships and offer some direction to future investigators.

Hypothesis 1

Hypothesis one was that CSA would be related to later sexual risk-taking. In this domain, CSA was associated with earlier sexual initiation, which has been documented in numerous prior studies (e.g. Schraufnagel et al., 2010), and has been associated with less frequent use of contraception during adolescence (Manlove, Terry-Humen, & Ikramullah, 2006). Preliminary analyses suggested that CSA was associated with both unintended pregnancies and having had a lifetime STI. However, after entering education and age as covariates, CSA only remained significantly associated with having had an unintended pregnancy. Due to the trend that was observed for CSA participants to report a greater likelihood of a past STI, it is likely that a larger sample would have yielded significant differences. Indeed, reporting an unwanted pregnancy was nearly twice as prevalent as reporting a past STI (86 participants reported an unwanted pregnancy while 46 reported a past STI). If, however, CSA is only related to unwanted

pregnancy, it is unclear why this would be the case. Perhaps those with a CSA background are disproportionately using condoms primarily for prophylaxis versus contraception. If so, perhaps once one's partner's STI status is ascertained, men with a history of abuse decrease condom use. If future research replicates this finding, researchers should explore the motivations for condom use among those with a CSA background, although reasons for condom use may not be static (Davis, Schraufnagel, Norris, George, & Gilmore, 2011) and, as such, longitudinal research would be optimal.

In terms of condom use specifically, there were no measures of condom use that were significantly associated with CSA as a dichotomous predictor. This was true when condom use was assessed as an absolute number of "unprotected episodes" and as a percentage. Further, condom use was assessed both generally and in terms of casual sex partners (those with whom sex was had on only once occasion). At first glance, this may not seem compatible with the finding that CSA is related to unintended pregnancy. However, recent research from our lab (Davis et al., 2011) suggests that "scares" or personal encounters with the adverse consequences of sex without a condom may invigorate a man's desire to use a condom. As such, it is possible that male survivors of CSA are "scared straight" after an unintended pregnancy and are no longer distinguishable from non-CSA men. This speculation is in line with adolescent research (e.g. Saewyc, Magee, & Pettingell, 2004) suggesting reduced condom use among CSA males (perhaps before they have had a scare) but at odds with research that has in fact shown decreased condom use among adult male survivors (e.g. Senn et al., 2006) – even those seeking care at an STI clinic. Again, longitudinal research would enable researchers to assess the trajectory of condom use-related variables over time. It should also be noted that latex condoms are not successful in preventing pregnancy 100% of the time. As such, it is possible that the unwanted pregnancy may

have stemmed from a broken condom, although it is not clear why this would happen more frequently among males with a CSA background.

All of the “number of sexual partner-related” dependent variables that were assessed at baseline were unrelated to CSA. This was true for partners over one’s lifetime, over the prior year, and for partners with whom one has only had sex once (i.e. likely casual or non-monogamous sex partners). However, the data gathered at the follow-up suggested that CSA participants did have more sexual partners during the six week follow-up period. These results are difficult to reconcile. While speculative, it is possible that the enhanced data collection methods at follow-up (the timeline follow-back methods, the shorter period of time on which to report) improved recall and accuracy. If so, perhaps this reduction in measurement error allowed the effect of CSA to emerge to significance. This is important to highlight. Future researchers should be advised that all pragmatic steps should be taken in order to improve the quality of their retrospective data. While it is unclear why the difference in number of sexual partners was only measureable at the follow-up time point, it is imperative to take note of this finding. Prior research suggests that greater number of partners in a short time frame is particularly related to STI risk (Finer, Darroch, & Singh, 1999; Valois, Oeltmann, Waller, & Hussey, 1999). Because CSA seems to be strongly related to earlier sexual initiation, as mentioned earlier, future researchers should be sure to assess this factor. It is possible that this variable may at least partially mediate the relationship between CSA and the number of sexual partners in one’s lifetime. Some important research in this area has not gathered this data (e.g. Senn et al., 2006) and, in turn, some of the conclusions that have been drawn need to be interpreted with caution.

Hypotheses 2 & 3

It was hypothesized that CSA would be associated with increased and maladaptive alcohol use. However, analyses of the CSA – alcohol use relationship yielded overwhelmingly, and somewhat surprisingly, null results. These data suggest that, in terms of drinking behavior, those with a CSA history are indistinguishable from those without such a history. There was one exception however: CSA participants reported consuming alcohol before anal sex more often than non-CSA participants. This relationship corresponds with Hypothesis 2, but in the context of the other null findings (e.g. no differences whether or not one has had anal sex, no difference in condom use during anal sex), it is somewhat difficult to interpret. It does suggest that CSA participants are more reluctant to engage in anal sex while they are sober. Prior research (Carter, Henry-Moss, Hock-Long, Bergdall, & Andes, 2010) suggests anal sex is often viewed unfavorably by heterosexuals, however, it is unclear why anal sex would be perceived less favorably by CSA participants compared to those without CSA. None of the particular abuse characteristics was associated with this variable so it does not seem that a particular aspect of CSA may have inspired this reluctance. Future research should investigate alcohol's role in anal sex for MSW. There was a trend toward significance for CSA participants to report more frequent binge drinking and findings that suggest a significant relationship between these two variables have been published previously (Hamburger, Leeb, & Swahn, 2008). However, given the number of comparisons that were made and did not yield significant differences, these two findings should be regarded as highly speculative.

As mentioned in the Results section earlier, because the hypothesized relationship between CSA and alcohol-use variables did not bear fruit, mediational analyses were obviated.

Hypothesis 4

Hypothesis four stated that a composite measure of abuse severity would be associated with both increased sexual risk-taking and alcohol-related variables. However, abuse severity was neither predictive of sexual risk-taking nor of alcohol-related outcomes. This is perhaps due to its inclusion of several facets that seem unrelated to outcome (i.e. duration and relationship to abuser) based on the exploratory findings presented below. Please note that Hulme's (2007) assessment, on which our measure was patterned, was not created with sexual risk-taking or alcohol use necessarily in mind. For psychometric purposes, she employed symptoms such as somatization and depression as criterion variables. Characteristics of abuse that predict or are associated with sexual risk or alcohol use may not be the same characteristics that predict other outcomes. Moreover, given the substantial quantity of null findings, it may be that Hulme's measure is optimal and that CSA severity is simply unrelated to measures of sexual risk-taking and alcohol use. Continued exploration of these questions should be a focus for future research.

Exploratory Findings

There were several characteristics that were related to sexual risk-related outcomes. However, because of the inconsistent nature of the findings, it is difficult, and perhaps unwise, to posit precise inferences from these data. The general pattern of findings is noteworthy however, as are a handful of specific relationships that emerged.

Some characteristics of abuse seem to contribute more to later sexual risk-taking than others. For instance, level of invasiveness, perpetrator coercion or force, and number of perpetrators were each associated with three or more indicators of sexual risk (including risk variables at both baseline and follow-up). However, duration of abuse, frequency of abuse, age

differential between the perpetrator and the victim, perpetrator gender, relationship to the perpetrator, and the MCI were either related to only one outcome variable or were unrelated to all sexual risk variables.

Prior research has suggested that more invasive acts and greater use of force are associated with risk-taking (e.g. Schraufnagel et al., 2010; Senn et al., 2007). Less is known about number of perpetrators as it relates to sexual risk-related outcomes of CSA, with evidence for the importance of these characteristics coming from other types of outcomes such as mental health (Zink, Klesges, Stevens, and Decker, 2009). Clearly, more attention should be paid to these additional variables. To truly ascertain the effect of perpetrator quantity, future researchers should try to obtain a sample that is large enough to test the effect of number of perpetrators while holding other abuse characteristics constant. The present study does not have enough participants to conduct such an analysis and, as such, number of perpetrators may be confounded by other characteristics, and it remains unclear how and why more perpetrators may fuel risk-taking.

Only two types of characteristics were associated with alcohol-related variables at baseline. Having a closer relationship to the perpetrator was associated with an earlier exposure to alcohol. This appears to be a logical finding. That is, a childhood environment in which a relative or other close acquaintance is a perpetrator of sexual abuse is also likely to be one in which youth alcohol use is monitored or discouraged to a lesser extent. Being abused by a male was also associated with two different indicators of increased drinking. This is in line with past research that has found that male-perpetrated abuse is often associated with more problematic outcomes (Holmes & Slap, 1998). If future research replicates this association, greater research

and clinical focus should be devoted to the manner in which perpetrator gender influences outcome trajectory.

In contrast, the results regarding abuse characteristics and alcohol use at follow-up were surprising and counterintuitive. This is because a number of them were associated with *less* alcohol consumption. This pattern was evident for relationship to the perpetrator, level of invasiveness, and number of perpetrators. These variables were associated with reduced drinking duration, quantity, and frequency in precisely the opposite direction as was hypothesized. This is a novel finding and it is difficult to speculate why CSA participants would consume less alcohol than their non-abused counterparts. Further, these findings are even more surprising because the present study found no such pattern when CSA was considered dichotomously or when characteristics were tested with the alcohol-related assessments at baseline. It is tempting to look for a third variable that may explain these results, but such a formulation would also predict alcohol-related differences among the background variables. These findings should be noted and the relationships should be evaluated in future research in order to test their replicability.

One additional finding seems worth mentioning with regard to abuse characteristics. While rarely implicated in the research literature (e.g. Beattie, Hull, Cockburn, 1986), there is ample anecdotal speculation that perpetrators of CSA may ply their victims with alcohol in order to facilitate abuse. This was not suggested by the data in the present study. This method of coercion was assessed but was left out of the final variable calculation because zero participants endorsed it. However, it remains possible that perpetrators did use this tactic but was not perceived as a “tactic” by the participant at the time although even research conducted with perpetrators as study participants casts doubt on the prevalence of this practice (Firestone, Moulden, & Wexler, 2009).

Limitations, Implications, & Conclusions

The present study is not without its limitations. First, the present study only included social drinkers and men who reported risky sexual practices. In other words, outcome variables were sampled from a restricted range of drinkers and of sexual risk-takers. It is possible that if abstainers, more problematic drinkers, and those who always use a condom were included in the sample, differences between the CSA and non-CSA groups would have been significant.

Second, the prevalence of CSA in our sample was only 10%. This yielded a CSA group that was quite small in comparison to the non-CSA group. However, for the two-group analyses, the dramatically unequal sample sizes are not optimal, but all of tests reported in the present analyses are robust to such inequality. Further, power analyses using GPower (version 3.1) indicated sufficient power ($\geq .80$) to detect small effects ($w = .16$) for Chi square tests and medium effects for t and U - tests ($d = .54$ and $.56$, respectively). It is not clear why the prevalence of CSA in the current sample was so low; particularly in the light of the fact that the sample had some level of sexual risk to be enrolled in the study. While the proportions of racial and ethnic minority participants matched the surrounding metropolitan area, minorities were underrepresented in terms of national statistics. This may have contributed to a reduced prevalence rate as, indeed, the rate of CSA among some racial and ethnic minority in the present study was higher than some of the others. However, it is also possible that, because MSM are included in the “overall prevalence rate” for men, the prevalence rate among the general MSW population is close to what was observed in the present study. It has in fact been nearly a decade since the last CSA prevalence study was conducted using a nationally representative sample (Briere & Elliott, 2003). More epidemiological studies in this domain would be valuable. Lastly, due to increased specificity (and decreased sensitivity compared to less behaviorally-specific

measures [DiLillo et al., 2006]) the current study's assessment of CSA may have contributed to fewer participants being categorized as having experienced CSA.

Because a large number of exploratory comparisons were conducted in the absence of an alpha correction, caution should be used when interpreting these results as one would expect to find some significant differences by chance alone. Another possible limitation was the fact that a three-year age difference was used to define CSA. This is two years less than the most frequently employed definition of a 5-year differential. However, if this definitional problem was responsible for many of the null findings presented here, one would expect to have found that the age differential abuse characteristic was related to outcome; this was not the case.

Due to the somewhat unwieldy and inconsistent nature of the findings from the present study, it is difficult to point toward concrete clinical implications. To be sure, the majority of the implications to be drawn from these analyses are for the researcher. For one, there is perhaps even more uncertainty regarding the relationships between CSA, alcohol use, and sexual risk-taking among MSW. Because some researchers have already concluded that there is a "consensus" that CSA and sexual risk-taking are related (Senn, Carey, & Venable, 2008), these data serve as a reminder that it remains imperative to continue evaluating the strength (and even presence) of these relationships. Second, abuse characteristics seem to be differentially related to risk- and alcohol-related outcomes with some characteristics (e.g. relationship to abuser) seeming to influence outcome less versus others (e.g. number of perpetrators).

In conclusion, the present study indicates that CSA was associated with some sexual risk indices such as earlier consensual sexual initiation, unwanted pregnancy, and number of sexual partners at the follow-up time point. Although many of the hypothesized CSA – risk-taking

hypotheses were not substantiated, there was some evidence that several different characteristics of CSA were associated with later risk-taking. The results presented here do not suggest that CSA is robustly associated with later alcohol-related variables, at least among a sample of social drinkers. As such, this study does not provide evidence for an alcohol linkage between CSA and later sexual risk-taking. Overall, these findings provide direction to future investigators: Among MSW, the relationships between CSA, characteristics of CSA, and sexual risk-taking require more examination. Further, the absence of a persuasive alcohol finding in the present study suggests strongly that pathways other than alcohol use should be explored.

Table 1

Sexual Risk Behaviors of Participants Who Reported Childhood Sexual Abuse (CSA) and Those Who Did Not (Non-CSA) - Baseline

Variable Type	Variable	CSA (<i>n</i> = 30)		Non-CSA (<i>n</i> = 282)					
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Continuous	Age of consensual sexual initiation ^a	15.00***	2.67	16.87	2.37				
	Number of lifetime vaginal sex partners ^b	23.00	24.95	15.26	17.57				
	Average number of vaginal sex partners per year ^b	2.03	2.09	2.06	1.83				
	Proportion of anal sex episodes without a condom in past 3 months	0.20	0.45	0.46	0.50				
	Proportion of no condom use during sex on a first date ^c	0.31	0.36	0.32	0.35				
Dichotomous		<i>n</i>	%	<i>n</i>	%				
	Less than 50% condom use for vaginal sex in past 3 months	8	31	115	47				
	Had sex on a first date ^c more than twice in lifetime	17	57	131	46				
	Partners had sex with only once in lifetime (3 or more)	15	52	132	52				
	Ever exchanged for sex	3	10	20	7				
	Ever have an unintended pregnancy	21***	70	65	24				
	Ever diagnosed with a sexually transmitted infection	8 [†]	29	38	14				
Had anal sex in the past 3 months	5	17	51	18					
Trichotomous		<i>n</i>	% Low	% Medium	% High	<i>n</i>	% Low	% Medium	% High
	Number of lifetime anal sex partners	29	24	24	52	281	47	22	31
	Number of sexual partners in the past year	30	50	37	13	281	60	29	11
	Number of vaginal sex episodes without a condom in past 3 months	30	30	40	30	279	34	33	32

Note. Percentages for dichotomous variables reflect only valid responses as the denominator.

^aThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

^bThis the natural log of this variable was used for analysis. The raw mean and standard deviation are shown in the table.

^cPlease appendix A for the precise wording.

*** $p < .001$. [†] $p < .08$.

Table 2
Sexual-Risk and Alcohol-Related Behaviors of CSA and Non-CSA Participants - Follow-Up

Variable Type	Variable	CSA (<i>n</i> = 23)		Non-CSA (<i>n</i> = 232)	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sexual Risk	Number of times had sexual intercourse without a condom in past 6 weeks ^a	4.57	5.30	4.33	6.54
	Proportion of times had sexual intercourse without a condom in past 6 weeks ^a	0.62	0.33	0.50	0.44
		<i>n</i>	%	<i>n</i>	%
	Two or more sexual partners in past 6 weeks	9*	39	44	19
	Diagnosed with sexually transmitted infection in past 6 weeks ^b	0	0	3	16
	Had a non-monogamous partner in past 6 weeks ^a	12 [†]	92	108	66
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Alcohol	Typical weekly alcohol consumption (in standard drinks) in past 6 weeks	16.05	16.51	13.74	11.65
	Time spent drinking during a typical week (in hours) in past 6 weeks	15.47	24.00	11.86	15.66
	Number of days got drunk in past 6 weeks ^c	6.65	7.86	6.32	6.03
	Level of intoxication while with sexual partner in past 6 weeks	4.00	1.5	4.03	1.48
	Proportion of the days on which sex occurred that included alcohol consumption	0.32	0.29	0.37	0.36

^a These analyses only included participants that reported having a sexual partner during the follow-up period (15 for CSA and 149 for Non-CSA).

^b Only those that were tested for a sexually transmitted infection were included in this calculation (1 for CSA and 19 for Non-CSA).

^c This mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

* $p < .05$. [†] $p < .06$

Table 3
Alcohol-Related Variables of CSA and Non-CSA Participants - Baseline

Variable Type	Variable	CSA (<i>n</i> = 30)			Non-CSA (<i>n</i> = 282)				
		<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>			
Continuous	Typical weekly alcohol consumption (in standard drinks) ^a	12.71	8.11		14.90	8.23			
	Time spent drinking during a typical week (in hours) ^a	11.21	6.55		10.67	5.83			
	Age when first had alcohol ^a	13.71	3.13		14.63	3.01			
	Age when first intoxicated ^a	15.29	2.76		15.70	2.31			
	Proportion of vaginal sex episodes that included alcohol use in past 3 months	0.46	0.18		0.48	0.27			
	Proportion of anal sex episodes that included alcohol use in past 3 months	0.92**	0.18		0.57	0.42			
	Frequency of alcohol consumption in past year ^{a,b}	3.86	1.18		3.66	1.08			
	Number of drinks consumed on a typical drinking day ^{a,b}	7.64	1.34		7.42	1.18			
	Largest amount of consumption during one day in past year ^b	4.46	1.14		4.26	1.24			
	Frequency of consuming that largest amount ^b	7.93	1.39		7.93	1.27			
	Frequency of consuming 5 or more drinks in two hours ^b	7.37 [†]	1.85		6.73	1.91			
	Largest amount of consumption during one day during lifetime ^{a,b}	3.18	1.28		3.27	1.23			
	Dichotomous	Rutgers Alcohol Problem Index (score > 13)	<i>n</i>	%		<i>n</i>	%		
8			29		65	24			
Trichotomous	Number of vaginal sex episodes that included alcohol use in past 3 months	<i>n</i>	%	%	<i>n</i>	%	%	%	
			Low	Medium	High	Low	Medium	High	
		30	27	30	43	280	29	39	32

Note.

^aThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

^bThese are raw means of the answer scale. Please see Appendix A for precise question wording and specific answer scale.

** $p < .01$. [†] $p = .08$.

Table 4

Bivariate Correlations - Abuse Characteristics (N = 30)

	1	2	3	4	5	6	7	8
1. Highest level of invasiveness	-							
2. Highest frequency of CSA experiences	0.15	-						
3. Closest relationship of a perpetrator	0.16	0.20	-					
4. Longest duration of CSA experiences	0.16	.72**	0.26	-				
5. Highest degree of force	0.11	0.07	0.07	0.21	-			
6. Maximum difference in age	-.32*	-0.06	-0.23	0.07	0.27	-		
7. Number of perpetrators	0.19	0.22	0.07	.49**	0.16	.34*	-	
8. Perpetrator gender ^a	0.06	0.07	0.03	-0.03	-.48**	-0.29	-0.06	-

Note. * $p < .05$. ** $p < .01$.

^a Male = 0; Female = 1.

Table 5
Bivariate Correlations - Abuse Severity and Sexual Risk and Alcohol - Baseline (N = 30)

Variable Type		Abuse Severity
Sexual Risk	Age of sexual initiation ^a	-.099
	Lifetime vaginal sex partners ^b	.141
	Lifetime anal sex partners ^c	.056
	Number of times had sex on a first date ^c	.147
	Condom use frequency when had sex on a first date	.137
	Number of times had vaginal sex in the past 3 months	.233
	Less than 50% condom use for vaginal sex in past 3 months	0.384 [†]
	Had anal sex in past 3 months ^c	.052
	Ever been diagnosed with any sexually transmitted infection ^c	.261
	Ever trade sex ^c	.269
	Ever gotten a woman pregnant unintentionally ^c	.036
	Number of sexual partners in past year ^c	.208
	Partners had sex with only once in lifetime (3 or more) ^c	.334
	Mean number of sexual partners per sexually active year ^b	.157
	Number of sexual episodes in past 3 months that did not involve a condom - above the 90th percentile ^c	0.37 [*]
Alcohol-Related	Proportion of anal sex episodes in past 3 months that involved alcohol	.550
	Proportion of times had vaginal sex in past 3 months that involved alcohol	.112
	Typical weekly alcohol consumption ^a	.107
	Typical weekly amount of time spent consuming alcohol ^a	.081
	Age first consumed alcohol ^a	.148
	Age first consumed enough alcohol to be intoxicated ^a	.140
	Rutgers Alcohol Problem Index (Score > 13) ^c	-.142
	Frequency of alcohol consumption in past year ^a	.149
	Number of drinks consumed on a typical drinking day ^a	.057
	Largest amount of consumption during one day in past year	-.003
	Frequency of consuming that largest amount ^c	-.179
	Frequency of consuming 5 or more drinks in two hours	.044
	Largest amount of consumption during one day during lifetime ^a	.154
Number of sexual episodes in past 3 months that involved alcohol ^c	.114	

Note. For questions verbatim, please see Appendix A.

^aThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

^bThe natural log of this variable was used for analysis. The raw mean and standard deviation are shown in the table.

^cThis variable was categorized for analyses.

* $p < .05$. [†] $p < .06$

Table 6
 Bivariate Correlations - Abuse Severity and Sexual Risk and Alcohol - Follow Up (N = 23)

Variable Type	Abuse Severity	
Sexual Risk	Number of times had sexual intercourse without a condom in past 6 weeks ^a	.591 [*]
	Proportion of times had sexual intercourse without a condom in past 6 weeks ^a	.476
	Had a non-monogamous partner in past 6 weeks ^a	.397
	Two or more sexual partners past 6 weeks	.022
Alcohol	Typical weekly alcohol consumption (in standard drinks) in past 6 weeks	-.701 ^{**}
	Time spent drinking during a typical week (in hours) in past 6 weeks	-.627 ^{**}
	Number of days got drunk in past 6 weeks ^b	-.483 [*]
	Level of intoxication while with sexual partner in past 6 weeks	-.010
	Proportion of the days on which sex occurred that included alcohol consumption in past 6 weeks	-.483

Note. ^{*} $p < .05$. ^{**} $p < .01$.

^aThese analyses only included participants that reported having a sexual partner during the follow-up period.

^bThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

Table 7

Bivariate Correlations - Abuse-Related Characteristics and Sexual Risk - Baseline (N = 30)

Variable	Invasiveness	Frequency	Relationship	Duration	Coercion/ Force	Age Difference	Number of Perpetrators	Gender
Age of sexual initiation ^a	-.193	.054	.084	-.062	.114	.133	-.149	-.106
Lifetime vaginal sex partners ^b	0.47*	-.231	-.155	-.053	.045	.063	.161	.178
Lifetime anal sex partners ^c	.137	-.155	-.165	-.053	.230	.114	.090	-.226
Number of times had sex on a first date ^c	.281	-.103	.018	-.004	-.044	-.128	.077	.279
Condom use frequency when had sex on a first date	.007	0.47*	.123	.294	-.142	-.069	.239	.307
Number of times had vaginal sex in the past 3 months	.352	.189	-.124	.116	-.004	-.008	.331	.327
Less than 50% condom use for vaginal sex in past 3 months	.292	.065	.000	.171	.146	.034	0.40*	.116
Had anal sex in past 3 months ^c	-.036	-.056	-.338	.076	.183	.032	.139	.120
Ever been diagnosed with any sexually transmitted infection ^c	.322	.112	-.219	.093	.272	.005	0.44*	.091
Ever trade sex ^c	.022	.237	-.157	.325 [†]	.050	0.38*	0.5**	-.089
Ever gotten a woman pregnant unintentionally ^c	.101	-.037	.010	-.033	.136	.035	-.005	.175
Number of sexual partners in past year ^c	0.52**	.230	.144	.032	-.032	-.325	-.169	.009
Partners had sex with only once in lifetime (3 or more)	.301	.140	-.052	.071	0.46*	.149	.221	-.100
Mean number of sexual partners per sexually active year ^b	0.52**	-.150	-.173	-.051	.090	.007	.073	.136
Number of sexual episodes in past 3 months that did not involve a condom ^c	.274	.148	-.041	.226	-.038	-.066	.259	.173

Note. * $p < .05$. ** $p < .01$. [†] $p = .085$

^aThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

^bThe natural log of this variable was used for analysis. The raw mean and standard deviation are shown in the table.

^cThis variable was categorized for analyses.

Table 8
 Bivariate Correlations - Abuse Characteristics and Alcohol - Baseline (N = 30)

Variable	Invasiveness	Frequency	Relationship	Duration	Coercion/ Force	Age Difference	Number of Perpetrators	Gender
Proportion of times had vaginal sex in past 3 months that involved alcohol	.166	-.055	.145	-.203	-.061	.031	.275	.275
Proportion of anal sex episodes in past 3 months that involved alcohol	.408	.707	.250	.559	.559	.544	.408	-.612
Number of sexual episodes in past 3 months that involved alcohol ^a	.177	.101	-.100	.209	.012	-.073	.071	.116
Typical weekly alcohol consumption ^b	-.227	.299	-.215	.252	.137	-.102	-.026	.132
Typical weekly amount of time spent consuming alcohol ^b	-.048	.354	-.207	.309	.082	-.117	.022	.132
Age first consumed alcohol ^b	.070	.131	0.38*	.103	-.108	-.170	-.001	-.086
Age first consumed enough alcohol to be intoxicated ^b	.002	.164	.065	.022	.199	.077	.010	-.260
Rutgers Alcohol Problem Index - Score above 75th percentile ^a	-.155	.301	.090	-.011	-.132	.005	-.226	.362
Frequency of alcohol consumption in past year ^b	.052	-.209	.176	-.057	.243	-.091	.002	-.071
Number of drinks consumed on a typical drinking day ^b	-.091	-.164	.266	-.104	-.088	.146	-.092	-.040*
Largest amount of consumption during one day in past year ^b	.121	-.338	-.021	-.229	.193	.083	-.118	-.039*
Frequency of consuming that largest amount ^a	-.160	.068	-.181	.035	-.166	-.143	-.175	.120
Frequency of consuming 5 or more drinks in two hours	.187	-.344	.243	-.200	.024	.137	-.015	-.329
Largest amount of consumption during one day during lifetime ^b	.113	.126	.275	.091	.024	-.193	-.045	-.076

Note. * $p < .05$. ** $p < .01$.

^aThis variable was categorized for analyses.

^bThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

Table 9

Bivariate Correlations between Abuse Characteristics and Sexual Risk- and Alcohol-Related Variables - Follow Up (N = 23)

Variable Type	Variable	Invasiveness	Frequency	Relationship	Duration	Coercion/ Force	Age Difference	Number of Perpetrators	Gender
Sexual Risk	Number of times had sexual intercourse without a condom in past 6 weeks ^a	-.218	.472	-.308	.504	.596*	.393	.583*	-.253
	Proportion of times had sexual intercourse without a condom in past 6 weeks ^a	-.310	.288	-.376	.418	.589*	.497	.539*	-.422
	Had a non-monogamous partner in past 6 weeks ^a	.475	.456	-.475	.468	.324	.000	.222	-.267
	Two or more sexual partners past 6 weeks	.304	.259	-.177	.016	-.204	-.103	.286	.375
Alcohol	Typical weekly alcohol consumption (in standard drinks) in past 6 weeks	-.591**	-.254	-.544*	-.369	-.275	.036	-.581**	.192
	Time spent drinking during a typical week (in hours) in past 6 weeks	-.556*	-.244	-.400	-.291	-.361	-.065	-.520*	.356
	Number of days got drunk in past 6 weeks ^b	-.526*	-.017	-.299	-.190	-.230	-.011	-.436*	.079
	Level of intoxication while with sexual partner in past 6 weeks	.124	-.027	-.231	-.076	.127	-.070	.270	-.032
	Proportion of the days on which sex occurred that included alcohol consumption in past 6 weeks	-.123	-.255	-.067	-.242	-.306	.001	-.350	-.301

Note. * $p < .05$. ** $p < .01$.

^aThese analyses only included participants that reported having a sexual partner during the follow-up period.

^bThis mean and standard deviation for this variable are shown after outliers were deleted or Winsorized.

Paper II

Childhood Sexual Abuse and Sexual Risk-Taking:

Motives for Sexual Behavior

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Introduction

Based on data from a nationally representative sample, roughly 15% of males experience childhood sexual abuse (CSA) while they are young (Briere & Elliott, 2003). The actual number is probably even higher however since abuse disclosure is especially rare among male survivors (Holmes & Slap, 1998; Saewyc, Pettingell, & Magee, 2003; Valente, 2005; O'Leary & Barber, 2008). Regardless what the precise figure is for males, it is clear that CSA among boys is more prevalent than was once thought and that these experiences are associated with a host of negative consequences (Holmes & Slap; Maniglio, 2009).

A growing body of research focuses on sexual risk-taking as a probable outcome of CSA (Senn, Carey, & Vanable, 2008). However, because women who have sex with men and men who have sex with men are at increased odds for both CSA and HIV, the preponderance of empirical investigation has largely been limited to these two populations (Senn et al.). This is unfortunate due to the fact that, as mentioned above, CSA among males in general is not an uncommon event. Moreover, HIV-positive men who have sex with women (MSW) are the primary source of HIV seroconversion among women in the United States (CDC, 2010). As such, additional attention on MSW is warranted and, although still in its infancy, this literature does suggest that MSW with histories of CSA possess sexual risk indices that are higher than their non-abused counterparts.

CSA and STI Risk Among MSW

Among MSW, CSA has been linked to an array of sexual risk indices. For instance, several studies have suggested that males with a CSA history have an earlier consensual sexual initiation than non-CSA males (e.g. Chandy, Blum, Resnick, 1996; Schraufnagel, Davis, George,

& Norris, 2010; 2011). In adolescence and in adulthood, male survivors of CSA have reported more sexual partners (e.g. DiIorio, Hartwell, & Hansen, 2002; Saewyc, Magee, & Pettingell, 2004; Schraufnagel et al., 2010; Senn, Carey, Vanable, Coury-Doniger, & Urban, 2006, 2007) and less frequent latex condom use (Brown, Lourie, Zlotnick, & Cohn, 2000; DiIorio et al.). Beyond unprotected sex and more partners, MSW survivors of CSA also report exchanging sex for drugs or money (e.g. DiIorio et al.; Van Dorn et al., 2005) at a higher rate than non-abused MSW. In terms of biological outcomes, several studies have documented that men with a CSA history are more likely to have been diagnosed with a lifetime STI (Futterman, Hein, Reuben, Dell, & Shaffer, 1993; Holmes & Slap; Paul, Catania, Pollock, & Stall, 2001; The NIMH Multisite HIV/STD Prevention Trial for African American Couples Group [NIMHPT], 2010) and are more likely to report a past unintended pregnancy (Schraufnagel et al., 2011) than men with no history of CSA. In sum, the aforementioned findings suggest that CSA is related to sexual risk behaviors and outcomes among MSW and that this relationship starts early and endures.

Mediators of the CSA – Sexual Risk Relationship

To date, only one model has been proposed to explain the potential relationship between CSA and later HIV risk behavior among men (Purcell, Malow, Dolezal, & Carballo-Diequez, 2004). In terms of mediators, the model focuses on proximal outcomes of CSA that then yield increased risk-taking. Proposed proximal outcomes include (but are not limited to) alcohol and drug use and psychopathology. The model has received partial support in the MSW literature. The most commonly investigated mediator has been alcohol-related variables. Two studies (Schraufnagel et al., 2010; Senn et al., 2006) have suggested that alcohol plays an important role in the relationship between CSA and having a greater number of sexual partners. However,

Schraufnagel et al.'s analysis indicated that CSA remained significantly and directly associated with number of partners, even while modeling the effect of alcohol-related variables. As such, the authors suggested that the function of sex itself should be explored as a possible contributor.

CSA and Mental Health Outcomes

While many MSW with histories of CSA will not develop clinical psychopathology (Finkelhor, 1990), experiencing CSA does increase the odds of subsequent mental health consequences (Holmes & Slap, 1998; Maniglio, 2009). Several clinical outcomes have been associated with CSA among men. For instance, using a nationally representative sample, Molnar, Buka, and Kessler (2001) found that male survivors of CSA were five times as likely to have post-traumatic stress disorder (PTSD) and were over twice as likely to have “any disorder” compared to non-CSA males. A more recent study found nearly identical results (O’Leary, 2009). Beyond PTSD, findings also suggest that men with histories of CSA are more likely to suffer from major depression, suffer recurrent major depression, and to attempt suicide (Brodsky et al., 2001; Barbe, Bridge, Birmaher, Kolko, & Brent, 2004; Joiner et al., 2007). A recent path analysis (Nada-Raja & Skegg, 2011) found that among males, CSA was related to the later development of non-PTSD anxiety disorders and that anxiety disorders, in turn, predicted engaging in non-suicidal self-injury. In addition to specific DSM-IV TR (American Psychiatric Association [*DSM-IV-TR*], 2000) diagnoses, CSA in males is also associated with impaired self-esteem and a generally more negative self-image (Romano & DeLuca, 2001). While not as robust as the female literature, the available evidence suggests that CSA is associated with a host of psychological problems among MSW.

Sexual Motives

Originally proposed and validated by Cooper, Shapiro, and Powers in 1998, the functionalist perspective on sexual behavior posits that, like other behaviors, sex is “best understood in terms of the goals or needs that it serves” (p. 1529). In an effort to explain adolescents’ engagement in risky sexual practices, Cooper et al. conceptualized sex motives as primarily divisible into two broad types: approach motives and avoidance motives. That is, sexual behavior may be positively reinforced by fostering pleasure or may be negatively reinforced by providing a respite from an aversive state. For example, a person may engage in sex to foster intimacy (an approach motive) or to regulate negative affect (an avoidance motive). In general, the authors’ found support for their hypotheses that those who have sex to obtain approval from a sexual partner, to cope with negative emotionality or endangered self-esteem, or to enhance positive emotions would show elevated sexual risk-indices. More specifically, they found that partner approval was especially related to risk behaviors in the absence of a stable relationship, that coping motives were more strongly associated with promiscuous behavior (greater number of less well-known partners) than to condom use, and that enhancement motives were related to a higher number of partners as well as condom use while in a stable relationship.

Cooper et al. (1998) did find that the personality trait of neuroticism was associated with both coping motives and partner approval motives. While neuroticism is not a form of pathology per se, as a construct it is largely viewed as synonymous with negative affect and affective lability and, as such, can be considered a higher order vulnerability to both mood and anxiety symptoms (Brown & Barlow, 2009). However, since Cooper et al.’s original sex motives studies, no research has been conducted to investigate the intersection of one’s mental health and their motivations for sex. Research on sex motives and CSA is nearly as sparse. Only one study

has reported findings related to sex motives among a sample of CSA survivors. As part of a recent study on sexual coercion, Brousseau, Hébert, and Bergeron (2011) reported the bivariate correlations between CSA and sex motives, however they found no significant relationships (all p 's > .05). The authors did not interpret these null findings however, because the relationships between CSA and sex motives were not central to their analyses. In sum, while there is no available evidence to suggest that CSA is directly related to sex motives, there is some suggestion that impaired mental health (a potential outcome of CSA) is related to the specific sex motives that have been shown to predict sexual risk-taking. Thus, perhaps there is a sequence of events such that CSA leads to anxiety and depression which, in turn, are associated with specific sex motives which are in turn related to elevated sexual risk. These are precisely the questions the present study aimed to address.

The Present Study and Hypotheses

Informed by the model proposed by Purcell and colleagues (2004), the purpose of the present study was to advance our understanding of the relationship between CSA and risky sexual behavior by being the first to examine the role of sex motives. More specifically, potential intermediate outcomes of CSA -- mental health symptoms and risk-associated sex motives -- were assessed as variables that may contribute to the relationship between CSA and the distal outcome of increased number of sexual partners.

Employing a structural equation modeling (SEM) framework, the hypothesized model (see Figure 1) proposes that participants with a history of CSA will report a greater number of sexual partners at follow-up than non-CSA men. It is also hypothesized that CSA will indirectly increase number of partners through increased mood and anxiety symptoms, which are expected

to increase partner approval and coping sex motives. In turn, each of these sexual motives is expected to increase the number of sexual partners at follow-up.

Due to prior sex motive research (Cooper et al., 1998) that indicated that condom use is also heavily influenced by relationship status, decreased condom use was not a hypothesized outcome because participants in the current sample were required to be outside of a steady relationship. The other sex motives (e.g. enhancement, peer approval, etc.) were not hypothesized to play important roles because of Cooper et al.'s findings regarding risk taking, the fact that sex motives are being analyzed in the context of elevated mental health symptoms, and the age group of the current sample (i.e. not adolescents as was the case in Cooper et al.'s research).

Method

Of note, the participants, procedures, and many of the measures used in the present study have been described previously (Schraufnagel et al., 2011).

Participants

Print and online advertisements stating that single male social drinkers were needed for a study on decision-making were used to recruit participants ($N = 321$). Interested individuals telephoned for eligibility screening. Inclusion requirements consisted of a) being a male between the ages of 21 and 30; b) being interested in sexual activity with women; c) being a moderate social drinker (defined as consuming 3 to 35 drinks per week, on average); and d) having had vaginal or anal intercourse with a woman without a condom at least once in the past year. Exclusion criteria consisted of a) scoring five or higher on the Brief Michigan Alcohol Screening Test (Pokorny, Miller, & Kaplan, 1972); or b) having an alcohol contraindication such as a

health condition or medication regimen (this was due to an alcohol-administration protocol that was also employed though not utilized in the present study).

The average age of participants was 25.5 ($SD = 3.5$). The sample was 67.4% Caucasian, 8.1% Asian American, 7.8% African American, 1.0% Native American/Native Alaskan, and 15.8% of participants indicated that they were multiracial or “other”. The sample was 6.5% Hispanic. In all, 35.0% of the participants identified themselves as full- or part-time students, and 49.7% were employed at least part time. On average, participants reported consuming 14.6 ($SD = 8.6$) standard drinks per week.

Procedure

Initial Laboratory Visit. Eligible callers were scheduled for a visit to the laboratory. After arriving at the lab, the potential participant was met by a male research associate (RA) who, in a private office, guided the participant through the process of informed consent. After participants had the opportunity to ask questions and had provided written consent, they were left alone in a private office to complete a series of background questionnaires. Data were collected using the online data collection and management software DatStat Illume (version 4.7). The questionnaires primarily assessed sexual experiences, behaviors, motivations, and attitudes. The questionnaire session lasted an average of 1 hr 39 min ($SD = 30$ min). After participants had completed their participation in the initial visit, the same male RA debriefed them, confirmed their contact information, and reminded them of their forthcoming follow-up survey. Participants were informed that the follow-up would be available online and that they were free to complete it from a computer of their choice or were welcome to return to our lab to complete it. After they had been reminded about the follow-up survey timeline and procedures, participants were compensated by check for the time they spent in the lab at a rate of \$15 per hour.

Follow-up Procedure. Five weeks after their laboratory visit, participants were contacted via email and reminded of several details regarding the follow-up survey. Specifically, they were informed that their follow-up survey would be ready to complete in one week, that once the survey was ready they would have one week in which to begin, and that once started, participants had one week in which to finish. A card sent via postal mail at the same time contained the same information, as well as a gift card that could be redeemed for a digital song download, and served as a priming incentive. Also within these priming letters, participants were informed that if they completed the follow-up survey, they would be entered into a monthly drawing to win a \$100 Visa gift card. Participants were also notified that they may complete the survey on their own from any computer with an internet connection, or they may return to the laboratory to do so. Progress on the survey could be saved so that it did not need to be completed in one session.

Participants who wished to complete the survey online were sent a unique URL with which to gain access. Periodic survey reminders were made by email and/or telephone if a participant's window to begin or to complete the survey was in danger of lapsing. When project staff received electronic confirmation that a completed survey had been submitted, compensation was issued to the participant. For completing the follow-up, participants received either \$30 in the form of an electronic Amazon.com gift certificate or a \$30 check mailed to their home, depending on their preference. Participants that chose to return to the lab for their follow-up completed the survey in a private office and, upon completion, they were similarly compensated with a \$30 check. Approximately five participants returned to the lab in order to complete the follow-up survey.

The follow-up survey employed methods similar to those described by Sobell and Sobell (1995; data were collected via online survey, not interview). Specifically, the Timeline Follow-

Back method (TLFB; Sobell et al, 1979) was used to gather detailed information on sexual behaviors over the six intervening weeks between the baseline assessment and the follow-up. This method allows participants to report information with the assistance of multiple memory aids, such as a visual calendar with significant dates indicated, as well as their own personal calendar. The follow-up was designed to last around one hour.

All methods and procedures described herein were approved by the Human Subjects Division at the University of Washington.

Measures

Child sexual abuse. CSA was assessed using a modified version of a measure originally published by Hulme (2007) that was designed to assess CSA solely among women. One of the strengths of this measure is that it utilizes behaviorally-specific language and does not rely on respondents to self-define experiences as “abuse”. For the current study, participants ($n = 30$) were included in the CSA group if they reported sexual contact before the age of 14 with someone three or more years older than them, or before the age of 14 when any form of coercion or force was used. Sexual contact included fondling, oral-genital contact, and any vaginal or anal penetrative acts. This is consistent with prior research in which both age differentials and the use of force are considered when defining CSA (e.g. Finkelhor, 1979; Senn et al., 2007).

Depression. Depression was assessed with the Patient Health Questionnaire – 8 (PHQ-8; Kroenke and Spitzer, 2002). The PHQ-8 consists of eight of the nine criteria on which the DSM-IV diagnosis of depressive disorders is based (American Psychiatric Association, 2000). The ninth question in the DSM-IV assesses suicidal or self-injurious thoughts. It was omitted because the present study was not equipped to provide adequate intervention. Research indicates that the

omission of the ninth item has virtually no effect on measure scoring (Kroenke & Spitzer). The eight items assess the amount to which the respondent has experienced depressive symptoms over the past two weeks. The items are scored on a four-point scale that ranges from 0 (*not at all*) to 3 (*nearly every day*) and the item scores are summed to create the final score. Kroenke and Spencer's assessment demonstrated that the PHQ-8 is psychometrically sound and that it has tremendous utility as a measure of depressive symptomatology among the general population (Kroenke et al., 2009). The reliability coefficient for the current sample was .87 ($M = 4.26$, $SD = 4.22$)

Anxiety. The Overall Anxiety Severity and Impairment Scale (OASIS; Norman, Cissell, Means-Christensen, & Stein, 2006) was used to assess anxiety. The OASIS consists of five items that gauge anxiety frequency, severity, and anxiety-related impairment. The instructions directed the respondent to consider experiences of "anxiety and fear" over the past two weeks. The original measure probed only the prior one week. We modified the OASIS to assess the prior two weeks in order to assess the same time frame as our measure of depressive symptoms. Each of the five items is scored on a five-point scale with higher numbers representing more anxiety-related symptoms. Psychometric analyses have confirmed the suitability of the OASIS for both clinical and general population samples (Norman et al.; Campbell-Sills et al., 2009). The reliability coefficient for the current sample was .86. ($M = 8.30$, $SD = 3.07$).

Sex Motives. Motives for sex were assessed with the Sex Motives Scale (SMS; Cooper et al., 1998). The SMS is a 29-item survey that loads on six types of motives, however only two of the types of motives are the focus of the current study. These are: coping (e.g. having sex "to feel better when you are low") and partner approval (e.g. having sex "because you worry your partner won't want you if you don't have sex"). Respondents indicate how often they engage in sexual

activities because of each of the motives. Responses range from 1 (*never or almost never*) to 5 (*always or almost always*). The SMS has demonstrated good reliability and validity. The reliability coefficients for the coping motives sub-scale and the partner approval sub-scale were .85 ($M = 2.01, SD = 0.92$) and .88 ($M = 1.54, SD = 0.81$), respectively.

Follow-up Assessment

Sexual risk-taking. Participants began the survey by identifying each person with whom they had had “vaginal, anal, or oral sex” with over the preceding six weeks. They then indicated each day (over the past 42 days) they had participated in sexual activity. For each day on which they engaged in sexual activity, participants provided information about the type of sexual activity that took place. This assessment allowed the precise calculation of the number of vaginal and anal sexual partners over the prior six week period. This variable is used as the dependent variable because it has been demonstrated that a greater number of partners in a relatively short time frame is associated with significantly increased STI risk (Finer, Darroch, & Singh, 1999; Valois, Oeltmann, Waller, & Hussey, 1999).

Results

Descriptive and Preliminary Analyses

Two participants were withdrawn from the study prior to the follow-up survey and were not included in the final dataset. Five additional participants were dropped from the dataset because they failed experimental manipulations that were part of the protocol for the larger study. The final dataset was then examined for strings of missing data and other data anomalies. Data from two participants was deleted due to excessive missing data. Therefore the final sample size for cross-sectional analyses was 312. In terms of attrition, 33 (10.6%) of participants never

began the follow up interview. Further, because of incomplete data we were unable to ascertain the status of some participants' sexual partners (whether the partner should be considered a vaginal or anal partner). In turn, follow-up partner data from those 24 participants (7.7%) was set to missing. Participants with a history of CSA were no more and no less likely to have data missing at follow-up.

For the OASIS, PHQ-8, and SMS, mean substitution was used for any apparently random missing data points (Tabachnick & Fidell, 2007). All study variable distributions were examined for normality. CSA was dichotomized into whether (coded as 1) or not (coded as 0) abuse was experienced. To address skew, the following steps were taken: PHQ-8 data with a standardized score greater than 3.19 were deleted (three cases); partner approval data were dichotomized into whether (coded as 1; $n = 154$) or not (coded as 0; $n = 159$) they expressed ever having sex for this reason; coping motives data were trichotomized into tertiles. Number of sexual partners was dichotomized into whether (coded as 1) or not (coded as 0) there were two or more vaginal or anal sex partners reported during the prior six weeks. A dichotomous childhood physical abuse variable was correlated with CSA, as were several demographic variables. However, none of these variables were significantly associated with any of the other variables in the current analyses and, as such, they were not included in the model.

Table 1 one provides correlations among study variables. CSA was significantly and positively correlated with anxiety, partner approval motives, coping motives, and having two more sexual partners at follow-up. There was also a trend ($p < .1$) for CSA correlating with depression. Anxiety was significantly and positively associated with depression, partner approval motives, and coping motives. Depression was significantly and positively related to partner approval motives and to coping motives. Coping motives was significantly and positively related

to partner approval motives and to having two more sexual partners at follow-up. Finally, partner approval motives were significantly and positively related to having two more sexual partners at follow-up. Because, as expected, anxiety and depressive symptoms were highly correlated, for modeling purposes they were entered as indicators of a latent “mood and anxiety symptoms” variable.

Model Testing

Path modeling in a structural equation framework was conducted using Mplus (version 6) software with pairwise deletion. As assessed by the χ^2 goodness of fit statistic, the hypothesized model did not fit the data well, $\chi^2(6, N = 312) = 17.20, p < .01, RMSEA = .077, CFI = .957$. Based on the modification indices provided by Mplus, an additional path from mood and anxiety symptoms to number of partners was added and the model was retested.

The new model (see Figure 2) demonstrated good fit, $\chi^2(5, N = 312) = 8.94, p = .11, RMSEA = .050, CFI = .985$. CSA was positively associated with mood and anxiety symptoms and was marginally associated with number of sexual partners. Participants who reported more mood and anxiety symptomatology also reported greater use of sex to cope with negative emotionality and also reported having sex more often to obtain approval from their partners. These two motives for sex were positively correlated with one another. Finally, participants who reported higher coping motives and higher partner approval motives were also more likely to report having sex with two or more people during the follow-up period. There was also a negative direct effect of mood and anxiety symptoms on number of sexual partners, such that those with elevated mood and anxiety scores were less likely to report having sex with two or more partners during the prior six weeks.

Overall, this model accounted for 10% of the variance in having had two or more sexual partners in the prior six weeks. The fitted model indicates that both CSA and mood and anxiety symptoms had direct and indirect effects on number of partners through their effects on sex motives. The total indirect effect of CSA on number of partners, working through mood and anxiety symptoms and sex motives was, as predicted, statistically significant, ($z = 2.02$, $p < .05$), however neither of the specific indirect paths (one through each of the sex motives variables) reached statistical significance. There was however, a trend toward significance for the path through partner approval motives, ($z = 1.79$, $p = .07$). Total standardized indirect effects for CSA on number of partners was .07.

Two alternative models were tested in which the mood and anxiety symptoms and the sex motives were switched. That is, the directionality of the relationships was reversed. The first model lacked fit $\chi^2(5, N = 312) = 21.31$, $p = .002$, RMSEA = .090, CFI = .941 and, after adding paths based on the Mplus modification indices displayed many of the signatures of a trivial and “just identified” model (e.g. nearly as many parameters to be estimated as there are data points in the model, near-perfect fit according to multiple indices). Because of this, and the fact that the model was less parsimonious, the model described above was judged to be the best.

Discussion

The present study examined relationships among history of CSA, mood and anxiety symptoms, motives for sex, and reported number of vaginal or anal sex partners at a six-week follow-up time point. The objective of this study was to extend and bolster prior research that has linked CSA to sexual risk-taking (Senn et al., 2008). By focusing on a community sample of MSW, utilizing a behaviorally-specific assessment of CSA, using high-quality longitudinal

follow-up data collection methods, and employing a SEM framework, the present study significantly improves the methodological rigor which has typified research in this domain. Further, assessing and testing the contribution that mood and anxiety symptoms and sex motives make to the CSA-sexual risk relationship represents a novel examination.

Having experienced sexual abuse as a child was associated with increased mood and anxiety symptomatology. It is important to note that while this finding is in line with a host of other studies that suggest that CSA is a risk factor for mood and anxiety symptoms (Maniglio, 2009), it is rare that findings of this nature were drawn from a community sample of MSW. Further, past research has also suggested that CSA's effects differ by gender and that abusive sexual experiences in childhood are especially predictive of internalizing symptoms in *females* and are more predictive of externalizing problems among males (Darves-Bornoz, Choquet, Ledoux, Gasquet, & Manfredi, 1998). This study serves as an important reminder that male victims of CSA should not be overlooked with regard to symptoms of anxiety and depression. It is also noteworthy that we excluded men from participating if, during screening, they reported taking a medication for which alcohol is contraindicated (e.g. certain psychotropic medications like benzodiazepines). As such, men at the high end of Axis I symptomatology were likely excluded from the present study and yet, with a restricted range, significant CSA effects were still detectable. Finally, mental health symptoms were assessed closer in time to the follow-up assessment of sexual risk than to the abusive experiences. So, while the mental health assessment did occur *between* CSA and later risk behavior, it is unclear how one's mental health status at age 21 to 30 relates to symptomatology more immediately post-CSA. Future research in this area should aim to achieve a more nuanced understanding of this trajectory as it is related to sex motives and risky sexual behavior.

Those with higher mood and anxiety symptoms also reported using sex as a coping mechanism more frequently and having sex more often to avoid the disapproval of their sexual partner. Published studies since Cooper et al.'s (1998) original research that have investigated predictors of sexual motives are all but non-existent. One study (Schachner & Shaver, 2004; and one additional, although unpublished, dissertation [Walker-Bauer, 2006]) has suggested that those who score high in anxious attachment also score higher on both types of motives. While being anxiously attached is associated with being anxious and depressed (Lee & Hankin, 2009; Eng et al., 2001), these findings fall short of providing convincing evidence of a linkage between mental health and maladaptive sex motives. As such, the current study is the first to illustrate a direct relationship between elevated mood and anxiety symptoms and particular motives for sexual behavior. However, the association between symptomatology and the partner approval motive is not a straightforward one. Perhaps, in fact, mood and anxiety symptoms were a marker for an anxious attachment style and, in turn, were associated with more frequent sex to obtain a partner's approval. Attachment style was not assessed in the present study, so the presence of such a correlation (between anxious attachment and mood and anxiety symptoms) is limited to speculation. Alternatively, the OASIS has been shown to positively correlate with measures of social anxiety (Norman et al., 2006). Thus, it is possible that higher scores on the partner approval subscale is a product of a higher-order anxiety surrounding interpersonal evaluation. The association between one's mood and anxiety symptoms and the use of sex as a coping mechanism is relatively intuitive and mirrors research in other areas that indicates a variety of maladaptive coping strategies employed by those with elevated negative affect (e.g. coping motives for alcohol consumption [Buchmann et al., 2010]). Given that these sex motives findings

are exploratory and novel, considerably more research attention should be devoted to predictors of certain motives and the role that mental health-related variables may play.

It should be noted that it is possible that those with avoidant sexual motives (such as coping motives and partner approval motives) may also be passive problem solvers more generally. Passive, avoidant problem solving has itself been associated with psychopathology post-CSA (O’Leary, 2009). In other words, as is proposed here, being more anxious and/or more depressed may lead one to rely more on sex to reduce negative affect or to obtain approval but using such means to regulate ones mental state may also lead to unsuccessful maintenance of mental health. While the model proposed herein posits that mental health symptoms precede sex motives, the fact that the mental health variables and the sex motives variables were assessed at the same point in time precludes absolute certainty in terms of the directionality of the relationship. Thus, an alternative model – one in which the sex motives preceded mood and anxiety symptoms – was also tested. The alternative model did not supplant the original in terms of fit; however, this does not preclude the possibility that avoidant behavioral and coping styles may influence, as well as be influenced by, psychopathology (APA, 2000; Boals, vanDellen, & Banks, 2011; Moulds, Kandris, Starr, & Wong, 2007) in a cyclical manner. What seems important to note is that, to some measure, following CSA there may be interplay between one’s mental health and the reasons or motivations for which one is engaging in sexual behavior. This interplay, in turn, may increase a person’s sexual risk.

Increased anxiety and mood symptoms were also directly negatively associated with having a greater number of sexual partners. While research on the relationship between psychopathology and sexual risk-taking is mixed (Donenberg, Emerson, Bryant, Wilson, & Weber-Shifrin, 2001; Lehrer, Shrier, Gortmaker, & Buka, 2006), this finding dovetails with the

clinical conceptualization of those with elevated mood and anxiety symptoms being more inclined to stay home (e.g. depression and panic disorder with agoraphobia), to refrain from social interactions (e.g. social anxiety disorder, depression), to avoid intense physiological sensations (e.g. panic disorder), to avoid stimuli that are related to past trauma (e.g. PTSD) and a host of other behaviors that are not likely associated with sexual pursuit or, perhaps, sexual desirability. Sexual disinterest is a specific item on the Beck Depression Inventory II (Beck, Steer, & Brown, 1996), one of the most frequently used assessments of depressive symptomatology and research has indicated that men with erectile dysfunction or hypoactive sexual desire have elevated rates of a variety of mood and anxiety disorders (e.g. Corona et al., 2008). In other words, elevated mood and anxiety symptoms may reduce sexual risk unless sex is used as an emotional coping mechanism or partner approval is particularly desirable.

As hypothesized, and in accordance with the original sex motives research (Cooper et al., 1998), both partner approval motives and coping motives were positively associated with having two or more sexual partners in the prior six week time period. These findings underscore the fact that the reason one is engaging in sexual behavior may have important personal and social health implications. Further, conceptualizing sexual behavior in terms of the functions it serves, and noting that the function of sex is neither consistent nor ubiquitous between individuals, highlights this as an area in which further research is needed and in which interventions may be tailored and optimized in the light of one's sex motives.

Though statistically only a marginal relationship, even after modeling its indirect effects, CSA still seemed to be directly associated with number of sexual partners at follow-up. This is noteworthy, though not entirely surprising since prior research (e.g. Schraufnagel et al., 2010; Senn et al., 2006) has suggested alternative linkages between CSA and number of sexual partners

while also observing a significant direct relationship. This suggests that, as has been posited for women (Heiman & Heard, 2004), CSA among males may set into motion multiple chains of events that reverberate over time to endanger one's sexual well-being. Future research should focus on several different pathways between CSA and risk. It would be especially useful to have a large enough sample in which to test several different pathways simultaneously within the same model. However, low rates of abuse and the logistical and financial difficulty of recruiting such a large sample will be challenging. An alternative option would be a consortium of CSA or risk-taking researchers who agree upon several promising constructs and assessment devices so that data could be pooled across projects. This proposition, of course, comes with myriad logistical and political obstacles, but is worth considering nonetheless.

Strengths, Limitations, and Implications

The present study was the first to investigate the role of mental health and sex motives as possible mediators in the relationship between CSA and later sexual risk-taking. Moreover, the use of a community sample of MSW differentiates this study from the preponderance of CSA – sexual risk research that has traditionally focused on samples of women, MSM, and clinic attendees. Furthermore, the present study employed a longitudinal design, a behaviorally-specific assessment of CSA, and sophisticated data analytic strategies. Each of these approaches adds tremendously to the study's methodological rigor and addresses several of the shortcomings that have been highlighted in relevant review articles (e.g. Senn, Carey, & Venable, 2008).

However, due to limitations in the present study, caution in interpreting the results is warranted. First, due to study inclusion criteria (e.g. being a moderate drinker, having had sex without a condom in the past year, not being in a stable, committed relationship) results drawn

from this sample may not generalize to other men. Further, eliminating those in steady relationships likely affected the endorsement of certain sex motives (e.g. intimacy). However, statistically, these restrictions in range would likely favor the null hypothesis and therefore increases the confidence in the significant findings. Another limitation to note is that, as with any longitudinal study, the present study suffered from participant attrition. However, analyses of baseline variables indicated that those that stayed in the study and those that dropped out did not differ on variables such as race, educational status, age, CSA status, anxiety or depression symptoms, or sexual risk-taking behavior.

Despite these limitations, the results of the present study are novel. They represent an initial foray into the role that sex motives, secondary to mental health symptoms, may play in the CSA – sexual risk-taking relationship. The present analyses suggest that CSA is associated with elevated mood and anxiety symptoms later in life and that these symptoms are, in turn, associated with problematic sex motives that end up increasing one's risk to STIs (by increasing the number of one's sexual partners). The results suggest multiple avenues by which interventionists could work toward reducing the risk of STIs for MSW with histories of CSA. To be sure, prevention of CSA is the obvious method of choice. However, the data presented here also suggest that the provision of evidence-based treatment for mood and anxiety symptoms may also limit the deleterious effects of CSA. Further, taking a close look at the function that sex has in a CSA survivor's life may also point toward problematic behavioral patterns. To address these problems, perhaps working to instill healthy and adaptive problem-focused coping strategies would reduce a man's reliance on sex as a means by which to regulate negative affect. Similarly, striving to reduce the perceived presence and magnitude of the threat posed by partner disapproval may also serve to promote sexual wellness. The trend toward significance for CSA

to be directly positively related to number of partners suggests that attention to the CSA – sexual risk relationship may be warranted outside the context of elevated mood and anxiety symptoms as well.

However, because of the exploratory nature of the present study, replication of the current pattern of findings is of paramount importance. While significant work lies ahead to further evaluate and refine these findings, the results presented herein provide a starting point for future researchers and hint at domains in which, pending future research, interventionists may be able to have a positive impact on the sexual lives of MSW who have endured CSA.

Table 1. Bivariate Correlations, Means, and Standard Deviations of Study Variables (N = 312)

Variable	1	2	3	4	5	6
1. Child Sexual Abuse	--					
2. OASIS Score	.14*	--				
3. PHQ-8 Score	.10	.61**	--			
4. Coping Motives	.15*	.35**	.32**	--		
5. Partner Approval Motives	.18**	.24**	.17**	.38**	--	
6. Number of Partners	.14*	-.06	-.09	.13*	.22**	--
Mean	NA	8.30	4.27	2.01	1.54	NA
Standard Deviation		3.07	4.22	0.92	0.81	

Figure 1. Hypothesized Model Linking Childhood Sexual Abuse, Mood and Anxiety Symptoms, Sex Motives, and Number of Sexual Partners

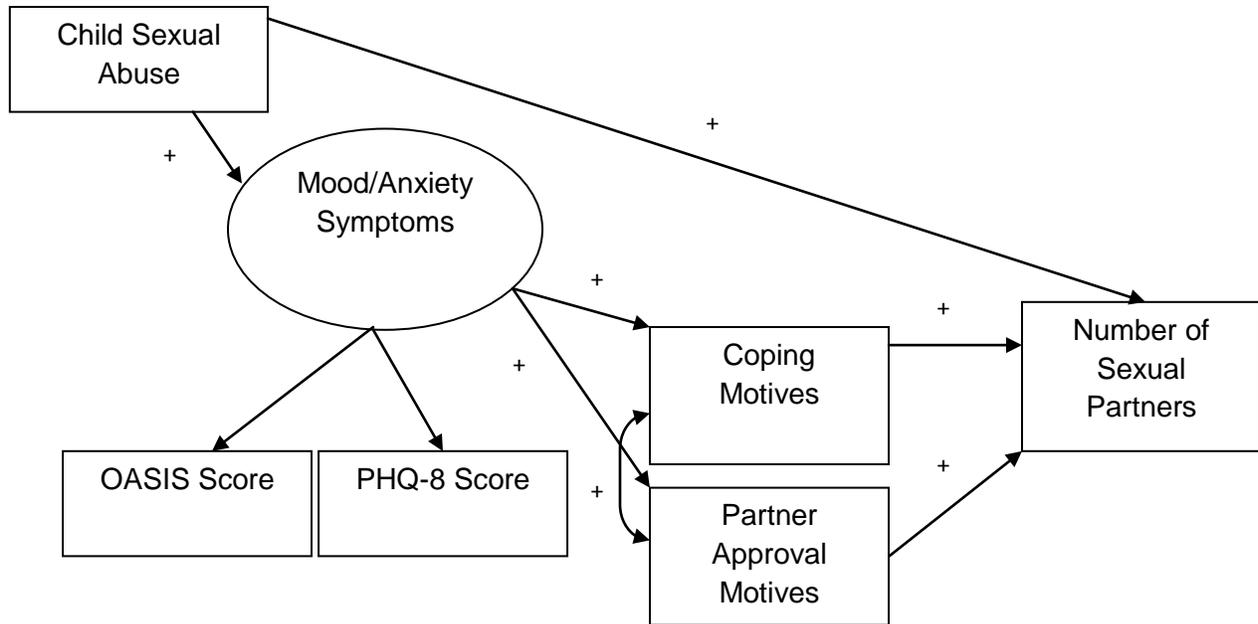
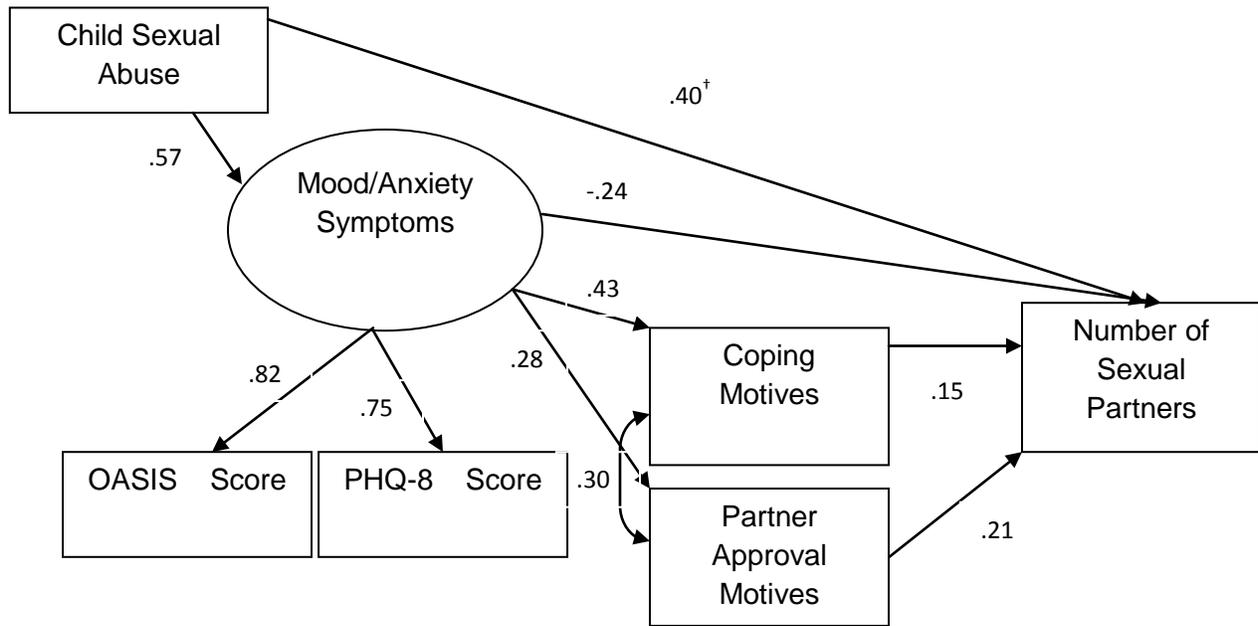


Figure 2. Final Model Linking Childhood Sexual Abuse, Mood and Anxiety Symptoms, Sex Motives, and Number of Sexual Partners



$^\dagger p = .06$; all other p values $< .05$

General discussion

This research broadly examined the relationship between CSA and sexual risk-taking among a community sample of MSW. Overall, these studies aimed to contribute to our fuller understanding of this relationship by examining a population that is underrepresented in the literature and by improving upon the methodological rigor of many extant studies (e.g. by using longitudinal data, SEM analytic methods, a detailed behaviorally-specific assessment of CSA, etc.). Taken together, the studies provide support for the hypothesis that CSA and elevated sexual risk are not independent among MSW. The present research also found that, among our sample, alcohol-related variables did not play an important role in the CSA – sexual risk relationship, contrary to study hypotheses. However, further examination revealed an association between CSA and later sexual risk-taking through a pathway of mental health variables and sexual motives.

Given the persuasive findings in the literature regarding the presence of a CSA – sexual risk relationship, one of the objectives of the present studies was to approach the topic in a detailed manner and to try and foster an understanding of the relationship that is as fine-grained as possible. To do so, an extremely detailed assessment of CSA was utilized and several different types of alcohol- and sexual risk-related measures were assessed. Paper I presented an examination of CSA and sexual risk-taking and offered the hypothesis that alcohol-related factors would mediate the CSA – sexual risk relationship. Results demonstrated that CSA was related to earlier sexual initiation, having had an unwanted pregnancy, and to having two or more sexual partners during the follow-up period. Findings however, did not support the hypothesis that alcohol would act as a mediator due to the fact that analyses of the relationship between CSA and alcohol-related factors (at both baseline and follow-up) were overwhelmingly null.

This contrasts with two earlier mediational findings that indicated alcohol and an important factor in the relationship for men (Schraufnagel et al., 2010; Senn et al., 2006). Paper I also presented findings regarding abuse severity as well as several different abuse-related characteristics and their independent associations with alcohol- and sexual risk-related variables. Findings again supported links between “more” abuse (intensity, duration, number of partners, etc.) and increased sexual risk-taking. However a similar pattern emerged such that few of the hypothesized relationships between abuse and alcohol bore fruit. Further, the sheer quantity of characteristic-related comparisons compels readers to interpret the significant findings cautiously. Future studies should continue to examine these relationships in a general MSW population in order to further illuminate the nature of these relationships or, perhaps, the lack thereof.

Paper II furnished an investigation of a novel pathway between CSA and later number of sexual partners. Specifically, it was hypothesized that the link between CSA and one’s number of sexual partners at follow-up would be mediated by mental health symptoms and one’s sex motives. Results supported such a pathway and suggested that CSA was associated with increased mood and anxiety symptoms, which was associated with more frequent sex to cope and more frequent sex to obtain partner approval, both of which were associated with having two or more sexual partners during a six week follow-up period. Moreover, in the final model, CSA remained marginally positively associated with number of partners and mood and anxiety symptoms remained negatively associated with number of partners. Indeed, as the first study to investigate the role of sex motives in this domain, these results provide an early glimpse of a novel pathway between CSA and sexual risk-taking. To be sure, further research should be conducted on this and other populations to verify replicability.

Comprehensively, the findings from the two studies contribute to existing research in several meaningful ways. Most generally, findings from the present studies provide further evidence of a relationship between CSA and subsequent sexual behavior that is associated with an increased risk for STIs and unwanted pregnancies among MSW. Although this global finding was supported, the current research did not suggest a relationship between CSA and later alcohol use variables. This finding, of course, renders moot an examination of alcohol as a mediator. While null, this finding adds to the literature because there have been several studies which have suggested alcohol's importance in this domain and have suggested that alcohol may be particularly important for male CSA survivors (e.g. Garnefski & Arends, 1998; Senn et al., 2006). Alcohol's role should be a primary focus of future studies due to the now somewhat equivocal state of the MSW literature. Because of the differential effects on outcome that were observed between abuse-related characteristics, this research attests to the importance of continued investigation regarding the different markers of abuse severity and the manner in which they influence outcome trajectory. The findings presented herein were also the first to examine and find support for the hypothesis that one's idiosyncratic motives for engaging in sexual behavior may, in tandem with mental health-related factors, connect one's past of CSA to one's future of increased sexual risk. This line of research deserves significant attention moving forward and this finding further documents the importance of exploring non-alcohol-related factors in the context of the CSA – sexual risk relationship. Because there are numerous areas within this domain that are worthy of ongoing empirical analysis, the following brief section is devoted to underscoring research directions that seem especially promising and to provide some recommendations for future investigators.

Future Directions

Further research with MSW. Since the most recent formal declaration in 2008 (Senn, Carey, & Vanable) that the state of the CSA – sexual risk literature among MSW was unacceptably underdeveloped, only two studies seem to have been published. The most recent one is the one which you are presently reading. The earlier one was, likewise, written by the current author. This is unfortunate and underscores the need for a wider array of researchers to tackle the dearth of this research using samples of MSW. Research with community samples is especially scarce and will be, therefore, especially valuable. The present studies attest to the difficulty of obtaining a large sample of MSW who report CSA and, while this certainly presents challenges, investigators should forge ahead and try to uncover clues to benefit this “forgotten group” (Exner, Gardos, Seal, & Ehrhardt, 1999).

Ongoing Investigation of Alcohol’s Role. Despite the current findings, the preponderance of research published to date (see review in the Introduction of Paper I), suggests that alcohol-related factors play a highly important role in the CSA – sexual risk relationship. In turn, it will behoove researchers to continue to probe these associations. Because of the restricted range of drinkers in the current study, it is possible that alcohol plays a significant role that was, unfortunately, not statistically detectable with this sample. Researchers in this domain should be sure to collect both global association data as well as event-level data as the latter will add tremendous strength to one’s causal argument (Cooper, 2006). In addition to being a potential mediator, recent research suggests that acute alcohol intoxication may interact with CSA status to flavor a man’s sexual perceptions (Davis, Schraufnagel, Tiura, Norris, & George, 2011). More specifically, these researchers found that men with a CSA history that were intoxicated were especially likely to report cognitions related to sexual entitlement. These cognitions were then

associated with increased condom use resistance. Variables such as drinking motives and alcohol expectancies may also be worth investigating as prior studies have suggested their possible involvement (e.g. Senn et al., 2006). In sum, there are several intriguing lines of research worth pursuing that implicate alcohol in the CSA and sexual risk relationship.

Longitudinal Data Collection. One of the primary strengths of the present studies was the fact that data were collected at multiple points in time. Future research should attempt to follow the same course, a suggestion which echoes recommendations made by Senn and colleagues (2008) due to the prevalence of cross-sectional studies in this area. For follow-up data collection, the use of a protocol similar to the TLFB (Sobell et al, 1979) method utilized here is also suggested as a means to improve recall. Further, the use of short follow-up time frames may aid in recall and reduce error. Additionally, measurable differences in sexual risk-indices are underscored if the time for which they are assessed is shorter in duration.

Condom Use. Research should focus on condom use as an outcome of CSA. As referenced in Paper I, several studies have documented an association between CSA and later decreases in condom use frequency. The present study did not find substantial research support for this assertion, nor did Schraufnagel and colleagues in 2010. Given that partner and relationship characteristics may influence condom use behavior, future research should be especially mindful of these factors. Again, the present study only included men that reported having had sex without a condom at least once in the prior year. It is possible that excluding those that reported that they always used a condom precluded the detection of an effect. Future research, with a full swath of condom users in a variety of relationship types should address this question more sufficiently. Further, given the findings of the present study that CSA was more strongly associated with lifetime unwanted pregnancies than it was with lifetime STIs, future

research should assess whether or not condom use behavior is implicated in this area. Further, the fact that participants with a history of CSA were more likely to report an unwanted pregnancy and marginally more likely to report an STI but did not report less condom use in general is perplexing. As suggested in Paper I, future research should examine the condom use trajectory over time for males with a CSA history to see if they use condoms less while they are young but, over time, their frequency of condom use becomes indistinguishable from non-CSA males.

Abuse Characteristics. Increased attention should be paid to abuse characteristics in future research. Several studies suggest that “worse” or “more” CSA is related to poorer outcome (e.g. Hulme, 2007; Senn et al. 2007) but seldom do studies use precisely the same definition of severity, and it is rare that a substantial quantity of characteristics is assessed (Senn, Carey, & Venable, 2008). As such, there is relatively little consensus regarding which characteristics are particularly important or influential. Beyond illustrating that there seems to be tremendous heterogeneity in the manner in which abuse characteristics are related to sexual risk indices, due to the great number of non-significant correlations, it is difficult to draw meaningful conclusions from the present results or to use these results to point future investigators in specific directions. Thus, future investigators should heed the advice of Senn, Carey, and Venable and assess characteristics with as much breadth as possible. Future investigators should also, unsurprisingly, work to obtain a sample that is either larger or has a higher prevalence of CSA.

This study also illustrated the high percentage of males that are abused by a female – nearly 50%. This contrasts with research among women and girls which suggests that they are perpetrated against by women to much a lesser extent (e.g. Newcomb, Munoz, & Vargas Carmona, 2009). As such, additional focus should be placed on the manner in which perpetrator

gender effects outcome for abused MSW. Finally, it would be optimal if studies were powered to analyze interactions between abuse characteristics. For instance do level of invasiveness and perpetrator gender interact to generate a particular outcome? Other interactions would be similarly interesting to examine. Until research begins to parse out these effects, speculation and anecdote is all that can be relied upon.

Genetic Influences on CSA Outcome. To date, the majority of research that has been conducted in an effort to understand the behavioral and psychological outcomes of CSA survivors has been focused on environmental factors. However, because environmental variability does not fully account for differences in outcome trajectory, researchers have begun to explore gene x environment interactions that may offer additional insight (Moffitt, Caspi, & Rutter, 2005). While this domain of inquiry remains inchoate, there have been some promising discoveries. Because of serotonin's role in affect regulation, genes that influence the efficiency of serotonin activity in the brain have received early empirical investigation. Specifically, a polymorphism (5-HTTLPR) that occurs in the promoter region of the serotonin transporter gene (SLC6A4, located on chromosome 17) has been associated with both individual differences in both drinking behavior and psychological functioning following adverse experiences. Studies suggest that 5-HTTLPR variability may specifically moderate the effect of CSA on later psychological functioning such as anxiety and depression (Cicchetti et al., 2007). Further, Aguilera et al. (2009) reported that in a sample of Spanish adults, having a history of CSA was associated with increased depressive symptomatology and that CSA had its greatest impact among those carrying an S allele.

There are, unsurprisingly, no studies that have investigated sex motives in this realm. However, one study that examined drinking motives may provide a foundation on which to

build. Armeli and colleagues (2008) reported that, contrary to their hypotheses, those with the S allele reported less drinking to cope motives compared to those with the other variant. However Way and Gurbaxani (2008) have suggested that the S allele exerts its influence by rendering an individual especially responsive to their social environment. This suggests that perhaps coping motives for a behavior are less relevant than more social motives, which went unexamined by Armeli and colleagues. However, in the light of the findings presented in Paper II, perhaps investigating genetic influences on social sex motives such as partner approval holds promise.

While the present studies did not provide support for an alcohol-related link between CSA and sexual risk, numerous other studies have and, as such, it is possible that alcohol may still hold promise as a mediator or a moderator. Of note, while no studies have specifically looked at the effect this 5-HTTLPR polymorphism may have on drinking behavior post-CSA, several studies do show that the S allele is associated with increased drinking following other forms of adversity (Covault et al., 2007) which again underscores this genes potential relevance to the matter at hand.

The available evidence suggests that the 5-HTTLPR polymorphism moderates the psychological impact of CSA, renders one more influenced by the social environment, and is related to problematic alcohol consumption. The convergence of these findings and their relevance to sexual risk-taking makes pursuing this biopsychosocial approach to the CSA – sexual risk relationship highly warranted.

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Appendix

Items Used to Assess Sexual Risk-Taking and Alcohol Use Behaviors

Below is list of items that were used to assess sexual risk behaviors and alcohol use behaviors that were not fully described in the method section. Following each item, the manner in which the item was analyzed is included. Response items are only included if it would add clarity to scoring or to the interpretation of the presented results. Additional information may be obtained from the author.

Baseline Assessment

Sexual Risk-Related Items

1. Age of Sexual Initiation: “How old were you when you first had consensual sexual intercourse (the age you chose to become sexually active)?”
2. Lifetime number of sexual partners: Instructions: “Answer the following questions according to your experiences throughout your lifetime”.
 - a. “With how many DIFFERENT female partners have you had vaginal intercourse?”
 - b. “With how many DIFFERENT female partners have you had anal intercourse?”
3. Number of times had sex on a first date: “How many times have you had sex with someone on the first date or someone whom you have known for less than 24 hours?”
4. Number of sexual partners in the past year: “With how many different partners have you had sex (sexual intercourse) within the past year?” Responses were capped at 30.
5. Number of people had sex with on only one occasion: “With how many different partners have you had sex on one and only one occasion?” Responses were capped at 30.
 - a. Proportion of condom use: “Of the times you had sex with someone on the first date or someone whom you have known for less than 24 hours, about how often did you use a condom?” Response options were expressed in increments of 10%.
6. Proportion of condom use, number of unprotected sexual episodes, and proportion of alcohol use during sex (items for anal sex were same but read “anal” in place of “vaginal”):
 - a. “In the past 3 months, how many times did you have vaginal intercourse?”
 - b. “Of the {insert #} times you had vaginal intercourse in the past 3 months, about how often did you use a condom?”
 - c. “Of the {insert #} times you had vaginal intercourse in the past 3 months, about how often did you consume alcohol prior to or during it?”
7. Trading sex: “How often do you pay for someone to perform a sexual act on you?” and “How often are you paid to perform a sexual act?” Any response other than “never” on either of these items was coded as “1” (yes).

8. Lifetime sexually transmitted infection: “Have you ever been diagnosed with a sexually transmitted disease?”
9. Lifetime unwanted pregnancy: “To your knowledge, have you ever gotten a woman pregnant when you did not plan to and/or did not want to?”

Alcohol-Related Items

1. Typical drinking quantity: “Consider a typical week during the past month. Please fill in a number for each day of the week indicating the typical number of drinks you usually consume on that day.” These responses were summed for typical weekly amount.
2. Typical drinking duration: “Consider a typical week during the past month. Please fill in a number for each day of the week indicating the typical number of hours you usually drink on that day.” Responses also summed.
3. First alcohol: “At what age did you first have more than a sip of beer, wine, wine coolers, or liquor to drink?”
4. First intoxication: “At what age did you first drink enough alcohol to feel drunk?”
5. Suggested items from the National Institute on Alcohol Abuse and Alcoholism (2003):
 - a. “During the last 12 months, how often did you usually have any kind of drink containing alcohol? (e.g. a 12 ounce can or glass of beer or cooler, a 5 ounce glass of wine, or a drink containing 1 shot of liquor). Choose only one.”

1	Every day	6	2 to 3 times a month
2	5 to 6 times a week	7	Once a month
3	3 to 4 times a week	8	3 to 11 times in the past year
4	Twice a week	9	1 or 2 times in the past year
5	Once a week		

- b. “During the last 12 months, how many alcoholic drinks did you have on a typical day when you drank alcohol?”

1	25 or more drinks	6	7 to 8 drinks
2	19 to 24 drinks	7	5 to 6 drinks
3	16 to 18 drinks	8	3 to 4 drinks
4	12 to 15 drinks	9	2 drinks
5	9 to 11 drinks	10	1 drink

- c. “During the last 12 months, what is the largest number of drinks containing alcohol that you drank within a 24-hour period?”

1	36 drinks or more	6	5 to 7 drinks
2	24 to 35 drinks	7	4 drinks
3	18 to 23 drinks	8	3 drinks
4	12 to 17 drinks	9	2 drinks
5	8 to 11 drinks	10	1 drink

- d. “During the last 12 months, how often did you drink this largest number of drinks? Choose only one.”

1	Every day	6	2 to 3 times a month
2	5 to 6 times a week	7	Once a month
3	3 to 4 times a week	8	3 to 11 times in the past year
4	Twice a week	9	1 or 2 times in the past year
5	Once a week		

- e. “During the last 12 months, how often did you have 5 or more drinks containing any kind of alcohol within a two-hour period? Choose only one.”

1	Every day	6	2 to 3 times a month
2	5 to 6 times a week	7	Once a month
3	3 to 4 times a week	8	3 to 11 times in the past year
4	Twice a week	9	1 or 2 times in the past year
5	Once a week	10	Never

- f. During your lifetime, what is the largest number of drinks containing alcohol that you drank within a 24-hour period?

1	36 drinks or more	6	5 to 7 drinks
2	24 to 35 drinks	7	4 drinks
3	18 to 23 drinks	8	3 drinks
4	12 to 17 drinks	9	2 drinks
5	8 to 11 drinks	10	1 drink

Follow-Up Assessment

Sexual Risk-Related Items

1. Number of sexual partners during follow-up period: “Please provide the nickname or initials of every woman you engaged in vaginal, anal, or oral sex with during the prior 6 week period beginning on {beginning date} and ending on {end date}.” These were then inspected for only vaginal or anal sex partners and summed and then dichotomized based on having had two or more partners or not.
2. Condom use: For each sexual episode that the participant reported they were asked, “Did you use a condom at any time when you and {insert partner id} had vaginal sex on {date}?” An identical item was queried anal sex. These responses were then used to calculate a proportion of vaginal and anal sex episodes that involved a condom as well as an absolute number of unprotected penetrative sexual episodes.
3. Monogamy: “Is your relationship with {insert partner id} monogamous (i.e. you both have sex only with each other)?” Dichotomized if reported a nonmonogamous partner or not.

4. Sexually transmitted infection: “During the prior 6 week period {insert date range}, did you get tested for any STD’s (sexually transmitted diseases)?” and, if yes, “When you were tested, were you diagnosed with an STD?”

Alcohol-Related Items

1. Typical drinking quantity and duration: “Consider a typical week during the past six weeks. Please select a number for each day of the week indicating the typical number of drinks you usually consumed on that day. Also select a number of each day of the week indicating the typical number of hours you usually drink on that day.” Responses for the quantity ranged from 1 to 26 (26 indicated “25 or more”). Responses for duration ranged from 1 to 24. These responses were summed (separately) to generate weekly data.
2. Number of days intoxicated: “In the past six weeks, how many days did you get drunk?” Responses ranged from 1 to 42.
3. Consuming alcohol on the days on which sex took place: For each day on which the participant indicated that they had sex, they were asked, “Did you consume alcohol on {insert date}?” If they responded yes, participants were then asked, “What was your highest level of intoxication while you were with {insert partner id}?” Responses for the first question were used to generate a proportion of the days on which a participant had sex also included alcohol. For the second question, response options ranged from 1 (*not at all intoxicated*) to 7 (*extremely intoxicated*). For the present analyses, these responses were averaged across all days and all partners to generate a single mean level of intoxication while with sexual partners.

Curriculum Vitae

EDUCATION

- 2006 – 2012 **Ph.D., University of Washington**, Seattle, WA (APA accredited)
 Clinical Psychology
 Dissertation Chair: William H. George, Ph.D.
 Dissertation: *Childhood Sexual Abuse and Sexual Risk-Taking Among Men Who Have Sex with Women: The Roles of Alcohol, Mental Health Symptoms, and Sex Motives*
M.S., 2008
 Thesis: *Childhood Sexual Abuse in Males and Subsequent Risky Sexual Behavior: A Potential Alcohol Use Pathway*
- 2011 – 2012 **Internship, VA Puget Sound – Seattle Division** (APA accredited)
 Training Director: Stephen McCutcheon, Ph.D.
- 2001 **B.S., University of Washington**, Seattle, WA
 Psychology

CLINICAL EXPERIENCE

- 2011 – 2012 **Psychology Intern, VA Puget Sound – Seattle Division**
 Placements: Addictions Treatment Center, PTSD Outpatient Clinic, Primary Care
 Supervisors: Carl Rimmele, Ph.D., Matthew Jakupcak, Ph.D., Autumn Paulson, Ph.D., & Stephen McCutcheon, Ph.D.
- 2008 – 2011 **DBT Practicum Therapist, UW Behavioral Research and Therapy Clinics**
 Department of Psychology, University of Washington, Seattle, WA
 Supervisors: Marsha M. Linehan, Ph.D., Melanie Harned, Ph.D., Katherine A. Comtois, Ph.D., Katie Korslund, Ph.D., Daniel Finnegan, M.S.W., Leslie Karwoski, Ph.D., Shari Manning, Ph.D., Sarah Reynolds, Ph.D., & Annie McCall, M.S.W.
- 2009 – 2011 **Anxiety Disorder Consult Team, UW Center for Anxiety and Traumatic Stress**
 Department of Psychology, University of Washington, Seattle, WA
 Supervisor: Lori Zoellner, Ph.D.
- 2007 – 2011 **Graduate Student Therapist, Psychological Services and Training Center**
 Department of Psychology, University of Washington, Seattle, WA
 Clinical Supervisors: Corey Fagan, Ph.D., John Baer, Ph.D.; Bruce Olson, Ph.D.; Jack Carr, Ph.D.; Miles Lawrence, M.B.A., Psy.D., David Kosins, Ph.D., & Tim Popanz, Ph.D.

RESEARCH EXPERIENCE

- 2007 – 2011 **Graduate Research Assistant**, *Projects MAST, AIMS, MARS*
 Department of Psychology, University of Washington
 School of Social Work, University of Washington
 Supervisor: Kelly Cue Davis, Ph.D.
- 2003 – 2006 **Research Coordinator Lead**, *CALM, CCAP*
 Department of Psychiatry and Behavioral Sciences, University of Washington
 Supervisor: Peter P. Roy-Byrne, M.D.
- 2003 – 2004 **Research Assistant**, *ER Follow-Up Study*
 Department of Psychiatry and Behavioral Sciences, University of Washington
 Supervisor: Katherine A. Comtois, Ph.D.
- 2002 **Research Assistant**, *REASONS Project*
 Department of Psychology, University of Washington
 Supervisors: William H. George, Ph.D. & Kelly F. Kajumulo, M.P.H.

PUBLICATIONS

Peer-Reviewed Articles

- Davis, K. C., **Schraufnagel, T. J.**, Kajumulo, K. F., Gilmore, A. K., Norris, J., & George, W. H. (in press). Men's Condom Use Attitudes and Resistance: A Qualitative Examination. *Archives of Sexual Behavior*.
- Davis, K. C., Kiekel, P., **Schraufnagel, T. J.**, Norris, J., George, W. H. (in press). Men's alcohol intoxication and condom use during sexual assault perpetration. *Journal of Interpersonal Violence*.
- Davis, K. C., **Schraufnagel, T. J.**, Jacques-Tiura, A. J., Norris, J., George, W. H., Kiekel, P. (2012). Childhood sexual abuse and acute alcohol effects on men's sexual aggression intentions. *Psychology of Violence*, 2, 179-193.
- Schraufnagel, T. J.**, Davis, K. C., George, W. H., & Norris, J. (2010). Childhood sexual abuse in males and subsequent risky sexual behavior: A potential alcohol use pathway. *Child Abuse & Neglect*, 34, 369-378.
- Cristofalo, M., Boutain, D., **Schraufnagel, T. J.**, Bumgardner, K., Zatzick, D., & Roy-Byrne, P. P. (2009). Unmet need for mental health and addictions care in urban community health clinics: Frontline provider accounts. *Psychiatric Services*, 60, 505-511.
- Davis, K. C., **Schraufnagel, T. J.**, George, W. H., & Norris, J. (2008). The use of alcohol and condoms during sexual assault. *American Journal of Men's Health*, 2, 281-290.
- George, W. H., Davis, K. C., **Schraufnagel, T. J.**, Norris, J., Heiman, J. R., Schacht, R. L., Stoner, S. A., & Kajumulo, K.F. (2008). Later that night: Descending alcohol intoxication and men's sexual arousal. *American Journal of Men's Health*, 2, 76-86.

Schraufnagel, T. J., Wagner, A. W., Miranda, J., and Roy-Byrne, P. P. (2006). Treating minority patients with depression and anxiety: What does the evidence tell us? *General Hospital Psychiatry*, 28, 27-36. **

Mukherjee, S., Sullivan, G., Perry, D., Verdugo, B., Means-Christensen, A., **Schraufnagel, T.**, Sherbourne, C., Stein, M., Craske, M., Roy-Byrne, P. (2006). Adherence to treatment among economically disadvantaged patients with panic disorder. *Psychiatric Services*, 57, 1745-1750.

Bricker, J., Russo, J. E., Stein, M. B., Sherbourne, C., Craske, M. G., **Schraufnagel, T. J.**, Roy-Byrne, P. P. (2006). Does recent cannabis use impact anxiety and depression treatment outcomes?: Results from a randomized effectiveness trial. *Depression and Anxiety*, 0, 1-7.

Roy-Byrne, P., Wagner, A. W., **Schraufnagel, T. J.** (2005). Understanding and treating panic disorder in the primary care setting. *Journal of Clinical Psychiatry*, 66 Suppl 4, 16-22.

** One of the top 25 articles requested from *General Hospital Psychiatry* in both 2006 and 2007

Published Abstracts

Schraufnagel, T. J., Russo, J., Wagner, A. W., Craske, M. G., Stein, M. B., Sherbourne, C. D., Roy-Byrne, P. P. (2005). The relationship between anxiety disorders and the trait of neuroticism. *Depression and Anxiety*, 22, 232-233.

Book Chapters

Davis, K. C., Kaysen, D., Gilmore, A. G., & **Schraufnagel, T. J.** (in press). Alcohol and Sexual Violence. In C. Kent (Ed.), *Encyclopedia of Addictive Behaviors*. Oxford, UK: Elsevier.

NATIONAL AND INTERNATIONAL PRESENTATIONS

Schraufnagel, T. J., Davis, K. C., George, W. H., & Norris, J. *Childhood Sexual Abuse, Mental Health, and Sex Motives among Males: A Pathway to Sexual Risk?* Poster presented at the 2012 American Psychological Association Annual Convention, Orlando, FL.

Davis, K. C., Norris, J., George, W. H., & **Schraufnagel, T. J.**, (2011, June). *The Role of Alcohol Intoxication and Sexual Aggression History on Men's Condom Use Resistance*. Presented at the annual scientific meeting of the Research Society on Alcoholism, Atlanta, GA.

Davis, K. C., **Schraufnagel, T. J.**, Norris, J., George, W. H., & Kajumulo, K. F. (2011, June). *Heterosexual Men's Condom Use Resistance Tactics: A Qualitative and Quantitative Assessment*. Presented at the annual meeting of the Society for Prevention Research, Washington, DC.

Gilmore, A. G., Schacht, R., Chen, J. A., & **Schraufnagel, T. J.** (2010, November). *Child Sexual Abuse and Current Sexual Health in College Students*. Presented at the annual convention of the Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Schraufnagel, K. E., Blume-Marcovici, A. C., Hickman, S. D., & **Schraufnagel, T. J.** (2010, November). *Practitioner Mindfulness: An FFMQ Pre-Post Study of Mindfulness in MBCT Professional Training Participants*. Poster to be presented at the annual convention of the Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Davis, K. C., **Schraufnagel, T. J.**, Burgess-Hull, A., Freese, K. S., Norris, J., George, W. H. (2010, June). *Men's alcohol intoxication and condom use during sexual assault perpetration*. Presented at the annual meeting of the Research Society on Alcoholism, San Antonio, TX.

Schraufnagel, T. J., George, W. H., Norris, J., Davis, K. C. (2009, November). *Sexual arousal among heterosexual male victims of childhood sexual abuse: A case of null findings*. Poster presented at the Congress of The Society for the Scientific Study of Sexuality, Puerto Vallarta, Mexico.

Schraufnagel, T. J., Davis, K. C., George, W. H., & Norris, J. (2008, February). *Childhood sexual abuse in males and subsequent sexual aggression: Direct and indirect effects*. Poster presented at the APA Summit on Violence and Abuse in Relationships, Bethesda, MD.

Davis, K. C., & **Schraufnagel, T. J.** (2008, June). *Alcohol intoxication and men's coercive condom use resistance tactics*. Poster presented at the annual meeting of the Research Society on Alcoholism, Washington, DC.

Schraufnagel, T. J., Russo, J., Wagner, A. W., Craske, M. G., Stein, M. B., Sherbourne, C. D., Roy-Byrne, P. P. (2005, March). *The Relationship Between Anxiety Disorders and the Trait of Neuroticism*. Poster presented at the Anxiety Disorders Association of America 25th Annual Conference, Seattle, WA.

STATE AND LOCAL PRESENTATIONS

Schraufnagel, K., Blume-Marcovici, A., Hickman, S., & **Schraufnagel, T. J.** (2010, October). *Practitioner Mindfulness: A Study of Changes in Mindfulness Associated with Participation in a Professional Training Retreat*. Poster presented at the Fall Conference of the San Diego Psychological Association, San Diego, CA.

TEACHING EXPERIENCE

- 2009 **Graduate Teaching Assistant and Lab Instructor**, *Research Methods in Psychology*
Department of Psychology, University of Washington, Seattle, WA
Instructor: Beth Kerr, Ph.D.
- 2009 **Workshop Co-Leader**, *Dialectical Behavior Therapy: Clinical Outcomes and Essential Characteristics*
Continuing education training at Echo Glen Children's Center, Snoqualmie, WA
Supervisor: Marsha Linehan, Ph.D.
- 2008 **Graduate Teaching Assistant**, *Introduction to Psychology*
Department of Psychology, University of Washington, Seattle, WA
Instructor: Jacqueline Pickrell, Ph.D.
- 2007 **Graduate Teaching Assistant and Lab Instructor**, *Abnormal Psychology*
Department of Psychology, University of Washington, Seattle, WA
Instructor: Alexia Giblin, Ph.D.

2007 **Graduate Teaching Assistant, *Introduction to Psychology***
Department of Psychology, University of Washington, Seattle, WA
Instructor: Judith McLaughlin, Ph.D.

2006 **Graduate Teaching Assistant, *Introduction to Psychology***
Department of Psychology, University of Washington, Seattle, WA
Instructor: Jacob Leonesio, Ph.D.

PROFESSIONAL SERVICE

2012 **Intern Representative, Clinical Training Committee**
VA Puget Sound – Seattle Division

2011-2012 **Member, Internship Selection Committee**
VA Puget Sound – Seattle Division

2009 **Graduate student clinical mentor**
Department of Psychology, University of Washington, Seattle, WA