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The Role of Alcohol Use during Sexual Situations in the Relationship between Sexual Revictimization and Women's Intentions to Engage in Unprotected Sex

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Abstract

Research has demonstrated relationships among childhood sexual abuse, adult sexual assault, and sexual risk taking. This study proposes that one mechanism through which the victimization-sexual risk taking relationship works is through an increased likelihood of drinking during sexual situations. Using path analysis, the current study explores this hypothesis in a sample of 230 women. The model illustrates that women with a history of child and adult sexual victimization reported greater intentions to engage in unprotected sex and that this relationship is in part accounted for by an increased likelihood of drinking in sexual situations. The results suggest that sexual risk reduction programs and sexual assault treatment programs should educate women about the alcohol-involved sexual risk taking that often follows sexual assault victimization.

Keywords

sexual assault victimization; alcohol use during sexual situations; condom use; risky sex

Childhood physical and sexual victimization have been linked to later substance use/abuse (Moran, Vuchinich, & Hall, 2004; Schuck & Widom, 2001; Wilsnack, Vogeltanz, Klassen, & Harris, 2007), and women who experience childhood sexual abuse have an increased risk for being sexually re-victimized as adults (Breitenbecher, 2001; Stoner et al., 2007). Furthermore, research has linked both child and adult sexual victimization to sexual risk taking (Campbell, Sefl, & Ahrens, 2004; Fergusson, Horwood, & Lynskey, 1997; Senn, Carey, & Vanable, 2008; Stoner et al., 2008). For example, sexually victimized women are less likely to insist on condom use than non-victimized women (Stoner et al., 2008). In turn, women who are more likely to insist on condom use are less likely to engage in unprotected sex (Norris et al., 2009). Although some researchers have established relationships between victimization and substance use and between substance use and risky sex, very few have

examined relationships among all three phenomena simultaneously (for an exception, see Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm, & Harris, 2004). Furthermore, Goldstein, Flett, and Wekerle (2010) suggest that most research has focused on childhood and/or adult sexual victimization with very little investigating the effects of other types of childhood maltreatment on future decision making. Additionally, past research has not investigated the role of alcohol use in sexual situations in testing these relationships. Using a cross-sectional design, the current study investigates the role of alcohol use during sexual situations as one possible mechanism underlying the relationship between victimization in childhood or as an adult and sexual risk taking.

Relationships Among Subtypes of Childhood Abuse

Research suggests strong correlations between experiencing childhood sexual abuse (CSA) and experiencing other types of child abuse, including physical (CPA) and emotional abuse (CEA; Briere & Elliott, 2003; Stoner et al., 2007). Furthermore, a plethora of research has demonstrated that a significant percentage of women who experience any form of childhood abuse are later sexually victimized as adults (Breitenbecher, 2001; Classen, Palesh, & Aggarwal, 2005; Messman-Moore & Brown, 2004; Messman-Moore & Long, 2003). For example, Messman-Moore and Brown (2004) found that both CSA and CEA were related to an increased likelihood of adult sexual victimization but did not find a relationship between CPA and sexual revictimization. However, in their review of correlates of sexual revictimization, Classen et al. (2005) noted that CPA was significantly related to adult sexual victimization.

Traumagenic Dynamics Model

Finkelhor and Browne's (1985) Traumagenic Dynamics Model accounts for many of the negative outcomes following childhood sexual abuse, including both impersonal sexual behavior and increased drinking in adulthood. Finkelhor and Browne propose four mechanisms through which increased sexual risk taking and drinking may occur following childhood abuse: 1) traumatic sexualization; 2) betrayal; 3) stigmatization; and 4) powerlessness. This model proposes that CSA victims are taught early that they will be rewarded for using their sexuality in both sexual and nonsexual ways; therefore, they may develop a more impersonal orientation toward sexual relationships that includes unprotected sex and sex with multiple partners. Further, these women have been betrayed by those close to them and because of that may have difficulty forming lasting and trusting relationships with others. Finkelhor and Browne also suggest that victims experience stigmatization as a result of their abuse that is often manifested in alcohol use/abuse. Finally, victims of CSA experience powerlessness because of their inability to stop the abuse during childhood; this may manifest later as feeling powerless to stop unprotected sex.

A great deal of research has supported various facets of the Traumagenic Dynamics Model, including linking a history of childhood or adult sexual trauma to risky sexual behavior (Campbell et al., 2004; Fergusson et al., 1997; Senn et al., 2008). Although a subset of women experience marked decreases in sexual activity following sexual victimization, another subset experience increased sexual activity, which often involves risky practices,

such as unprotected sex (Campbell et al., 2004; Fergusson et al., 1997). For example, in a survey study of college women, Lemieux and Byers (2008) found that women who had experienced CSA were more likely to have engaged in unprotected sex than women who had not experienced CSA. In a sample of adult rape survivors, Campbell et al. (2004) found that one-third were classified as having high sexual health risk following the assault. This included increases in sexual activity and number of sexual partners and decreases in condom use. Furthermore, these changes in sexual activity were not specific to experiencing adult sexual victimization but were also related to experiencing CSA. In a longitudinal study of women, Fergusson et al. (1997) found that as severity of CSA increased (none, noncontact, contact, intercourse), so too did the rates of engaging in unprotected sex.

Although evidence strongly suggests that engaging in risky sexual behavior is related to child sexual abuse, very little research has focused on childhood abuse more broadly. Only one study has linked child physical abuse to sexual risk taking (Sterk, Klein, & Elifson, 2004). This study examined other forms of childhood trauma including physical and emotional abuse and found that women who had experienced childhood physical abuse engaged in risky sex more frequently (composite variable including unprotected oral, anal, and vaginal sexual intercourse) than did women without a history of childhood physical abuse.

Ample research has found that CSA victims demonstrate increased drinking in adulthood (Miller, Downs, & Testa, 1993; Wilsnack et al., 2007; Wilsnack et al., 2004). For example, Wilsnack and colleagues (2004) found that women who had experienced CSA were more likely to be drinkers than nonvictims. Furthermore, Hughes et al. (2010) suggested an additive effect. Their study found that women who had experienced both CSA and ASA engaged in higher rates of hazardous drinking than nonvictimized women or women who had only experienced ASA. Research has also demonstrated a relationship between other types of childhood abuse and increased alcohol use/abuse as an adult. For example, Strine et al. (2012) found that women who had experienced physical abuse, emotional abuse, and sexual abuse were all more likely to report alcohol problems in adulthood. In a sample of male and female adolescents recruited from a substance abuse treatment center, Oshri, Tubman, and Burnette (2012) found that experiencing CSA, but not neglect, was positively related to later drinking during sexual experiences. Although these studies are helpful in establishing a link between childhood trauma and alcohol use, these studies have not examined alcohol use specifically in the context of having sex/sexual risk-taking. This study seeks to examine the role of context specific alcohol use.

The mechanisms underlying increased sexual risk taking following sexual victimization are not well understood (Campbell et al., 2004). The Traumagenic Dynamics Model suggests that victims may engage in impersonal sexual behavior (e.g., many partners, unprotected sex) as a way of coping with the psychological distress produced by sexual assault (Finkelhor & Browne, 1985). However, it is still unclear why one would engage in more impersonal sexual behavior following victimization. It may be that situational influences, such as alcohol use, are important to consider. Evidence suggests that alcohol consumption increases one's likelihood of engaging in unprotected sex, at least under some circumstances (for reviews, see Cooper, 2002; 2006; Leigh, 2002). For example, Campbell et al. (2004)

found that 95% of the women who engaged in risky sexual behavior following sexual victimization reported an increase in alcohol consumption during sexual situations. Very few studies have investigated the specific role of alcohol use during sexual intercourse; however, it is drinking in sexual situations, and not general drinking behaviors, that may directly increase one's likelihood of risky sex. Therefore, this study asserts that it is plausible that sex-specific alcohol use following a victimization experience is one mechanism through which the relationship between sexual assault and sexual risk taking operates (Quina, Morokoff, Harlow, & Zurbriggen, 2004; Wilsnack et al., 2004).

To date, research that has investigated the role of alcohol consumption in the relationship between sexual assault victimization and risky sexual behavior has been limited. Wilsnack et al. (2004) presented a model examining relationships among CSA, general alcohol consumption, and alcohol-related risky sexual behavior. Compared to non-victims, women who had experienced CSA were more likely to be drinkers and were more likely to engage in alcohol-related risky sexual behavior as an adult. Although general drinking was related to both CSA and alcohol-related risky sexual behavior, it did not mediate the relationship among those variables. Therefore, CSA still demonstrated a unique relationship with alcohol-related risky sexual behavior. However, alcohol-related risky sexual behavior was included as a broad construct with several indicators, including frequency of drinking during sexual behavior, as well as becoming sexually forward when drinking, becoming less particular about sexual partners when drinking, and experiencing sexual aggression from someone who had been drinking. Thus, it was not possible to disentangle which factors accounted for the relationship between alcohol-related risky sexual behavior and CSA. The current study focuses specifically on the role of drinking during sexual situations as a key factor in the relationship between victimization and likelihood of unprotected sex.

Finally, there is some evidence to suggest that the relationship between alcohol and sexual risk taking (i.e., unprotected sex) is often partner-specific. Past research has found that alcohol use is related to an increased likelihood of unprotected sex with a nonsteady partner but not related to unprotected sex with a steady partner (Brown & Venable, 2007). Therefore, the current study examines relationships among victimization experiences, alcohol use in sexual situations, and future intentions of unprotected sex with both a new and a steady partner.

Overview of Study and Hypotheses

The present study extends previous research by simultaneously examining relationships among four phenomena: childhood sexual, physical, and emotional abuse; adult sexual victimization; alcohol consumption in sexual situations during the past year; and future intentions of engaging in unprotected sex with a new partner and a steady partner. Path analysis was used to test the hypothetical model presented in Figure 1. Based on past research (Breitenbecher, 2001; Classen et al., 2005; Messman-Moore & Brown, 2004; Messman-Moore & Long, 2003), we expected that all forms of childhood abuse would be related to adult sexual assault victimization and also directly to alcohol use during sexual situations. In addition, we hypothesized that alcohol use during sexual situations would mediate the relationship between adult sexual victimization and unprotected sex intentions.

Method

Participants

Participants were 230 women recruited from the community through posted flyers and advertisements in local newspapers to participate in an experiment on male-female relationships. On average, participants were 25.27 years old ($SD = 3.79$). Sixty-two percent were Caucasian, 11% were African-American, 6% were Asian-American, 3% were American Indian or Alaskan Native, 9% were multiracial, and 9% classified themselves as other. Nine percent identified their ethnicity as Latina. Thirty-three percent were either full- or part-time students. Mean number of drinks consumed per week was 10.96 ($SD = 9.69$).

Procedures

Interested individuals contacted the lab and were screened to ensure eligibility. Because participants were recruited for an experimental study that involved consuming alcohol, they were required to be non-problem drinkers (more than one drink but less than 40 drinks per week) between the ages of 21 and 35. Problem drinkers and abstainers were screened out. In addition, to attract women who would be at elevated risk for engaging in unsafe sexual practices, participants had to have had sexual intercourse with a man but not currently be in a committed relationship. Finally, participants had to be interested in having a relationship with a man in the future. Eligible participants completed background measures prior to completing the alcohol administration protocol. At the end of the session, participants were debriefed, paid \$15/hour, and given information regarding HIV and STI prevention. All procedures were approved by the University's Human Subjects Division.

Measures

Alcohol Use—To assess general alcohol use, participants were asked to fill out the Drinking Habits Calendar (Collins, Parks, & Marlatt, 1985). The calendar asks participants to fill in the number of typical drinks consumed on each day of the week. Further, participants were asked to indicate how old they were when they first drank, how old they were when they first got drunk, and how often they consumed alcohol during the past month on a scale ranging from *I did not drink at all* (1) to *Once a day or more* (7). On average, participants were 14.5 years old ($SD = 3.10$) when they first consumed alcohol, 15.6 years old ($SD = 3.08$) when first drank enough to feel drunk, drank alcohol approximately 3 days per week ($SD = 1.68$), and consumed approximately 3.0 alcoholic drinks on the days they drank ($SD = 1.49$). Additionally, participants were asked how many vaginal sexual partners they had in the past three months ($M = 1.77$; $SD = 1.12$).

Childhood sexual abuse—The Childhood Sexual Abuse scale (CSA; Whitmire, Harlow, Quina, & Morokoff, 1999) assesses experiences with forced sexual activity prior to the age of 14. Sample items include, “Did anyone ever touch your breasts or genitals?” and “Did anyone older ever put his penis in your mouth, vagina, or rectum?” Participants responded to seven questions using 4-point scales ranging from *no* (1) to *many times* (4). Alpha for the current sample was .91. Responses were recoded according to whether or not participants had ever experienced each act. Participants were then placed into one of four groups, based on the most severe assault experienced (Fergusson et al., 1997): no assault (participant said

no to all questions), non-contact CSA (participant said yes to one of two questions involving exhibition behaviors), contact without penetration (participant said yes to one of three questions involving touching of genitals or breasts), and penetration (participant said yes to one of two questions involving attempted or completed oral, vaginal, or anal rape).

Childhood emotional and physical abuse—The Emotional Abuse and Physical Abuse subscales from the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1994) each employed 5 items to assess participants' experiences with emotional and physical abuse during childhood. The emotional abuse subscale includes questions such as, "When I was growing up, I thought that my parents wished that I had never been born." The physical abuse subscale includes questions such as, "When I was growing up, I got hit so hard by someone in my family that I had to see a doctor or go to the hospital." Participants responded using 5-point scales ranging from *never true* (0) to *very often true* (4). Because the two scales were highly correlated ($r = .618, p < .001$), scores from all ten variables were averaged to form one scale of emotional and physical abuse during childhood ($M = 0.80$; $SD = 0.81$); alpha for the current study was .90.

Adult sexual assault—Adult sexual assault was measured using a modified 20-item version of the Sexual Experiences Survey (SES; Koss, Gidycz, & Wisniewski, 1987; Testa, 2001). The SES uses behaviorally specific questions to measure sexually aggressive behavior since the age of 14. In total, four tactics (continual arguments/pressure, threatening physical harm, physical force, and incapacitation) were crossed with five sexual acts (fondling/kissing/touching, attempted vaginal intercourse, vaginal intercourse, oral sex, and anal sex). Responses were made on 4-point scales with options ranging from *never* (0) to *three or more times* (3). The alpha for the current study was .91. Following convention (Koss et al., 1987), participants were grouped into one of five groups based on the most severe assault experienced: no assault, forced contact (hugging, kissing, touching by any tactic), sexual coercion (any oral, anal, or vaginal intercourse obtained through verbal arguments or pressure), attempted rape (any oral, anal, or vaginal intercourse that was attempted but not completed by using threats, force, or incapacitation), or completed rape (any oral, anal, or vaginal intercourse obtained by using threats, force, or incapacitation).

Alcohol use during sexual situations—Alcohol use in sexual situations in the past year was assessed using two questions: "Over the past year, how often did you consume alcohol prior to sexual activity?" and "During those times that you consumed alcohol prior to or during sexual activity, approximately how intoxicated would you say you usually were?" The first question was answered on a 5-point scale ($M = 1.78$; $SD = 0.96$) ranging from 0 (*never*) to 4 (*always*). Therefore, participants on average consumed alcohol prior to sexual activity "about half the time." The second question was answered on a 7-point scale ($M = 3.24$; $SD = 1.02$) ranging from 0 (*not at all intoxicated*) to 6 (*extremely intoxicated*). In other words, participants said that when they consumed alcohol prior to sexual activity, they were moderately intoxicated. These two measures were not significantly skewed. Responses to these two items were multiplied to form an index of alcohol consumption in sexual situations ($M = 6.07$; $SD = 4.26$) that ranged from 0 to 20 (Jacques-Tiura, Abbey, Parkhill, & Zawacki, 2007; Parkhill & Abbey, 2008).

Likelihood of unprotected sex—Two questions asked participants about their future likelihood of engaging in sex without a condom with both a new male partner and a steady male partner. These items were rated on 7-point Likert scales ranging from *not at all likely* (0) to *very likely* (6). On average, participants were not very likely to engage in unprotected sex with a new male partner ($M = 1.68$; $SD = 1.87$) and were somewhat likely to engage in unprotected sex with a steady male partner ($M = 3.97$; $SD = 2.08$). These two measures were not significantly skewed.

Results

Childhood and Adult Victimization Frequencies

Overall, 49.6% of women acknowledged some form of CSA: 11.7% experienced non-contact CSA, 19.1% experienced contact CSA without penetration, and 18.7% experienced penetrative CSA. Likewise, women were grouped into one of five adult sexual assault victimization groups. Overall, 84.3% of women experienced some form of adult sexual assault: 10.4% experienced forced contact, 16.1% experienced verbal sexual coercion, 11.3% experienced attempted rape, and 46.5% experienced completed rape, including alcohol-involved rape.

Bivariate Analyses

As can be seen in Table 1, all of the correlations were in the predicted directions. CSA was positively correlated with childhood emotional/physical abuse, adult sexual assault, and likelihood of having unprotected sex with a new partner. Adult sexual assault severity was positively correlated with alcohol use during sexual situations, such that the more severely the woman had been victimized, the more frequently she had consumed alcohol in greater quantities prior to sexual situations during the past year. Finally, alcohol use during sexual situations was positively correlated with future likelihood of having unprotected sex with a new partner but not with a steady partner.

Path Analyses

The hypothesized path model was evaluated using MPlus 6.0 (Muthen & Muthen, 2010). Maximum likelihood estimation was selected because it is robust to violations of normality (Chou & Bentler, 1995). Model fit was assessed with several absolute and incremental fit indices, including chi-square, root mean square error of approximation (RMSEA), and comparative fit index (CFI; Bentler, 1990; Bentler & Bonett, 1980; Bollen, 1989; Browne & Cudeck, 1993). Although a nonsignificant χ^2 demonstrates that the model fits well, it is dependent on sample size and significant values are often accepted if other indicators of fit are good. RMSEA values less than .08 and CFI values over .90 indicate good fit (Browne & Cudeck, 1993; Hoyle, 1995).

Although the hypothesized model fit the data well, $\chi^2 (5, 230) = 11.29, p = .046$; RMSEA = .074; CFI = 0.95, three paths were not significant and, therefore, deleted from the model: 1) CSA to alcohol consumption; 2) CPA/CEA to alcohol consumption; and 3) alcohol consumption to likelihood of unprotected sex with a steady partner. The final model fit the data well, $\chi^2 (8, 230) = 12.20, p = ns$; RMSEA = .048; CFI = 0.97 (see Figure 2). All forms

of childhood abuse were positively related to adult sexual assault victimization while CSA was also positively related to the likelihood of engaging in unprotected sex with a new partner. Being victimized in adulthood was positively related to increased levels of alcohol consumption during sexual situations which, in turn, was positively related to likelihood of engaging in unprotected sex with a new partner.

Overall, the model accounted for 10.1% of the variance in adult victimization, 7.2% of the variance in sex-specific alcohol use, and 4.5% of the variance in likelihood of engaging in unprotected sex with a new partner. Indirect effects were also tested to determine if both CSA and CPA/CEA indirectly affected the likelihood of engaging in unprotected sex with a new partner. The indirect effect for the path from CSA to likelihood of engaging in unprotected sex with a new partner was not significant ($\beta = .01, p = ns$); however, as noted above, the direct path between these two variables was significant. The indirect effect for the path from CPA/CEA to likelihood of engaging in unprotected sex with a new partner only approached significance ($\beta = .01, p = .08$). Finally, indirect effects were tested to determine if both CSA and CPA/CEA indirectly affected alcohol use in sexual situations. The indirect effect for the path from CSA to alcohol use was significant ($\beta = .05, p < .05$) as was the indirect effect for the path from CPA/CEA to alcohol use ($\beta = .06, p < .05$).

To demonstrate the mediating role of sex-specific alcohol use (i.e., to show that alcohol use did not just covary with adult victimization), an alternative model was tested hypothesizing that adult sexual assault and alcohol use during sexual situations were correlated (see Figure 3). Although the model fit the data well, $\chi^2 (7, 230) = 11.77, p = ns$; RMSEA = .054; CFI = 0.96, the path from adult sexual assault to likelihood of unprotected sex with a new partner was not significant. Therefore, the effects of adult sexual assault on unprotected sex likelihood can be seen through its effects on alcohol consumption during sexual situations. Furthermore, the hypothesized model demonstrated that the childhood abuse variables were not significantly related to alcohol consumption during sexual situations. Because these paths were not significant, Figure 2 was accepted as the most parsimonious model.

In addition, a second alternative model was posited to examine general drinking behaviors as opposed to drinking specifically in sexual situations. In this hypothetical model, participants' average number of drinks consumed on drinking days would have replaced alcohol use during sex. However, general drinking was not significantly related to either outcome variable (steady partner: $r = .098, p = ns$; new partner: $r = .068, p = ns$); therefore, a full path model was not tested.

Discussion

The present study extended previous research by examining relationships among child and adult victimization experiences, women's alcohol consumption during sexual situations, and intentions to use condoms with new and steady male partners. We hypothesized that the effects of both childhood abuse and adult sexual victimization on unprotected sex intentions would be mediated by alcohol consumption during sexual situations. As expected, childhood sexual, physical, and emotional abuse positively predicted adult sexual assault victimization. Experiencing adult sexual assault was related to increased frequency and amount of alcohol

consumption in sexual situations, which was then related to increased likelihood of having unprotected sex with a new partner, but not with a steady partner. These results illustrate that alcohol consumption in sexual situations is one mechanism through which the sexual assault victimization-sexual risk taking relationship operates. In support of previous findings (e.g. Wilsnack et al., 2004), our results indicate that women who experience more severe victimizations consume greater amounts of alcohol in sexual situations which could then lead to increased sexual risk taking. In addition, the more alcohol a woman reports typically consuming in sexual situations, the more likely she was to endorse engaging in unprotected sex with a new partner.

Several results were unexpected. First, child abuse (both sexual and physical/emotional) was not directly related to alcohol consumption during sexual situations as hypothesized; however, the indirect effects for both pathways were significant. Although the Traumagenic Dynamics Model suggests that victims of childhood abuse may drink more as a way of coping with the abuse (Finkelhor & Browne, 1985), others suggest that experiencing one form of child abuse alone may not be enough to contribute to negative drinking patterns (Hughes et al., 2010).

Second, CSA was directly and indirectly related to unprotected sex intentions with a new partner. As the Traumagenic Dynamics Model proposes, women who experience CSA may develop an impersonal orientation toward sexual encounters (Finkelhor & Browne, 1985). Schacht et al. (2010) found that women who had experienced childhood sexual assault were significantly less likely to request condom use in response to a sexually arousing vignette than women with no sexual assault history or women who had experienced only adult sexual assault. Our findings also suggest that women who have experienced CSA believe they are less likely to use condoms with new partners in the future. Perhaps the experience of not being able to defend themselves as children leads to a fear of negative partner reaction as adults, thus inhibiting their ability to be sexually assertive in requesting a condom (Quina, Harlow, Morokoff, Burkholder & Deiter, 2000; Quina et al., 2004).

Interestingly, experiencing childhood physical and/or emotional abuse did not demonstrate a relationship with likelihood of unprotected sex – with either a new or steady partner. It may be that the effects are more trauma-specific. Experiencing childhood sexual abuse may contribute to confusing attitudes about sex (Finkelhor & Browne, 1985), including a particular confusion about how to assertively request condoms. However, experiencing childhood physical and/or emotional abuse may contribute to feelings of powerlessness but not necessarily to attitudes about using condoms during sexual situations. Although the direct effects were not significant, the indirect effects from childhood physical and/or emotional abuse to unprotected sex intentions with a new partner approached significance, demonstrating the need to retest this model using a larger sample.

Although the current study did not assess women's motivations for consuming alcohol during sex, others have suggested that sexually victimized women may use alcohol to cope with the psychological distress resulting from their abuse or assaults (Deliramich & Gray, 2008; Hedtke et al., 2008; Miranda, Meyerson, Long, Marx, & Simpson, 2002). Alcohol consumption during sexual situations in particular may be a method some women use to

cope with aspects of sex that may trigger memories of previous childhood or adult victimization (for a review, see Senn et al., 2008). Women who drink more frequently during sex may be particularly likely to engage in unprotected sex due to alcohol's effects.

It is worth noting that the relationships among sexual victimization, alcohol consumption, and risky sex intentions were relevant only to engaging in unprotected sex with a new sexual partner. Past research has found that differences in the relationship between alcohol use and risky sex are dependent on the type of partner (Leigh, 2002). For example, Brown and Vanable (2007) found that alcohol use led to a greater likelihood of unprotected sex with nonsteady partners but not with steady partners. This study adds to the existing literature regarding the importance of considering the type of partner when assessing the relationships among victimization experiences, alcohol use, and risky sexual behaviors.

Strengths, Limitations and Directions for Future Research

There were several strengths of this study. First, the current study examined multiple forms of childhood abuse, including both physical and emotional abuse. Although the results do not indicate a direct effect on sexual risk taking behavior, they do demonstrate that women may have an increased risk of being victimized as adults, which in turn is associated with increased sexual risk taking. A second strength of this study is the integration of several variables into one model. With some exceptions, most of the relationships modeled in this study have previously been examined only at a bivariate level. Finally, a third strength of this study is the examination of two alternative models. The first model examined the role of sex-specific alcohol use. Specifically, the model tested whether or not alcohol use was correlated with adult sexual assault while both were allowed to relate to likelihood of unprotected sex without a condom. Although the model fit well, the path from adult sexual assault to likelihood of unprotected sex with a steady partner was not significant. By testing this alternative model, we can be more confident that alcohol consumption in sexual situations mediates this relationship as proposed.

In addition to the first alternative model, a second alternative model was tested to determine if the mediation effects are limited to alcohol consumption during sexual situations. Using a more general drinking measure, the results indicated no significant relationship with either of the dependent variables. Therefore, we can conclude that this effect may be specific to alcohol consumption during sexual situations.

In addition to the strengths listed above, there were several limitations. The current study employed a cross-sectional design to assess relationships among victimization experiences, alcohol use, and unprotected sex intentions. Although the current study examined the two alternative models discussed above, others may also be possible. Because of the requirements of the larger study, this study was limited to female drinkers who were not in a committed relationship and eliminated women with drinking problems. Therefore, these results may not generalize to other populations of women.

In addition, the current study assessed only the future intention to engage in unprotected sex and did not include a time frame for participants to consider although the relationship between intentions to use condoms and actual condom use has received considerable

attention within health behavior models (Ajzen, 1991; Ajzen & Fishbein, 1974; Sheeran, Abraham, & Orbell, 1999). This research has shown that intentions are one of the strongest and most consistent predictors of behavior (Sheeran et al., 1999). Although this relationship is strong, behavioral intentions do not perfectly predict behavior. One reason may be that women do not actually use condoms themselves but must assertively request that their partners use one (Norris et al., 2009), and alcohol consumption may decrease the likelihood of assertively requesting condoms (Stoner et al., 2008). Future research should consider utilizing longitudinal designs to establish temporal relationships among victimization experiences, situation-specific alcohol use, and risky sexual decision making (see Testa, Hoffman, & Livingston, 2010).

Implications for Prevention and Treatment Programs

This study demonstrates that women who have been sexually victimized as children and as adults may be more likely than nonvictimized women to have unprotected sex and that this relationship may in part be due to an increase in alcohol consumption in sexual situations. Treatment programs should focus on the psychological adjustment of women who have been sexually victimized in an effort to decrease alcohol consumption following sexual assault. Furthermore, this study suggests that sexual risk reduction programs and sexual assault treatment programs should educate women about the alcohol consumption and sexual risk taking that often follows sexual assault victimization.

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Figure 1.

Hypothesized model. Dotted lines represent paths that were tested but were not significant. Solid lines represent significant pathways, $p < .05$.

Figure 2.

Final model illustrating alcohol use mediating the relationship between adult sexual victimization and future likelihood of unprotected sex. Note that loadings are standardized. All paths significant at $p < .05$.

Figure 3.

Alternative model depicting both alcohol use and adult sexual victimization predicting future likelihood of unprotected sex. Note that loadings are standardized. Dotted lines indicate nonsignificant pathways. Solid lines represent significant pathways, $p < .05$.

Table 1

Means, Standard Deviations, and Correlations among Predictor Variables

	M	SD	1	2	3	4	5	6
1. Child sexual abuse	1.06	1.20	-					
2. Child emotional/physical abuse	0.80	0.81	0.33**	-				
3. Adult sexual assault	2.63	1.52	0.24**	0.28**	-			
4. Alcohol use during sex	6.07	4.26	0.02	0.05	0.27**	-		
5. Unprotected sex- new partner	1.68	1.87	0.20**	-0.07	0.10	0.16*	-	
6. Unprotected sex- steady partner	3.97	2.08	0.07	-0.07	0.13*	0.04	0.51*	-

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