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Sexual Victimization and Sex-Related Drinking Motives: How Protective is Emotion Regulation?

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Abstract

One in five college women experience sexual victimization (SV) and SV severity is associated with subsequent psychological distress including sex-related distress. SV severity may also be associated with drinking motives to cope with sex-related distress and to enhance sex (sex-related drinking motives; SRDM), particularly if individuals suffer from emotion regulation (ER) difficulties. College women (N = 151) completed a survey assessment of ER, SV history, childhood sexual abuse, and SRDM. Twelve regression models assessed six facets of ER as moderators between SV severity and SRDM. Among women with no or low levels of prior SV severity, women with greater access to ER strategies were less likely to endorse drinking to cope SRDM. At higher levels of SV severity, women at all levels of access to ER strategies were equally likely to endorse drinking to cope SRDM, suggesting that access to ER strategies did not mitigate motivations to drink to cope with sex-related distress for these women. Women with severe SV histories may benefit from interventions that build on existing ER strengths or address other factors. However, greater access to ER strategies may serve as a protective factor against SRDM when SV severity is low.

Keywords

Alcohol; emotion regulation; sexual victimization; drinking motives; sexual health

College-aged women experience among the highest rates of sexual victimization (SV; Breiding et al., 2014; Koss, Gidycz, & Wisniewski, 1987; Sinozich & Langton, 2014); approximately 20% of women are sexually victimized during college (Humphrey & White, 2000; Krebs, Lindquist, Warner, Fisher, & Martin, 2009). SV comprises a wide variety of experiences that range from unwanted touching to rape (i.e. penetration of the mouth, anus, and/or vagina; Abbey, Jacques-Tiura, & LeBreton, 2011) and perpetrators use a variety of

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tactics including verbal coercion, incapacitation, and force (Koss, Gidycz, & Wisniewski, 1987). Survivors who have experienced SV more than once and whose SV histories included higher severity outcomes and tactics (e.g., forced rape) report heightened mental health difficulties (Dworkin, Menon, Bystrynski, & Allen, 2017) including alcohol use (Walsh, Resnick, Danielson, MCauley, Saunders, & Kilpatrick, 2014) and drinking to cope with negative emotions (Lindgren, Neighbors, Blayney, Mullins, & Kaysen, 2012), compared to other survivors. Disruptions to sexual health are another area of victimization impact. SV history is associated with sexual functioning difficulties such as decreased sexual satisfaction and inhibited sexual arousal and desire (Lutfey, Link, Litman, Rosen, & McKinlay, 2008; Postma, Bicanic, van der Vaart, & Laan, 2013; Van Berlo & Ensink, 2000; Weaver, 2009). Furthermore, women with more severe SV histories, compared to less severe, are more likely to endorse a lack of orgasm at least 25% of the time during sexual situations (Turchik & Hassija, 2014), among other sexual difficulties (Neilson, Norris, Bryan, & Stappenbeck, 2017).

SV history is associated with fear of sex (Van Berlo & Ensink, 2000) and elevated sex-related distress (i.e., distress associated with sexuality or sexual activity) has been reported among women with histories of SV (Siegel et al., 1990; Stephenson, Hughan, & Meston, 2012; Ullman & Siegel, 1993). Such links between SV history with fear and with sex-related distress are likely due to the fact that sexual activity serves as a trigger or reminder of the traumatic event (O'Driscoll & Flanagan, 2016). Accordingly, sex-related distress worsens with assaults that included penetration (i.e., those that are more severe; Lemieux & Byers, 2008; Siegel et al., 1990) and may persist even when the sexual assault occurred one or more years ago (Siegel et al., 1990; Van Berlo & Ensink, 2000). Given this increase in sex-related distress for women with more severe SV histories, research is needed to elucidate ways in which women attempt to cope or reduce the impact of such distress. The goal of the current study was to examine the association between the severity of sexual victimization histories and motivations women may have for consuming alcohol prior to sex, and to examine whether facets of one's ability to regulate their emotions moderated this association.

Sexual Victimization and Drinking Motives

Motivational models of alcohol use posit that individuals are motivated to drink for different reasons (e.g., to celebrate; to improve their mood) and that these reasons are differentially associated with particular antecedents and consequences of drinking (Cooper, Frone, Russell, & Mudar, 1995). Drinking motives most commonly assess a person's typical motivations for drinking across all situations. Understanding college women's motives for drinking has implications for prevention and intervention work, particularly on college campuses where alcohol use is widespread (Hingson & White, 2014).

Given victimized women's experiences of sex-related distress and their increased endorsement of drinking motives to cope with negative emotions following SV (Lindgren et al., 2012), it is plausible that victimized women drink *specifically* as a self-regulatory function to cope with sex-related distress and may also drink for enhancement motives in order to increase the enjoyment and positive experiences related to sex. Indeed, the general drinking motives reported among women with SV histories include drinking to cope with

negative emotions (e.g., to forget your worries) and drinking to enhance positive emotions (e.g., because it's fun; Grayson & Nolen-Hoeksema, 2005; Lindgren et al., 2012; Miranda, Meyerson, Long, Marx, & Simpson, 2002). Severity of SV history is associated with increases in coping and enhancement drinking motives (Grayson & Nolen-Hoeksema, 2005). These motives to drink to cope or enhance sex are referred to as sex-related drinking motives (SRDM). Furthermore, a woman's ability to regulate her emotional responses (i.e., emotion regulation; ER) may make her more or less likely to drink for these reasons. That is, if a woman can engage in ER proficiently, she may not drink to decrease sex-related distress or to enhance sex, even as the severity of her SV history increases. Conversely, a woman with greater deficits in ER may be more inclined to drink to decrease sex-related distress and/or to enhance sex in the absence of more adaptive ER abilities.

Only three studies that we are aware of have examined SRDM (Kahler et al., 2015; Tubman, Wagner, & Langer, 2003; Wray, Pantalone, Kahler, Monti, & Mayer, 2016). One study found that drinking motives to cope with sex-related distress and to enhance sex were associated with alcohol problems and heavy episodic drinking (Tubman et al., 2003). SRDM were also associated with lower willingness to consider changing drinking, adjusting for alcohol problem severity (Kahler et al., 2015). In the same study, SRDM were positively associated with an increased frequency of pre-sex drinking over and above general drinking motives (coping, enhancement, and social motives) and sexual alcohol expectancies. Finally, experiencing discrimination among men who have sex with men is associated with SRDM even when coping and enhancement motives were included in the model (Wray et al., 2016). Given the nascent stage of the literature on SRDM, these studies make important first steps in understanding correlates of SRDM and supporting incremental predictive validity. However, research has yet to examine SRDM specifically in the context of SV history.

Sexual Victimization, Emotion Regulation, and Sex-Related Drinking Motives

Gratz and Roemer (2004) conceptualize ER as a multifaceted process involving the awareness, understanding, and acceptance of emotions. ER also includes the ability to engage in goal-directed behavior, control impulses when experiencing negative emotions, and employ situationally appropriate and adaptive regulatory strategies. For women who experience ER difficulties, coping with a traumatic event such as SV may prove challenging, resulting in engagement of maladaptive coping strategies. Women who show difficulties with ER through avoidance of emotions, thoughts, or internal experiences, or through alexithymia (i.e., the inability to identify and describe emotional states; Boeschen, Koss, Figueredo, & Coan, 2001; Zeitlin, McNally, & Cassiday, 1993), are unlikely to experience emotional relief (Foa & Kozak, 1986) and may self-medicate through alcohol use (Miranda, 2002). Comparatively, women who are more skilled in ER may be less likely to cope using maladaptive or avoidant strategies given that they experience emotional relief through more adaptive and approach-oriented means.

The process model of ER (Gross, 1998) provides a foundational theoretical framework for how ER strategies differ at subsequent times throughout an unfolding emotional response.

This model implies that individuals regulate their emotions when they (a) select a situation, (b) modify a situation, (c) deploy attention on specific aspects of a situation, (d) change their cognitions about a situation, and (e) modulate their responses to a situation. Individuals with ER difficulties may select into, modify, and attend to sexual encounters in different ways than individuals who successfully regulate their emotions. Moreover, it is possible that ER influences how victims think about and modulate their emotional responses to a sexual situation. The cognitions that a victimized woman attaches to sexual behavior may influence her motives to drink before or during a sexual encounter, warranting an exploration of ER's relationship with SV and motivations to drink to cope with sex-related distress and to enhance sex. Conceivably, women who are less able to regulate sex-related distress adaptively on their own may be more motivated to drink in an attempt to modulate – mitigating distress and enhancing enjoyment – their emotions during sexual experiences.

Although quite a few studies have investigated the association between SV and general drinking motives (e.g., Lindgren et al., 2012), there has been no research on the association between SV severity and SRDM or on how ER difficulties might moderate this association. Moreover, no research has examined how specific aspects of ER (i.e., awareness of emotions, controlling impulses, etc.) might independently relate to SV and SRDM. Because prior research has demonstrated that specific ER facets have unique associations with trauma histories and mental health outcomes such as PTSD (Doolan, Bryant, Liddell, & Nickerson, 2017; Nickerson et al., 2015), research that investigates the relations among SV severity, SRDM, and specific ER skills is warranted.

Current Study

Many women with a history of SV (especially those with more severe histories) suffer from sex-related distress (Siegel et al., 1990; Van Berlo & Ensink, 2000) and as such, may experience motives to drink to cope with sex-related distress and to enhance sex. The current paper examines the relation between SV severity and SRDM as well as the potential moderating role of ER. That is, individual differences in specific facets of ER may be associated with a woman's ability to cope with sex-related distress, thus influencing the tendency to adopt and be propelled by SRDM. Put another way, given that engaging in these two SRDM logically serves a regulatory function, women with less ability to regulate their emotions using other techniques may endorse stronger SRDM. In the current study we explore different ER facets separately given that previous literature finds differential associations with mental health outcomes (Doolan, Bryant, Liddell, & Nickerson, 2017; Nickerson et al., 2015). We hypothesize that SV severity will be positively associated with both motivations to drink to cope with sex-related distress and to enhance sex. We also hypothesize that ER ability will be positively associated with both motivations to drink to cope with sex-related distress and enhance sex. Finally, the present study investigates the moderating role of ER in the relationship between SV severity and SRDM. We hypothesize that SV severity will be more strongly associated with both SRDM among women with high ER difficulties relative to those who do not have difficulties with ER. Childhood sexual abuse (CSA) is associated with ER difficulties and other problems (Chang, Kaczkurkin, McLean, & Foa, 2018; Smith, Smith, & Grekin, 2014). Therefore, it will be included as a covariate in the models. See Figure 1 for a conceptual model.

Method

Participants and Procedures

One hundred and fifty-one women were recruited for a study on alcohol and women's sexual experiences from an online subject pool of introductory psychology students at a large, public, northwestern US university. Data were collected between 2013 and 2014. Participants were recruited for a larger study examining alcohol use and sexual risk taking. The larger study aimed to provide preliminary support for two interventions to reduce sexual risk taking among young women. For purposes related to the larger study aims, participants who had ever engaged in sexual intercourse with a man and who drank an average of at least 2 alcoholic beverages per week in the past month were included in analyses. Of those, the average age was 19.72 (*SD* = 1.32), 90 (60.4%) identified as White, 26 (17.4%) as Asian or Asian American, 2 (1.3%) as African-American, 2 (1.3%) as American Indian or Alaska Native, 22 (14.8%) as Multi-racial and 7 (4.7%) as other. Thirteen (9%) identified as Hispanic. The majority (98%) were full-time students, and 37% were employed either full- or part-time. Participants completed a one-time online survey in exchange for research credit for their introductory psychology class. They were instructed to complete the entire survey all at once and in a private location. The university Institutional Review Board approved the study protocol.

Measures

Sex-related drinking motives.—Items for the Sex-related Drinking Motives measure were based on the original Drinking Motives Questionnaire (Cooper, 1994)[1]. Using 4-point frequency scales (1 = *Almost never*; 4 = *Almost always*), four items assess motives to drink to cope with sex-related distress (α = .91) – "To feel less depressed about sexual activity," "To forget your worries about sexual activity," "To help you forget your problems related to sexual activity," "To feel less upset about sexual activity." Using the same frequency scales, four items assess motives to drink to enhance sex (α = .92) – "To make sexual activity more exciting," "To make sexual activity more fun," "To make you more relaxed during sexual activity," "So that you will enjoy sexual activity more." Items within each subscale were averaged.

Sexual victimization.—The revised Sexual Experiences Survey (Koss et al., 2008) was administered to assess nonconsensual sexual experiences since age 14. Types of unwanted sexual behavior included sexual contact (e.g., fondling) and attempted or completed oral, vaginal, or anal penetration. Perpetrator tactics included verbal coercion, intoxication, and force. Participants indicated the number of times each sexual act occurred by each tactic on 4-point frequency scales (0 = *Never*; 3 = *3 or more times*). SV severity was calculated by multiplying a severity rank that represented a cross between the tactic and outcome (0 = *No SV*, 1 = *Sexual contact by verbal coercion*, 2 = *Sexual contact by intoxication*, 3 = *Sexual contact by force*, 4 = *Attempted or completed rape by verbal coercion*, 5 = *Attempted or completed rape by intoxication*, 6 = *Attempted or completed rape by physical force*) by the frequency with which each combination occurred (Davis et al., 2014) and then summing those products. This resulted in a possible range of SV severity from 0–63.

Childhood sexual abuse.—The first three items of the Computer Assisted Maltreatment Inventory (CAMI; DiLillo et al., 2010) were administered to measure childhood sexual abuse before the age of 14. Specifically, items assessed whether various sexual acts happened with 1) anyone against the participant's will or when they did not want it to happen, 2) immediate family members or other relatives (excluding voluntary sexual play that may have occurred with a similar age peer), and 3) anyone who was more than five years older than the participant (excluding voluntary acts with a dating partner). If participants answered "Yes" to any of the three questions, they were coded as having a history of childhood sexual abuse.

Emotion regulation difficulties.—ER difficulties were assessed using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). Participants were asked how often they experienced 36 different reactions to negative or unpleasant events on 5-point frequency scales (1 = *Almost never*; 5 = *Almost always*). The DERS is comprised of six subscales: Impulse Control Difficulties (e.g., "When I'm upset, I have difficulty controlling my behaviors;" α = .84); Limited Access to Emotion Regulation Strategies (e.g., "When I'm upset, I believe that there is nothing I can do to make myself feel better;" α = .90); Difficulties Engaging in Goal-Directed Behaviors (e.g., "When I'm upset, I have difficulty getting work done;" α = .89); Lack of Emotional Clarity (e.g., "I have difficulty making sense out of my feelings;" α = .83); Lack of Emotional Awareness (e.g., "I pay attention to how I feel" [reverse coded]; α = .86); and Nonacceptance of Emotional Responses (e.g., "When I'm upset, I feel like I am weak;" α = .89). The items within each subscale were summed such that higher scores indicate difficulty in regulating emotion.

Analytic Approach

Using the SPSS PROCESS Macro, twelve linear regressions examined interactions between SV severity and ER on SRDM. Six regressions examined interactions between SV severity and the six DERS (ER) subscales on drinking to cope with sex-related distress motives and six regressions examined these same interactions on drinking to enhance sex motives. CSA was included as a covariate. Regression models were conducted using the PROCESS Macro in SPSS version 21, and models were examined using 1000 bootstrap resamples (Hayes, 2013). Independent variables were standardized prior to analyses. The PROCESS Macro uses bootstrapping to conduct more accurate tests with the presence of non-normally distributed dependent variables in linear regression (Hayes, 2018; Shrout & Bolger, 2002).

Results

Descriptive Statistics

Correlations were examined between SV severity, CSA, SRDM (to cope with sex-related distress and to enhance sex), and ER (Table 1). Means, standard deviations, and ranges are also included for all variables. SV history is described in Table 2 by outcome (e.g., contact, rape) and tactic (e.g., coercion, force).

Regressions of SV Severity and Emotion Regulation on Sex-Related Drinking Motives

Sex-Related Coping Motives.—The analytic sample size for the regressions was N = 146 due to five participants missing SV severity data. As shown in Table 3, results revealed that SV severity was positively associated with drinking to cope with sex-related distress motives in all models, as expected (Models 1a-1f)[2]. Also as expected, there were significant positive effects of the DERS subscales on drinking to cope with sex-related distress motives in five of the six models: Impulse Control Difficulties (Model 1a), Limited Access to ER Strategies (Model 1b), Lack of Emotional Clarity (Model 1d), Lack of Emotional Awareness (Model 1e), and Non-acceptance of Emotional Responses (Model 1f). The covariate, CSA, was found to be positively associated with drinking to cope with sex-related distress motives in all models except for Limited Access to ER Strategies (Model 1b) where $p = .055$.

Results also revealed a marginally significant interaction between SV severity and one DERS subscale – Limited Access to ER Strategies (Model 1b) – on drinking to cope with sex-related distress motives ($p = .05$). As shown in Figure 2, plotting the interaction revealed a meaningful pattern of moderation, but one that differed from expectation, and can best be understood with reference to intercept differences. Among women with no or low levels of prior SV severity, women with greater access to ER strategies (i.e. lower scores on the subscale) were less likely to endorse drinking to cope with sex-related distress motives in comparison to women with low access to ER strategies (i.e. higher scores on the subscale) who were more likely to endorse drinking to cope with sex-related distress motives. At higher levels of SV severity, however, women at all levels of access to ER strategies were equally likely to endorse drinking to cope with sex-related distress motives. When examining the slope of the lines, regardless of their SV history, women with low access to ER strategies were prone to endorse drinking to cope with sex-related distress motives at the same high level (i.e., their slope was flat and non-significant, $t(145) = 1.34$, $p = .18$). In contrast, among those with average, $t(145) = 3.66$, $p < .001$, or high, $t(145) = 3.50$, $p < .001$, access to adaptive ER strategies, increasingly severe victimization experiences was significantly positively associated with the frequency of drinking to cope with sex-related distress motives, though importantly their absolute levels never surpassed those of women with little or no access to adaptive ER strategies.

Sex-Related Enhancement Motives.—As shown in the bottom half of Table 3, two of the six models revealed significant main effects of DERS subscales on drinking to enhance sex motives: Impulse Control Difficulties (Table 3, Model 2a) and Limited Access to ER Strategies (Table 3, Model 2b) were both positively associated with drinking to enhance sex motives. No significant main effects of SV severity or SV severity by DERS interactions were obtained (Models 2a-2f).

Discussion

The purpose of this study was to examine the associations between SV severity, specific facets of ER, and SRDM while controlling for CSA. As hypothesized, SV severity was positively associated with drinking to cope with sex-related distress motives. However, contrary to our predictions, SV severity was not associated with motivations to drink to

enhance sex. Also as hypothesized, four of the six DERS subscales—Impulse Control Difficulties, Access to ER Strategies, Clarity, and Non-acceptance of Emotion—were positively associated with drinking to cope with sex-related distress motives (as ER difficulties increase, so do SRDM). Additionally, two of the six DERS subscales – Impulse Control Difficulties and Access to ER Strategies – were positively associated with drinking to enhance sex motives. Taken together, these results suggest that difficulties in several facets of ER were associated with increased motivations to drink to cope with sex-related distress whereas only two were associated with increased motivations to drink to enhance sex. Finally, CSA was associated with drinking to cope with sex-related distress motives in all models except for Access to ER Strategies. These findings should be considered within the context of the marginally significant two-way interaction between SV severity and Access to ER Strategies on drinking to cope with sex-related distress motives.

In contrast to the association between SV severity and drinking to cope with sex-related distress motives, SV severity was not significantly associated with drinking to enhance sex motives. This finding is consistent with theories regarding motivational models of alcohol use. Drinking to cope motives are by their nature a reaction to, and desire to downregulate, a negative experience including a mood state. In contrast, drinking to enhance motives involve moving toward a desired state. Thus, motivations to drink to enhance sex are likely not as strongly associated with negative emotions as motivations to drink to cope with sex-related distress (Cooper, Kuntsche, Levitt, Barber, & Wolf, 2015). Impulse Control Difficulties and Access to ER Strategies were associated with motivations to both drink to cope with sex-related distress and to enhance sex. Indeed, individuals who struggle with impulsivity compared to those who do not are more susceptible to both approach (attempts to increase an experience) and avoidance (attempts to decrease an experience) motives (Cooper et al., 2015). It also follows that individuals with deficits in access to adaptive ER strategies would be more likely to adopt SRDM, whether to upregulate or downregulate emotions related to sexuality. CSA was not significantly associated with drinking to enhance sex in any of the models.

The effect of SV severity on drinking to cope with sex-related distress motives was subsumed within a marginally significant interaction ($p = .05$) with one of the DERS subscales – Access to ER Strategies – and revealed a somewhat mixed influence of SV severity on drinking to cope with sex-related distress motives. When examining the interactions of different domains of ER with SV severity, a surprising interaction was observed. Specifically, women with lower access to ER strategies reported the highest levels of drinking to cope with sex-related distress motives, independent of their SV histories. For women with average or high access to ER strategies, SV severity was positively associated with drinking to cope with sex-related distress motives. A speculative interpretation suggests that women with more pervasive deficits in access to ER strategies may be more motivated to drink to cope with sex-related distress than women without these deficits regardless of their SV history. However, for women with more severe SV histories and average or high access to ER strategies, the experience of sex-related distress may limit their ability to effectively access adaptive ER strategies, and as a result, they may be more like to endorse motivations to drink to cope with their sex-related distress. Given that this is the first investigation of the role of SV on drinking to cope with sex-related distress motives,

additional research is needed to examine whether, how, and in what contexts women underutilize ER strategies so that effective interventions can be identified.

Limitations and Future Directions

There are several limitations to the present study that should be noted. We ran multiple regression models, and as a result, inflated family wise error is a concern. Only one model out of the twelve showed a significant interaction, and although it is possible that this highlights the independent contribution of single facet of ER, we also acknowledge that the current sample was underpowered and may have failed to detect other significant relationships (McClelland & Judd, 1993). Future research should re-examine these questions to determine the robustness of the present findings as well as re-examine whether the association between SV severity and drinking to cope with sex is moderated by other domains of ER in larger samples. Additionally, the current sample was comprised of undergraduate, primarily Caucasian women, and it is unclear whether the findings would generalize to community, clinical, or more diverse samples. For example, a sizable proportion of women in substance use treatment report a prior history of SV (Grice, Brady, Dustan, Malcolm, & Kilpatrick, 1995; Klostermann & Fals-Stewart, 2006). It may be that for women with alcohol use disorders or for those who are at risk for hazardous alcohol consumption, ER and SV interact and contribute to SRDM in a way not observed in the present sample. Additionally, the current study did not directly assess women's sex-related distress. It is likely that women's use of SRDM is tied to their level of sex-related distress, and future studies examining global and state sex-related distress are needed to better understand women's use of SRDM. Treatment history was not assessed in this study but could impact the findings in that women who receive effective treatment after SV may have reduced sex-related distress and fewer difficulties with ER. Future research could include treatment history as a covariate and examine its influence in more detail. Finally, the current study used a cross-sectional design, thus we could not test causal or temporal relationships of these variables on SRDM. Although SRDM do seem to be associated with SV severity in the current study, it is likely that other factors contribute to SRDM and SRDM may pre-date SV experiences for some individuals. Future research should include longitudinal designs to better understand the developmental trajectories of SRDM. Future research should also consider investigating the downstream effects of SRDM, including alcohol misuse, negative consequences of alcohol use, and sexual satisfaction.

Clinical Implications

The results of this study have several tentative clinical implications, and replication of these findings is vital prior to treatment development. ER is not a unidimensional construct but is characterized by many facets. Providers may need to tailor treatment around their individual client's particular ER deficits and provide them with specific ER training rather than taking a general approach. The roles of ER and SV in SRDM are complex; at the highest SV severity levels, access to ER strategies did not mitigate motivations to drink to cope with sex-related distress. This implies that women with more severe SV histories may benefit from interventions that go beyond providing ER strategies to those that build upon ER strengths and address other factors. However, greater access to ER strategies does seem to serve as a protective factor against SRDM when SV severity is lower. This implies that

treatment to improve access to ER strategies may be especially effective for women with less severe SV histories and all women with low access to ER strategies. As their SV severity increases, women who have other types of ER deficits may choose maladaptive coping strategies other than SRDM. Therefore, these women might have different concerns and need different treatment approaches. Furthermore, impulse control and access to ER strategies appear to be important for both types of SRDM. Pending replication of these results, interventions with limited resources could prioritize teaching those facets.

Conclusion

In sum, the present findings suggest that SV severity and difficulties across domains of ER are related to women's SRDM. This pattern of results suggests that ER difficulties and SV severity are more consistently associated with motivations to drink to cope with sex-related distress than to enhance sex. Better understanding of the ways in which specific ER processes influence SRDM, particularly in conjunction with consideration of SV severity, may elucidate risk and protective factors predictive of women's risk for increased SRDM. Ongoing research is also needed to ascertain the downstream effects of SRDM on alcohol use outcomes and negative consequences, as well as women's sexual experiences. Continued research that addresses sex-related motivations for drinking may contribute to more effective and tailored prevention and intervention programs targeting women's post-assault drinking motivations and behavior.

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References

Abbey A, Jacques-Tiura AJ, & LeBreton JM (2011). Risk factors for sexual aggression in young men: An expansion of the confluence model. Aggressive Behavior, 37, 450–464. 10.1002/ab.20399 [PubMed: 21678429]

Boeschen LE, Koss MP, Figueredo AJ, & Coan JA (2001). Experiential avoiance and post-traumatic stress disorder: A cognitive mediation model of rape recovery. Journal of Aggression, Maltreatment Trauma, 4, 211–245. 10.1300/J146v04n02_10

Breiding MJ, Smith SG, Basile KC, Walters ML, Chen J, & Merrick MT (2014). Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization - National Intimate Partner and Sexual Violence Survey, United States, 2011. Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report, 63(SS08), 1018.

Chang C, Kaczkurkin AN, McLean CP, & Foa EB (2018). Emotion regulation is associated with PTSD and depression among female adolescent survivors of childhood sexual abuse. Psychological Trauma: Theory, Research, Practice, and Policy, 10, 319–326. 10.1037/tra0000306

Cooper ML, Frone MR, Russell M, & Mudar P (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. Journal of Personality and Social Psychology, 69, 990–1005. 10.1037/0022-3514.69.5.990 [PubMed: 7473043]

Davis KC, Gilmore AK, Stappenbeck CA, Balsan MJ, Geroge WH, & Norris J (2014). How to score the sexual experiences survey? A comparison of nine methods. Psychology of Violence, 4, 445–461. 10.1037/a0037494 [PubMed: 25512879]

DiLillo D, Hayes-Skelton SA, Fortier MA, Perry AR, Evans SE, Messman Moore TL, Walsh K, Nash C, & Fauchier A (2010). Development and initial psychometric properties of the Computer Assisted

Maltreatment Inventory (CAMI): A comprehensive self-report measure of child maltreatment history. Child Abuse & Neglect, 34, 305–317. 10.1016/j.chiabu.2009.09.015 [PubMed: 20347148]

Doolan EL, Bryant RA, Liddell BJ, & Nickerson A (2017). The conceptualization of emotion regulation difficulties, and its association with posttraumatic stress symptoms in traumatized refugees. Journal of Anxiety Disorders, 50, 7–14. 10.1016/j.janxdis.2017.04.005 [PubMed: 28505466]

Dworkin ER, Menon SV, Bystrynski J, & Allen NE (2017). Sexual assault victimization and psychopathology: A review and meta-analysis. Clinical Psychology Review, 56, 65–81. 10.1016/j.cpr.2017.06.002 [PubMed: 28689071]

Gratz KL, & Roemer L (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties of emotion regulation scale. Journal of Psychopathology and Behavioral Assessment, 26, 41–54. 10.1007/s10862-008-9102-4

Grayson CE, & Nolen-Hoeksema S (2005). Motives to drink as mediators between childhood sexual assault and alcohol problems in adult women. Journal of Traumatic Stress, 18, 137–145. http://doi.org/10.l002/jls.20021 [PubMed: 16281206]

Grice DE, Brady KT, Dustan LR, Malcolm R, & Kilpatrick DG (1995). Sexual and physical assault history and posttraumatic stress disorder in substance-dependent individuals. The American Journal on Addictions, 4, 297–305. 10.1111/j.1521-0391.1995.tb00268.x

Gross JJ (1998). The emerging field of emotion regulation: An integrative review. Review of General Psychology, 2, 271–299. 10.1037/1089-2680.2.3.271

Hayes AF, 2013 Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. The Guilford Press, New York, NY.

Hayes AF (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. Communication Monographs, 85, 4–40. 10.1080/03637751.2017.1352100

Hingson R & White A (2014). New research findings since the 2007 Surgeon General's Call to Action to Prevent and Reduce Underage Drinking: A review. Journal of Studies on Alcohol and Drugs, 75, 158–169. 10.15288/jsad.2014.75.158 [PubMed: 24411808]

Humphrey JA, & White JW (2000). Women's vulnerability to sexual assault from adolescence to young adulthood. Journal of Adolescent Health, 27, 419–424. 10.1016/S1054-139X(00)00168-3 [PubMed: 11090744]

Kahler CW, Wray TB, Pantalone DW, Mastroleo NR, Kruis RD, Mayer KH, & Monti PM (2015). Assessing sexual motives for drinking alcohol among HIV-positive men who have sex with men. Psychology of Addictive Behaviors, 29, 247–253. 10.1037/adb0000006 [PubMed: 25134043]

Klostermann KC, & Fals-Stewart W (2006). Intimate partner violence and alcohol use: Exploring the role of drinking in partner violence and its implications for interventions. Aggression & Violent Behavior, 11, 587–597. 10.1186/1747-597X-1-24

Koss MP, Abbey A, Campbel R, Cook S, Norris J, & Testa M (2008). Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. Psychology of Women Quarterly, 31, 357–370. 10.1111/j.1471-6402.2008.00468.x

Koss MP, Gidycz CA, & Wisniewski N (1987). The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. Journal of Consulting and Clinical Psychology, 55, 162–170. [PubMed: 3494755]

Krebs CP, Lindquist CH, Warner TD, Fisher BS, & Martin SL (2009). College women's experiences with physically forced, alcohol- or other drug-enabled, and drug-facilitated sexual assault before and since entering college. Journal of American College Health, 57, 639–647. 10.3200/JACH.57.6.639-649 [PubMed: 19433402]

Lemieux SR, & Byers ES (2008). The sexual well-being of women who have experienced child sexual abuse. Psychology of Women Quarterly, 32, 126–144. 10.1111/j.1471-6402.2008.00418.x

Lindgren KP, Neighbors C, Blayney JA, Mullins PM, & Kaysen D (2012). Do drinking motives mediate the association between sexual assault and problem drinking? Addictive Behaviors, 37, 323–326. 10.1016/j.addbeh.2011.10.009 [PubMed: 22094169]

Lutfey KE, Link CL, Litman HJ, Rosen RC, & McKinlay JB (2008). An examination of the association of abuse (physical, sexual, or emotional) and female sexual dysfunction: Results from

the Boston Area Community Health Survey. Fertility and Sterility, 90, 957–64. 10.1016/j.fertnstert.2007.07.1352 [PubMed: 18023433]

Miranda R, Meyerson LA, Long PJ, Marx BP, & Simpson SM (2002). Sexual assault and alcohol use: Exploring the self-medication hypothesis. Violence and Victims, 17, 205–217. 10.1891/vivi.17.2.205.33650 [PubMed: 12033555]

Nickerson A, Bryant RA, Schnyder U, Schick M, Mueller J, & Morina N (2015). Emotion dysregulation mediates the relationship between trauma exposure, post-migration living difficulties and psychological outcomes in traumatized refugees. Journal of Affective Disorders, 173, 185–192. 10.1016/j.jad.2014.10.043 [PubMed: 25462415]

O'Driscoll C & Flanagan E (2016). Sexual problems and post-traumatic stress disorder following sexual trauma: A meta-analytic review. Psychology and Psychotherapy: Theory, Research, and Practice, 89, 351–367. 10.1111/papt.12077

Postma R, Bicanic I, van der Vaart H, & Laan E (2013). Pelvic floor muscle problems mediate sexual problems in young adult rape victims. Journal of Sexual Medicine, 10, 1978–1987. 10.1111/jsm.12196 [PubMed: 23679151]

Shrout PE, & Bolger N (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. Psychological Methods, 7, 422–445. 10.1037//1082-989X.7.4.422 [PubMed: 12530702]

Siegel JM, Golding JM, Stein JA, Burnam MA, & Sorenson SB (1990). Reactions to sexual assault: A community study. Journal of Interpersonal Violence, 5, 229–246. 10.1177/088626090005002007

Sinozich S, & Langton L (2014). Rape and sexual assault victimization among college-age females, 1995–2013. Bureau of Justice Statistics, 1–20.

Smith KZ, Smith PH, & Grekin ER (2014). Childhood sexual abuse, distress, and alcohol-related problems: Moderation by drinking to cope. Psychology of Addictive Behaviors, 28, 532–537. 10.1037/a0035381 [PubMed: 24955671]

Stephenson KR, Hughan CP, & Meston CM (2012). Childhood sexual abuse moderates the association between sexual functioning and sexual distress in women. Child Abuse & Neglect, 36, 180–189. 10.1016/j.chiabu.2011.09.015 [PubMed: 22391416]

Tubman JG, Wagner EF, & Langer LM (2003). Patterns of Depressive Symptoms, Drinking Motives, and Sexual Behavior Among Substance Abusing Adolescents: Implications for Health Risk. Journal of Child & Adolescent Substance Abuse, 13, 37–57. 10.1300/J029v13n01_03

Turchik JA, Hassija CM (2014). Female sexual victimization among college students: Assault severity, health risk behaviors, and sexual functioning. Journal of Interpersonal Violence, 29, 2439–2457. 10.1177/0886260513520230 [PubMed: 24505086]

Ullman SE, & Siegel JM (1993). Victim-offender relationship and sexual assault. Violence and Victims, 8, 121–134. 10.1177/0886260506288590 [PubMed: 8193054]

Van Berlo W, & Ensink B (2000). Problems with sexuality after sexual assault. Annual Review of Sex Research, 11, 235–57. 10.1080/10532528.2000.10559789

Walsh K, Resnick HS, Danielson CK, McCauley JL, Saunders BE, & Kilpatrick DG (2014). Patterns of drug and alcohol use associated with lifetime sexual revictimization and current posttraumatic stress disorder among three national samples of adolescent, college, and household-residing women. Addictive Behaviors, 39, 684–689. 10.1016/j.addbeh.2013.12.006 [PubMed: 24370205]

Weaver TI (2009). Impact of rape on female sexuality: Review of selected literature. Clinical Obstetrics and Gynecology, 52, 702–711. 10.1097/GRF.0b013e3181bf4bfb [PubMed: 20393422]

Wray TB, Pantalone DW, Kahler CW, Monti PM, & Mayer KH (2016). The role of discrimination in alcohol-related problems in samples of heavy drinking HIV-negative and positive men who have sex with men (MSM). Drug and Alcohol Dependence, 166, 226–234. 10.1016/j.drugalcdep.2016.07.017 [PubMed: 27481457]

Zeitlin SB, McNally RJ, & Cassiday KL (1993). Alexithymia in victims of sexual assault: An effect of repeated traumatization? American Journal of Psychiatry, 150, 661–663. 10.1176/ajp.150.4.661 [PubMed: 8465889]

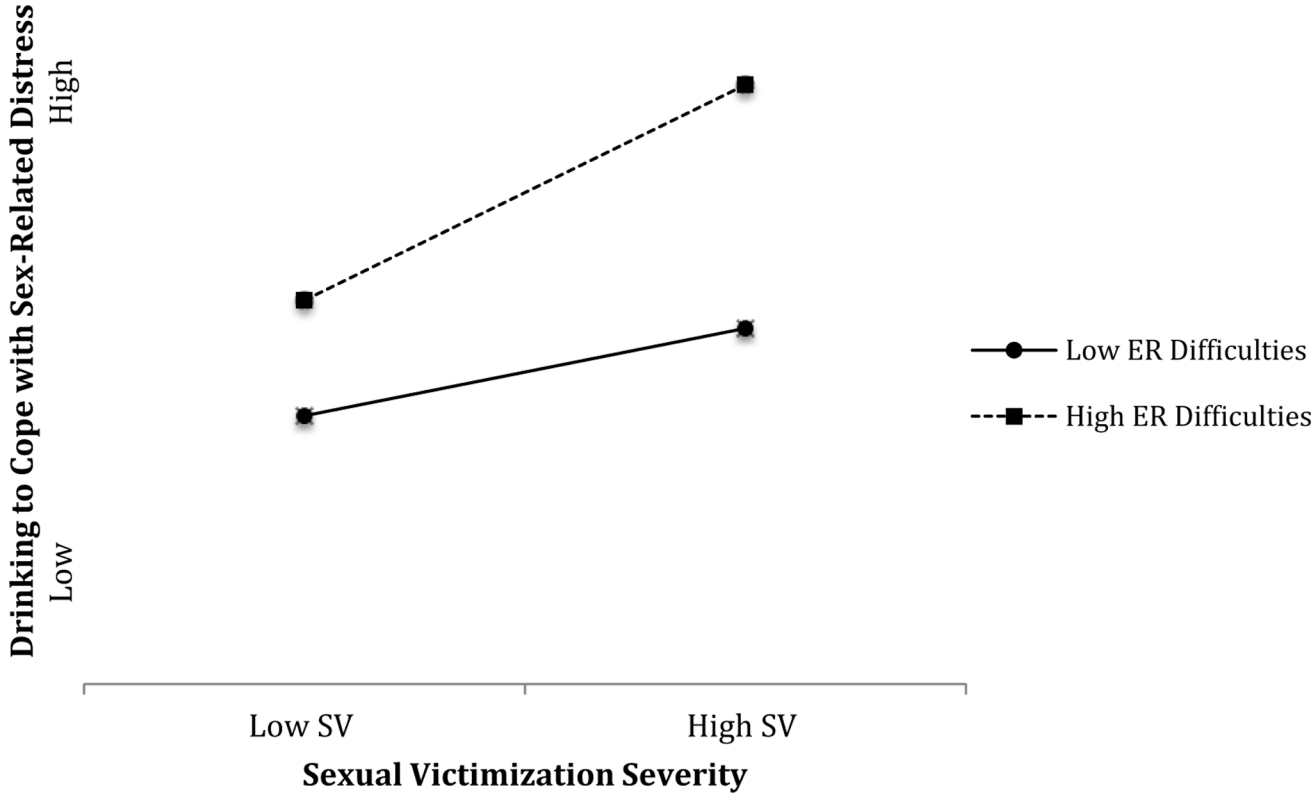

Figure 1.
Conceptual model of the hypothesized relationships.

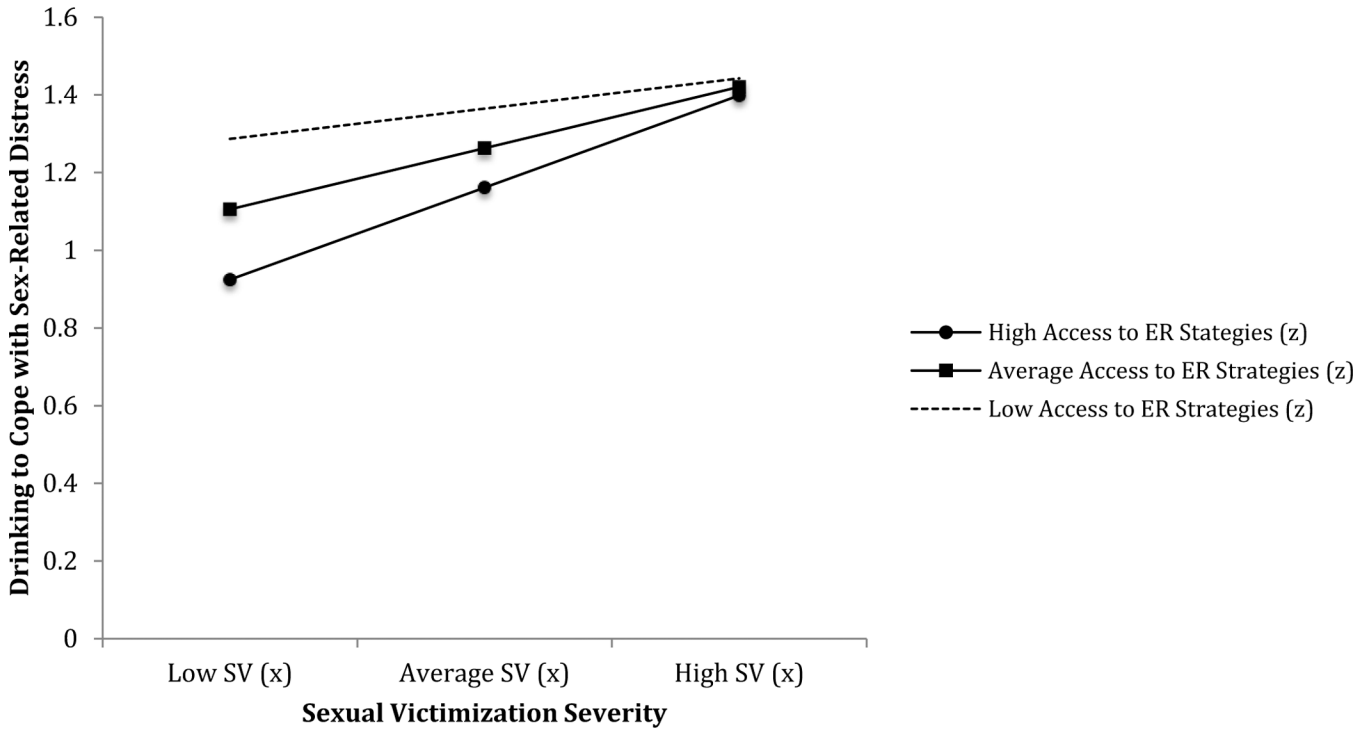

Figure 2.

Simple slopes plot illustrating the relationship between sexual victimization (SV) severity and sex-related drinking to cope motives among women with varying levels of access to emotion regulation strategies (Access). High Access to ER Strategies = Lower Scores on the Access Subscale. Low Access to the ER Strategies = High Scores on the Access Subscale. Solid lines indicate that the slope was significantly different from 0, $p < .05$. “Low” = - 1 SD; “Average” = Mean; “High” = + 1 SD.

Table 1.

Means, Standard Deviations, and Correlations of Sex-Related Drinking Motives, Sexual Victimization Severity, Childhood Sexual Abuse and Emotion Regulation.

Variable	1	2	3	4	5	6	7	8	9	10
1. Childhood Sexual Abuse	--	.25**	.10	.26**	.03	.16*	.12	−.06	.13	−.02
2. Drink to Cope with Sex	--	--	.44**	.27**	.20*	.14	.24**	.12	.17*	.23**
3. Drink to Enhance Sex	--	--	--	.13	.12	.04	.21**	.12	.17*	.12
4. SV Severity	--	--	--	--	.13	.19*	.21*	−.03	.19*	.10
5. DERS Nonacceptance	--	--	--	--	--	.38**	.46**	.27**	.59**	.45**
6. DERS Goals	--	--	--	--	--	--	.63**	.14	.63**	.37**
7. DERS Impulse	--	--	--	--	--	--	--	.25**	.75**	.48**
8. DERS Aware	--	--	--	--	--	--	--	--	.32**	.63**
9. DERS Access	--	--	--	--	--	--	--	--	--	.52**
10. DERS Clarity	--	--	--	--	--	--	--	--	--	--
Range	--	1–3.5	1–4	0–58	6–30	4–25	5–29	6–29	8–37	5–24
Mean	Yes =15; No = 136	1.25	1.73	7.32	13.45	13.51	10.84	13.78	16.09	11.72
SD		*.52*	*.81*	*13.07*	*5.37*	*5.19*	*4.20*	*4.98*	*6.89*	*3.96*

Note:

* $p < .05$;

** $p < .01$;

DERS Nonacceptance = Difficulties in Emotion Regulation Scale Nonacceptance of Emotional Responses subscale; DERS Goals = Difficulty Engaging in Goal-Directed Behavior subscale; DERS Impulse = Impulse Control Difficulties subscale; DERS Aware = Lack of Emotional Awareness subscale; DERS Access = Limited Access to Emotion Regulation Strategies subscale; DERS Clarity = Lack of Emotional Clarity subscale.

Table 2.

Descriptive analyses of sexual victimization severity by tactic and outcome. Participants were able to endorse more than one experience.

	Frequency			
Tactic/Outcome	**O Times**	**1 Time**	**2 Times**	**3 or more Times**
Coercion				
Contact	117	11	7	14
Attempted Rape	132	7	5	7
Completed Rape	132	5	3	11
Incapacitation				
Contact	103	22	14	7
Attempted Rape	124	11	7	9
Completed Rape	123	6	8	14
Force				
Contact	133	9	2	5
Attempted Rape	140	6	3	2
Completed Rape	139	2	4	6

Table 3.

Results of the Regression models examining whether the DERS subscales moderated the association between SV severity and sex-related drinking motives while controlling for CSA.

	Drinking to Cope with Sex-Related Distress					
	b	**r^2**	**95% CI**		***b***	**r^2**	**95% CI**
Model 1a		.16***		Model 1d		.17***	
CSA	.30*		.02, .58	CSA	.37**		.09, .65
SV	.11*		.02, .19	SV	.10*		.01, .18
DERS Impulse	.13**		.04, .21	DERS Clarity	.12**		.04, .19
SV × Impulse	−.04		−.10, .03	SV × Clarity	.04		−.04, 11
Model 1b		.15***		Model 1e		.14***	
CSA	.28		−.01, .56	CSA	.38**		.10, .66
SV	.13**		.04, .21	SV	.12**		.03, .20
DERS Access	.09*		.01, .18	DERS Aware	.08*		.00, .16
SV × Access	−.07†		−.15, −.00	SV × Aware	.04		−.04, .11
Model 1c		.12**		Model 1f		.14***	
CSA	.31*		.02, .61	CSA	.34*		.06, .62
SV	.11*		.02, .20	SV	.11*		.02, .19
DERS Goals	.04		−.05, .12	DERS Nonacceptance	.08*		.00, .17
SV × Goals	−.01		−.09, .07	SV × Nonacceptance	−.01		−.11, .11
	Drinking to Enhance Sex						
Model 2a		.08*		Model 2d		.03	
CSA	.03		−.43, .48	CSA	.10		−.37, .56
SV	.09		−.05, .23	SV	.10		−.04, .24
DERS Impulse	.21**		.07, .35	DERS Clarity	.09		−.04, .22
SV × Impulse	−.08		−.18, .04	SV × Clarity	−.03		−.16, .10
Model 2b		.07*		Model 2e		.05	
CSA	−.01		−.47, .45	CSA	.16		−.30, .63

Drinking to Cope with Sex-Related Distress							
	b	**r^2**	**95% CI**		***b***	**r^2**	**95% CI**
SV	.11		−.03, .25	SV	.10		−.03, .24
DERS Access	.17*		.03, .31	DERS Aware	.09		−.04, .23
SV × Access	−.10		−.23, .02	SV × Aware	.10		−.02, .23
Model 2c		.02		Model 2f		.03	
CSA	.10		−.38, .58	CSA	.09		−.37, .56
SV	.09		−.06, .24	SV	.11		−.03, .25
DERS Goals	.02		−.12, .16	DERS Nonacceptance	.07		−.07, .20
SV × Goals	.03		−.11, .16	SV × Nonacceptance	−.11		−.28, .07

Note. CI = Confidence Interval; CSA = Childhood Sexual Abuse; SV = Sexual Victimization Severity; DERS = Difficulties in Emotion Regulation Scale; DERS Nonacceptance = Difficulties in Emotion Regulation Scale Nonacceptance of Emotional Responses subscale; DERS Goals = Difficulty Engaging in Goal-Directed Behavior subscale; DERS Impulse = Impulse Control Difficulties subscale; DERS Aware = Lack of Emotional Awareness subscale; DERS Access = Limited Access to Emotion Regulation Strategies subscale; DERS Clarity = Lack of Emotional Clarity subscale.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Ŧ $p = .05$