Published in final edited form as:

Psychol Violence. 2015 April ; 5(2): 192–198. doi:10.1037/a0036316.

Social Reactions, Self-Blame and Problem Drinking in Adult Sexual Assault Survivors

Rannveig Sigurvinsdottir and

Department of Psychology, University of Illinois at Chicago

Sarah E. Ullman

Department of Criminology, Law and Justice, University of Illinois at Chicago

Abstract

Objective—The purpose of this study was to test a model of the relations of social reactions to sexual assault disclosure, self-blame and problem drinking. This is the first study to investigate whether type of self-blame has different relationships with social reactions and problem drinking in a large, diverse sample of sexually assaulted women. These relationships are important to investigate in order to identify specific targets for treatment and intervention with sexual assault victims and their social networks.

Method—Community-residing female sexual assault survivors (N = 1863) in a large metropolitan area completed a mail survey about sexual assault, social reactions to disclosure, self-blame attributions, and problem drinking symptoms.

Results—Structural equation modeling showed that characterological self-blame mediated the effect of negative social reactions on drinking, but behavioral self-blame did not function as a mediator. A second model showed unique relationships of specific positive and negative social reactions to drinking through characterological and behavioral self-blame.

Conclusions—Characterological self-blame needs to be targeted in treatment and intervention with survivors, as it appears to be a key mechanism through which social reactions may influence recovery. Secondary prevention with informal social networks should educate people about social reactions to avoid negative reactions and promote those that are helpful, so people can better respond to survivors' sexual assault disclosures and improve recovery.

Keywords

rape; sexual assault; self-blame attributions; problem drinking; community

Following an unwanted sexual experience, survivors of sexual assault may decide to disclose it to various informal (e.g., friend) and formal (e.g., doctor) sources. How others react to such a disclosure impacts the survivor's recovery. Positive social reactions may include providing emotional and practical support. Negative social reactions, on the other

Correspondence concerning this article should be addressed to Rannveig Sigurvinsdottir, Department of Psychology, University of Illinois at Chicago, 1007 W. Harrison, M/C 285, Chicago, IL 60607. rsigur2@uic.edu.

The authors have no conflict of interests and the findings have not been published in other journals.

hand, may be efforts to blame, control and distract the survivor from the experience as well as treating the survivor differently or showing egocentric reactions (Ullman, 2000). When survivors disclose their experience, they typically get both positive and negative reactions (Filipas & Ullman, 2001). Negative social reactions adversely impact physical and psychological health (Ullman, 1996; Ullman & Siegel, 1995) but positive social reactions have a limited effect (e.g., either nonsignificant or small positive) on the well-being of survivors (Campbell, Ahrens, Sefl, Wasco & Barnes, 2001; Ullman, Filipas, Townsend, & Starzynski, 2007). Studies have yet to examine how social reactions may affect drinking through other variables, such as self-blame. In this study, we examine the role which self-blame plays in the relationship between social reactions and problem drinking.

Social reactions and self-blame

Social reactions are associated with whether and how survivors blame themselves for the sexual assault (Ullman & Najdowski, 2011). For example, fewer positive responses are associated with more self-blame of survivors (Wyatt, Newcomb & Notgrass, 1991). Survivors may also already blame themselves for the assault, and negative reactions from others could strengthen that self-blame (Ullman, 1996; Ullman, Townsend, Filipas, & Starzynski, 2007). According to the social negativity hypothesis from the stress and coping literature, victims may give more weight to negative reactions than positive reactions, and negative reactions may then elicit strong emotional reactions from victims (Major, Zubek, Cooper, Cozzarelli, & Richards, 1997). Alternatively, negative social reactions could reinforce or exacerbate already existing feelings of self-blame, consistent with the affect-matching hypothesis (Major et al., 1997). In fact, cross-sectional and longitudinal studies have shown associations of negative social reactions and increased self-blame in survivors (Littleton & Breitkopf, 2006; Ullman, & Najdowski, 2011; Ullman, Townsend et al., 2007). Because negative reactions relate to poorer recovery than positive reactions (Ullman, 1999), the two types of reactions may also differentially relate to self-blame.

Social reactions and problem drinking

Survivors of sexual assault may use alcohol to cope with their experiences (Ullman, Filipas, Townsend & Starzynski, 2005). Adult sexual assault survivors experience more problem drinking than non-survivors (Burnam et al., 1998; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Wilsnack, Vogeltanz, Klassen, & Harris, 1997). Some survivors may use alcohol in order to regulate their negative emotions, because they expect it to reduce tension. Such behavior may also serve as a form of avoidance coping. Drinking to cope with distress has been shown to relate to posttraumatic stress disorder (PTSD) and drinking problems in survivors of sexual assault (Ullman, Filipas, Townsend & Starzynski, 2006).

Furthermore, negative social reactions appear to be related to greater problem drinking, at least in women with less frequent social interaction (Ullman, Starzynski, Long, Mason, & Long, 2008). However, the literature on how problem drinking relates to social reactions as well as self-blame remains scarce. Given how common problem drinking symptoms are in survivors, it is possible that some of that behavior may be impacted by how others have

reacted to the survivor as well as internalized feelings of self-blame. In this study, we want to examine these relationships in detail.

Self-blame

Self-blame is a central construct in the sexual assault recovery field theorized to be related to the loss of control that occurs during the assault and internalized feelings of responsibility for the assault happening and/or for one's responses to it. Such beliefs about responsibility for being assaulted are a rape myth or false belief commonly adhered to in American society (Edwards, Turchik, Dardis, Reynolds, & Gidycz, 2011). Many survivors blame themselves in the aftermath of their victimization and self-blame is related to greater psychological distress and increased risk of revictimization (Breitenbecher, 2006; Miller, Markman, & Handley, 2007). Thus, reduction in self-blaming attributions is a target for both advocacy and treatment with survivors.

Self-blame plays a role in the adjustment of sexual assault survivors (Frazier, 1990). Behavioral self-blame (BSB) is when survivors attribute the assault to their actions and characterological self-blame (CSB) is when survivors attribute the assault to their character. Both BSB and CSB have been associated with poorer survivor adjustment, but CSB has stronger negative effects, possibly because CSB refers to a person's character and is therefore more personal and difficult to change than a simple instance of behavior (Breitenbecher, 2007; Frazier, 2003; Koss, Figueredo & Prince, 2002; Littleton & Breitkopf, 2006). In addition, both types of self-blame have been found to mediate the relationship between negative social reactions and poorer psychological adjustment (Ullman, 1996). However, BSB and CSB are two different concepts (Littleton, Magee & Axsom, 2007), and presumably changing one's behavior is easier than changing one's character (Janoff-Bulman, 1979). In fact, studies show that CSB relates to worse psychological symptoms than BSB in sexual assault victims (Breitenbecher, 2007; Hill & Zautra, 1989; Koss et al., 2002; Ullman, Filipas et al., 2007). Also, self-blame tends to be most common soon after sexual assault and is more common than for victims of other traumatic events (including other crimes), possibly because society expects women to prevent sexual assault, to resist if attacked, and people disbelieve women reporting sexual assault more than other crimes (Ullman, 2010).

Using longitudinal data on sexual assault victims to test the temporal order of social reactions and self-blame, Ullman & Najdowski (2011) found that negative reactions at time 1 related to CSB at time 2, but not the other way around. However, negative social reactions did not relate to BSB in their model, regardless of temporal order (Ullman & Najdowski, 2011). These data therefore suggest that CSB and BSB are two different concepts, and that negative reactions temporally precede CSB, but that the relationship of negative reactions with BSB is less clear. While this is the only longitudinal study of social reactions and self-blame attributions to date in sexual assault victims, it did not examine other important recovery outcome variables like problem drinking.

Current study

In this study, we investigate the relationship between social reactions, self-blame attributions and problem drinking using a new community-residing sample of sexual assault survivors. Past studies used exploratory analyses of a different sample to explore social reactions, self-blame, and drinking without testing theoretical models or examining specific types of self-blame as possible mediators of different types of social reactions on problem drinking. While past work shows self-blame mediates the effects of social reactions on PTSD (Ullman et al., 2007), we have yet to test problem drinking as an outcome. Given that problem drinking is common in sexual assault survivors and self-blame is related to more maladaptive coping, including drinking to cope with distress, it is possible that greater post-assault self-blame is a risk factor for problem drinking.

We examined both positive and negative social reactions because they have differentially related to outcomes in past research (see Ullman, 1999; Ullman, 2010 for reviews) as well as both BSB and CSB, because they appear to be distinct concepts that differentially affect recovery. Based on previous research, our hypotheses are the following:

H₁: Negative social reactions will relate to increased CSB, BSB, and problem drinking (Ullman, 1996; Ullman & Najdowski, 2009).

H₂: Positive social reactions will have a weak or no relationship with CSB and BSB.

H₃: There will be an indirect effect from negative social reactions to problem drinking through both types of self-blame.

Method

Participants

The sample for this project is a community sample of female sexual assault survivors in a large Midwestern city (N=1863; 85% response rate). The age of participants ranged from 18 to 78 ($M = 36.51$, $S = 12.54$). The race distribution of the sample was 45% African American, 35% White, 11% other, 7% Multiracial, 2% Asian; 13% Hispanic assessed separately. The education of the sample was as follows: 10.3% had not completed high school, 15.3% completed high school or GED, 42.5% attended at least some college and 32.0% graduated from college or continued with their studies. Forty-three percent of women were employed at the time of the survey, 53% had children, and 32% were married or cohabiting. When asked about how much time had passed since the assault (or the most serious assault for those who had multiple unwanted experiences), 29.58% reported the assault happening in the last five years, 18.43% in the last six to ten years, 12.51% in the last 11–15 years, 9.10% in the last 16–20 years, 8.76% in the last 21–25 years, 6.66% in the last 26–30 years and 14.96% that the assault happened more than 30 years ago, $M = 14.90$, $SD = 12.22$, range = 0–59.

Measures

Sexual victimization was assessed with a modified version of the Sexual Experiences Survey (SES; Koss, Gidycz, & Wisniewski, 1987) created by Testa, VanZile-Tamsen,

Livingston, and Koss (2004). The measure revealed that 80% of victims experienced completed rape, 7% attempted rape, 8% coercion, 4% unwanted contact, and 1% did not endorse any SES items. On average, women had experienced the assault 14 years before taking the survey ($SD = 12.22$, $Median = 11$). Women were asked about their most serious sexual assault if they had multiple assaults and their responses to that assault, including disclosures and reactions from others they told about the assault.

Social reactions—Participants completed the Social Reactions Questionnaire (SRQ; Ullman, 2000), reporting how often they received 48 different social reactions from any person they told since the assault on Likert scale items ranging from 0 (*never*) to 4 (*always*). “This measure has good test–retest reliability ($r_s = .68-.77$) and evidence of several forms of validity as reported by Ullman (2000).

In this study, responses were averaged to create subscales assessing the frequency with which participants received **positive reactions** (e.g., *emotional support* such as “Held you or told you that you are loved” or *tangible aid/information support* reactions such as “Helped you get information of any kind about coping with the experience”) and **negative reactions** (e.g., *blaming* reactions such as “Told you that you could have done more to prevent this experience from occurring,” *treat differently/stigma* reactions like “Said he/she feels you’re tainted by this experience,” *controlling* reactions such as “Made decisions or did things for you,” *egocentric* reactions such as “Said he/she knew how you felt when he/she really did not,” and *distracting* reactions such as “Told you to go on with your life”). On average, women reported “rarely” receiving negative reactions ($M = .96$, $SD = .80$) and “sometimes” receiving positive reactions ($M = 2.22$, $SD = .95$). The subscales were also reliable in this sample with Cronbach’s $\alpha = .93$ for negative reactions and $.92$ for positive reactions. We also looked at subscales of the SRQ. The positive reactions consisted of **emotional support**: $\alpha = 0.92$, $M = 2.49$, $SD = 1.49$ and **tangible support**: $\alpha = 0.80$, $M = 1.32$, $SD = 1.54$. The negative reactions included **blame**: $\alpha = 0.81$, $M = 0.79$, $SD = 1.28$, **controlling reactions**: $\alpha = 0.82$, $M = 0.84$, $SD = 1.30$, **egocentric reactions**: $\alpha = 0.72$, $M = 1.11$, $SD = 1.39$, **distracting reactions**: $\alpha = 0.79$, $M = 1.19$, $SD = 1.40$ and finally, **treating the survivor differently** than before: $\alpha = 0.87$, $M = 0.81$, $SD = 1.28$.

Self-blame attributions—Participants completed the Rape Attribution Questionnaire (Frazier, 2003), a valid and reliable self-report measure of sexual assault victims’ attributions about why the assault occurred. Two 5-item scales assessed characterological (e.g., “I am unlucky”; “I am a careless person”) and behavioral (e.g., “I should have resisted more”; “I should have been more cautious”) self-blame. Participants rated how often during the past year they thought they were assaulted for reasons described by each item using a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Frazier (2003) has reported subscale alpha coefficients ranging from $.77-.89$ and test–retest reliability coefficients ranging from $.68-.80$ in samples of women sexual assault victims. In our sample, the measure had acceptable reliability for both CSB ($\alpha = .76$; $M = 2.56$, $SD = .96$) and BSB ($\alpha = .83$; $M = 3.35$, $SD = 1.45$).

Problem drinking—Past-year problem drinking was assessed with the Michigan Alcoholism Screening Test (MAST, Selzer, 1971), a widely used 25-item standardized self-report screening instrument for alcohol abuse and dependence. The number of alcohol-related problems during the past year was coded as a continuous measure ($M = 2.90$, $SD = 4.22$, $\alpha = .80$ in this sample) and indicates a low level of alcohol problems (cutoff score for problem drinking = 5), with only 20% problem drinkers, compared to 38% in another similar study of sexual assault victims (Ullman et al., 2008).

Procedure

Participants were recruited with weekly advertisements in local newspapers, on Craigslist, and through university mass mail. In addition, we posted fliers in the community, at colleges and universities, as well as at agencies that cater to community members in general and victims of violence against women specifically (e.g., community centers, cultural centers, substance abuse clinics, domestic violence and rape crisis centers). Interested women called the research office and were screened for eligibility by trained female graduate research assistants. To be included in the study women had to have an unwanted sexual experience at the age of 14 or older, they had to be 18 or older at the time of participation, and to have previously told someone about the unwanted sexual experience. Participants were paid \$25 following completion and return of the approximately 1 hour mail survey for their participation as in past studies of this nature (Ullman, 2011). The university's Institutional Review Board approved all study procedures and documents.

Analysis

First, correlations between social reactions, self-blame and problem drinking were calculated. Then, a path model was constructed to model the relationship between different types of social reactions, self-blame and drinking. Based on previous research, paths were drawn from social reactions (positive and negative) to self-blame (BSB and CSB) as well as to problem drinking. An indirect effect from the positive and negative reactions was then modeled through both types of self-blame to problem drinking. Age, race, and level of education were controlled as covariates, as demographic differences have been found in women's problem drinking with older, White, more educated women tend to have greater problem drinking (Wilsnack et al., 1997). Mplus, version 6.12 was used for these analyses.

Results

In this study, we tested whether self-blame acts as a mediator between social reactions and problem drinking, as well as whether type of self-blame differentially relates to those variables. Table 1 shows correlations between BSB, CSB, positive social reactions, negative social reactions, and the specific SRQ subscales. As the table shows, BSB was significantly positively correlated with CSB, negative reactions, problem drinking and all of the negative SRQ subscales, except for egocentric reactions. CSB was positively correlated with negative reactions, problem drinking, and all of the negative subscales. Neither type of self-blame was significantly correlated with positive reactions.

The hypothesized path model can be seen in Figure 1 with standardized betas for significant paths (non-significant paths were deleted). Consistent with the first hypothesis, negative social reactions related to increased problem drinking, $\beta = 0.10$, $p = 0.004$ and increased CSB, $\beta = 0.29$, $p < 0.001$. On the other hand, negative reactions did not relate to BSB. Contrary to the second hypothesis, positive reactions related to both decreased BSB, $\beta = -0.08$, $p = 0.003$ and decreased CSB, $\beta = -0.09$, $p = 0.001$. Positive reactions do not directly relate to problem drinking. Figure 1 also shows a high correlation between CSB and BSB, $r = 0.48$, $p < 0.001$. Despite being so strongly connected, the two types of self-blame differentially affect problem drinking. CSB relates to increased problem drinking, $\beta = 0.13$, $p < 0.001$ but BSB has no relationship with problem drinking, $\beta = 0.04$, $p = 0.19$.

The two types of self-blame had different roles in the model; CSB emerged as an important mediator, but BSB did not act as a mediator between reactions and problem drinking. The third hypothesis was therefore partially confirmed, with an indirect effect through CSB but not BSB. Two significant indirect effects emerged in this model, using a bootstrapping method with 5000 samples and 95% confidence intervals. First, there was an indirect effect from negative social reactions to problem drinking through CSB (estimate = 0.04, $p < 0.001$, CI: 0.14 to 0.34). Second, there was an indirect effect from positive reactions to problem drinking through CSB (estimate = -0.01, $p = 0.003$, CI: -0.02 to -0.004). The fit of the model was good, $\chi^2(2, 1863) = 2.36$, $p = 0.31$, RMSEA = 0.01 (CI 0.00–0.05), CFI = 1.00, TLI = 0.99, SRMR = 0.01. The model explains 3.60% of the variance in problem drinking, 34.40% of the variance in BSB and 24.00% of variance in CSB.

A second, exploratory model was also tested, because positive and negative social reactions had different relationships with self-blame and problem drinking. Positive reactions were broken down into Emotional support and Tangible support. Negative reactions were broken down in Blame, Control, Egocentric reactions, Distraction and Treat differently. Figure 2 shows the model where social reactions subscales relate to both types of self-blame and problem drinking. Only significant paths are shown in the figure and all coefficients are standardized. The social reactions were all correlated with each other, but that is not shown in the model to simplify the figure.

Emotional support related to decreased CSB, $\beta = -0.08$, $p = 0.02$. The other positive reaction, tangible support, related to decreased BSB, $\beta = -0.10$, $p = 0.003$. However, tangible support related to increased problem drinking, which was surprising, $\beta = 0.11$, $p = 0.002$. Of the negative reactions, blaming reactions had the strongest relationship with self-blame (not surprisingly). Blaming reactions related to both increased BSB, $\beta = 0.24$, $p < 0.001$ as well as CSB, $\beta = 0.09$, $p = 0.01$. Controlling reactions related to increased CSB, $\beta = 0.12$, $p = 0.01$. Distracting reactions also related to increased CSB, $\beta = 0.12$, $p = 0.002$. Treating differently was the only negative reaction that related to decreased self-blame and it was marginally significant $\beta = -0.08$, $p = 0.06$. One subscale was eliminated, egocentric reactions, because it did not relate to self-blame or problem drinking. The negative effects of negative social reactions seen in the previous model therefore seem to be largely driven by Blame, Control and Distracting reactions. These different results for the SRQ subscales indicate that it may indeed be useful to be more specific about exactly what types of social reactions are being manifested when examining their effects on self-blame attributions.

In addition to the direct effects, there were four significant indirect effects, all going through CSB. First, there was a significant negative indirect effect from emotional support to problem drinking through CSB, where increased emotional support was connected with decreased self-blame and decreased problem drinking (estimate = -0.07 , $p = 0.001$, CI: -0.12 to -0.03). Second, an indirect positive effect emerged from blame to problem drinking through CSB (estimate = 0.02 , $p = 0.08$, CI: 0.03 to 0.14), so more blame related to more self-blame and more drinking. Third, there was an indirect positive effect from control to problem drinking through CSB (estimate = 0.02 , $p = 0.02$, CI: 0.02 to 0.16). Lastly, an indirect positive effect emerged from distracting reactions to problem drinking through CSB (estimate = 0.02 , $p < 0.001$, CI: 0.05 to 0.16). The fit of the model was adequate: $\chi^2(9) = 15.86$, $p = 0.07$, RMSEA = 0.02 (CI: 0.00 – 0.040 , CFI = 0.99 , TLI = 0.99 , SRMR = 0.02).

Discussion

This study is the first empirical test, to our knowledge, of whether type of self-blame would have different relationships with social reactions and problem drinking in a large, diverse sample of sexually assaulted women. Negative social reactions to women's disclosures of sexual assault are associated with poorer recovery outcomes, including depression, PTSD (Ullman, 2010), and increased risk of revictimization (Miller et al., 2007). Few studies have examined how such reactions may be related to greater problem drinking, a common problem in sexual assault victims. One exploratory study showed that negative social reactions were associated with greater problem drinking for women with less frequent social interaction in cross-sectional analyses (Ullman et al., 2008) and for revictimized survivors in a 1-year longitudinal follow-up study (Ullman & Najdowski, 2009). However, studies have yet to test whether post-assault responses such as self-blame mediate effects of social reactions on problem drinking in sexual assault victims.

Given how common and influential self-blame is on rape survivors' recovery, this study sought to examine whether women's attributions of self-blame after sexual assault mediated the effects of positive and negative social reactions to assault disclosure on problem drinking. Characterological self-blame was revealed to be a key mechanism through which social reactions may influence problem drinking, extending past work showing the effects of this form of self-blame on depression and PTSD (Koss et al., 2002; Frazier, 2003).

Contrary to our hypothesis, results suggest that characterological self-blame (CSB), but not behavioral self-blame (BSB), mediates the relationship between social reactions and problem drinking. For example, CSB mediated the relationships between both positive and negative social reactions and problem drinking. Also, CSB mediated the relationship between BSB and problem drinking. This partially fits with and extends on previous research, where both types of blame mediated the relationship between social reactions and psychological recovery outcomes (Ullman, 1996). This study demonstrates that not only does self-blame appear to act as a mediator, but that relationship is dependent on which type of self-blame is being examined. Possibly negative reactions reinforce or exacerbate survivor's own self-blame which then leads them to engage in greater problem drinking, consistent with the affect-matching hypothesis (Major et al., 1997) and past studies showing that negative social reactions lead to greater self-blame in victims (e.g., Littleton &

Breitkopf, 2006; Ullman, Townsend, Filipas, & Starzynski, 2007). However, more longitudinal data are needed to further evaluate this possibility. Also, if one is prone to blaming one's character after sexual assault, this may also lead them to blame their behavior, both of which may reflect a tendency towards a general self-blaming attributional style of internal, negative, self-focused attributions for bad events (Pepper, 2009).

Contrary to our hypothesis, positive social reactions related to decreased BSB and CSB, but did not directly relate to problem drinking. Negative reactions, on the other hand, related to only CSB and problem drinking, partially confirming our third hypothesis. These results suggest that differentiating between type of reaction and type of self-blame is important as they have very different relationships with each other. Past research shows that CSB has stronger negative effects than BSB on psychological outcomes, such as PTSD, in rape victims (Frazier 2003; Koss et al., 2002). This study shows that such self-blaming of one's character may at least be partially due to negative social reactions from others told about the assault and that problem drinking symptoms may also be adversely affected.

When we looked at specific social reaction subscales of the SRQ, we found that they did not all relate to self-blame or problem drinking in the same ways, suggesting that grouping them together as overall positive or negative social reactions may not be useful because they have very different relationships with self-blame and drinking. For example, when we looked at positive reactions, we found that emotional support was related to less CSB and increased problem drinking, which is to be expected since this is a valued reaction that may let women feel less stigmatized and more validated. The positive relation of emotional support and problem drinking may simply be that women with more problems in general, including drinking, tend to seek more support, but this cannot be clarified without longitudinal data. With negative reactions, the picture was even more diverse. For example, egocentric reactions did not relate to either type of self-blame or problem drinking. Given that egocentric reactions focus on the support provider and not the victim, it makes sense that this response might not relate to victim self-blame or drinking. Blaming reactions were related to increases in both types of self-blame; Control and Distracting reactions related to increased CSB but Treating differently reactions related to decreased BSB. Blame has typically been appraised as one of the most harmful reactions that victims experience after sexual assault and it makes sense that being blamed would lead to or reinforce survivors' own self-blame. Other negative reactions of control and distraction predicted more characterological self-blame, which is consistent with some past research showing negative effects of these responses on victim recovery (Peter-Hagene & Ullman, in press). It is unclear why being treated differently would related to less BSB. Overall, these results suggest that social reactions, self-blame and problem drinking are all connected, but that picture is very complex. It is also important to note that women receive multiple types of social reactions and these reactions are associated with each other, so it is difficult to tease apart their effects. Perhaps research examining single disclosures to one person soon after assault could isolate the effects of social reactions in future research, but in reality, most women delay disclosing sexual assault and when they disclose, tell multiple people and get multiple reactions.

Limitations

A limitation of our model is that it explained little of the variance in problem drinking. However, this model is not intended to provide a comprehensive test of all factors affecting problem drinking in sexual assault victims, but instead to test how social reactions and self-blame may be related to problem drinking.

The data are also cross-sectional and retrospective self-report in nature and based on a convenience sample of women coming forward to participate in a study of unwanted sexual experiences. Thus, generalizability of this sample is unknown. For example, having disclosed the unwanted experience to others in the past was required to participate, so it is possible that self-blame plays a different role for women who do not tell anyone about the assault. Without a nationally representative sample, this cannot be fully tested. Also, a long time had passed for many of the women, since the unwanted experience, so it is possible that their recall of events is imperfect. Also, time frames were not the same for all measures, as problem drinking and self-blame were past year, but social reactions were specific to the assault disclosure and anytime since the assault. We also cannot link specific social reactions to specific disclosures of sexual assault, so reactions may have been received from different support providers, which may also influence the nature and type of attributions women make for their assaults. For example, negative reactions from formal support providers, such as police, doctors, and clergy have been found to be more common and harmful to women, whereas positive reactions from friends appear to be uniquely helpful (Ullman, 2010).

Research Implications—These findings imply that social reactions upon assault disclosure may impact women's blaming of their character and behavior in unique ways that may have consequences for their recovery outcomes. This investigation also expands the study of such mediational effects beyond psychological recovery outcomes of past studies to problem drinking, another common problem for some sexual assault survivors. Further research is needed in large community samples representative of the population using longitudinal data to test models of the relationships of social reactions to various health outcomes, including problem drinking, following sexual assault, especially since we have some data showing negative physical health effects of negative social reactions to assault disclosure (McAuslan, 1998; Ullman & Siegel, 1995). These results could also be used to contribute to creating more comprehensive models of problem drinking in sexual assault victims, where self-blame (and type of self-blame) should probably be included in order to have a more comprehensive understanding of drinking problems for this population.

Clinical and Policy Implications—Interventions are needed to educate social network members and professionals about the effects of social reactions on survivors' responses and recovery from sexual assault. Teaching people what is helpful and unhelpful in response to survivors is feasible as evidenced by one preliminary experimental study (Foyne & Freyd, 2011) and may reduce victim self-blame known to predict poorer recovery. Social network responses and interventions to support responders are needed so that survivors are receiving positive reactions that may reduce their self-blame and reliance on problem drinking and ensure they do not receive negative social reactions that compound the normal reaction of

self-blame common after sexual assault. Treatment and prevention programs should include education regarding social reactions and their effects on survivors so that we are better able to reinforce positive recovery outcomes. Policies such as training first responders like police, clergy, and medical and mental health professionals in how to respond supportively without negative social reactions to sexual assault victims after assault should be enacted as part of educational curricula, training and continuing education, especially for those professionals who are most likely to encounter survivors.

Acknowledgments

The research was supported by the National Institute on Alcohol Abuse and Alcoholism grant R01 #17429 to Sarah E. Ullman. The authors would like to acknowledge Mark Relyea, Cynthia Najdowski, Liana Peter-Hagene, Amanda Vasquez, Meghna Bhat, Rene Bayley, Gabriela Lopez, Farnaz Mohammad-Ali, Saloni Shah, Susan Zimmerman, Diana Acosta, Shana Dubinsky, Brittany Tolar, Hira Rehman, Joanie Noble, Sabina Skupien, Nava Lalehzari, Justyna Ciechonska, and Edith Zarco for assistance with data collection

References

- Breitenbecher K. The relationships among self-blame, psychological distress, and sexual victimization. *Journal of Interpersonal Violence*. 2006; 21:597–611. [PubMed: 16574635]
- Burnam MA, Stein JA, Golding JM, Siegel JM, Sorenson SB, Forsythe AB, Telles CA. Sexual assault and mental disorders in a community population. *Journal of Consulting and Clinical Psychology*. 1998; 56:843–850. [PubMed: 3264558]
- Campbell R, Ahrens CE, Sefl T, Wasco SM, Barnes HE. Social Reactions to Rape Survivors: Healing and Hurtful Effects of Psychological and Physical Health Outcomes. *Violence and Survivors*. 2001; 16(3):287–302.
- Edwards K, Turchik J, Dardis C, Reynolds N, Gidycz C. Rape myths: History, individual and institutional-level presence, and implications for change. *Sex Roles*. 2011; 65:761–773.
- Filipas HH, Ullman SE. Social reactions to survivors of sexual assault from social network members. *Violence and Survivors*. 2001; 16:673–692.
- Foyes MM, Freyd JJ. The impact of skills training on responses to the disclosure of mistreatment. *Violence and Victims*. 2011; 1:66–77.
- Frazier P. Survivor attributions and post-rape trauma. *Journal of Personality and Social Psychology*. 1990; 59:289–304.
- Frazier PA. Perceived control and distress following sexual assault: A longitudinal test of a new model. *Journal of Personality and Social Psychology*. 2003; 84:1257–1269. [PubMed: 12793588]
- Koss MP, Gidycz CA, Wisniewski N. The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of students in higher education. *Journal of Consulting and Clinical Psychology*. 1987; 55:162–170. [PubMed: 3494755]
- Littleton H, Breitkopf CR. Coping with the experience of rape. *Psychology of Women Quarterly*. 2006; 30:106–116.
- Littleton HL, Magee KT, Axsom D. A Meta-Analysis of Self-Attributions Following Three Types of Trauma: Sexual Victimization, Illness, and Injury. *Journal of Applied Social Psychology*. 2007; 37(3):515–538.
- Janoff-Bulman R. Characterological versus behavioral self-blame: inquiries into depression and rape. *Journal of personality and social psychology*. 1979; 37(10):1798. [PubMed: 512837]
- Kilpatrick DG, Acierno R, Resnick HS, Saunders BE, Best CL. A 2-year longitudinal analysis of the relationships between violent assault and substance use in women. *Journal of Consulting and Clinical Psychology*. 1997; 65:834–847. [PubMed: 9337502]
- Koss MP, Figueredo AJ, Prince RJ. Cognitive mediation of rape's mental, physical, and social health impact: Test of four models in cross-sectional data. *Journal of Consulting and Clinical Psychology*. 2002; 70:926–941. [PubMed: 12182276]

- Major B, Zubek JM, Cooper ML, Cozzarelli C, Richards C. Mixed messages: Implications of social conflict and social support within close relationships for adjustment to a stressful life event. *Journal of Personality and Social Psychology*. 1997; 72:1349–1363. [PubMed: 9177021]
- Miller A, Markman K, Handley I. Self-blame among sexual assault victims prospectively predicts revictimization: A perceived sociolegal context model of risk. *Basic and Applied Social Psychology*. 2007; 29:129–136.
- McAuslan P. After sexual assault: The relationship between women's disclosure, the reactions of others, and health". ETD Collection for Wayne State University. 1998 Paper AAI9915701. <http://digitalcommons.wayne.edu/dissertations/AAI9915701>.
- Pepper SE. Self Blame in Sexual Assault Survivors and Attributions to Other Sexual Assault Survivors. Master of Science (Psychology). 2009 http://digital.library.unt.edu/ark:/67531/metadc12181/m1/1/high_res_d/thesis.pdf.
- Testa M, VanZile-Tamsen C, Livingston JA, Koss MP. Assessing women's experiences of sexual aggression using the Sexual Experiences Survey: Evidence for validity and implications for research. *Psychology of Women Quarterly*. 2004; 28:256–265.
- Ullman SE. Social reactions, coping strategies, and self-blame attributions in adjustment to sexual assault. *Psychology of Women Quarterly*. 1996; 20(4):505–526.
- Ullman SE. Social support and recovery from sexual assault: A review. *Aggression and Violent Behavior: A Review Journal*. 1999; 4(3):343–358.
- Ullman SE. Psychometric characteristics of the Social Reactions Questionnaire: A measure of reactions to sexual assault survivors. *Psychology of Women Quarterly*. 2000; 24:257–271.
- Ullman, SE. Talking about sexual assault: Society's response to survivors. Washington, DC: American Psychological Association; 2010.
- Ullman SE. Longitudinal tracking methods in a study of adult women sexual assault survivors. *Violence Against Women*. 2011; 17:189–200. [PubMed: 21307029]
- Ullman SE, Filipas HH, Townsend SM, Starzynski L. Trauma exposure, PTSD, and problem drinking among sexual assault survivors. *Journal of Studies on Alcohol*. 2005; 66:610–619. [PubMed: 16331846]
- Ullman SE, Filipas HH, Townsend SM, Starzynski LL. Correlates of comorbid PTSD and drinking problems among sexual assault survivors. *Addictive Behaviors*. 2006; 31(1):128–132. [PubMed: 15899554]
- Ullman SE, Filipas HH, Townsend SM, Starzynski L. Psychosocial correlates of PTSD symptom severity in sexual assault survivors. *Journal of Traumatic Stress*. 2007; 20:821–831. [PubMed: 17955534]
- Ullman SE, Najdowski CJ. Revictimization as a moderator of psychosocial risk factors for problem drinking in female sexual assault survivors. *Journal of Studies on Alcohol and Drugs*. 2009; 70:41–49. [PubMed: 19118390]
- Ullman SE, Najdowski CJ. Prospective changes in attributions of self-blame and social reactions to women's disclosures of adult sexual assault. *Journal of Interpersonal Violence*. 2011; 26:1934–1962. [PubMed: 20724295]
- Ullman SE, Siegel JM. Sexual assault, social reactions, and physical health. *Women's Health: Research on Gender, Behavior, and Policy*. 1995; 1(4):289–308.
- Ullman SE, Starzynski LL, Long SM, Mason GE, Long LM. Exploring the relationships of women's sexual assault disclosure, social reactions, and problem drinking. *Journal of Interpersonal Violence*. 2008; 23(9):1235–1257. [PubMed: 18309039]
- Ullman SE, Townsend SM, Filipas HH, Starzynski LL. Structural models of the relations of assault severity, social support, avoidance coping, self-blame, and PTSD among sexual assault survivors. *Psychology of Women Quarterly*. 2007; 31:23–37.
- Wilsnack SC, Vogeltanz ND, Klassen AD, Harris TR. Childhood sexual abuse and women's substance abuse: National survey findings. *Journal of Studies on Alcohol and Drugs*. 1997; 58:264–271.
- Wyatt, GE.; Newcomb, M.; Notgrass, CM. Internal and external mediators of women's rape experiences. In: Burgess, AW., editor. *Rape and sexual assault III: A research handbook*. New York: Garland; 1991. p. 29-55.

Figure 1.
Path model of social reactions, self-blame attributions, and problem drinking.

Figure 2.
Path model with social reactions subscales, self-blame attributions, and problem drinking.

Table 1

Correlations between social reactions, self-blame attributions, and problem drinking.

	BSB	CSB	Pos Reac	Neg Reac	Prob Drink	Emotion	Tangible	Blame	Control	Egocentric	Distract	Treating different
BSB	1	0.60**	-0.06	0.13**	0.08*	-0.05	-0.05	0.20**	0.12**	0.03	0.08*	0.10**
CSB		1	-0.03	0.29**	0.15**	-0.06	0.04	0.25**	0.27**	0.10**	0.24**	0.24**
Pos Reac			1	0.18**	0.15**	0.97**	0.76**	-0.01	0.14**	0.43**	0.26**	-0.05
Neg Reac				1	0.06	0.10**	0.32**	0.76**	0.92**	0.57**	0.84**	0.87**
Prob Drink					1	0.03	0.09**	0.10**	0.14**	0.10**	0.13**	0.10**
Emotional						1	0.57**	-0.07**	0.06**	0.39**	0.20**	-0.11**
Tangible							1	0.16**	0.30**	0.39**	0.31**	0.14**
Blame								1	0.67**	0.26**	0.53**	0.69**
Control									1	0.41**	0.70**	0.78**
Egocentric										1	0.42**	0.29**
Distracting											1	0.61**
Treating differently												1

* p is significant at the 0.05 level,

** p is significant at the 0.001 level.

(BSB: Behavioral self-blame, CSB: Character self-blame, Pos Reac: Positive Reactions, Neg Reac: Negative Reactions, Prob Drink: Problem Drinking, Emotion: Emotional Support, Tangible: Tangible Support).