



# HHS Public Access

Author manuscript

*J Interpers Violence*. Author manuscript; available in PMC 2023 March 01.

Published in final edited form as:

*J Interpers Violence*. 2022 March ; 37(5-6): 2510–2534. doi:10.1177/0886260520934437.

## A Pilot Evaluation of an Intervention to Improve Social Reactions to Sexual and Partner Violence Disclosures

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### Abstract

The purpose of the current study was to evaluate an intervention (*Supporting Survivors and Self* [SSS]) created to increase positive social reactions and decrease negative social reactions to sexual assault and partner violence disclosures among informal support disclosure recipients. Participants were 1,268 college students from a medium-sized New England university who completed an online baseline survey and were assigned to either the treatment or control condition. The SSS intervention trained potential informal supports on what to say and not to say to disclosure recipients. Six months after the SSS intervention, participants in both conditions completed the follow-up survey online. Whereas intentions to provide positive social reactions significantly increased among participants in the treatment group compared to the control group and there were marginally significant effects in the anticipated directions for alcohol-specific intended social reactions, no overall difference was observed across conditions in actual social reactions provided. Moderation analyses suggested that, in general, the SSS intervention was more effective on various outcomes for students who were younger, male, non-white, sexual minorities, and/or non-victims. Moderation analyses also suggested that the intervention varied in efficacy depending on the circumstances of the disclosure. Despite the mixed outcomes of the SSS intervention, these data suggest that the SSS intervention was effective in improving social reactions for some students and under some circumstances. Future research is needed to further refine the

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We would like to thank Caroline Leyva, Jane Stapleton, Robert Eckstein, Prentiss Phillips, Victoria Stanek, Allison Depuy, Drew Doyle, Lianna Nawn, Meredith Baker, Nicole Westfall, Lauren Flynn, Hannah Nordstorm, Kristina Kalla, Michael-Green Kelsey, Abi Beaulieu, Eleonora Giovine, Ross Jones, and Sarah Russo for their assistance with this project.

SSS intervention to bolster its effectiveness in reducing negative social reactions and increasing positive social reactions for all students.

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Intimate partner violence (IPV) and sexual assault (SA) are public health issues (Black et al., 2011) that lead to deleterious psychological (e.g., posttraumatic stress disorder) and behavioral (e.g., problem drinking) health outcomes for victims (Black et al., 2011; Campbell et al., 2009). These harmful outcomes are more likely to occur when victims who disclose their IPV or SA experiences receive negative social reactions (e.g., responses such as disbelief and blame) from the individuals to whom they disclose, most commonly friends and family members (i.e., informal supports). Recent research has shed light on the factors (e.g., victim attributions) that predict informal supports' negative and positive (e.g., providing emotional support) social reactions (Edwards & Dardis, 2016). Although bystander-focused prevention programs touch on how to support survivors, there is no comprehensive intervention to date that aims to reduce deleterious outcomes in victims by specifically targeting potential recipients of IPV and SA disclosure to inform these individuals of the best methods of responding to disclosures. The purpose of the proposed study was to evaluate an intervention (i.e., *Supporting Survivors and Self*[SSS]) created to increase positive social reactions and decrease negative social reactions among potential disclosure recipients.

The majority of victims tell another person about their victimization, most commonly a friend (Emily R Dworkin et al., 2019; Sylaska & Edwards, 2014). Research also suggests that about half of college students (42–51%) report being the recipient of an IPV and/or SA disclosure (Paul et al., 2014; Sylaska & Edwards, 2015). Unfortunately, many disclosure recipients do not respond positively to victims' disclosures. For example, research shows that among victims who disclosed, 83% received negative social reactions from at least one supporter (Ahrens & Aldana, 2012). Further, two thirds of college students receiving an IPV or SA disclosure did not think they did a good job helping their friend (Banyard et al., 2010), with 68% expressing uncertainty about what victims needed, and 40% stating they were unsure how to help (Ahrens & Campbell, 2000). This indicates that interventions are needed to improve supporters' ability to respond effectively to disclosures.

Grounded in stress, coping, and social support theories (Cohen & Wills, 1985; Taylor, 2011; Thoits, 1995), a large body of research with victims has documented significant associations among negative social reactions to an IPV or SA disclosure and self-blame, PTSD, depression, drinking to cope, problem drinking, and revictimization (Jacques-Tiura et al., 2010; Littleton, 2010; Matthews, 2011; Orchowski et al., 2013; Peter-Hagene & Ullman, 2013; Relyea & Ullman, 2015b; Schackner et al., 2017; Ullman, 1996; Ullman & Najdowski, 2011; Ullman & Peter-Hagene, 2016; Ullman et al., 2007). However, research on the outcomes of positive social reactions (e.g., believing, validating the victims' experiences) has been mixed. Whereas some research has documented that positive social reactions are related to lower levels of self-blame, PTSD, depression, drinking to cope, problem drinking, and revictimization (Orchowski et al., 2013; Relyea & Ullman, 2015b; Sullivan et al., 2010; Ullman, 2000; Ullman & Najdowski, 2011), other research has demonstrated weak or nonsignificant relationships, especially in multivariate models

that include negative social reactions (Schackner et al., 2017; Ullman, 2000; Ullman et al., 2006). In addition to more general positive and negative social reactions, research suggests that certain alcohol-specific social reactions are associated with survivor outcomes. For example, negative alcohol-related social reactions (e.g., blaming the victim because they were drinking) predict some negative outcomes (e.g., self-blame, alcohol problems), whereas the outcomes of positive alcohol-related social reactions (e.g., telling that just because they are drinking (Relyea & Ullman, 2015a) it is not their fault) are less clear (K. Lorenz & S. E. Ullman, 2016; Katherine Lorenz & Sarah E Ullman, 2016) (Lorenz & Ullman, 2016; Relyea & Ullman 2015).

Several theories inform the SSS intervention. First, attribution theory (i.e., how individuals explain the behaviors of other individuals) could be particularly useful in understanding how informal supporters explain the behavior of victims (e.g., whether they engage in victim blame), and therefore whether they offer positive and/or negative social reactions to a victim's IPV or SA disclosure. Consistent with attribution theory (Weiner, 1995), research shows that the provision of positive social reactions is related to the following factors in disclosure recipients: less IPV and SA myth endorsement, a personal victimization history, closeness to the victim (and lack of closeness to the perpetrator), perceptions of adaptive/positive coping by the victims, empathy towards the victim, and low attributions of victim responsibility (i.e., less victim blame) (Edwards & Dardis, 2016). Negative social reactions are related to factors such as greater IPV and SA myth endorsement, victim use of alcohol at the time of the IPV or SA incident, victims' use of avoidant coping strategies (e.g., self-blame and problem drinking), low feelings of empathy towards the victim, and attributions of victim responsibility (Edwards & Dardis, 2016). Finally, the theory of planned behavior (Ajzen, 1991) suggests that individuals with greater efficacy to engage in a behavior (e.g., respond positively to a disclosure) are more likely to do so than individuals with less efficacy.

Based on the aforementioned literature, there is a need for an intervention that teaches informal supports how to respond to victims' disclosure. As such, we developed an intervention entitled *Supporting Survivors and Self: An Intervention for Social Supports of Survivors of Partner Abuse and Sexual Aggression* (SSS). The SSS intervention concurrently targets social reactions for IPV and SA given the high co-occurrence of these forms of violence and research suggesting that the correlates of social reactions to IPV are similar to the correlates of social reactions to SA (Sullivan et al., 2010; Sylaska & Edwards, 2014). The SSS intervention includes an initial, two-hour session and a 90-minute booster session. The SSS intervention is delivered in groups and co-facilitated. In a small nonrandomized pilot evaluation of the SSS intervention, researchers found that intentions to provide negative social reactions decreased immediately after the session and intentions to provide positive social reactions increased immediately after the session (Edwards & Ullman, 2018).

Specifically, the theoretically grounded SSS intervention is guided by an acronym, HEARSS: Hearing, Empathy, Align, Resources, Stick with feelings, and Support oneself. The Hearing section covers basic listening skills. The Empathy section provides participants with specific information on the reasons why positive social reactions can be helpful and

negative social reactions can be harmful, examples of what to say and what not to say (including ways to promote healthy coping and discourage unhealthy coping, e.g., drinking to cope). The Align section covers how to align responses with the victims' needs, including reflecting back feelings. The Resources section covers local, state, and national resources, and how to suggest resources to the victim. Stick with feelings regards the importance of not using distraction (e.g., alcohol use) to cope, and Support oneself addresses the importance of balancing one's own needs with the needs of the victim. Throughout the session, participants had opportunities for role play, and discussion of scenarios. The role of alcohol in risk for and outcomes associated with IPV and SA and alcohol-specific social reactions is addressed in the intervention given the key role that alcohol plays as an assault characteristic and consequence of experiencing IPV and SA.

The purpose of the current study was to conduct a pilot evaluation of the SSS intervention in a sample of college students. The hypotheses/aims were as follows:

### **Hypothesis 1.**

Individuals who received the SSS intervention, relative to individuals in the control condition and individuals who did not attend the intervention, would report higher intentions to provide positive social reactions (general and alcohol-specific) and lower intentions to provide negative social reactions (general and alcohol-specific).

### **Hypothesis 2.**

Individuals who received the SSS intervention, relative to individuals in the control condition and individuals who did not attend the intervention, will report higher actual positive social reactions (general and alcohol-specific) and lower actual negative social reactions (general and alcohol-specific).

### **Hypothesis 3.**

Individuals who received the SSS intervention, relative to individuals in the control condition and individuals not attending the intervention, will report greater confidence in responding, more victim empathy, and less victim blame (intermediary outcomes).

### **Moderation.**

There is a growing emphasis in the field on determining not only if interventions for work but for whom do they work (Gottfredson et al., 2015). As such, for each hypothesis (1–3), we examined whether the circumstances of the disclosure (e.g., victim alcohol use), as well as demographic, IPV/SA history, and/or alcohol use patterns of the intervention participants, moderated the impact of program participation on intended social reactions, actual social reactions, and intermediary outcomes. We had no hypotheses for this exploratory aim.

## Method

### Research Design

Participants were assigned to either the treatment condition or the wait-list control condition. Because a large number of participants ( $n = 531$ ; 63.50% of participants invited) who were assigned to the treatment condition did not attend the actual intervention, we created three groups for the purposes of analyses: control ( $n = 432$ ), treatment attender (Tx-Attender;  $n = 305$ ), treatment non-attender (Tx-Nonattender;  $n = 531$ ). Predictors of intervention uptake are presented elsewhere (Waterman et al., 2020).

### Procedures

The study took place at a residential, medium-size public university in the northeastern United States and received approval from the university's Institutional Review Board. The university's Dean of students sent emails to randomly selected, full-time, undergraduate students between the ages of 18 and 24 on the behalf of the researchers. These emails (initial and two reminders) were sent via mass email to 7,000 students in four batches across four weeks in the fall of 2018. We also sent an email from the research team to all professors at the University with classes greater than 60 students ( $n = 205$  professors), as identified by the course catalog. Lastly, we posted fliers in residence halls and other shared spaces about the study.

Overall, 1,831 students started the baseline survey, of whom 1,268 consented to and completed the survey. Of our final 1,268 participants, 78.4% ( $n = 994$ ) were recruited via official email from the Dean of students, 14.4% ( $n = 183$ ) were recruited via a friend (i.e., a friend forwarded the study information), 4.9% ( $n = 62$ ) were recruited via professors, 1.3% ( $n = 16$ ) were recruited via fliers, 0.6% ( $n = 8$ ) were recruited via the website, and 0.4% ( $n = 5$ ) were recruited in another way (e.g., "Facebook"). Qualtrics randomized participants into intervention and control groups. Participants were initially randomized at a 50/50 rate to the intervention and control conditions. However, we found that rates of intervention attendance were lower than expected. Thus, in order to achieve desired numbers of intervention participants, when we reached over 400 in the control group, we began assigning 100% of participants who were randomly selected to be emailed to the intervention group. Because participants were recruited via professors and fliers were not randomly selected, these participants were randomized 50/50. Thus, 65.9% of participants were assigned to the intervention ( $n = 836$ ) and 34.1% were assigned to control ( $n = 432$ ). Participants randomized into the intervention group were invited to attend the intervention, which was conducted in two sessions (initial session and booster session). Initial session attendance was 36.2% ( $n = 303$ ); of those, 83.1% ( $n = 252$ ) attended the booster.

Participants first completed the baseline survey (Time 1). An average of two weeks later, those in the intervention group participated in the first intervention session. The follow-up survey (Time 2) occurred 6 months after the first intervention session, and, for control participants, 6 months and 2 weeks after their baseline survey (to ensure receipt of email at times comparable to intervention participants). We sent participants up to eight total text, email, and call reminders to remind them of the Time 2 survey. Of the 1,268 baseline

participants, 70.1% ( $n = 889$ ) completed the Time 2 survey, including 314 in the control condition and 575 in the intervention group. Participants received \$15 and \$25 gift cards for completing Time 1 and 2, respectively. Of the 305 participants who attended the first session, 252 (82.6%) attended the booster session (see Waterman et al., 2020 for factors that predicted booster uptake). Participants also received reminder texts, emails, and calls to remind them about the initial and booster sessions; they received up to five of these reminders.

## Participants

Participants<sup>1</sup> were 1,268 full-time undergraduate students from a university in the northeastern United States. The mean age of participants was 19.6 ( $SD = 1.2$ ; range 18–24). Of the sample, 28.3% were in their: first year ( $n = 359$ ), 24.2% second year ( $n = 307$ ), 24.1% third year ( $n = 306$ ), 22.6% fourth year ( $n = 286$ ), and 0.8% fifth year or beyond ( $n = 10$ ). Two-thirds of students identified as a woman (68.5%;  $n = 866$ ), 30.9% identified as a man ( $n = 391$ ), 0.4% identified as gender variant and/or gender queer ( $n = 5$ ), and 0.2% identified as another gender (e.g., transgender male;  $n = 3$ ). Participants were 91.2% White ( $n = 1144$ ), 4.5% Asian/Asian American ( $n = 57$ ), 1.4% Black/African American ( $n = 18$ ), 0.2% American Indian or Alaska Native ( $n = 3$ ), and 2.6% Multiracial ( $n = 33$ ). Five percent were Hispanic/Latino ( $n = 63$ ). Participants were 88.0% heterosexual/straight ( $n = 1111$ ), 6.4% bisexual ( $n = 81$ ), 1.4% not sure ( $n = 18$ ), 1.3% gay ( $n = 16$ ), 1.1% pansexual ( $n = 14$ ), 0.7% lesbian ( $n = 9$ ), 0.6% asexual ( $n = 8$ ), and 0.4% identified with another sexual orientation (e.g., demisexual;  $n = 5$ ). Also, 67.7% of the sample had dated or been in a romantic relationship in the past year.

## Baseline Equivalence

We conducted a series of chi-squares and  $t$ -tests to examine the equivalence of baseline demographic and outcome measures between the intervention ( $n = 836$ ) and control ( $n = 432$ ) conditions. At baseline, participants in the control condition were more likely to: be men, in their first year of college, have consumed alcohol at least once in the past 30 days, and have lower intentions to cope with disclosures by disengaging with their emotions than the intervention condition. Groups did not differ at baseline on any other study variable. Analysis comparing participants invited to the intervention who attended and participants invited to the intervention who did not attend are reported elsewhere (Waterman, Edwards, Rodriguez, et al., 2020).

## Participant Attrition Analysis

We conducted chi-squares and  $t$ -tests to compare Time 2 survey completers versus noncompleters on Time 1 variables. Participants completing the Time 2 survey were more likely to be women, less likely to be an IPV victim during their lifetime or in the past 6 months, less likely to be a SA victim during their lifetime, more likely to have consumed at least one alcoholic beverage in the past 30 days, gave fewer negative social and negative alcohol-related reactions at baseline, reported less victim blame, less actual and intended

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<sup>1</sup>The percentages describing participants do not include participants who refused to answer the question. Participant refusal on these questions was small, ranging from 3 participants (0.2%) to 13 participants (1.0%).

victim responsibility, less actual coping with disclosures using denial, less actual use of emotional and instrumental support in coping with disclosures, and less actual and intended use of disengagement when coping with disclosures. Groups did not differ on any other study variable.

## Measures

**Experiences of disclosure.**—Modeled after previous research (Edwards & Dardis, 2016), at Time 1 and 2, participants responded to the item, “In the past 6 months, has someone (e.g., friend, acquaintance, family member, dating/romantic partner) told you they experienced any of the following?” This item was followed by three SA items (e.g., “someone [including, but not limited to, a romantic partner] used physical force, threats of physical force, alcohol/drugs to incapacitated to have sexual intercourse [oral, anal, vaginal]”) and 13 items of physical, verbal, and psychological partner abuse (PA; e.g., “their partner threw something at them,” “their partner refused to talk to them,” “their partner monitored their phone, email, social media account”). Participants who indicated that they received a disclosure were asked how many disclosures they received and answered questions about their reactions to the disclosure. Participants who did not experience disclosure were asked to imagine that a friend, family member, or someone else told them they had been a victim of SA and/or PA.

**Characteristics of disclosure.**—Only disclosure recipients received questions about disclosure characteristics. These questions were modeled after previous research (Edwards & Dardis, 2016) and included the relationship between victim and perpetrator, whether the victim had been drinking when the experience happened, time since first disclosure, how the disclosure happened, relationship between victim and disclosure recipient, how upset the victim was when disclosing, frequency of discussing the experience, whether the victim was drinking at the time of disclosure, and whether the disclosure recipient was drinking at the time of disclosure.

**Actual and intended social reactions.**—Participants responded to an initial version of the Social Reactions Questionnaire-Shortened (Relyea & Ullman, 2015c; Ullman et al., 2014). Participants who were not disclosure recipients were asked questions about how they would respond to a friend or family member who told them about an IPV and/or SA experience; disclosure recipients were asked questions about their actual behavior. Items assessed negative reactions (10 items; e.g., “Told them that they were irresponsible or not cautious enough”; “Tried to take control of what they did/decisions they made”), and positive reactions (4 items; e.g., “Listened to their feelings”). Response items ranged from 1 = *never/extremely unlikely* to 5 = *always/extremely likely*. Final score on the subscales was a mean of items. Reliability for actual/intended was  $\alpha = .83/.80$  at Time 1 and  $\alpha = .85/.84$  at Time 2 for negative reactions, and  $\alpha = .70/.76$  at Time 1 and  $\alpha = .70/.74$  at Time 2 for positive social reactions.

Participants also responded to the Social Reactions Questionnaire-Alcohol (Relyea & Ullman, 2015a). Disclosure recipients answered questions about their actual behavior (if they reported that the victim had been drinking at the time of the experience), and disclosure

nonrecipients answered questions about their intended behavior. This questionnaire includes two subscales: negative alcohol reactions (6 items; e.g., “Told them the experience was their fault because they were drinking when it happened”), and positive alcohol reactions (2 items; e.g., “Said that they should have been able to go out and have a drink without worrying about something like that happening”). Response items ranged from 1 = *never/extremely unlikely* to 5 = *always/extremely likely*. Final score on the subscales was a mean of items. Reliability for actual/intended was  $\alpha = .89/.86$  at Time 1 and  $\alpha = .89/.88$  at Time 2 for negative, and  $\alpha = .57/.41$  at Time 1 and  $\alpha = .61/.49$  at Time 2 for positive social reactions.

**Intermediary outcomes.**—At Time 1 and Time 2, participants responded to three items created for the current study on a scale from 1 = *strongly disagree* to 5 = *strongly agree*: “I feel confident that I could help a friend who has been a victim of intimate partner abuse and/or sexual assault,” “I feel empathy for victims of intimate partner abuse and sexual assault. (Empathy is the ability to understand and share the feelings of another),” and “Victims of intimate partner abuse and sexual assault are at least partly responsible for what happened to them.”

**SA victimization.**—At Time 1, participants responded to two questions asking if they had ever experienced unwanted sexual contact or unwanted sexual intercourse (0 = *no*, 1 = *yes*) with the questions (Banyard, Ward, Cohn, Moorhead, & Walsh, 2007), “In your lifetime, have you had sexual contact with someone when you didn’t want to?” and “In your lifetime, have you had sexual intercourse with someone when you didn’t want to?” Sexual intercourse was defined as “any form of sexual penetration including vaginal intercourse, oral sex, and anal intercourse,” and sexual contact was defined as “touching of genitals without a person’s permission (but there is no penetration).” Unwanted sexual intercourse/contact was defined as “those situations in which you were certain at the time that you did not want to engage in the sexual experience and you either communicated this in some way (e.g., you said no; you protested; you said you didn’t want to; you physically struggled; you cried), or you were intimidated or forced by someone or you were incapacitated (e.g., drunk, passed out).”

**IPV victimization.**—At Time 1, participants responded to four questions asking if they had ever, in their lifetime, experienced verbal, physical, or psychological IPV (0 = *no*, 1 = *yes*), for example, “My partner insulted or swore or shouted or yelled at me”. Participants who experienced any IPV were then asked about the same experiences in the past 6 months. At Time 2, participants only received the questions about the previous 6 months. These questions were taken from the Revised Conflict Tactics Scale (Straus & Douglas, 2004).

**Alcohol use.**—Participants were asked, “In the past 30 days, have you ever, even just one time, consumed any kind of alcoholic beverage?” Response options were 0 = *no* and 1 = *yes*. Standard drinks were defined for participants (e.g., 12 oz. beer, 5 oz. wine). Participants who responded *yes* received the following alcohol measures. First, participants responded to the Daily Drinking Questionnaire (DDQ; Collins et al., 1985), which assesses the average number of drinks for each day of a typical week in the past 30 days (0 to 25+ drinks). The average number of drinks per day in a typical week was summed for a total weekly



drinks score. Second, to assess heavy episodic drinking frequency, participants responded to a question about number of times they drank more than five drinks in a two hour period in the past month (response options from 1 = *didn't drink 5 or more drinks in a two hour period in the past month* to 7 = *every day*) and the maximum amount of drinks in the past 30 days (response options from 0 = less than one to 9 = 9+; NIAAA, 2019).

## Analysis Plan

**Main effects.**—Treatment effect analyses compared participants in the intervention group who attended (Tx-Attender;  $n = 305$ ) to both: (a) participants who were invited to the treatment but who did not attend (Tx-Nonattender;  $n = 531$ ) and (b) participants in the control group ( $n = 432$ ). We conducted ANCOVA analyses in SPSS. We added contrasts to compare the three groups using the /LMATRIX subcommand. Covariates included gender, year in college, and alcohol use in the past 30 days, based on baseline differences in these variables. We used these covariates for all models except those models including alcohol use frequency or binge drinking as moderators, where we only included gender and year in college (because there was no variability in alcohol use in the past 30 days for these moderators).

Dependent variables differed by hypothesis. To test Hypothesis 1, we compared the three groups on T2 intended reactions, among participants who responded about intentions at T2 ( $n = 415$ ). To test Hypothesis 2, we compared the three groups on T2 actual reactions, among participants who responded about actual reactions at T2 ( $n = 474$ ). To test Hypothesis 3, we compared the T2 scores on intermediary variables of all participants, with the T1 score of each outcome as a covariate to assess for differences in change.

**Moderation analyses.**—We explored four categories of moderators: demographic, IPV/SA, alcohol use, and characteristics of actual disclosures. To explore moderation, intervention condition was operationalized via two dummy codes: Tx-Attender (1) vs. Control (0) and Tx-Attender (1) vs. Tx-Nonattender (0). We then entered these dummy-coded variables into a regression model in SPSS along with covariates consistent with the covariates in the main effect analysis, main effect of the moderator, and the two interactions of interest (i.e., interaction between each dummy-coded treatment variable and moderator). For example, for gender, we included both gender  $\times$  Control and gender  $\times$  Tx-Nonattender in the model. Each moderator was tested separately. In cases of significant interactions, we used the SAS PROCESS macro to probe the direction of the interaction by looking at the simple effect of the intervention at both levels of dichotomous moderators and at high and low values ( $+/-1 SD$ ) of continuous moderators. We did not include moderators where the sample size of the group was five or fewer.

## Results

### Intervention Effects

See Table 1 for descriptive statistics of the outcomes and main effect analyses for Hypotheses 1 through 3. We report marginal effects for main effects but not for interactions.

**Hypothesis 1.**—The Tx-Attender group scored higher than the Control and Tx-Nonattender groups on intended positive social reactions. The Tx-Attender group was marginally higher than the Control group on intended positive alcohol-related social reactions, and marginally lower than the Control group on intended negative alcohol-related social reactions.

**Hypothesis 2.**—There were no significant main effects for intervention condition on actual social reactions.

**Hypothesis 3.**—The Tx-Attender group scored higher than the Control and Tx-Nonattender groups in confidence in responding, but there were no differences in empathy or self-blame.

### Moderation Analyses

Tables 2 through 4 display statistically significant interactions for Hypotheses 1 through 3. Each table presents significant interactions by outcome and includes the adjusted means for each group as well as the simple effects of the intervention at each level of the moderator (+/−1 *SD* for continuous moderators and at each level [0, 1] for dichotomous moderators).

**Demographic moderators.**—There was a significant interaction for age on T2 intended positive social reactions and T2 intended negative alcohol-related social reactions. Specifically, the Tx-Attender group was significantly higher than Control in T2 intended positive social reactions and the Tx-Attender group was significantly lower than Tx-Nonattender in T2 intended negative alcohol-related social reactions among younger participants. Intervention effects were not present among older participants. There was also a significant interaction for gender (follow-up analyses revealed that the intervention resulted in more positive social reactions among men only), as well as race (the intervention resulted in fewer negative social reactions among non-White/non-Hispanic participants). There were significant interactions for sexual orientation: simple effects indicated the intervention resulted in higher T2 actual positive alcohol-related social reactions among individuals who were sexual minorities, whereas no effect was observed among heterosexual participants. Finally, simple effects showed the Tx-Attender group resulted in higher T2 confidence for all participants, but the intervention effect on confidence was stronger among individuals who were sexual minorities.

**Previous IPV and SA as a moderator.**—The intervention was only effective at changing social reactions in the expected direction among participants who were *not* previous victims of IPV; these included intended T2 negative social reactions, intended T2 negative alcohol-related social reactions, and T2 actual positive social reactions. Moreover, the intervention resulted in higher T2 positive alcohol-related social reactions only for participants who were *not* previous victims of SA.

**Alcohol moderators.**—Alcohol use frequency moderated intervention effects on changes in empathy, such that the intervention resulted in greater empathy only among those who

were less frequent drinkers. There were no significant interactions with heavy episodic drinking.

**Disclosure characteristic moderators.**—The Tx-Attender group reported higher actual positive social reactions when neither they nor the victim had been drinking during the disclosure, and when the victim approached them (rather than when they noticed something was wrong and approached the victim). The Tx-Attender group reported lower negative actual social reactions when they talked about it more, when the perpetrator was a stranger, friend, or family member of the victim (e.g., was not a current or former romantic partner of the victim), when the victim was drinking during the disclosure, and when they noticed something was wrong and approached the victim (rather than when the victim approached them). The Tx-Attender group reported less negative actual alcohol-related social reactions when the victim was a stranger, acquaintance, casual friend, or casual romantic partner of the victim (as opposed to a close friend, serious romantic partner, or family member).

## Discussion

Research shows that negative social reactions (e.g., victim blame) are commonly made to victims of SA/IPV disclosing to others and result in significant psychological symptomatology in victims (Dworkin, Brill, & Ullman, 2019). The purpose of the current study was to evaluate an intervention (i.e., SSS) created to increase positive social reactions and decrease negative social reactions to SA and IPV disclosures in potential informal support disclosure recipients. Whereas the SSS intervention was effective, for the most part, for improving intended social reactions, we found no main effects for actual social reactions provided as a function of condition. This latter finding may be because individuals who came to the intervention, compared to those that did not, were already responding in a more supportive way to victims' disclosures. Moreover, there was low variability on the actual social reaction variables, especially negative social reactions, compared to intentions. This could have been because negative social reactions had a relatively low base rate (Dworkin et al., 2018), six months was not sufficient time for participants to receive a disclosure and provide reactions, or responses were affected by social desirability. All these factors could have limited our ability to find an effect. Alternatively, it could be that the SSS intervention does not, in fact, work as well for actual social reactions compared to intended social reactions, suggesting that perhaps revisions to the intervention (e.g., increased duration, enhanced skills practice) could improve its effectiveness.

It is interesting to note that the SSS intervention appeared to work better on both intended and actual social reactions for sub-groups of individuals, specifically, for younger, male, non-white, and/or sexual minority students as well as students who were non-victims. Although future research is needed to better understand these findings, it is possible that some of these subgroups of individuals had more “room to grow” on our outcome variables whereas other students (e.g., women, older students, previous IPV/SA survivors) did not. Also, the SSS intervention explicitly attended to diverse sexual identities which could, in part, explain the finding that the SSS intervention was more effective in regard to actual negative social reactions for ethnic minority and sexual minority students. The finding that

the program did not work as well for disclosure recipients who were victims is potentially concerning. Prior research has shown that disclosure recipients who are experiencing high levels of distress were less effective at responding to disclosures (Edwards & Dardis, 2016); victims may experience more distress during disclosures than non-victims, and thus may need additional therapeutic interventions before we would see changes in their reactions to other victims' disclosures.

Moderation analyses also suggested that intervention effects differed as a function of characteristics of the disclosure. SSS participants reported lower negative social reactions when the perpetrator was a stranger, friend, or family member to the victim compared to a current or former partner. It is possible that this finding reflects societal stereotypes suggesting that non-partner assaults are more serious or harmful (Edwards et al., 2011) and highlights the potential need for additional SSS content counteracting these societal stereotypes. SSS participants also reported more positive social reactions when the victim approached them (versus when the disclosure recipient approached the victim), perhaps indicating that disclosure recipients were more likely to provide positive social reactions when they perceived that the victim was explicitly seeking their support. It is also possible that disclosure recipients had less of an opportunity to provide positive social reactions when the victim did not approach them directly. However, negative social reactions were lower among SSS participants when they approached the victim rather than the reverse; perhaps the disclosure recipients were more cognitively prepared and more emotionally ready to provide support if they were the ones initiating the conversation. SSS participants also reported lower negative reactions when they talked about the experience at greater length, potentially indicating that survivors had greater need for support or greater comprehension and processing the event with the disclosure recipient. Finally, SSS participants reported lower negative alcohol-related reactions when they were less close with the victim (that is, strangers, acquaintances, or casual friend/dating partner), whereas the intervention did not affect these reactions when the victim was a close friend, partner, or family member. It may be that disclosures by people with whom the recipient has close relationships may be more likely to cause the recipient to be more upset, leading to more negative reactions (e.g., anger at the victim for getting drunk). Indeed, in an early study of differences in social reactions by disclosure recipient type, 50% of egocentric reactions were provided by friends (Filipas & Ullman, 2001). It is also possible that reactions in close relationships are more ingrained and less malleable to intervention.

Regarding alcohol use during the disclosure, SSS participants reported higher positive social reactions when neither person had been drinking but lower negative reactions when the victim was drinking during the disclosure. In addition, the SSS intervention was only effective in increasing empathy among less frequent drinkers, suggesting that drinking more frequently might reduce the likelihood that individuals would receive a disclosure or respond effectively when they do. While preliminary and potentially inconsistent, these results point to a possibility that disclosure recipients may be more available to be positive or less myopic if alcohol were not involved in the discussion, or that disclosure recipients were more aware of perhaps a heightened sensitivity in victims if the victim was drinking during the disclosure. It may also be that participants simply did not give many reactions while drinking, given that the program stressed following up with the participants when sober.

However, there is currently no research to our knowledge that investigates these possibilities. Other research will be necessary to look more in depth at these processes, as well as the combination of drinking between both the victim and disclosure recipient, as well as the recipient's perception or attribution of the victim's alcohol use patterns, to understand these results in greater detail.

There are several limitations to the current study. First, our sample was relatively non-diverse in terms of race/ethnicity and socioeconomic status. Second, due to time constraints, we used short measures, some of which were created for the study, to assess our constructs of interest. These short measures in conjunction with probable selection bias could have impacted our ability to detect significant findings in some areas. Third, we did not have an immediate post-test or a follow-up beyond six months, which precluded our ability to detect shorter term and longer-term intervention effects and could possibly have led to greater retention to the follow-up assessment. Fourth, we had problems with uptake in the treatment condition leading to a smaller sample size for the treatment condition (see Waterman et al., 2020, for factors that predicted uptake in the current study). Along these lines, despite our attempts at randomization, we had some condition imbalances, although we adjusted for these in the analyses. Fifth, victims were less likely to complete the follow-up survey, which could have impacted the results. Sixth, we adapted the Social Reactions Questionnaire to assess intended and actual reactions provided, rather than received, which is a novel and unvalidated use of the measure that might have affected results. Finally, effect sizes were small.

In light of the limitations, future research should utilize larger more diverse samples and include an immediate post-test and a longer follow-up period. Given issues with uptake of the SSS intervention, and prevention and intervention programming more generally, research is needed to better understand factors that do and do not predict uptake of health behavior programming. Future research is also needed to further refine the SSS intervention to bolster its effectiveness in reducing negative social reactions and increasing positive social reactions for all students. In fact, we conducted an in-depth process evaluation of the SSS intervention alongside the outcome evaluation and will use that information to further refine the SSS intervention (Waterman et al., 2020). Given issues with uptake, future research should examine other ways (e.g., online) to reach students, especially those most in need of intervention like SSS.

These data suggest that the SSS intervention was effective in improving social reactions for some students and under some circumstances. Although the SSS intervention requires further refinement, we believe that the SSS intervention, or something like it, could have a great deal of utility for college campuses, and potentially other settings (e.g., high schools, military bases) where rates of SA and IPV and disclosure are high. Indeed, campuses are increasingly implementing SA and IPV prevention programming on campus (Orchowski et al., 2018) (DeKeseredy & Schwartz, 1998), and the SSS intervention may serve as one piece of comprehensive prevention and intervention initiatives to prevent and respond to SA and IPV. Unfortunately, negative social reactions are far too common, and we know that they lead to deleterious outcomes in victims (E. R. Dworkin et al., 2019). Therefore,

an intervention that seeks to reduce negative social reactions and increase positive social reactions is of critical public health importance.

## Acknowledgments

Funding for this study was provided by the National Institute of Health (NIH), Grant # 5R34AA024849-03. The findings and implications presented in this paper do not represent the official views of the NIH. The authors declare that they have no conflicts of interest.

## References

- Ahrens CE, & Aldana E (2012). The Ties That Bind: Understanding the Impact of Sexual Assault Disclosure on Survivors' Relationships with Friends, Family, and Partners. *Journal of Trauma & Dissociation*, 13(2), 226–243. 10.1080/15299732.2012.642738 [PubMed: 22375809]
- Ahrens CE, & Campbell R (2000). Assisting rape victims as they recover from rape: The impact on friends [Peer Reviewed Journal]. *Journal of Interpersonal Violence*, 15(9), 28. 10.1177/088626000015009004
- Ajzen I (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(179–211).
- Banyard VL, Moynihan MM, Walsh WA, Cohn ES, & Ward S (2010). Friends of survivors: The community impact of unwanted sexual experiences. *Journal of Interpersonal Violence*, 25(2), 242–256. 10.1177/0886260509334407 [PubMed: 19506165]
- Black MC, Basile KC, Breiding MJ, Smith SG, Walters ML, Merrick MT, Chen J, & Stevens MR (2011). National intimate partner and sexual violence survey: 2010 summary report.
- Campbell R, Dworkin E, & Cabral G (2009). An ecological model of the impact of sexual assault on women's mental health. *Trauma, Violence, & Abuse*, 10, 225–246. 10.1177/1524838009334456
- Cohen S, & Wills TA (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310–357. 10.1037/0033-2909.98.2.310 [PubMed: 3901065]
- Collins RL, Parks GA, & Marlatt GA (1985). Social determinants of alcohol consumption: the effects of social interaction and model status on the self-administration of alcohol. *Journal of Counseling & Clinical Psychology*, 53(2), 189–200.
- DeKeseredy WS, & Schwartz MD (1998). *Woman abuse on campus: Results from the Canadian national survey*. Sage Publications, Inc.
- Dworkin ER, Brill CD, & Ullman SE (2019). Social reactions to disclosure of interpersonal violence and psychopathology: A systematic review and meta-analysis. *Clinical psychology review*, 101750.
- Dworkin ER, Brill CD, & Ullman SE (2019). Social reactions to disclosure of interpersonal violence and psychopathology: A systematic review and meta-analysis. *Clinical Psychology Review*, 72.
- Edwards KM, & Dardis CM (2016). Disclosure recipients' social reactions to victims' disclosures of intimate partner violence. *Journal of Interpersonal Violence*, 0886260516681155.
- Edwards KM, Turchik JA, Dardis CM, Reynolds N, & Gidycz CA (2011). Rape myths: History, individuals and institutional-level presence, and implications for change. *Sex Roles*, 65(11–12), 761–774. 10.1007/s11199-011-9943-2
- Edwards KM, & Ullman SE (2018). Preliminary data on an intervention to reduce negative social reactions to victims' disclosures. *Journal of College Student Development*, 59(1), 105–110.
- Gottfredson DC, Cook TD, Gardner FEM, Forman-Smith D, Howe GW, & Zafft KM (2015). Standards of evidence for efficacy, effectiveness, and scale-up research in prevention science: Next generation. *Prevention Science*, 16, 893–926. [PubMed: 25846268]
- Jacques-Tiura AJ, Tkatch R, Abbey A, & Wegner R (2010). Disclosure of sexual assault: Characteristics and implications for posttraumatic stress symptoms among African American and Caucasian survivors. *Journal of Trauma & Dissociation*, 11(2), 174–192. 10.1080/15299730903502938 [PubMed: 20373205]

- Littleton HL (2010). The impact of social support and negative disclosure reactions on sexual assault victims: A cross-sectional and longitudinal investigation. *Journal of Trauma & Dissociation*, 11(2), 210–227. 10.1080/15299730903502946 [PubMed: 20373207]
- Lorenz K, & Ullman SE (2016). Alcohol and sexual assault victimization: Research findings and future directions. *Aggression and Violent Behavior*, 31, 82–94.
- Lorenz K, & Ullman SE (2016). Exploring correlates of alcohol-specific social reactions in alcohol-involved sexual assaults. *Journal of Aggression, Maltreatment & Trauma*, 25(10), 1058–1078.
- Matthews KC (2011). Social reactions to disclosure, attributions of responsibility, and shame as predictors of psychological adjustment in sexual assault survivors [Dissertation, Idaho State University].
- NIAAA. (2019). Drinking levels defined. <https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking>
- Orchowski LM, Edwards KM, Hollander JA, Banyard VL, Senn CY, & Gidycz CA (2018). Integrating Sexual Assault Resistance, Bystander, and Men's Social Norms Strategies to Prevent Sexual Violence on College Campuses: A Call to Action. *Trauma, Violence, & Abuse*, 1524838018789153.
- Orchowski LM, Untied AS, & Gidycz CA (2013). Social reactions to disclosure of sexual victimization and adjustment among survivors of sexual assault. *Journal of Interpersonal Violence*, 28(10), 2005–2023. [PubMed: 23300195]
- Paul LA, Walsh K, McCauley JL, Ruggiero KJ, Resnick HS, & Kilpatrick DG (2014). Characteristics and life experiences associated with receiving a rape disclosure within a national telephone household probability sample of women. *Journal of Community Psychology*, 42(5), 583–592. [PubMed: 25382881]
- Peter-Hagene LC, & Ullman SE (2013). Social reactions to sexual assault disclosure and problem drinking: Mediating effects of perceived control and PTSD. *Journal of Interpersonal Violence*, 29, 1418–1437. 10.1177/0886260513507137 [PubMed: 24323692]
- Relyea M, & Ullman SE (2015a). Measuring social reactions to female survivors of alcohol-involved sexual assault: The social reactions questionnaire–alcohol. *Journal of Interpersonal Violence*, 30(11), 164–1887. 10.1177/0886260514549054
- Relyea M, & Ullman SE (2015b). Unsupported or turned against understanding how two types of negative social reactions to sexual assault relate to postassault outcomes. *Psychology of Women Quarterly*, 39(1), 37–52. 10.1177/0361684313512610 [PubMed: 25750475]
- Relyea M, & Ullman SE (2015c). Unsupported or turned against: Understanding how two types of negative social reactions to sexual assault relate to postassault outcomes. *Psychology of Women Quarterly*, 39(1), 37–52. 10.1177/0361684313512610
- Schackner JN, Weiss NH, Edwards KM, & Sullivan TP (2017). Social reactions to IPV disclosure and PTSD symptom severity: Assessing avoidant coping as a mediator. *Journal of Interpersonal Violence*.
- Sullivan TP, Schroeder JA, Dudley DN, & Dixon JM (2010). Do differing types of victimization and coping strategies influence the type of social reactions experienced by current victims of intimate partner violence? *Violence against women*, 16(6), 638–657. [PubMed: 20445076]
- Sylaska KM, & Edwards KM (2014). Disclosure of intimate partner violence to informal social support network members: A review of the literature. *Trauma, Violence, & Abuse*, 15(1), 3–21. 10.1177/1524838013496335
- Taylor SE (2011). Social support: A review. *The Handbook of Health Psychology*, 192–217.
- Thoits PA (1995). Stress, coping, and social support processes: Where are we? What next? *Journal of Health and Social Behavior*, 36, 53–79.
- Ullman SE (1996). Social reactions, coping strategies, and self-blame attributions in adjustment to sexual assault. *Psychology of Women Quarterly*, 20(4), 505–526.
- Ullman SE (2000). Psychometric characteristics of the social reactions questionnaire. *Psychology of Women Quarterly*, 24(3), 257–271.
- Ullman SE, Filipas HH, Townsend SM, & Starzynski LL (2006). Correlates of comorbid PTSD and drinking problems among sexual assault survivors. *Addictive Behaviors*, 31(1), 128–132. [PubMed: 15899554]

- Ullman SE, & Najdowski CJ (2011). Prospective changes in attributions of self-blame and social reactions to women's disclosures of adult sexual assault. *Journal of Interpersonal Violence*, 26(10), 1934–1962. [PubMed: 20724295]
- Ullman SE, & Peter-Hagene LC (2016). Longitudinal relationships of social reactions, PTSD, and revictimization in sexual assault survivors. *Journal of Interpersonal Violence*, 31(6), 1074–1094. 10.1177/0886260514564069 [PubMed: 25538120]
- Ullman SE, Peter-Hagene LC, & Relyea M (2014). Coping, emotion regulation, and self-blame as mediators of sexual abuse and psychological symptoms in adult sexual assault. *American Journal of Public Health*, 93(7), 1104–1109. 10.2105/AJPH.93.7.1104
- Ullman SE, Townsend SM, Filipas HH, & Starzynski LL (2007). Structural models of the relations of assault severity, social support, avoidance coping, self-blame, and PTSD among sexual assault survivors. *Psychology of Women Quarterly*, 31(1), 23–37.
- Waterman EA, Edwards KM, Rodriguez LM, Ullman SE, & Dardis CM (2020). Predictors of uptake and retention in an intervention to improve social reactions to disclosures of sexual assault and partner abuse. *Journal of American College Health*, 1–10.
- Weiner B (1995). *Judgments of responsibility: A foundation for and theory of social conduct*. Guilford Press.



Main Effects Results (Hypotheses 1-3)

Table 1.

Outcome	Overall		Control		Tx-Nonattender		Tx-attender		Effect size ( <i>p</i> value)
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>n</i> )	<i>M</i> ( <i>n</i> )	<i>M</i> ( <i>n</i> )	<i>M</i> ( <i>n</i> )	<i>M</i> ( <i>n</i> )			
<b>Hypothesis 1 (Intended reactions)</b>									
T2 Positive social reactions (intentions)	4.64 (0.55)	4.55 (129) <sup>a</sup>	4.61 (133) <sup>c</sup>	4.77 (119) <sup>a,c</sup>	<b>.02 (.04)</b>				
T2 Negative reactions (intentions)	1.44 (0.53)	1.53 (129) <sup>c</sup>	1.45 (135)	1.36 (119) <sup>c</sup>	.01 (.24)				
T2 Positive alcohol-related (intentions)	3.78 (1.19)	3.84 (125) <sup>a</sup>	3.62 (130)	3.97 (118) <sup>a</sup>	<b>.01 (.09)</b>				
T2 Negative alcohol-related (intentions)	1.36 (0.57)	1.45 (127) <sup>a</sup>	1.36 (132)	1.24 (119) <sup>a</sup>	<b>.02 (.05)</b>				
<b>Hypothesis 2 (Actual reactions)</b>									
T2 Positive social reactions (actual)	3.93 (0.75)	3.87 (160)	3.87 (158) <sup>c</sup>	4.05 (129) <sup>c</sup>	.01 (.17)				
T2 Negative reactions (actual)	1.29 (0.46)	1.28 (164)	1.35 (159) <sup>c</sup>	1.25 (130) <sup>c</sup>	.01 (.14)				
T2 Positive alcohol-related (actual)	3.07 (1.40)	3.16 (47)	3.01 (48)	3.06 (40)	.01 (.55)				
T2 Negative alcohol-related (actual)	1.26 (0.51)	1.25 (50)	1.30 (49)	1.24 (40)	.01 (.53)				
<b>Hypothesis 3</b>									
T2 Confidence	3.98 (0.90)	3.88 (295) <sup>a</sup>	3.88 (296) <sup>b</sup>	4.22 (251) <sup>a,b</sup>	<b>.03 (.00)</b>				
T2 Empathy	4.30 (1.05)	4.26 (292)	4.27 (293)	4.42 (248)	.00 (.37)				
T2 Blame	1.70 (1.06)	1.67 (296)	1.75 (295)	1.68 (251)	.00 (.28)				

\* *Note.* T2 = Time 2. Covariates were gender, year in college, and alcohol in past 30 days (based on baseline equivalency differences). Statistically significant comparisons are **bolded**; marginally statistically significant interactions are **bolded and italicized**. Superscripts represent differences between groups in the three-group analyses; letters

<sup>a</sup> represent statistically significant differences

<sup>b</sup> represent statistically significant differences

<sup>c</sup> represents marginally statistically significant differences. Effect size is measured by eta squared; .02 is a small effect, .13 is a medium effect, and .26 is a large effect.

**Table 2.**

Significant Moderation Results (Hypothesis 1)

Significant Moderators	R <sup>2</sup> Change due to Interaction	Adjusted Means by Group						Simple Effects	
		Control		Tx-Nonattender		Tx-Attender		b(SE) of intervention effect at low level of moderator	b(SE) of intervention effect at high level of moderator
		Moderator (Low) Adj M	Moderator (High) Adj M	Moderator (Low) Adj M	Moderator (High) Adj M	Moderator (Low) Adj M	Moderator (High) Adj M		
Age	0.01*	4.51	4.56	--	--	4.81	4.59	0.30 (0.09)**	0.03 (0.10)
Any lifetime IPV victimization	0.01*	1.55	1.40	--	--	1.36	1.51	-0.19 (0.08)*	0.12 (0.12)
Age	0.01**	--	--	1.55	1.29	1.28	1.38	-0.27 (0.10)**	0.08 (0.10)
Any lifetime IPV victimization	0.01	1.51	1.37	--	--	1.25	1.40	-0.26 (0.09)**	0.04 (0.13)

\* Note. Covariates were gender, year in college, and alcohol in past 30 days (based on baseline equivalency differences). The simple effects of the intervention are depicted at both levels of dichotomous moderators (e.g., gender) and at high and low values (+/-1 SD) of continuous moderators.

\*  $p < .05$ .

\*\*  $p < .01$ .

Table 3.

Significant Moderation Results (Hypothesis 2)

Significant Moderators	R <sup>2</sup> Change due to Interaction	Adjusted Means by Group								Simple Effects	
		Control		Tx-Nonattender		Tx-Attender		Moderator (High) Adj M	Moderator (Low) Adj M	b(SE) of intervention effect at low level of moderator	b(SE) of intervention effect at high level of moderator
		Moderator (Low) Adj M	Moderator (High) Adj M	Moderator (Low) Adj M	Moderator (High) Adj M	Moderator (Low) Adj M	Moderator (High) Adj M				
<b>Actual Positive Social Reactions</b>											
Gender (1=man)	0.01*	4.02	3.28	--	--	4.05	3.74	0.04 (0.10)	0.45 (0.18)*		
Any lifetime IPV victimization	0.01*	3.72	4.01	--	--	4.01	3.91	0.28 (0.11)**	-0.10 (0.12)		
Victim approached disclosure recipient	0.01*	--	--	3.99	3.87	3.74	4.11	-0.25 (0.18)	0.24 (0.10)*		
Alcohol use during disclosure (victim)	0.01*	--	--	3.83	3.96	4.04	3.71	0.21 (0.10)*	-0.25 (0.20)		
Alcohol use during disclosure (recipient)	0.01*	--	--	3.78	3.97	4.03	3.70	0.25 (0.09)**	-0.28 (0.23)		
<b>Actual Negative Social Reactions</b>											
Race (1=White non-Hispanic)	0.01*	--	--	1.80	1.30	1.33	1.26	-0.48 (0.21)*	-0.04 (0.06)		
Victim/perpetrator relationship (1 = Casual or serious current or ex-partner)	0.01*	--	--	1.55	1.28	1.25	1.26	-0.30 (0.10)**	-0.02 (0.06)		
Victim approached disclosure recipient	0.02**	--	--	1.63	1.27	1.25	1.27	-0.39 (0.12)**	0.00 (0.06)		
Frequency of talking about the experience	0.02**	--	--	1.19	1.52	1.28	1.25	0.09 (0.08)	-0.27 (0.08)***		
Alcohol use during disclosure (victim)	0.01*	--	--	1.22	1.73	1.22	1.44	0.00 (0.06)	-0.28 (0.12)*		
<b>Actual Positive Alcohol-Related Social Reactions</b>											
Sexual minority	0.06**	--	--	3.17	1.86	2.96	4.13	-0.21 (0.33)	2.26 (0.81)**		
Any lifetime SA victimization	0.05**	--	--	2.59	3.22	3.58	2.63	0.99 (0.44)*	-0.59 (0.41)		
<b>Actual Negative Alcohol-Related Social Reactions</b>											
Victim/recipient relationship (1 = Close friends or family)	0.03*	--	--	1.58	1.26	1.10	1.30	-0.48 (0.22)*	0.04 (0.13)		

\* Note: Covariates were gender, year in college, and alcohol in past 30 days (based on baseline equivalency differences). The simple effects of the intervention are depicted at both levels of dichotomous moderators (e.g., gender) and at high and low values (+/-1 SD) of continuous moderators.

\* p < .05.

\*\* p < .01.

.100 < *d*  
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**Table 4.**

Significant Moderation Results (Hypothesis 3)

Significant Moderators	R <sup>2</sup> Change due to Interaction		Adjusted Means by Group						Simple Effects	
	Control		Tx-Nonattender			Tx-Attender			<i>b</i> ( <i>SE</i> ) of intervention effect at low level of moderator	<i>b</i> ( <i>SE</i> ) of intervention effect at high level of moderator
	Moderator (Low) <i>Adj M</i>	Moderator (High) <i>Adj M</i>	Moderator (Low) <i>Adj M</i>	Moderator (High) <i>Adj M</i>	Moderator (Low) <i>Adj M</i>	Moderator (High) <i>Adj M</i>	Moderator (Low) <i>Adj M</i>	Moderator (High) <i>Adj M</i>		
Sexual minority	0.01*	3.80	3.55	--	4.06	4.31	0.26 (0.08)**	0.76 (0.23)***		
Alcohol use frequency	0.01*	4.16	4.30	--	4.44	4.22	0.28 (0.12)*	-0.08 (0.12)		

\* *Note.* Covariates were gender, year in college, and alcohol in past 30 days (based on baseline equivalency differences). The simple effects of the intervention are depicted at both levels of dichotomous moderators (e.g., gender) and at high and low values (+/-1 *SD*) of continuous moderators.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .