

Sexual Assault Disclosure and Related Mental Health Among Undergraduate Female Assault
Survivors

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Abstract

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Through online, self-report surveys, this dissertation sought to illuminate sexual assault disclosure experiences as well as the relationship between negative reactions to sexual assault disclosures and mental health among undergraduate women who had experience alcohol-involved and non-alcohol involved assaults (AIAs and non-AIAs, respectively). Study 1 characterized survivors' disclosure confidantes and the disclosure reactions that survivors received, and also compared how frequently AIA and non-AIA survivors received different reactions from different providers as well as likelihood of having disclosed to different confidantes. Study 2 investigated the associations between various negative disclosure reactions, PTSD symptoms, motivation to drink to cope with negative affect, and alcohol use behavior. Taken together, findings suggest that it is critical to consider the social context of sexual assault recovery in working with undergraduate sexual assault survivors and their social supporters.

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Characterizing Sexual Assault Disclosure Among Undergraduate Women

Abstract

Approximately 20% of college women experience some form of sexual assault victimization (Cantor et al., 2015). Approximately 75% of these assaults involve alcohol use by the victim, perpetrator or both (Reed, Amaro, Matsumoto, & Kaysen, 2009). Sexual assault has many mental health consequences (e.g., Zinzow et al., 2010); and post-assault social support is critical to recovery from such mental health problems. Logically, in order to access social support that is relevant to their assault, survivors must disclose to others that they have been assaulted. Despite the high rates of sexual assault on college campuses, little research has focused on college women's disclosure experiences. Moreover, no research has focused specifically on undergraduate alcohol-involved-assault (AIA) survivors' disclosures. The current study therefore characterized sexual assault disclosure among undergraduate survivors of AIAs ($n = 150$) and non-AIAs ($n = 79$), specifically to whom these survivors disclosed and how disclosure confidantes responded. Results demonstrated that AIA and non-AIA survivors disclosed to an average of five different people, and that female friends emerged as the most frequent disclosure confidante among both AIAs and non-AIAs. Additionally, AIA survivors were more likely than non-AIA survivors to have ever disclosed to their mother and also tended to disclose more frequently to mental health providers than did non-AIA survivors. Although survivor groups did not differ in the frequency with which they had received victim blaming, stigmatizing, controlling, distracting, egocentric, emotional support, or tangible aid responses from informal supports, AIA survivors tended to experience tangible aid reactions from formal supports more often than non-AIA survivors did. Importantly, both AIA and non-AIA survivors tended to experience positive disclosure reactions more frequently than negative disclosure reactions. AIA survivors also received disclosure reactions that referenced presence of alcohol in the assault

(AIA-specific reactions), most often that were subtly as opposed to overtly hostile. Findings from this study speak to the importance of creating programming that trains diverse social supports in effective responding to sexual assault disclosures from undergraduate women.

Characterizing Sexual Assault Disclosure Among Undergraduate Women

Introduction

College sexual assault is a significant public health problem in the United States. A recent national study of undergraduates' experiences with "nonconsensual sexual contact by physical force, threats of physical force [,] or incapacitation...[due to being] unable to consent or stop what was happening because you were passed out, asleep or incapacitated due to drugs or alcohol" (Cantor et al., 2015, p. 8) demonstrated that approximately 20% of undergraduate women experience some form of sexual victimization during their time in college (Cantor et al., 2015). Non-national data indicate that up to 75% of undergraduate women's sexual assault experiences involve alcohol use proximal to the assault – be it by the victim, perpetrator, or both (Reed et al., 2009). Importantly, sexual assault has many negative mental health consequences, especially, posttraumatic stress disorder (PTSD) (and related symptoms) and maladaptive alcohol use (e.g., Zinzow et al., 2010). Among undergraduate women who have experienced rape, approximately 33% of them meet criteria for a current diagnosis of PTSD; and up to 42% of them have engaged in monthly binge drinking (five or more drinks in two hours; National Institute on Alcohol Abuse and Alcoholism, 2019) during the past year (Kilpatrick, Resnick, Ruggiero, Consenti, & McCauley, 2007).

Social support plays a critical role in recovery from trauma, including sexual assault, and in fact has been identified as highly impactful in buffering against the onset of the above-mentioned mental health problems (e.g., Brewin, Andrews, & Valentine, 2000). Logically, in order to access social support that is relevant to their assault and related recovery, survivors must disclose to others that they have been assaulted. Despite this critical role of sexual assault disclosure in recovery from assault-related psychopathology, very little research has focused on

sexual assault disclosure among undergraduate college women, who are, as noted, at evident risk for such problems. Moreover, the available research on undergraduates' sexual assault disclosures has failed to evaluate whether the assaults disclosed involved alcohol (c.f., Koo, 2011; Littleton, Grills-Taquechel, & Axsom, 2009), despite the high prevalence of alcohol-involved assaults (AIAs) among undergraduate women. Thus, the present study will characterize disclosure of AIAs and non-AIAs among undergraduate women.

Background

Sexual Assault Disclosure

Sexual assault disclosure refers to experiences in which sexual assault survivors tell others that they have been assaulted. Rates of disclosure vary across studies. Early community samples indicated that one-half to two-thirds of female survivors disclose their assault (Ullman, 1999). More recent studies suggest that approximately 80-90% of survivors from samples that contain a mix of women from the community, universities, and mental health centers may disclose their assault (e.g., Ahrens, Cabral, & Abeling, 2009; Starzynski, Ullman, Filipas, & Townsend, 2005; Ullman & Peter-Hagene, 2014). The limited extant literature characterizing assault disclosure among undergraduate women suggests that approximately three-fourths of survivors disclose their assault (e.g., Fisher, Daigle, Cullen, & Turner, 2003; Orchowski & Gidycz, 2012).

Sexual Assault Disclosure Reactions

Research on sexual assault disclosure that has been conducted primarily with community women demonstrates that disclosure confidantes respond with a mix of negative disclosure reactions and positive disclosure reactions (e.g., Ullman, 2000). Negative disclosure reactions are frequently characterized by invalidation, verbally attacking the survivor, and minimizing the

survivor's experience and/or needs. Many negative disclosure reactions communicate, apart from their overt content, distinct messages simultaneously: first, that either the survivor or the assault is a "problem"; and second, that the confidante rejects the survivor because of this "problem," and/or is either unable or unwilling to effectively help the survivor cope with the "problem" that the confidante has identified (Relyea & Ullman, 2015b). Confidantes are particularly likely to reject survivors when they have cast survivors as opposed to the assault as "the problem." Specific negative disclosure reactions include: blaming the survivor for having been assaulted (blaming reactions); trying to or actually taking control of the survivor's behavior (controlling reactions); treating the survivor like she is damaged goods (stigmatizing reactions), or incompetent (infantilizing reactions); distracting the survivor from thinking or talking about the assault (distracting reactions); or becoming so emotionally distressed by the disclosure that the survivor ultimately feels compelled to take care of the disclosure confidante (egocentric reactions) (Ullman, 2000; Ullman, personal communication, August 23, 2016). Conversely, positive disclosure reactions tend to be characterized by supporting the survivor and her needs through providing reassurance, comforting, or validation, or by providing information about coping and recovery or connecting her with recovery-related resources (e.g., medical care; Ullman, 2000).

Undergraduates' Sexual Assault Disclosure Confidantes

From the limited extant literature that has addressed undergraduates' sexual assault disclosures, it appears that undergraduate women disclose to an average of three people and rarely more than five people (Littleton, 2010). Most undergraduate women disclose to confidantes who are informal supports (Littleton, 2010; Littleton et al., 2009; Orchowski & Gidycz, 2012, 2015), which includes friends, romantic partners, or family members, rather than

formal supports, such as healthcare providers, police, members of the legal system, or religious leaders (Orchowski & Gidycz, 2012; Starzinsky et al., 2005; Ullman, 1999). Within these support networks, it appears that friends are the most common informal disclosure confidantes (Littleton, 2010), and that it is more common for women to disclose to female friends than to male friends (Banyard, Moynihan, Walsh, Cohn, & Ward, 2010; Orchowski & Gidycz, 2012). After friends, disclosures are most commonly made to family and romantic partners (Littleton, 2010; Orchowski & Gidycz, 2012). Generally, undergraduates who do disclose to formal supports disclose to mental health providers more often than any other type of formal support (Littleton, 2010; Orchowski & Gidycz, 2012). In the only study to date that has investigated undergraduates' disclosure of AIAs and non-AIAs, Littleton and colleagues (2009) identified that AIA survivors were more likely to have disclosed to informal social supports than were non-AIA survivors, and that survivor groups did not differ in the frequency with which they disclosed to formal supports. However, this study did not specify the relationship that survivors had with said social supports, and thusly the data are unable to provide important insight into undergraduates' disclosure confidantes.

Sexual Assault Disclosure: AIAs versus non-AIAs

As noted, extant literature on assault disclosure suggests that there is meaningful variation in the disclosure reactions that survivors of AIAs versus non-AIAs receive. Recent research (Relyea & Ullman, 2015a) suggests that AIA survivors may receive disclosure reactions that do not reference that the assault involved alcohol (i.e., general negative disclosure reactions) and reactions that do reference that the assault involved alcohol (i.e., AIA-specific negative disclosure reactions). AIA-specific negative reactions are frequently characterized by blaming the survivor or doubting her experience due to the fact that the assault involved alcohol.

Importantly, only one study to date has characterized AIA survivors' receipt of AIA-specific, and this study did not specifically work with undergraduate assault survivors (Relyea & Ullman, 2015a). Given the high prevalence of AIAs among undergraduate women (e.g., Kilpatrick et al., 2007) and the critical role of disclosure in sexual assault recovery, it would be beneficial to also characterize the general and AIA-specific negative disclosure reactions undergraduate AIA survivors receive.

Current Study

As noted, undergraduate women are at great risk for sexual assault, and many of these assaults will involve alcohol. Sexual assault is associated with negative mental health outcomes, and social support plays a critical role in recovery from such sequelae (e.g., Brewin, Andrews, & Valentine, 2000). Yet, as is evident from the literature reviewed thus far, very few studies have addressed sexual assault disclosure among undergraduate women. Similarly, extant literature has yet to characterize the disclosure reactions that undergraduate AIA survivors receive and to compare the disclosure reactions and general characteristics of AIA versus non-AIA survivors' disclosures. The present study will address these noteworthy gaps in the extant literature, with the following specific aims: 1) describe disclosure confidantes among AIA and non-AIA survivors, 2) compare disclosure confidantes among AIA and non-AIA survivors, 3) describe disclosure reactions among AIA and non-AIA survivors, and 4) compare disclosure reactions among AIA and non-AIA survivors.

Method

Participants and Recruitment

Participants were recruited from 1) the University of Washington's Psychology Human

Subject Pool (PHSP), 2) online (Facebook and Craigslist), and 3) via UW's Registrar's office. In order to be eligible for the current study, participants were required to 1) identify as female, 2) be a current undergraduate student, 3), be at least 18 years old, 4) have experienced one (or more) sexual assault(s) when they were ≥ 14 years old that was perpetrated by a man, and 5) have disclosed at least one of their assaults to at least one person. Students completed a web-based screening survey to determine their eligibility for the study.

Procedures

Recruitment. Following IRB approval of this study, participants were recruited via the PHSP September 2017 – May 2018. Participants were recruited online and via the Registrar's office April – December 2018.

PHSP. Students in various psychology courses completed a large screening survey that consisted of questions assessing eligibility for various studies conducted via UW's Psychology Department. Students who were eligible for this study were invited to participate by email. Initial invitation emails described the study, confidentiality measures, participants' rights as human research subjects, and incentives for participation. Emails also contained the secure link to the study's online measures, a unique password for accessing the website, and directions on how to login to the website with their password. Research staff contact information was provided so that potential participants could discuss any questions about participation or the study prior to participation with the investigator or research assistants. Women who did not respond to this initial email received reminder contacts about participation. After five reminder emails were sent, research assistants called participants to attempt to enroll them in the study.

Online recruitment. Advertisements describing a study on social relationships, sexual experiences, and drinking seeking women who were at least 18 years old and currently enrolled

in college were posted to Craigslist, and study staff posted similar announcements to Facebook. These advertisements and announcements included a link to a study-specific screening survey. Study staff emailed eligible respondents to invite them to participate in the study; this invitation email contained the same information as the invitation email described above and the procedure for contacting these women was the same as described above.

UW Registrar's Office. Study staff obtained a list of all female undergraduate students who were at least 18 years old and currently enrolled at the UW from the UW Registrar's Office. These students received an email from study staff, advertising a study on social relationships, sexual experiences, and drinking; this email included a link to the same online screening survey that was posted online. Those who were eligible based on their responses to the screening survey received that same invitation email described above and were contacted in the aforementioned manner.

Measures

Demographic information. Participants reported on demographic information including age, race, ethnicity, year in college, and romantic relationship status.

Adult sexual assault. The Sexual Experiences Survey – Revised (SES-R; Koss et al., 2007) was administered to assess participants' sexual assault histories. The SES-R uses behaviorally specific questions to assess women's experiences of victimization beginning at age 14. Questions assess survivors' experiences with different assault tactics, including coercion (e.g., perpetrator threatens to end the relationship with the survivor or to spread rumors about her), incapacitation, and physical force. Questions also assess how frequently survivors have experienced different assault outcomes, including unwanted sexual contact (e.g., fondling) and attempted or completed rape (i.e., oral, vaginal, or anal penetration).

Sexual assault disclosure. Participants indicated whether or not they had disclosed to various informal social supports (mother, father, step-mother, step-father, sibling, step-sibling, other relative, female friend, male friend, transgender friend, acquaintance, romantic partner, casual dating partner, sexual but not romantic partner, former partner) and formal social supports (mental health provider, doctor, specialty doctor, legal system professional [e.g., police officer, legal advocate, lawyer], professor or teacher, school or university staff or administrator). Participants could also write in social supports to whom they had disclosed in a free-text box (“other”).

General social reactions to sexual assault disclosure. Participants’ general disclosure reactions were assessed with a 16-item version of the Social Reactions Questionnaire (Ullman, personal communication, August 23, 2016). The Social Reactions Questionnaire – Shortened (SRQ-S) has eight subscales, which measure blaming (e.g., “Told you that you were irresponsible or not cautious enough”), stigmatizing (e.g., “Avoided talking to you or spending time with you”), infantilizing (e.g., “Treated you as if you were a child or somehow incompetent”), controlling (e.g., “Made decisions or did things for you”), distracting (e.g., “Told you to go on with your life”), and egocentric reactions (e.g., “Expressed so much anger at the perpetrator that you had to calm them down”), as well as emotional support (e.g., “Reassured you that you are a good person”) and tangible aid (e.g., “Provided information and discussed options”) reactions, with two items per subscale. Participants rated the frequency with which they had received each type of reaction on a scale of 0 (*never*) to 4 (*always*). Participants completed the SRQ-S twice: once reflecting reactions from informal supports, and once reflecting reactions from formal supports. Among AIA survivors who had disclosed to informal supports, subscale alphas ranged .69 - .87, and among AIA survivors who had disclosed to

formal supports, subscale alphas ranged .68 - .87. Subscale alphas ranged .50 - .90 among non-AIA survivors who had disclosed to informal supports, and .47 - .88 among non-AIA survivors who had disclosed to formal supports. Alphas tended to be higher for the global general negative disclosure reaction subscale ($\alpha = .90 - .91$ for AIA and non-AIA survivors disclosing to both formal and informal supports) than for the global positive disclosure reaction subscale ($\alpha = .61 - .74$ for AIA and non-AIA survivors disclosing to both formal and informal supports).

AIA-specific social reactions to sexual assault disclosure. Participants who had experienced and disclosed an AIA also completed the Social Reactions Questionnaire-Alcohol (SRQ-A; Relyea & Ullman, 2015a). This questionnaire measures reactions that reference that the assault disclosed involved alcohol use. The SRQ-A consists in two subscales, AIA-specific negative reactions (nine items; e.g., “Said your experience could not really have been unwanted because it happened while you were drinking”) and AIA-specific positive reactions (two items; e.g., “Said that you should have been able to go out and have a drink without worrying about something like this happening”). Participants rated the frequency with which they had received each type of reaction on a scale of 0 (*never*) to 4 (*always*), and subscale scores are means. Participants completed the SRQ-A twice: once reflecting reactions from informal supports, and once reflecting reactions from formal supports. Internal consistency was somewhat stronger for AIA-specific negative disclosure reactions ($\alpha_{\text{AIA-specific negative reactions, formal}} = .92$; $\alpha_{\text{AIA-specific negative reactions, informal}} = .93$) than AIA-specific positive reactions ($\alpha_{\text{AIA-specific positive reactions, formal}} = .75$; $\alpha_{\text{AIA-specific positive reactions, informal}} = .60$).

Data Analytic Plan

All data analyses completed to identify outliers and otherwise clean data were conducted in SPSS 25. Descriptive statistics were run to determine normality of variables to be included in

analyses; participants were excluded if their responses were greater than or equal to 3.19 standard deviations above the mean for a given variable, consistent with standards for data transformation (Edner, personal communication, March 2019).

Results

Participants

Based on the screening surveys for the present study, 1161 women were eligible for participation. A total of 244 women ultimately completed the survey. Nine women did not report whether they had experienced an AIA or a non-AIA. An additional six eligible participants completed some portion of the main study survey more than once; five completed some portion of the survey twice and one completed some portion of the survey three times. Only the first set of responses from these duplicate or triplicate participants were retained and their later responses were eliminated, given that having been exposed to the survey previously may have influenced their second set of responses.

The final sample included 229 women, the majority of whom were enrolled as full-time ($n = 223$; 97.38%) as opposed to part-time students. Forty-six students were freshman, 79 were sophomores, 66 were juniors, and 38 were seniors. Participants were 20.00 years old on average ($SD = 2.55$ years). Most women identified their race as white ($n = 130$), followed by Asian/South Asian ($n = 40$), multi-racial ($n = 39$), other ($n = 10$), Native American/American Indian/Alaska Native ($n = 4$), Middle Eastern/North African ($n = 3$), and African American/Black ($n = 2$). Approximately half of participants were single at the time of the study ($n = 106$), and the remaining participants were either dating ($n = 34$), in a romantic relationship ($n = 73$), living with their romantic partner ($n = 12$), or married ($n = 3$). Approximately 56% of students did not identify as being affiliated with a religion at the time of the study ($n = 129$). Regarding political

attitudes, on a scale of 1 (*very liberal*) to 7 (*very conservative*) average, participants identified their political attitudes as being more liberal than conservative ($M = 2.56$, $SD = 1.27$).

Sexual Assault History

Responses to the SES-R demonstrated that participants had experienced and disclosed diverse completed and attempted sexual assaults since the age of 14 and during the last year (see Table 1.1). Notably, over two-thirds of each survivor group had experienced completed rape, and over one-half of each group had experienced sexual assault by force.

Approximately two-thirds of the sample reported that they had experienced and disclosed an AIA ($n = 150$; 65.50%), and the remaining participants reported that neither they nor the perpetrator(s) had consumed alcohol prior to the sexual assault they had disclosed ($n = 79$; 34.50%). Of the 150 participants who had experienced and disclosed an AIA, 124 reported that both they and the perpetrator(s) consumed alcohol prior to the assault, 16 reported that only they had consumed alcohol prior to the assault, and ten reported that only the perpetrator had consumed alcohol prior to the assault.

Disclosure Confidantes

Both AIA survivors and non-AIA survivors reported that they had disclosed their assault to approximately five different people ($M_{AIA} = 5.80$, $SD_{AIA} = 6.07$; $M_{non-AIA} = 5.36$, $SD_{non-AIA} = 3.78$). Due to the skewness (2.82) and kurtosis (11.64) of this particular variable, a Mann Whitney U test was conducted to compare mean total disclosure confidantes across survivor groups; results suggested that AIA and non-AIA survivors did not differ in their total number of disclosure confidantes ($p = .45$).

Collapsing across assault types, 210 participants had ever disclosed to any informal support, whereas only 58 participants had ever disclosed to any formal support (see Table 1.2).

Far fewer participants had never disclosed an informal support than a formal support: only two women reported having never disclosed to an informal support, whereas 157 reported that they had never disclosed to a formal support. Consistent with this pattern, among AIA survivors, 137 had ever disclosed to any informal support, whereas only 33 had ever disclosed to a formal support. Twenty-two non-AIA survivors had ever disclosed to a formal support, and 73 non-AIA survivors had ever disclosed to an informal support.

As demonstrated in Table 1.2, AIA and non-AIA survivors were particularly likely to have disclosed their assault to a female friend; indeed, this was the most common disclosure confidante for both AIA and non-AIA survivors. Both groups of survivors also frequently disclosed to romantic partners and male friends. Participants were remarkably unlikely to have disclosed to formal social supports, with the exception of mental health providers.

Exploratory Analyses. Exploratory logistic regressions were conducted (with an alpha correction of .01) to determine whether survivor groups differed in their likelihood of disclosing to the most frequently endorsed disclosure confidantes, specifically, mothers, female friends, male friends, romantic partners, and mental health providers. These exploratory analyses demonstrated that survivor group was significantly associated with previous disclosure to mothers ($\beta = 1.34, p < .001$) such that AIA survivors were nearly four times more likely than non-AIA survivors to have ever disclosed to their mothers (OR = 3.81). The association between survivor group and previous disclosure to a mental health provider also approached significance ($\beta = 0.60, p = .06$), with AIA survivors being approximately two times more likely than non-AIA survivors to have disclosed to a mental health provider (OR = 1.82). Survivor group was not significantly associated with previous disclosure to a female or male friend, or romantic partner (all $ps > .01$).

Social Reactions to Sexual Assault Disclosure Across Disclosure Confidantes

General disclosure reactions from formal social supports. On average, AIA and non-AIA survivors in this sample received negative disclosure reactions less frequently than positive disclosure reactions from formal supports (see Table 1.3). A series of *t*-tests, utilizing a Bonferroni correction with an alpha of .006, demonstrated that AIA and non-AIA survivors did not differ in the frequency with which they received any of the negative disclosure reactions as well as emotional support reactions from formal social supports (all *ps* > .006). Interestingly, the difference between AIA and non-AIA survivors' average frequency of receiving tangible aid reactions trended towards significant ($t(55) = -2.80, p = .007$), such that AIA survivors tended to receive tangible aid reactions more frequently than non-AIA survivors from formal social supports.

General disclosure reactions from informal supports. AIA and non-AIA survivors tended, overall, to receive positive disclosure reactions more frequently than negative disclosure reactions from informal supports (see Table 1.4). Results of *t*-tests conducted to compare AIA and non-AIA survivors' average frequency of receiving different negative and positive disclosure reactions from informal supports largely mirrored those described above: no significant differences emerged (all *ps* > .006).

AIA-specific disclosure reactions. In line with results of general disclosure reaction analyses, overall, both formal and informal supports were more likely to respond with positive than with negative AIA-specific disclosure reactions (see Table 1.5). Although all negative, AIA-specific disclosure reactions occurred relatively rarely across both social support groups, being called a nasty name for having been sexually assaulted while drinking was a particularly infrequent AIA-specific disclosure reaction.

Discussion

The present study aimed to characterize sexual assault disclosure – specifically, disclosure confidantes and the reactions survivors received – among undergraduate survivors of AIAs and non-AIAs. It further aimed to identify variation in disclosure confidantes and reactions received among these survivor groups.

Findings from the present study regarding typical disclosure confidantes are both consistent with and discrepant from extant research on undergraduate women's assault disclosure experiences that has failed to identify whether or not the disclosed assault involved alcohol. Previous research has suggested that college women disclose to approximately three confidantes on average and a maximum of five confidantes (Littleton, 2010). In the present sample, however, across AIA and non-AIA survivors, women disclosed to an average of approximately five confidantes. Additionally, AIA and non-AIA survivors did not differ in their total number of disclosure confidantes. Echoing previous research by Banyard and colleagues (2010) as well as Orchowski and Gidycz (2012), survivors in this sample were highly likely to have disclosed to informal supports, particularly female friends. Survivor groups did not differ in their likelihood of disclosing to a female friend.

Adding to extant literature, the present study found that AIA survivors were nearly four times more likely than non-AIA survivors to have disclosed to their mothers. Additionally, a trend emerged in which AIA survivors were approximately two times more likely than non-AIA survivors to have ever disclosed to mental health providers. Future research may benefit from investigating whether sexual assault acknowledgment or labeling is associated with disclosure confidantes. Many survivors do not label their assaults as such (e.g., Harned, 2004). Some women who have experienced AIAs may be reluctant to label their assaults because they or the

perpetrator were intoxicated at the time of the assault, thereby rendering the survivor to blame or the perpetrator blameless, respectively (Harned, 2005). Given that survivors experience psychological distress regardless of whether or not they label their assaults (Harned, 2004), perhaps AIA survivors were more likely to disclose to their mothers or to mental health professionals because they were seeking guidance or support from a trusted or trustworthy authority figure regarding a distressing experience that they did not know how to understand. Disclosures to mental health providers may also have been related to survivors' assault-related distress. Indeed, sexual assault victimization is associated with negative mental health sequelae (e.g., Kilpatrick et al., 2007); perhaps AIA survivors felt somewhat more in need of seeking professional help with coping with this distress than did AIA survivors. Future research on the function of disclosing to difference social supports could elucidate this issue.

Beyond disclosures to mental health professionals, disclosures to formal social supports were quite rare. AIA and non-AIA survivors disclosed to legal system professionals or individuals associated with their academic institutions very infrequently. Future research might benefit from addressing AIA and non-AIA survivors' motives for disclosing – or not – to different social supports, and could provide insight into the extent to which recently proposed changes to Title IX (Planned Parenthood Action Fund, 2018) relate to undergraduates' motives for disclosing to different formal supports. Importantly, previous research suggests that Asian American undergraduate women are significantly less likely than undergraduate White women to disclose alcohol-involved unwanted sexual contact to both friends and parents (Koo, 2011). Evidently, parents and friends are not the only informal social supports to whom undergraduate survivors disclose, and the present study's findings suggest that a friend's gender may relate to

their likelihood of receiving a disclosure. Therefore, it is critical that future research clarify racial differences in a wider range of the social supports to whom AIA and non-AIA survivors disclose.

Comparisons of the disclosure reactions that AIA as opposed to non-AIA survivors received from informal versus formal supports largely suggested that survivor groups were more similar than they were different. Findings trending towards significance – that AIA survivors tended to receive tangible aid reactions more frequently than did non-AIA survivors, across social support groups – suggest that additional research comparing disclosure reactions received by AIA versus non-AIA survivors is warranted. Indeed, so that survivors who are seeking tangible aid from formal social supports are able to receive it, it will be beneficial to understand what aspects of AIA survivors' disclosure experiences may evoke that response from such social supports. Importantly, across survivor groups and social supports, participants tended to have received positive disclosure reactions more frequently than negative reactions. Future research should also seek to clarify whether there are racial differences in the disclosure reactions that AIA and non-AIA survivors receive (cf. Koo, 2011).

AIA survivors were also unique in that they received disclosure reactions that referenced the role of alcohol in the sexual assault. Interestingly, the least common negative, AIA-specific disclosure reaction from both formal and informal disclosure confidantes was also the most overtly attacking. It may be beneficial to identify factors contributing to the extent to which confidantes' responses are antagonistic in future research.

Limitations

The present study has several limitations. Given the cross-sectional study design, results must be interpreted cautiously. Additionally, the participants in this sample were predominantly white and politically liberal; thus, generalizability to other undergraduate survivors may be

limited. An additional and unique factor that may limit generalizability is the timing of the data collection, which overlapped with the resurgence of the #MeToo movement in the fall of 2017. This movement encouraged and facilitated women's public disclosures of sexual assault and harassment. It is likely that this unique historical context facilitated disclosure as well as affected disclosure reactions, and that the influence of this historic movement on participants' related behavior may have changed as the movement grew and changed over time. The field may benefit from qualitative investigation of the impact of #MeToo on survivors' disclosure experiences and confidantes' responses.

Conclusions and Clinical Implications

This study addresses several glaring gaps in the extant literature on sexual assault disclosure. It is the first study to compare undergraduate AIA and non-AIA survivors' disclosure confidantes, both positive and negative general disclosure reactions, and both positive and negative general disclosure reactions from different disclosure confidantes. It is also the first study to evaluate AIA-specific disclosure reactions among undergraduate survivors, from different disclosure confidantes. Findings tentatively suggest that across assault groups, female friends are most likely to receive disclosures. Additionally, AIA survivors are more likely to disclose to their mothers and somewhat more likely to disclose to mental health providers than are non-AIA survivors. Although AIA and non-AIA survivors appear to have more similar than disparate experiences in the disclosure reactions that they receive from both formal and informal supports, AIA survivors may be more likely to receive tangible aid reactions from formal supports than are non-AIA survivors. Additionally, when confidantes' reactions reference the presence of alcohol in AIA survivors' victimization experiences, said reactions tended to be subtly as opposed to overtly attacking.

Although survivors who disclosed to formal supports in this study were most likely to have disclosed to a mental health professional, very few survivors did indeed disclose to such professionals. Additionally, the majority of survivors across groups disclosed to informal social supports. It is possible that survivors in this study did not view formal supports as necessary or relevant to their post-assault adjustment and recovery. It is also possible that survivors were unaware of assault-specific resources or otherwise unwilling to access said resources. Overall, this pattern suggests that survivors are more likely to engage with individuals who are not professionally trained to provide trauma-related care, and speaks to the importance of developing and effectively advertising effective programming for sexual assault survivors. These findings also suggest that providing social supporters, particularly women who may be friends with other women, with guidance on how to respond to sexual assault disclosures from their friends.

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Table 1.1. AIA and non-AIA Survivors' Sexual Assault Histories.

	Non-AIA <i>n</i> (%)	AIA <i>n</i> (%)
Tactic		
Coercion	21 (27.27%)	5 (3.52%)
Incapacitation	11 (14.29%)	59 (41.55%)
Force	45 (58.44%)	78 (54.93%)
Outcome		
Contact	12 (15.19%)	16 (10.81%)
Attempted rape	13 (16.46%)	28 (18.92%)
Completed rape	54 (68.35%)	104 (70.27%)

Table 1.2. Social Supports to Whom AIA and non-AIA Survivors Disclosed

Social support	Non-AIA survivors	AIA survivors
	<i>n</i>	<i>n</i>
Mother	24	18
Father	10	10
Step-mother	0	2
Step-father	2	2
Sibling	21	21
Step-sibling	1	0
Other relative	5	7
Female friend	61	121
Male friend	31	63
Trans friend	4	1
Acquaintance	7	5
Romantic partner	31	51
Someone I was casually dating	5	13
Someone with whom I have a sexual but not romantic relationship	10	7
Former romantic partner	14	18
Mental health provider	21	29
Doctor	8	13
Legal system professional (e.g., police officer)	3	6
Legal advocate	3	7
Lawyer	2	0
Professor or teacher	5	7
School or university staff or administrator	0	6

Table 1.3. General Disclosure Reactions from Formal Supports, across AIA and non-AIA Survivors.

Reaction	Non-AIA <i>M (SD)</i>	AIA <i>M (SD)</i>	<i>t</i>	<i>df</i>	<i>p</i>
Blaming	0.78 (1.04)	0.88 (0.97)	-0.36	55	.72
Stigmatizing	1.08 (.91)	0.66 (0.82)	1.85	55	.07
Infantilizing	0.90 (1.10)	0.69 (0.99)	0.77	55	.45
Controlling	0.74 (1.00)	0.72 (0.97)	0.08	55	.94
Distracting	1.46 (1.20)	1.20 (1.05)	0.86	55	.39
Egocentric	0.94 (0.91)	1.03 (1.15)	-0.33	55	.75
Emotional Support	2.30 (0.84)	2.27 (0.80)	0.16	55	.88
Tangible Aid	1.72 (0.99)	2.52 (1.12)	-2.80	55	.007

Note. SRQ-S items measure the frequency with which a given reaction is received on a scale of 0 (*never*) to 4 (*always*).

Note. Table includes data from the subset of participants who had ever disclosed to any formal social support.

Table 1.4. General Disclosure Reactions from Informal Supports, across AIA and non-AIA Survivors.

Reaction	Non-AIA <i>M (SD)</i>	AIA <i>M (SD)</i>	<i>t</i>	<i>df</i>	<i>p</i>
Blaming	0.72 (0.99)	1.02 (1.03)	-2.10	216	.04
Stigmatizing	0.65 (0.92)	0.45 (0.74)	1.60	125.36	.11
Infantilizing	0.58 (0.92)	0.65 (1.02)	-0.52	216	.60
Controlling	0.51 (0.82)	0.55 (0.83)	-0.39	216	.70
Distracting	0.94 (1.05)	1.04 (1.05)	-0.68	216	.50
Egocentric	1.01 (1.02)	0.85 (0.97)	1.12	216	.27
Emotional Support	2.36 (1.02)	2.33 (1.19)	0.17	216	.86
Tangible Aid	1.11 (1.09)	1.23 (1.16)	-0.75	216	.46

Note. SRQ-S items measure the frequency with which a given reaction is received on a scale of 0 (*never*) to 4 (*always*).

Table 1.5. Average Frequency of Receiving AIA-specific Disclosure Reactions, from Formal and Informal Supports.

	Formal Supports <i>M (SD)</i>	Informal Supports <i>M (SD)</i>
Negative reactions	0.58 (0.80)	0.62 (0.76)
Told you the experience was your fault because you were drinking when it happened	0.57 (0.94)	0.70 (1.01)
Said that you should have known better than to be drinking or drunk in that situation	0.57 (0.94)	0.88 (1.11)
Said your experience could not have really been unwanted because it happened while you were drinking	0.43 (0.77)	0.53 (.93)
Called you a nasty name for having this experience while drinking	0.20 (0.66)	0.23 (.72)
Minimized the seriousness of your experience because you were drinking when it happened	0.77 (0.17)	0.85 (1.23)
Said you must have acted like you wanted sex at the time (e.g., led him on) but regret it now because you were drinking or drunk	0.69 (1.23)	0.60 (0.97)
Asked how you could remember what happened if you were drinking when it happened; that is, they questioned your memory	0.87 (1.07)	0.67 (1.00)
Said you shouldn't blame the other person (or people) involved just because you made bad choices while drinking	0.47 (0.97)	0.45 (.084)
Treated you in some way that made you feel worse because you were drinking when it happened	0.70 (1.02)	0.67 (0.99)
Positive reactions	1.95 (1.12)	1.94 (1.23)
Said that you should have been able to go out and have a drink without worrying about something like this happening	2.07 (1.40)	2.12 (1.39)

Said it was not your fault or you were
taken advantage of because you were too
drunk to give consent

1.83 (1.46)

1.75 (1.53)

Note. SRQ-A items measure the frequency with which a given reaction is received on a scale of 0 (*never*) to 4 (*always*).

Mental Health Consequences of Social Reactions to College Women's Sexual Assault
Disclosures

Abstract

Approximately 25% of college women experience some form of sexual victimization in college (Cantor et al., 2015), and approximately 75% of these assaults involve alcohol use by the victim and/or perpetrator (Reed, Amaro, Matsumoto, & Kaysen, 2009). Sexual assault has many mental health consequences, including posttraumatic stress disorder (PTSD) symptoms and drinking problems (e.g., Zinzow, Resnick, McCauley, Amstadter, Ruggiero, & Kilpatrick, 2012). The reactions women receive when they disclose their assault relate to these post-assault mental health sequelae. Indeed, survivors who receive more negative disclosure reactions – such as being blamed or distracted by the people to whom survivors disclose – experience more severe PTSD symptoms (e.g., Relyea & Ullman, 2015b) and report more severe alcohol use behavior (Sigurvinsdottir & Ullman, 2015). Moreover, among alcohol-involved assault (AIA) survivors, receiving more negative disclosure reactions that specifically reference that the assault involved alcohol is also associated with greater post-assault alcohol use, problem drinking, and PTSD symptom severity (Relyea & Ullman, 2015a). Despite the high rates of sexual assault on college campuses, little research has focused on college women’s disclosure experiences and the association between disclosure reactions and post-assault mental health functioning. Moreover, no research has focused on this relationship among undergraduate AIA survivors. Further, scant research has examined individual-level factors contributing to the association between disclosure reactions and post-assault mental health outcomes association. One such drinking-related factor – drinking to cope with negative emotions (i.e., drink-to-cope motive; e.g., Cooper 1994) – is related to alcohol use behaviors; yet, it is largely absent from past examinations of the association between disclosure reactions and post-assault mental health functioning. The current study examines the relationships among general and AIA-specific negative disclosure reactions,

PTSD symptoms, drink-to-cope motive, and alcohol use behaviors among undergraduate sexual assault survivors ($N = 229$; $n_{AIA} = 150$, $n_{non-AIA} = 79$). Results demonstrated among undergraduate AIA survivors, both general and AIA-specific negative disclosure reactions were associated with elevated PTSD symptoms, which are in turn related to stronger drink-to-cope motivation, and finally, alcohol use behavior. However, among non-AIA survivors, general negative disclosure reactions were associated with elevated PTSD symptoms and in turn drink-to-cope motivation, but that there was no subsequent association with alcohol use behavior. These results highlight the importance of the social context of sexual assault recovery and of addressing disclosure experiences in therapy.

Mental Health Consequences of Social Reactions to College Women's Sexual Assault

Disclosures

Introduction

College women are uniquely at risk for sexual assault: approximately one in five women will be assaulted by the time she graduates from college (Cantor et al., 2015). Alcohol-involved assaults (AIAs) are particularly prevalent among undergraduate women, with approximately 75% of undergraduate sexual assaults involving alcohol use by the victim and/or perpetrator (Reed et al., 2009).

Sexual assault is causally associated with negative outcomes in a variety of life domains. Most widely recognized are the mental health effects of sexual assault, among which Posttraumatic Stress Disorder (PTSD) and elevated alcohol use are prevalent and prominent. Recent research has demonstrated that 30% of undergraduates who had previously been raped met criteria for a provisional diagnosis of PTSD related to sexual trauma (Littleton & Decker, 2017), and undergraduate women with a history of drug- or alcohol-involved rape were approximately three times more likely to meet criteria for PTSD than are those without such an assault history (Zinzow, Resnick, McCauley, Amstadter, Ruggiero, & Kilpatrick, 2010). Assault survivors are also at risk for greater alcohol consumption during the years following their assault (Bryan et al., 2016; Kaysen, Neighbors, Martell, Fossos, & Larimer, 2006; Lindgren, Neighbors, Blayney, Mullins, & Kaysen, 2012). Moreover, survivors are more likely to engage in maladaptive alcohol use – characterized by negative consequences for one's mental health, physical health, relationships, and/or school or work productivity (e.g., White & Labouvie, 1989) – than women who have not been sexually victimized (Bryan et al., 2016; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Kilpatrick et al., 2007; Walsh et al., 2014). Assault survivors

who engage in such alcohol use are, sadly, at high risk for revictimization (Gidycz et al., 2007). PTSD symptoms and risky alcohol use also tend to co-occur. Indeed, national data suggest that approximately one-third of undergraduate women who have experienced alcohol-involved rape meet criteria for comorbid PTSD and alcohol abuse (Zinzow et al., 2012). Interestingly, AIA and non-AIA survivors seem to experience a different degree of risk for experiencing PTSD symptoms and risky alcohol use. Comorbid PTSD and alcohol abuse, binge drinking (defined as consuming at least four standard drinks in two hours, for women; National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2019), and meeting criteria for substance abuse have been identified as more prevalent among AIA than non-AIA survivors (McCauley, Ruggiero, Resnick, Conoscenti, & Kilpatrick, 2009; Zinzow et al., 2012), whereas a lifetime diagnosis of PTSD was more common among non-AIA survivors than AIA survivors (Zinzow et al., 2010, 2012).

Extant literature indicates that one factor that may relate to these mental health sequelae are women's assault disclosure experiences – that is, what happens when women tell others that they have been sexually assaulted. A growing body of literature indicates that receiving negative disclosure reactions, such as victim blame, indifference, shaming, minimizing, or failing to believe the survivor, is associated with more severe PTSD symptoms and alcohol use behaviors or maladaptive drinking (e.g., Ullman, 1999; Sigurvinsdottir & Ullman, 2015).

Surprisingly, very little research has focused on the relationship between sexual assault disclosure and mental health functioning among undergraduate women. Moreover, the available research on undergraduate assault disclosure has failed to evaluate whether the assaults involved alcohol (e.g., Orchowski & Gidycz, 2012), despite the high prevalence of alcohol-involved assaults (AIAs) among undergraduate women. Thus, the present study will evaluate disclosure of AIAs and non-AIAs, and related mental-health outcomes among undergraduate women. It will

also consider the roles of drinking-related factors in these connections, specifically drinking motives.

Sexual Assault Disclosure Reactions

Research on sexual assault disclosure that has been conducted primarily with community women demonstrates that disclosure confidantes respond with a mix of negative disclosure reactions and positive disclosure reactions (e.g., Ullman, 2000). Negative disclosure reactions are frequently characterized by invalidation, verbally attacking the survivor, and minimizing the survivor's experience and/or needs. Many negative disclosure reactions communicate, apart from their overt content, distinct messages simultaneously: first, that either the survivor or the assault is a "problem"; and second, that the confidante rejects the survivor because of this "problem," and/or is either unable or unwilling to effectively help the survivor cope with the "problem" that the confidante has identified (Relyea & Ullman, 2015b). Confidantes are particularly likely to reject survivors when they have cast survivors as opposed to the assault as "the problem." Specific negative disclosure reactions include: blaming the survivor for having been assaulted (blaming reactions); trying to or actually taking control of the survivor's behavior (controlling reactions); treating the survivor like she is damaged goods (stigmatizing reactions), or incompetent (infantilizing reactions); distracting the survivor from thinking or talking about the assault (distracting reactions); or becoming so emotionally distressed by the disclosure that the survivor ultimately feels compelled to take care of the disclosure confidante (egocentric reactions) (Ullman, 2000; Ullman, personal communication, August 23, 2016).

Interestingly, recent research (Relyea & Ullman, 2015a) suggests that AIA survivors may receive both disclosure reactions that do not reference that the assault involved alcohol (i.e., general negative disclosure reactions) *and* reactions that do reference that the assault involved

alcohol (i.e., AIA-specific negative disclosure reactions). AIA-specific negative reactions are frequently characterized by blaming the survivor or doubting her experience due to the fact that the assault involved alcohol. Importantly, only one study to date has characterized AIA survivors' receipt of AIA-specific and general negative disclosure reactions, and this study did not specifically work with undergraduate assault survivors (Ullman & Relyea, 2015a).

Overall, there is very little research on undergraduate women's sexual assault disclosure. From this limited literature, it appears that college women receive a mix of both general positive and negative disclosure reactions in response to their adult sexual assault (ASA [sexual assault experienced at or after the age of 14]) disclosures (Borja, Callahan, & Long, 2006; Orchowski & Gidycz, 2012). In both cross-sectional and longitudinal studies of only general negative disclosure reactions to disclosures of college women's most severe ASA, college women were most likely to receive controlling or distracting reactions whereas blaming reactions were relatively infrequent (Littleton, 2010; Littleton, Grills-Taquechel, & Axsom, 2009). However, none of these studies indicated whether the ASA being disclosed involved alcohol.

Negative Disclosure Reactions and PTSD Symptoms

The aforementioned gaps in the field's understanding of undergraduate women's sexual assault disclosure experiences are troublesome given that literature from the past two decades has consistently demonstrated that negative reactions to sexual assault disclosure relate to worse post-assault mental health outcomes among community women (e.g., Ullman, 1996). Indeed, greater general negative disclosure reactions are associated with increasingly more severe PTSD symptom severity (Ullman & Filipas, 2001; Ullman & Peter-Hagene, 2014). The same patterns have been observed in preliminary research with undergraduate women. Cross-sectionally, controlling reactions in response to disclosure of college women's most serious ASA were

associated with more severe PTSD symptoms (Orchowski, Untied, & Gidycz, 2013). Longitudinally, global general negative reactions (i.e., collapsing across specific disclosure reaction subtypes) to disclosure of college women's most serious ASA predicted more severe PTSD symptoms (Littleton, 2010). Given the impairment and distress associated with PTSD symptoms (e.g., American Psychiatric Association, 2013) and the high rates of sexual assault-related PTSD symptoms among undergraduate survivors (Kilpatrick et al., 2007), it is imperative that additional research in this domain be conducted with undergraduate AIA survivors.

Negative Disclosure Reactions and Alcohol Use

Women who are sexually assaulted are highly likely to use alcohol frequently and/or in high quantities (e.g., Kilpatrick et al., 2007). They are also more likely to do so than their counterparts who have not been assaulted (Bryan et al., 2016). Moreover, akin to PTSD symptoms, preliminary evidence suggests that the greater the general negative disclosure reactions that community women receive – both global and specific negative reactions – the greater their alcohol use and alcohol-related problems (Relyea & Ullman, 2015a; Sigurvinsdottir & Ullman, 2015). Yet, there have been no studies to date of the association between college women's alcohol use and disclosure reactions they have received. In light of the baseline prevalence of problem drinking among undergraduate women (e.g., Lorenz & Ullman, 2016), and the prevalence of assault-related problem drinking among undergraduate women (e.g., Lindgren et al., 2012), this gap in the literature is both noteworthy and problematic.

Alcohol-involved Sexual Assaults: Disclosure Patterns, Disclosure Reactions, and Mental Health

Once again, there is very limited research on the association between disclosure reactions and mental health outcomes among undergraduate women who have experienced AIAs. In fact,

there is only one such study, which has addressed differences in disclosure patterns and negative disclosure reactions received among undergraduate women (Littleton et al., 2009). Indeed, there are no studies to date that have addressed the relationship between mental health and disclosure reactions among undergraduate women who have experienced and disclosed AIAs.

As previously noted, women who disclose an AIA may receive negative disclosure reactions that specifically address that alcohol was involved in her assault (Relyea & Ullman, 2015a). In the only study that has addressed the respective relationships between general and AIA-specific negative disclosure reactions and mental health functioning, Relyea and Ullman (2015a) demonstrated that general and AIA-specific disclosure reactions relate differently to post-assault alcohol use *and* PTSD symptoms. At the bivariate level, both general and AIA-specific negative disclosure reactions were positively associated with problems related to alcohol use, including getting feedback from others that the survivor's drinking is a problem and seeking professional help for alcohol use, and PTSD symptoms. Regression analyses demonstrated that AIA-specific negative disclosure reactions were associated with more severe problem drinking, whereas general negative disclosure reactions were associated with more severe PTSD symptoms and greater frequency of binge drinking. Given the high prevalence of AIAs among undergraduate women, it would be beneficial to address relationships between general and AIA-specific negative disclosure reactions among undergraduate AIA survivors.

Drinking Motives

There is ample evidence that assault survivors drink alcohol to cope with negative affect – in other words, that coping motives drive survivors' alcohol use (e.g., Kaysen et al., 2007; Lindgren et al., 2012). Importantly, and not surprisingly, assault survivors drink to cope

specifically with their trauma-related distress (Miranda, Meyerson, Long, Marx, & Simpson, 2002), which likely includes PTSD symptoms.

Such research is consistent with motivational models of alcohol use, which posit that people consume alcohol in order to obtain specific ends (e.g., Cox & Klinger, 1988). Cox and Klinger (1988) hypothesized that one's drinking is motivated by whether one's desired drinking-related outcome is positive or negative, and whether the desired outcome is external (e.g., social) or internal. Cooper and colleagues (1994, 1995) expanded on this formulation of drinking motives and proposed that there are four different types of drinking based on these two dimensions: external, positive reinforcement (drinking to enhance one's social experience); external, negative reinforcement (drinking to avoid social rejection); internal, positive reinforcement (drinking to enhance positive emotions); and internal, negative reinforcement (drinking to reduce negative emotions). These researchers further suggested that alcohol consumption that serves the function of coping with negative affect (i.e., internal, negative reinforcement) will be associated with antecedents and consequences that are different from those associated with drinking to serve other functions (for example, drinking to enhance positive affect). Finally, Cooper and colleagues (1995) also held that individuals who drink to cope lack other, more adaptive or effective methods of coping with emotional distress.

Applying these criteria to a fictional assault survivor who has received negative disclosure reactions, first, it is plausible that the negative disclosure reactions she receives implicitly communicate that disclosing her assault is an ineffective coping behavior. Thus, she is likely left still in need of coping with both her assault and with the PTSD symptoms to which these reactions have contributed. She may then be motivated to use alcohol to cope with her distress, which would likely effectively, and quickly, reduce her psychological distress. Over

time, through repeated exposure to the effectiveness of alcohol in reducing her in-the-moment distress, her drinking motives-related behavior is likely reinforced and may evolve into problem drinking. In this example, one can see that such drinking (i.e., characterized by the drinking-to-cope motive) has antecedents and consequences that would not logically correspond to any other drinking motives category, and that the survivor lacks alternative, more adaptive coping behaviors

This example is consistent not only with motivational models of alcohol use, but also with sexual assault disclosure research. Relyea and Ullman (2015a) demonstrated that both AIA-specific and general negative disclosure reactions were positively correlated with the drink-to-cope motive. Peter-Hagene and Ullman (2014) demonstrated that negative disclosure reactions were associated with more severe PTSD symptom; in turn, such symptoms were related to greater coping motives for drinking, and finally, problem drinking. This study represents the synthesis of multiple parallel yet never-before-connected bodies of research on the experiences of survivors of sexual assault. Given the high prevalence of sexual assault (e.g., Kilpatrick et al., 2007), related alcohol problems and PTSD symptoms (e.g., Kilpatrick et al., 2007; Zinzow et al., 2010) and coping drinking among undergraduate survivors (e.g., Fossos, Kaysen, Neighbors, Lindgren, & Hove, 2011; Kaysen et al., 2007; Lindgren et al., 2012; Miranda et al., 2002; Øverup, DiBello, Brunson, Acitelli, Neighbors, 2015), it is imperative to address these topics, as they relate to sexual assault disclosure, in this population of survivors. Indeed, such investigation could yield important insights into effective clinical interventions for such problems as they relate to disclosure experiences.

Present Study

As is evident from the literature reviewed thus far, there is no research on the relationship between sexual assault disclosure reactions among undergraduates, or on individual difference factors that may impinge upon this association. The present study will address these noteworthy gaps in the literature. Specific aims, hypotheses, and research questions of the current project include the following:

Aim 1: Based on previous literature with community women (e.g., Sigurvinsdottir & Ullman, 2015; Ullman, Filipas, Townsend, & Starzynski, 2007; Ullman, Townsend, Filipas, & Starzynski, 2007) and undergraduate women (e.g., Lindgren et al., 2012; Littleton, 2010), evaluate the relationships among general negative disclosure reactions, PTSD symptoms, drinking motives, and alcohol use behaviors.

Hypothesis 1: Among both AIA survivors and non-AIA survivors, general negative disclosure reactions will be positively associated with PTSD symptoms, which will be associated with the drink-to-cope motive, and in turn, alcohol use behaviors.

Research Question 1: Given that AIA and non-AIA survivors appear to differ in their respective risks for PTSD symptoms and risky alcohol use behaviors (e.g., Zinzow et al., 2012), does the strength of this relationship differ between AIA and non-AIA survivors?

Aim 2: Based on previous literature with community women (Relyea & Ullman, 2015a) and the aforementioned gaps in the literature related to undergraduate women, examine the relationships between AIA-specific negative disclosure reactions, PTSD symptoms, drinking motives, and alcohol use behaviors.

Research Question 2: Do AIA-specific negative disclosure reactions relate to PTSD symptoms and, in turn, to the drink-to-cope motive, and finally, drinking behaviors?

Method

Procedures

Recruitment. Following IRB approval of this study, participants were recruited via the PHSP September 2017 – May 2018. Participants were recruited online and via the Registrar’s office April – December 2018.

PHSP. Students in various psychology courses completed a large screening survey that consisted of questions assessing eligibility for various studies conducted via UW’s Psychology Department. Students who were eligible for this study were invited to participate by email. Initial invitation emails described the study, confidentiality measures, participants’ rights as human research subjects, and incentives for participation. Emails also contained the secure link to the study’s online measures, a unique password for accessing the website, and directions on how to login to the website with their password. Research staff contact information was provided so that potential participants could discuss any questions about participation or the study prior to participation with the investigator or research assistants. Women who did not respond to this initial email received reminder contacts about participation. After five reminder emails were sent, research assistants called participants to attempt to enroll them in the study.

Online recruitment. Advertisements describing a study on social relationships, sexual experiences, and drinking seeking women who were at least 18 years old and currently enrolled in college were posted to Craigslist, and study staff posted similar announcements to Facebook. These advertisements and announcements included a link to a study-specific screening survey. Study staff emailed eligible respondents to invite them to participate in the study; this invitation email contained the same information as the invitation email described above and the procedure for contacting these women was the same as described above.

UW Registrar's Office. Study staff obtained a list of all female undergraduate students who were at least 18 years old and currently enrolled at the UW from the UW Registrar's Office. These students received an email from study staff, advertising a study on social relationships, sexual experiences, and drinking; this email included a link to the same online screening survey that was posted online. Those who were eligible based on their responses to the screening survey received that same invitation email described above and were contacted in the aforementioned manner.

Measures

Demographic information. Participants reported on demographic information including age, race, ethnicity, year in college, and romantic relationship status.

Adult sexual assault and disclosure. The Sexual Experiences Survey – Revised (SES-R; Koss et al., 2007) was administered to assess participants' sexual assault histories. The SES-R uses behaviorally specific questions to assess women's experiences of victimization beginning at age 14. Questions assess assault tactics and frequency of experiencing different assault outcomes. Participants were also asked whether or not they had disclosed any of these sexual assault experiences.

General social reactions to sexual assault disclosure. Participants' general disclosure reactions were assessed with a 16-item version of the Social Reactions Questionnaire (Ullman, personal communication, August 23, 2016). The Social Reactions Questionnaire – Shortened (SRQ-S) has eight subscales, which measure blaming (e.g., "Told you that you were irresponsible or not cautious enough"), stigmatizing (e.g., "Avoided talking to you or spending time with you"), infantilizing (e.g., "Treated you as if you were a child or somehow incompetent"), controlling (e.g., "Made decisions or did things for you"), distracting (e.g., "Told

you to go on with your life”), and egocentric reactions (e.g., “Expressed so much anger at the perpetrator that you had to calm them down”), as well as emotional support (e.g., “Reassured you that you are a good person”) and tangible aid (e.g., “Provided information and discussed options”) reactions, with two items per subscale. Participants rated the frequency with which they had received each type of reaction on a scale of 0 (*never*) to 4 (*always*), and subscale scores were means. For the present study, only negative disclosure reaction subscales were used.

AIA-specific social reactions to sexual assault disclosure. Participants who had experienced and disclosed an AIA also completed the Social Reactions Questionnaire-Alcohol (SRQ-A; Relyea & Ullman, 2015a). This questionnaire measures reactions that reference that the assault disclosed involved alcohol use. The SRQ-A consists in two subscales, AIA-specific negative reactions (nine items; e.g., “Said your experience could not really have been unwanted because it happened while you were drinking”) and AIA-specific positive reactions (two items; e.g., “Said that you should have been able to go out and have a drink without worrying about something like this happening”). Participants rated the frequency with which they had received each type of reaction on a scale of 0 (*never*) to 4 (*always*), and subscale scores are means. Participants completed the SRQ-A twice: once reflecting reactions from informal supports, and once reflecting reactions from formal supports. For the present study, only negative disclosure reaction subscales were used.

PTSD symptoms. Participants’ past-month PTSD symptoms specifically related to the assault that they disclosed were measured with the Posttraumatic Diagnostic Scale for DSM-5 (PDS-5; Foa et al., 2015). Items assess symptoms of intrusion, avoidance, changes in mood and cognition, and arousal and hyperreactivity. The questionnaire also measures symptom onset and

duration, and symptom-related distress and interference. In this sample, the measure had good internal consistency ($\alpha = .93$).

Drinking to cope. Participants reported on their endorsement of the drink-to-cope motive via the Drinking Motives Questionnaire (DMQ; Cooper et al., 1994). The DMQ consists in 20 items and responses to all items are on a five-point scale, from 1 (*never or almost never*) to 5 (*always or almost always*). There are five items in the drink-to-cope motive subscale ($\alpha = .80$); an example item is: “Because it helps when you feel depressed or nervous.”

Alcohol use behaviors. A modified Quantity Frequency/Daily Drinking Questionnaire (QF/DDQ; Collins, Parks, & Marlatt, 1985) assessed typical and peak drinking during the previous month. The QF/DDQ measures typical number of standard drinks consumed when drinking, hours over which typical drinks are consumed, peak number of standard drinks, hours over which peak drinks were consumed, and typical number of days of the week on which alcohol was consumed. Standard drinks were defined as 12 ounces of approximately 5% alcohol by volume beer (ABV); 10 ounces of beer greater than 5% ABV (e.g., microbrew); 8 ounces of Canadian beer, malt liquor, or ice beer; 1 ounce of 100-proof liquor; and 1.25 ounces of 80-proof liquor.

Data Analytic Method

Correlations among study variables were conducted in SPSS. Path analysis was conducted to address H1 and RQ2, whereas multi-group path analysis was planned for RQ1. These structural analyses were conducted in MPlus Version 8.2. Models run for H1, RQ1, and RQ2 included general negative disclosure reactions or AIA-specific negative disclosure reactions, PTSD symptoms, and drink-to-cope motive as observed variables, whereas alcohol use

behaviors was modeled as a latent variable. All estimates reported in path analyses are standardized β estimates.

Results

Participants

Based on the screening surveys for the present study, 1161 women were eligible for participation. A total of 244 women ultimately completed the survey. Nine women did not report whether they had experienced an AIA or a non-AIA. An additional six eligible participants completed some portion of the main study survey more than once; five completed some portion of the survey twice and one completed some portion of the survey three times. Only the first set of responses from these duplicate or triplicate participants were retained and their later responses were eliminated, given that having been exposed to the survey previously may have influenced their second set of responses.

The final sample included 229 women ($n_{AIA} = 150$, $n_{non-AIA} = 79$). Forty-six participants were freshman, 79 were sophomores, 66 were juniors, and 38 were seniors. The majority of participants were enrolled as full-time ($n = 223$; 97.38%) as opposed to part-time students. Participants were 20.00 years old on average ($SD = 2.55$ years). Most women identified their race as white ($n = 130$), followed by Asian/South Asian ($n = 40$), multi-racial ($n = 39$), other ($n = 10$), Native American/American Indian/Alaska Native ($n = 4$), Middle Eastern/North African ($n = 3$), and African American/Black ($n = 2$). Approximately half of participants were single at the time of the study ($n = 106$), and the remaining participants were either dating ($n = 34$), in a romantic relationship ($n = 73$), living with their romantic partner ($n = 12$), or married ($n = 3$). Approximately 56% of students did not identify as being affiliated with a religion at the time of the study ($n = 129$). Regarding political attitudes, on a scale of 1 (*very liberal*) to 7 (*very*

conservative) average, participants identified their political attitudes as being more liberal than conservative ($M = 2.56, SD = 1.27$).

Descriptive statistics for and correlations among variables included in path analyses. Descriptive statistics for and correlations among variables included in path analyses are reported in Table 2.1 (all participants), Table 2.2 (AIA survivors), and Table 2.3 (non-AIA survivors). Drinking behaviors tended to be intercorrelated, with statistically significant, positive correlations that were moderate to large in magnitude.

General Negative Disclosure Reactions (Aim 1)

A path analysis was conducted to evaluate the associations among general negative disclosure reactions, PTSD symptoms, the drink-to-cope motive, and alcohol use behaviors, collapsing across survivor groups. The model was an acceptable fit for the data, $\chi^2(20) = 51.55, p = .0001$, root mean square error of approximation (RMSEA) = .08 (90% CI [0.06, 0.11]), comparative fit index (CFI) = .95, Tucker-Lewis Index (TLI) = .93, standardized root mean square residual (SRMR) = .06. As can be seen in Figure 2.1, general negative disclosure reactions related to more severe PTSD symptoms, which were in turn associated with stronger drink-to-cope motive; finally, drink-to-cope motive related to elevated alcohol use behaviors. All of these associations were statistically significant. Based on the model's standardized estimates and modification indices, an alternative model was run in which the latent alcohol use variable consisted of number of hours spent drinking during the maximum drinking episode during the past month, number of days spent drinking during a typical week in the past month, total number of drinks consumed in a typical week during the past month, and number of hours spent drinking during a typical week in the past month. This yielded the best fitting model for the data, in which the aforementioned positive associations remained statistically significant, was an acceptable fit

for the data, $\chi^2 (14) = 28.04, p = .01, RMSEA = .07$ (90% CI [0.03, 0.10]), CFI = .97, TLI = .96, SRMR = .05 (see Figure 2.2).

Among AIA survivors, the model tested for RQ 1 was also an acceptable fit for the data, $\chi^2 (20) = 38.08, p = .01, RMSEA = .08$ (90% CI [0.04, 0.12]), CFI = .95, TLI = .93, SRMR = .05. Again, general negative disclosure reactions were positively associated with PTSD symptom severity; PTSD symptom severity was positively associated with drink-to-cope motive, which was in turn positively associated with alcohol use behaviors, including maximum drinks consumed during one drinking occasion during the past month, number of hours spent drinking during the maximum drinking episode during the past month, total number of drinks consumed in a typical week during the past month, number of hours spent drinking during a typical week in the past month, and number of days on which alcohol was consumed in a typical week in the past month. All paths were statistically significant (see Figure 2.3). Respecification yielded a model that was a good fit for the data when the latent alcohol use behavior included maximum drinks consumed during one drinking occasion during the past month, number of hours spent drinking during the maximum drinking episode during the past month, total number of drinks consumed in a typical week during the past month, and number of days on which alcohol was consumed in a typical week during the past month, $\chi^2 (14) = 23.95, p = .05, RMSEA = .07$ (90% CI [.01, .12]), CFI = .95, TLI = .93, SRMR = .05. As evident in Figure 2.4, all positive paths in this model remained statistically significant.

Among non-AIA survivors, the proposed model did not fit the data, $\chi^2 (20) = 61.33, p = .00, RMSEA = .16$ (90% CI [.12, .21]), CFI = .90, TLI = .82, SRMR = .08 (see Figure 2.5). However, as with AIA survivors, a respecified model in which the latent alcohol use behavior included maximum drinks consumed during one drinking occasion during the past month,

number of hours spent drinking during the maximum drinking episode during the past month, total number of drinks consumed in a typical week during the past month, and number of days on which alcohol was consumed in a typical week during the past month was a good fit for the data, $\chi^2(14) = 19.53, p = .15, RMSEA = .07$ (90% CI [.00, .14]), CFI = .97, TLI = .95, SRMR = .07. Interestingly, in this model, general negative disclosure reactions were significantly, positively associated with PTSD symptoms, which in turn was significantly, positively associated with drink-to-cope motive. However, the association between drink-to-cope motive and alcohol use behavior was not statistically significant (see Figure 2.6).

In order to compare the strength of structural models across different participant samples using path analysis with multiple groups, a given model must be a good fit for the data in each participant sample (Muthén, 1999). Although the general negative disclosure reaction model was a good fit for the data in both the AIA and non-AIA survivor samples, the lack of significant association between the drinking-to-cope motive and alcohol use behaviors among non-AIA survivors indicated that path analysis with multiple groups was not appropriate to run, and instead that tests of measurement invariance were indicated to determine whether the latent alcohol use behavior variable captured the same construct across the survivor groups (Chen, 2007). Based on van den Schoot and colleagues' (2012) recommendations, a configural invariance model in which non-AIA survivors were the reference group was specified. In this model, the latent variable mean was fixed to 0 and the variance was fixed to 1 within each group. The configural model did not have good fit, $\chi^2(5) = 36.28, p = .00, RMSEA = .24, CFI = .78, TLI = .46, SRMR = .13$. A metric invariance model was then conducted (van den Schoot, Lugtig, & Hox, 2012), in which factor loadings were constrained to be equal across groups. In this model, the factor mean in both survivor groups was fixed to 0; factor variance was also fixed

among non-AIA survivors, to 1, but free to vary among AIA survivors. This model also did not have good fit, $\chi^2 (7) = 44.14, p = .00, RMSEA = .22, CFI = .73, TLI = .54, SRMR = .15$. Chen (2007) recommends that in samples such as the present one in which N was ≤ 300 and sample sizes are unequal, noninvariance is suggested by “a change of $\leq -.005$ in CFI, supplemented by a change of $\geq .010$ in RMSEA or a change of $\geq .025$ in SRMR” (p. 501). The configural and metric models exceeded these cutoffs, suggesting that measurement noninvariance was present. In other words, the path models were not the same across the two groups, and the latent alcohol use variable appears to have a different relationship to the remaining variables in the model in each survivor group. Therefore, the strength of the models could not be compared.

AIA-specific Negative Disclosure Reactions (Aim 2)

A path analysis was conducted to evaluate the associations among AIA-specific negative disclosure reactions, PTSD symptoms, the drink-to-cope motive, and in turn, alcohol use behaviors. The model was not a good fit for the data, $\chi^2 (20) = 37.83, p = .01, RMSEA = .11$ (90% CI [.06, .17]), $CFI = .87, TLI = .82, SRMR = .09$ (see Figure 2.7). Inspection of the model’s standardized estimates and fit indices suggested that removing both indicators related to hours spent drinking during the last month could improve model fit. This model was indeed a good fit for the data, $\chi^2 (9) = 12.28, p = .20, RMSEA = .07$ (90% CI [.00, .16]), $CFI = .97, TLI = .95, SRMR = .06$. Similar to the aforementioned model, AIA-specific negative disclosure reactions were associated with increased PTSD symptoms, which were in turn associated with stronger drink-to-cope motive, and in turn, elevated alcohol use behavior (see Figure 2.8).

Discussion

This paper sought to clarify the broader relationship between sexual assault disclosure reactions and survivors’ mental health among undergraduate sexual assault survivors. It is the

first empirical test of any structural relationship between negative disclosure reactions and survivors' mental health among undergraduate assault survivors in general, and specifically of undergraduate AIA survivors. The present study bridges several conceptually related, but historically disconnected, areas of research. This connection fills a critical gap in the field's understanding of assault recovery among undergraduate AIA survivors.

Consistent with hypotheses, general negative disclosure reactions were positively associated with PTSD symptoms, in turn, the drink-to-cope motive, and finally, alcohol use behaviors, when collapsing across survivor groups. These findings are consistent with previous research by Ullman and her colleagues (Peter-Hagene & Ullman, 2014; Sigurvinsdottir & Ullman, 2015) that has demonstrated that general negative disclosure reactions partially account for survivors' post-assault drinking behaviors both cross-sectionally and longitudinally, as does drink-to-cope motive. Importantly, the present study extends the extant literature on this phenomenon to undergraduate AIA survivors, who have historically been overlooked in the field's efforts to understand the social context of sexual assault recovery.

However, findings also suggested that this result may have been driven by the AIA survivor group, given that the same relationships existed among this survivor group but not non-AIA survivors. Indeed, among both AIA and non-AIA survivors in the present study, general negative disclosure reactions were associated with more severe PTSD symptoms, and in turn, stronger motivation to drink to cope. Although the drink-to-cope motive was associated with elevated alcohol use behaviors among AIA survivors, among non-AIA survivors, no such relationship existed. It therefore appears that although AIA and non-AIA survivors alike experience psychological distress due to the negative disclosure reactions that they have received and that they are motivated to cope with this distress maladaptively, by drinking. However, AIA

and non-AIA survivors act on this motivation differently: AIA survivors do indeed drink to cope, and non-AIA survivors may not. Future research may seek to clarify how non-AIA survivors cope with this distress apart from alcohol use.

These findings align with previous research on trauma-related psychopathology among AIA survivors versus non-AIA survivors. As noted, AIA survivors are at greater risk for risky alcohol use and comorbid PTSD and alcohol abuse than are non-AIA survivors (McCauley, Ruggiero, Resnick, Conoscenti, & Kilpatrick, 2009; Zinzow et al., 2012), whereas non-AIA survivors are at greater risk for a lifetime PTSD diagnosis than are AIA survivors (Zinzow et al., 2010, 2012). It is possible that findings from this study reflect these trends in survivor groups' respective risk for psychopathology, *and* also that such previously established trends reflect survivor groups' experiences with the social context of sexual assault recovery.

Alternatively, the present study's findings may be related to survivors' pre-assault alcohol use and repertoire of coping behaviors. It has been demonstrated that college women who engaged in binge drinking prior to being sexually assaulted were more likely to experience an AIA than a non-AIA, and that pre-assault binge drinking predicted post-assault binge drinking (McCauley, Calhoun, & Gidycz, 2010). Perhaps the AIA survivors in this sample had engaged in risky alcohol use prior to being assaulted with great enough frequency that they learned that alcohol use could effectively dampen psychological distress *and* that they did not have sufficient exposure to opportunities for learning adaptive emotion coping skills. Thus, when AIA survivors disclosed their assaults and were met with negative disclosure reactions, they were motivated to and actually did drink to cope with the distress that such reactions evoked because they lacked alternative coping behaviors. Longitudinal research that assesses survivors' coping behaviors in addition to constructs evaluated in the present study is needed to investigate this hypothesis.

AIA survivors in this sample evidenced a propensity for drinking to cope not only with PTSD symptoms associated with general negative disclosure reactions, but also with AIA-specific negative disclosure reactions. Interestingly, however, general and AIA-specific negative disclosure reactions related to different alcohol use behaviors. It is unclear why this difference in the association with drinking behaviors emerged. It will be important for future research to clarify this issue, as well as whether general or AIA-specific negative disclosure reactions confer an equal degree of risk for mental health problems.

Limitations

The present study has several limitations. First, given that this study is cross-sectional, causality cannot be inferred and results therefore must be interpreted cautiously. Relatedly, all measures were self-report and retrospective, which may have introduced the possibility of reporting biases. Additionally, the participants in this sample were predominantly white; thus, generalizability to racial or ethnic minority undergraduate survivors may be limited. An additional and unique factor that may limit generalizability is the timing of the data collection, which overlapped with the resurgence of the #MeToo movement in the fall of 2017. This movement encouraged and facilitated women's public disclosures of sexual assault and harassment. It is likely that this unique historical context facilitated disclosure as well as affected disclosure reactions, and that the influence of this historic movement on participants' related behavior may have changed as the movement grew and changed over time. The field may benefit from qualitative investigation of the impact of #MeToo on survivors' disclosure experiences and how they coped with social supports' reactions. Finally, as is the trend in disclosure reaction literature (e.g., Dworkin, Brill, & Ullman, under review), PTSD symptoms due to a sexual assault were assessed but symptoms or other distress specifically due to disclosure reactions

were not. Further research that addresses the connections of these specific sources of distress to drink-to-cope motive and alcohol use behavior is needed.

Conclusions and Clinical Implications

This study critically expands the extant literature on sexual assault disclosure by examining the relationships between negative disclosure reactions and common mental health problems that are associated with sexual assault victimization.

Findings from this study suggest that receiving general negative disclosure reactions puts undergraduate survivors of both AIAs and non-AIAs at risk for experiencing PTSD symptoms with which they are motivated to cope maladaptively, by using alcohol. Although AIA survivors engaged in alcohol use to cope with the distress that is evoked by AIA-specific negative disclosure reactions, non-AIA survivors do not engage in related alcohol use.

Replication of these findings in future research will provide fruitful information for effective psychotherapy with undergraduate survivors. With both AIA and non-AIA survivors, such intervention could target the relationship between general negative disclosure reactions and PTSD symptoms, for example by utilizing cognitive strategies to modify maladaptive disclosure reaction-related cognitions (e.g., Resick, Monson, & Chard, 2017). This link could also be addressed with behavioral exercises to gain exposure to avoided, disclosure-related situations in order to facilitate emotional processing (e.g., Foa, Huppert, & Cahill, 2005) or inhibitory learning (e.g., Craske, Treanor, Conway, Zbozinek, and Vervliet, 2014) that will effectively reduce the PTSD symptoms associated with negative disclosure reactions. With AIA survivors who have received either general or AIA-specific negative disclosure reactions, clinicians could also utilize strategies of evidence-based treatment for substance use disorders (e.g., McHugh, Hearon, & Otto, 2010) for coping with urges to use substances to manage psychological distress

when presenting problems include motivation to drink to cope and related alcohol use behaviors (e.g., DeMarce, Gnys, Raffa, & Karlin, 2014). These latter strategies serve the function of providing adaptive ways to cope with disclosure reactions and related psychological distress, given the theoretical supposition that individuals who are motivated to drink to cope lack coping behaviors that are adaptive, and alternative to drinking (Cooper, 1994).

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Table 2.1. Descriptive Statistics and Intercorrelations among Variables in Structural Model, Collapsing Across Survivor Group.

	1	2	3	4	5	6	7	8	<i>M (SD)</i>
1. General negative disclosure reaction	—	.47***	.34***	.12	.07	.03	.09	.13	0.97 (0.61)
2. PDS-5 total		—	.34***	-.02	.04	-.08	-.01	.07	15.62 (14.33)
3. Drink-to-cope motive			—	.25***	.12	.07	.18**	.09	2.18 (0.91)
4. Maximum drinks consumed in one drinking episode (past month)				—	.50***	.41***	.56***	.55***	6.85 (5.76)
5. Hours to consume maximum drinks (past month)					—	.39***	.51***	.56***	2.28 (1.93)
6. Number of days on which alcohol was consumed in a typical week (past month)						—	.60***	.58***	2.17 (1.17)
7. Number of drinks consumed in a typical week (past month)							—	.82***	6.76 (8.09)
8. Number of hours spent drinking in a typical week (past month)								—	5.04 (5.88)

Note. * $p < .05$ ** $p < .01$ *** $p < .001$

Table 2.2. Descriptive Statistics and Intercorrelations among Variables in Structural Model, among AIA Survivors.

	1	2	3	4	5	6	7	8	9	<i>M</i> (<i>SD</i>)
1. General negative disclosure reaction	—	.48***	.35***	.13	.00	-.02	.04	.08	.62***	1.01 (0.60)
2. PDS-5 total		—	.35***	.10	.11	.04	.11	.19*	.35***	13.14 (12.39)
3. Drink-to-cope motive			—	.30***	.12	.09	.22**	.09	.41***	2.24 (0.89)
4. Maximum drinks consumed in one drinking episode (past month)				—	.48***	.33***	.50***	.52***	.26**	7.85 (6.44)
5. Hours to consume maximum drinks (past month)					—	.35***	.53***	.56***	-.01	2.52 (1.99)
6. Number of days on which alcohol was consumed in a typical week (past month)						—	.57***	.52***	.03	2.37 (1.14)
7. Number of drinks consumed in a typical week (past month)							—	.80***	-.01	13.14 (12.39)
8. Number of hours spent drinking in a typical week (past month)								—	.06	2.24 (0.89)
9. AIA-specific negative disclosure reactions									—	0.57 (0.70)

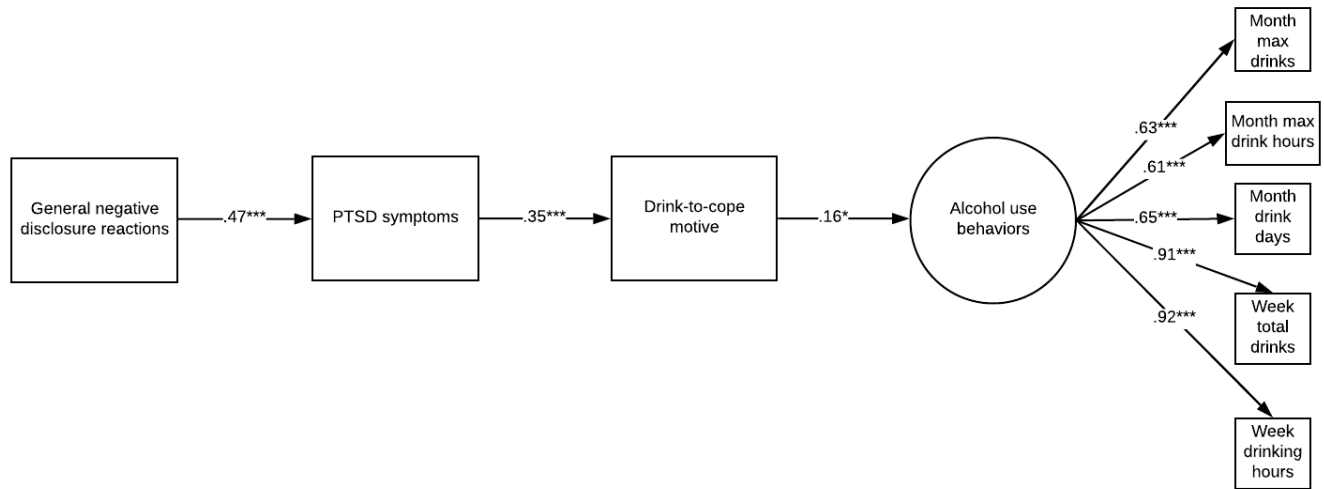
Note. * $p < .05$ ** $p < .01$ *** $p < .001$

Table 2.3. Descriptive Statistics and Intercorrelations among Variables in Structural Model, among Non-AIA Survivors.

	1	2	3	4	5	6	7	8	<i>M (SD)</i>
1. General negative disclosure reaction	—	.51***	.31**	.07	.18	.08	.19	.25*	4.76 (6.08)
2. PDS-5 total		—	.39***	-.13	.04	-.11	-.10	.02	3.47 (4.43)
3. Drink-to-cope motive			—	.09	.10	-.03	.03	.05	2.08 (0.96)
4. Maximum drinks consumed in one drinking episode (past month)				—	.56***	.60***	.73***	.61***	4.92 (3.48)
5. Hours to consume maximum drinks (past month)					—	.49***	.44***	.55***	1.78 (1.69)
6. Number of days on which alcohol was consumed in a typical week (past month)						—	.65***	.71***	1.82 (1.44)
7. Number of drinks consumed in a typical week (past month)							—	.89***	4.76 (6.08)
8. Number of hours spent drinking in a typical week (past month)								1	3.47 (4.43)

Note. * $p < .05$ ** $p < .01$ *** $p < .001$

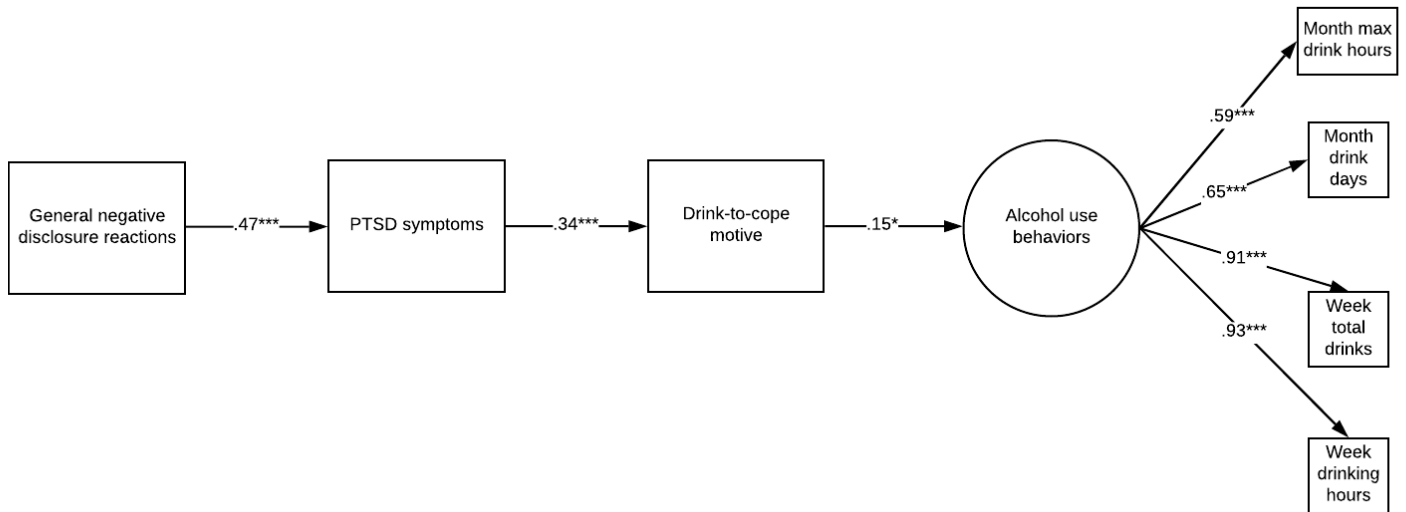
Figure 2.1. Initial Path Analysis Examining the Associations among General Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, Collapsing Across Survivor Groups.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month); week drinking hours = number of hours spent drinking in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

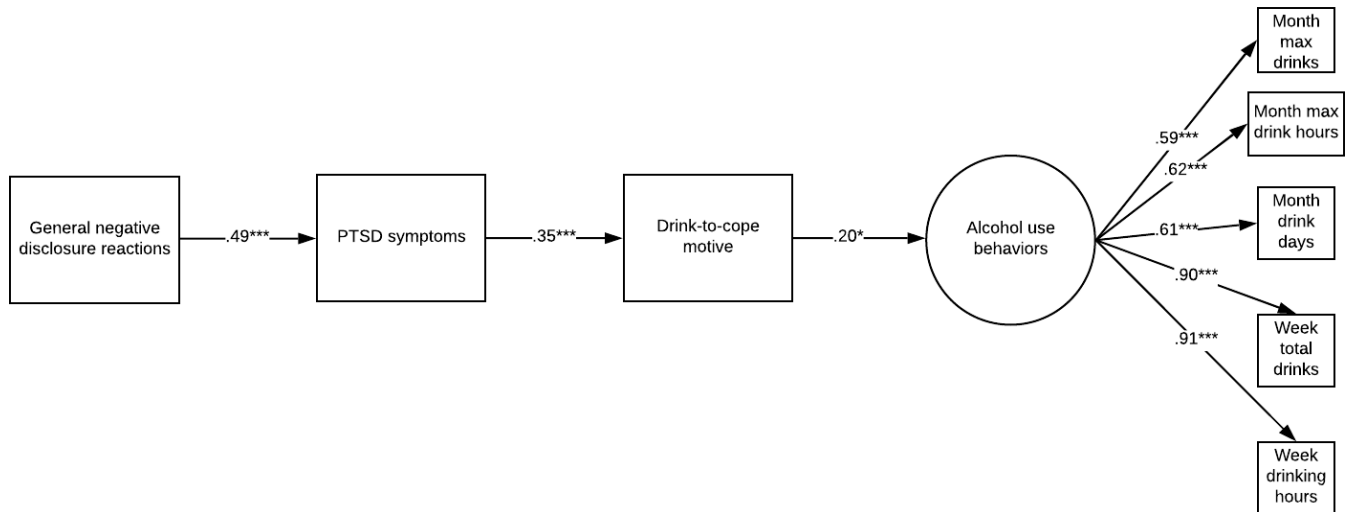
Figure 2.2. Respecified Path Analysis Examining the Associations among General Negative Disclosure Reactions, the Drink-to-cope Motive, and Alcohol Use Behaviors, Collapsing Across Assault Groups.



Note. Month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month); week drinking hours = number of hours spent drinking in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

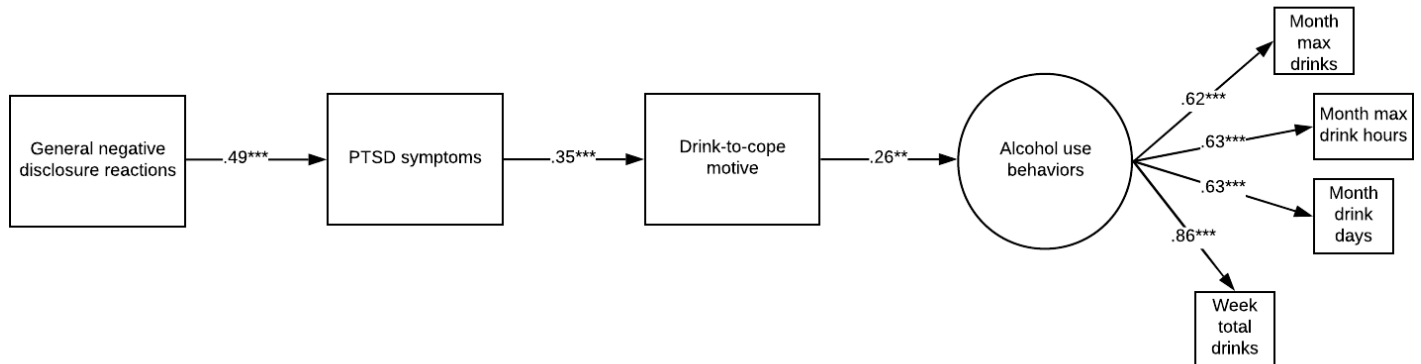
Figure 2.3. Initial Path Analysis Examining the Associations among General Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, among AIA Survivors.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month); week drinking hours = number of hours spent drinking in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

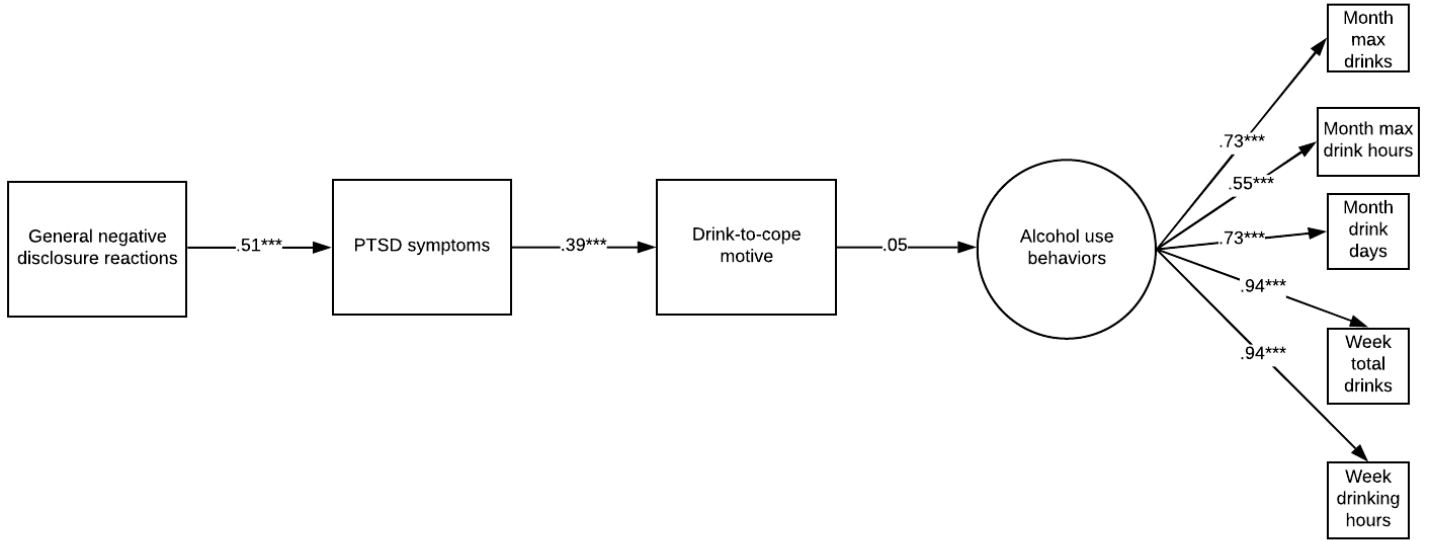
Figure 2.4. Respecified Path Analysis Examining the Associations among General Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, among AIA Survivors.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

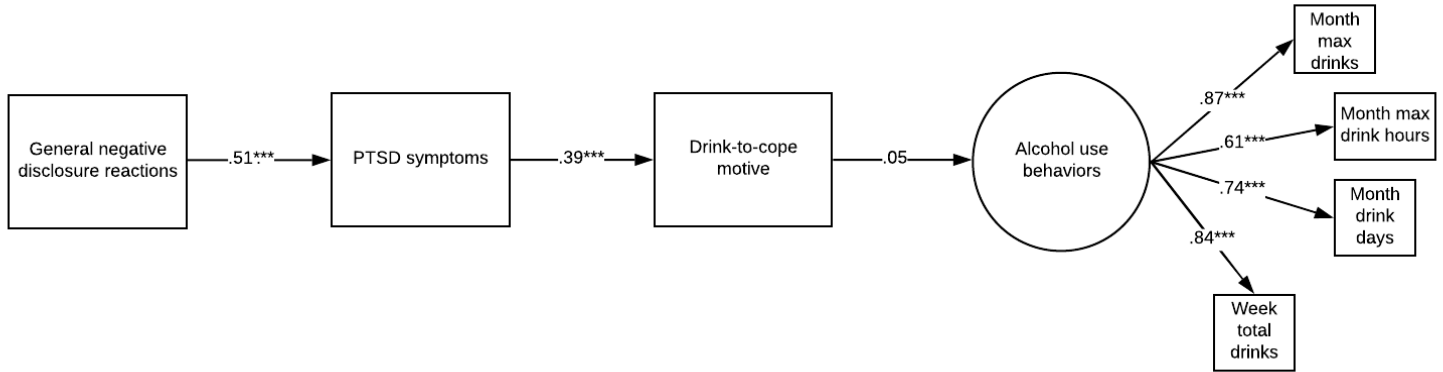
Figure 2.5. Initial Path Analysis Examining the Associations among General Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, among Non-AIA Survivors.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month); week drinking hours = number of hours spent drinking in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

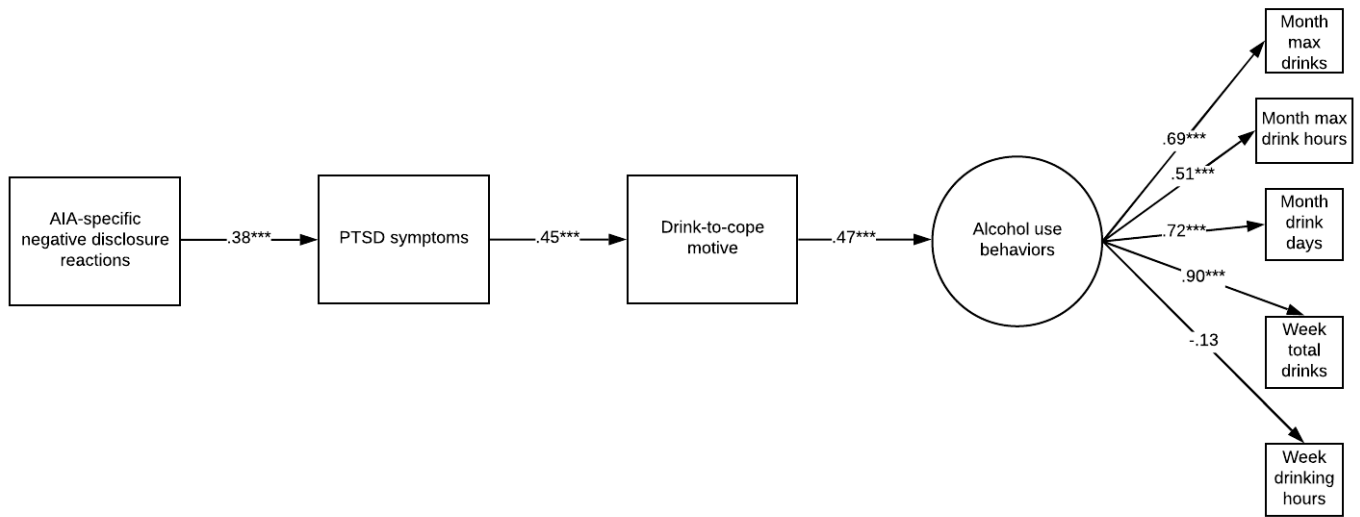
Figure 2.6. Respecified Path Analysis Examining the Associations among General Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, among Non-AIA Survivors.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

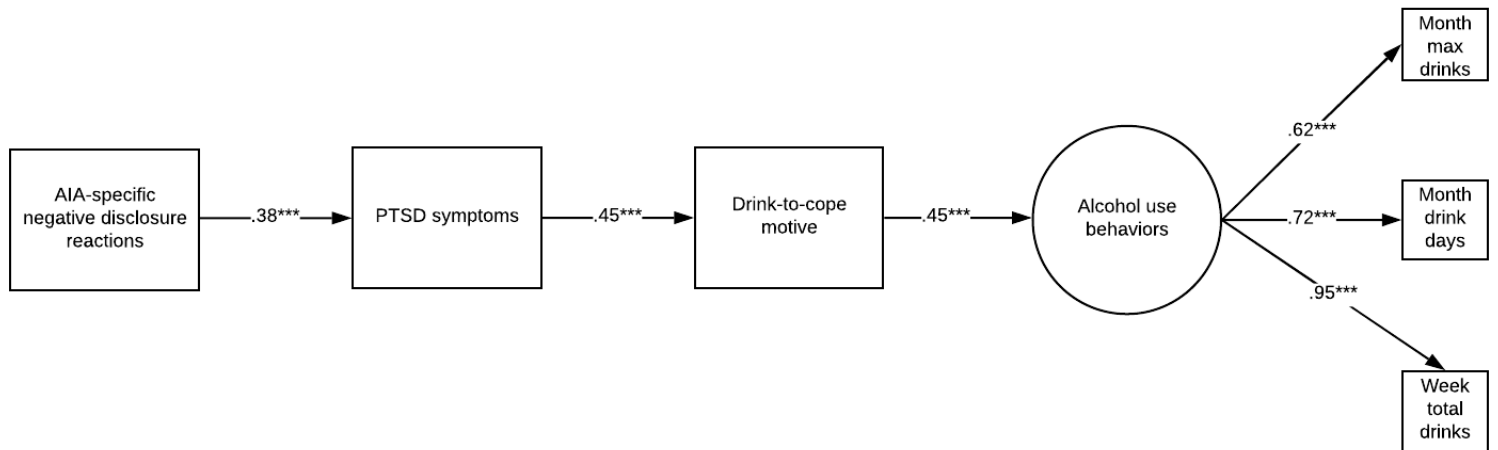
Figure 2.7. Initial Path Analysis Examining the Associations among AIA-specific Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, among AIA Survivors.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month max drink hours = hours to consume maximum drinks (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month); week drinking hours = number of hours spent drinking in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figure 2.8. Respecified Path Analysis Examining the Associations among AIA-specific Negative Disclosure Reactions, PTSD Symptoms, the Drink-to-cope Motive, and Alcohol Use Behaviors, among AIA Survivors.



Note. Month max drinks = Maximum drinks consumed in one drinking episode (past month); month drink days = number of days on which alcohol was consumed in a typical week (past month); week total drinks = number of drinks consumed in a typical week (past month).

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

General Discussion

These studies provide critical insight into undergraduates' sexual assault disclosure experiences. They illuminate both the characteristics of these disclosure experiences, as well as, for AIA survivors, how such disclosure experiences relate to common mental health sequelae of sexual trauma.

In Chapter 1, descriptive statistics demonstrated that, in many ways, undergraduate AIA and non-AIA survivors are more similar than they are different in their disclosure experiences. Both groups tended to disclose more frequently to informal social supports than formal social supports, particularly to female friends. Additionally, they received a mix of both positive general disclosure reactions and negative general disclosure reactions. Interestingly, AIA survivors appeared to receive more tangible aid reactions than did non-AIA survivors, and there were no further differences in the different disclosure reactions that AIA and non-AIA survivor received from either type of social support. This pattern of results warrants further investigation, to better understand how all social supports may increase their likelihood of offering tangible aid to survivors who are seeking such support. Additionally, AIA survivors received diverse disclosure reactions that specifically referenced that their assault had occurred in the context of alcohol use.

In Chapter 2, path analyses illuminated that negative disclosure reactions that AIA and non-AIA survivors received were related to common sexual trauma-related sequelae. Indeed, among AIA survivors, both general and AIA-specific negative disclosure reactions were associated with more severe PTSD symptoms, in turn, stronger motivation to drink to cope with distress, and finally, alcohol use behavior. Although non-AIA survivors also experienced a motivation to drink to cope that was associated with PTSD symptoms related to general negative

disclosure reactions, they did not appear to actually engage in related alcohol use behavior. As noted in Chapter 2, there are many empirically supported methods for intervening upon the relationship between negative disclosure reactions and undergraduate survivors' mental health. It is possible that the alcohol use behavior assessment in the present sample did not detect a connection between the drink-to-cope motive and alcohol use behavior among non-AIA survivors, given the presence of measurement invariance. However, given that extant findings that non-AIA survivors are less likely to engage in heavy alcohol use following a sexual assault, it seems more plausible that the present study detected a meaningful difference in the ways in which negative disclosure reactions are associated with various indices of mental health. Regardless, these findings suggest important directions for future work and novel, important directions for clinical practice with undergraduate survivors' who have received negative disclosure reactions.

A synthesis of these respective chapter's findings demonstrates critical additional lines of inquiry for this field of research. First, it will be important to identify whether any of the specific disclosure reaction subscales measured in Chapter 1 drive the relationships evidenced in Chapter 2. Additionally, undergraduates tend to disclose to social supports who are unlikely to know how to respond in a way that, if it does not at least facilitate recovery, avoids doing harm. This reality evokes two critical questions. First, what skills would facilitate social supports responding with at least not harmful reactions? Second, what skills would facilitate survivors disclosing in a way that would evoke helpful reactions? Should results from the present study be replicated, it will be critical for subsequent research to develop programming that provides such skills.

Ultimately, this dissertation illuminates the nuanced social context of sexual assault recovery for undergraduate female survivors. Both studies demonstrate that, for many survivors,

silence about their victimization history is not an option. Moreover, social supporters are critically involved in and have a responsibility to particularly undergraduate survivors, whether or not said social supporters may have anticipated or wanted to assume this role.