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ASSOCIATIONS AMONG SEXUAL ASSAULT CHARACTERISTICS AND SOCIAL
REACTIONS TO DISCLOSURE IN A SAMPLE OF UNDERGRADUATE WOMEN

A thesis submitted in partial fulfillment
of the requirements for the degree of

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New York

by

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ABSTRACT

ASSOCIATIONS AMONG SEXUAL ASSAULT CHARACTERISTICS AND SOCIAL REACTIONS TO DISCLOSURE IN A SAMPLE OF UNDERGRADUATE WOMEN

Danielle S. Citera

Sexual assault is a public health crisis in the United States, with college women at an increased risk for experiencing unwanted sexual contact and rape. Following an experience of sexual assault, women are susceptible to negative outcomes including suicidality, posttraumatic stress disorder, depression, and anxiety. One of the factors that influences the development of psychopathology after a sexual assault is social reactions to disclosure. When women tell someone about their sexual assault, they may receive both positive and negative social reactions. Social reactions have been found to be associated with negative mental health outcomes for survivors. Several sexual assault characteristics, including the relationship between the survivor and perpetrator and the involvement of alcohol or other substances, have been found to be associated with social reactions. Previous researchers have examined the associations between sexual assault characteristics and social reactions to disclosure. There is a lack of understanding, however, about which of these assault characteristics have the greatest impact on negative social reactions to disclosure. This study aimed to directly compare a number of sexual assault characteristics to understand how each characteristic is uniquely associated with social reactions to disclosure.

The current study examined 340 undergraduate female survivors of sexual assault (i.e., unwanted sexual contact and attempted/completed rape). Participants completed

surveys on traumatic experiences, sexual assault experiences, and social reactions to disclosure. Hierarchical regressions were employed to understand the unique variance of sexual assault characteristics in association with social reactions to disclosure.

Closeness of the survivor-perpetrator relationship contributed the most variance in relation to negative social reactions to disclosure. Involvement of alcohol, surprisingly, did not contribute unique variance to this association with negative social reactions to disclosure. Implications for university programming and interventions will be discussed.

TABLE OF CONTENTS

List of Tables.....	iii
Introduction.....	1
Method.....	8
Results.....	15
Discussion.....	17
Appendix A: Demographics Questionnaire	30
Appendix B: Trauma History Screen.....	31
Appendix C: Revised Sexual Experiences Survey (Koss et al., 2007).....	33
Appendix D: Social Reactions Questionnaire (Ullman, 2000).....	40
References.....	43

LIST OF TABLES

Table 1: Correlations among Continuous Predictor and Criterion Variables	24
Table 2: Descriptive Statistics.....	25
Table 3: Change Values of Predictors of SRQ Negative Reactions in Hierarchical Regression.....	26
Table 4: Change Values of Predictors of SRQ Positive Reactions in Hierarchical Regression.....	27
Table 5: Predictors of SRQ Negative Reactions in the Last Step of Hierarchical Regression.....	28
Table 6: Predictors of SRQ Positive Reactions in the Last Step of Hierarchical Regression.....	29

Introduction

Sexual assault of emerging adults on college campuses across the United States has become a public health crisis. According to a 2015 study, nearly 1 in 4 undergraduate women reports an experience of sexual assault since beginning college (Cantor et al., 2015). Disclosure of sexual assault involves sharing information about a sexual assault experience with another individual. The process of disclosure often results in the evocation of a social reaction from the disclosure recipient. Negative social reactions, in which the disclosure recipient turns against, or fails to provide support to the sexual assault survivor, have been found to negatively impact post-assault functioning in the survivor (e.g., Ullman & Peter-Hagene, 2016),

There is evidence that negative social reactions are related to certain characteristics of the sexual assault. For example, characteristics such as the relationship between the survivor and perpetrator and whether alcohol was involved may influence the way in which the disclosure recipient responds to the survivor (e.g., Lorenz & Ullman, 2016; van der Bruggen & Grubb, 2014), ultimately influencing the survivor's post-assault psychopathology and functioning. The goal of this study was to examine the relationship of these characteristics (i.e., survivor-perpetrator relationship, involvement of alcohol) with social reactions to disclosure.

Outcomes Associated with Sexual Assault

Sexual assault is associated with a host of negative outcomes including psychopathology, substance use, and risky behavior engagement. Dworkin, Menon, Bystrynski, and Allen (2017) conducted a meta-analysis to examine relations between

sexual assault and psychopathology. They found that sexual assault was significantly positively associated with suicidality, obsessive-compulsive conditions, trauma- and stressor-related conditions, bipolar conditions, depression, anxiety, disordered eating, and substance abuse and dependence. Regarding risky behavior engagement, research has provided support for associations between sexual assault and sexual risk-taking behaviors. With a sample of 102 female survivors of rape, Campbell, Sefl, and Ahrens (2004) found that 34% of the women reported high-risk sexual behavior following an experience of rape. Specifically, these women reported engaging in sexual activity more frequently, with more sexual partners, and with less condom use.

One of the factors related to psychopathology among sexual assault victims is social reactions to disclosure.

Disclosure and Social Reactions

Social reactions to sexual assault disclosure refer to reactions or responses provided to the survivor by the recipient of the disclosure. Social reactions to disclosure may be positive or negative. Positive reactions consist of emotional support and/or tangible aid whereas negative reactions are comprised of responses in which the disclosure recipient turns against the survivor or acknowledges the assault but fails to provide support to the survivor (Relyea & Ullman, 2015b).

Social reactions to disclosure have been found to impact post-assault functioning in survivors. In a sample of over 1,000 women, researchers found that negative social reactions to disclosure were associated with greater PTSD symptoms over time for the survivor (Ullman & Peter-Hagene, 2016). Similarly, in a sample of more than 600 women, higher frequency of negative social reactions to disclosure was

associated with greater PTSD symptoms as well as more self-blame and more avoidance coping by the survivor (Ullman, Townsend, Filipas, & Starzynski, 2007). Social reactions have thus gained prominence among researchers and clinicians working with sexual assault survivors as a target for preventive and intervention purposes.

A number of sexual assault characteristics, including the relationship between the survivor and perpetrator and the involvement of alcohol or other substances in the assault, have been found to impact social reactions to disclosure. Previous research regarding the survivor-perpetrator relationship has been mixed, with some support for more negative reactions to those survivors who experience assault by a stranger (van der Bruggen & Grubb, 2014). More recent research, however, has demonstrated that those survivors who experience assault by a known individual (e.g., acquaintance, romantic partner) receive more negative reactions than survivors assaulted by an unknown individual (e.g., stranger; Catlin, Scherr, Barlett, Jacobs, & Normile, 2019). Regarding the involvement of alcohol or other substances in the assault, research supports an association with negative reactions to disclosure (e.g., Relyea & Ullman, 2015a; Ullman & Filipas, 2001a).

Social reactions to disclosure involve a judgment about the survivor on the part of the disclosure recipient. Regarding negative reactions to disclosure, a body of literature exists in which theories of victim-blame and rape myth acceptance are examined. Many sexual assault survivors experience social judgment in which they are considered tarnished. Additionally, preconceived notions or beliefs about what constitutes a rape or sexual assault continue to operate in society (Herman, 1997). These preconceived notions of “legitimate” rape typically involve white women who are attacked by a stranger (Ullman, 2010). Given this idea about what “real” rape is, it is unsurprising that women

who are assaulted by acquaintances or romantic partners are not considered “legitimate” victims or survivors.

Similar to those survivors who do not fit the stereotypical “legitimate” rape, sexual assault survivors who endorse alcohol involvement during their assault are vulnerable to victim-blaming. Beshers and DiVita (2019) examined changes in rape myth acceptance at a university in the northeast United States between 2010 and 2017. Although they found a decrease in rape myth acceptance over time, most items related to alcohol showed no significant change over time. This means that rape myth surrounding “real” rape and the role of alcohol in sexual assault persists today.

Emerging Adulthood and Sexual Assault

Emerging adulthood refers to a period of human development from late adolescence through the mid-twenties (Arnett, 2000). Researchers have demonstrated that in the United States, sexual assault prevalence is highest among emerging adults. Turchik and Hassija (2014) found that in a sample of 309 college women, approximately 73% reported an experience of sexual victimization since the age of 16.

In a sample of college-aged survivors of unwanted sexual contact, researchers found that 79% of female survivors disclosed their experiences to at least one other individual (Walsh et al., 2010). For survivors of unwanted sexual intercourse, Walsh and colleagues found that 41% disclosed their experiences to another individual.

Regarding the relationship between college-aged survivors and their perpetrators, Walsh, Banyard, Moynihan, Ward, and Cohn (2010) found that 34% of unwanted sexual contact experiences were perpetrated by strangers, 29% were perpetrated by acquaintances, 21% were perpetrated by a platonic friend, 7% were perpetrated by a

casual or first date, and 6% were perpetrated by a romantic partner. Many of these assaults are facilitated by alcohol and other substances, with Walsh and colleagues reporting that 80% of assaults involved alcohol or other substances. Additionally, in a sample of college women representing 119 universities across the United States, researchers found that 72% of rapes occurred while the survivor was intoxicated (Mohler-Kuo, Dowdall, Koss, & Wechsler, 2004). Given that previous literature supports a relation between negative social reactions, the closeness of the survivor-perpetrator relationship, and alcohol involvement during sexual assault, it is imperative that these associations are examined to aid with prevention of the onset of psychopathology following an experience of sexual assault. Understanding the unique role that each of these common sexual assault characteristics plays in the prediction of negative social reactions will allow for the development of targeted programming.

Limitations of the Literature

A significant body of literature exists surrounding the associations between social reactions to disclosure and psychopathology among sexual assault survivors (e.g.,

Regarding the survivor-perpetrator relationship, a substantial portion of the literature consists of studies in which vignettes are provided to participants who are then asked to make a judgment about blame (Catlin et al., 2019; Franklin & Garza, 2018). The use of hypothetical scenarios, however, poses a problem. It is possible that participants may provide biased answers in accordance with social desirability. The analysis of actual social reactions that have been shared with survivors will mitigate the effects of social desirability bias.

Regarding alcohol-involved assault, many researchers fail to ascertain the level of impairment or incapacitation experienced by the survivor. Instead, participants are simply asked whether or not drinking occurred prior to the assault (Orchowski & Gidycz, 2012; Untied, Orchowski, Mastroleo, & Gidycz, 2016). The current study, however, will analyze the survivor's use of alcohol prior to the sexual assault as it relates to impairment or incapacitation that the survivor perceives as the method by which the assault was facilitated.

Finally, the literature consists of numerous studies in which the correlates of social reactions to disclosure are examined. To my knowledge, none of these studies to date have examined the relative contribution of predictors of social reactions to disclosure. Directly comparing these predictors will allow us to understand which characteristics have the strongest relationship to social reactions to disclosure. This information will be critical for the development of time-efficient and cost-effective interventions.

Current Study

The current study will address the following aims: (1) replicate the findings of recent research regarding the relation between the survivor-perpetrator relationship and social reactions to disclosure, (2) replicate the findings of previous research regarding the relation between alcohol-involved assault and social reactions to disclosure, and (3) explore the relative importance of two sexual assault characteristics regarding the relationship with social reactions to disclosure: the survivor-perpetrator relationship and alcohol involvement in the sexual assault.

Hypothesis. The closeness of the survivor-perpetrator relationship and alcohol will each significantly contribute to the variance in negative social reactions to disclosure after accounting for predictors previously established in the literature (e.g., history of childhood sexual abuse, assault severity).

Method

Participants

Survey data were collected from 340 female undergraduate students, ranging in age from 18 to 24. In the final sample, 64% of women identified as White, 17% identified as Hispanic or Latina, 14% identified as Black or African American, 11% identified as Asian, 7% identified as Multiracial, and 2% identified as Other. Regarding education status, 24% of students were enrolled as freshmen, 27% as sophomores, 26% as juniors, and 22% as seniors. The women in the sample reported experiencing a range of sexual assault types, with 27% of women reporting an experience of unwanted sexual contact or touching and 73% reporting an experience of attempted or completed rape.

Procedure

Data used in the current study were collected for a dissertation conducted between 2016 and 2018 (Ritholtz, 2019). Female undergraduates were invited to anonymously participate in a Qualtrics study looking at reactions to upsetting events that are common in the lives of college students. In order to maximize recruitment of participants, survey links were distributed in several ways. After identifying college campuses with high levels of diversity, the investigator contacted the leadership of religious-based organizations, sports teams, sororities, and women's groups on campus. This communication involved a description of the study and a request that the survey link be distributed to group members. In addition, the study was publicized via social media posts inviting interested females to participate.

For those individuals who opted to open the survey link, they were directed to a consent page which outlined the purpose, risks, and benefits of the study. Participants

who consented to participate were then asked to complete a measure of demographics and the Revised Sexual Experiences Survey – Short Form Victimization (SES-SFV; Koss et al., 2007). Those who endorsed at least one item, or experience of sexual assault (e.g., unwanted sexual contact, attempted or completed rape), since the age of 14, were then prompted to complete the additional measures outlined below. All participants were debriefed and provided with information about resources for survivors of sexual assault and interpersonal violence. Each participant was then entered into a raffle to win a gift certificate.

Measures

Demographics. The demographics questionnaire assessed for age, university, academic year, race (African American or Black, American Indian or Alaskan Native, Asian American, Caucasian or White, Native Hawaiian or Other Pacific Islander, Other; Orchowski et al., 2013), and ethnicity (Hispanic or Latina or Not Hispanic or Latina).

In the current study, Race/Ethnicity was coded to reflect minority status versus endorsement as Caucasian or White. This rationale was based on previous literature suggesting that women of minority backgrounds may be more likely to be blamed for an assault than their Caucasian or White counterparts (e.g., Tillman, Bryant-Davis, Smith, & Marks, 2010).

Trauma Frequency. The Life Events Checklist for DSM-5 (LEC-5; Weathers, Blake, Schnurr, Kaloupek, Marx, & Keane, 2013) is a 17-item self-report measure used to screen for the experience of traumatic events in one's lifetime. The LEC-5 is a revision of the original LEC which has demonstrated adequate test-retest reliability over a 7-day period ($r = .82, p < .001$) and good convergent validity with other measures assessing

trauma history (Gray, Litz, Hsu, & Lombardo, 2004). Although psychometrics have not yet been published for the LEC-5, few psychometric differences from the original version of the LEC are expected due to the minimal change between the two versions.

In the current study, Trauma Frequency was coded to reflect the sum of traumatic experience endorsements, excluding those endorsements related to sexual abuse and sexual assault. A separate variable, Child Sexual Abuse, was coded to reflect whether or not the participant endorsed a history of child sexual abuse.

Sexual Assault. The Revised Sexual Experiences Survey – Short Form Victimization (SES-SFV; Koss et al., 2007) is a self-report evaluation of sexual assault experiences. The SES-SFV, a revision of the original SES, uses updated and more behaviorally specific language (e.g., “sex play” was replaced with a specific behavioral description). In a sample of undergraduates, the SES-SFV demonstrated good convergent validity and fair-to-moderate test-retest reliability (Littleton, Layh, Rudolph, & Haney, 2019). Participants are asked to report whether they have experienced seven types of unwanted sexual contact : (1) fondling, kissing, touching (2) oral sex (3) anal sex or penetration with a finger or object (4) vaginal sex or penetration with a finger or object (5) attempted oral sex (6) attempted anal sex or penetration and (7) attempted vaginal sex or penetration. Following the description of each of the seven acts, a list of five possible tactics used by the perpetrators is provided, including (a) lies, threats, verbal pressure, or false promises (b) displeasure, criticism, or anger (c) incapacitation of the survivor due to drunkenness or being “out of it” (d) threats of physical force or violence and (e) use of physical force, violence, or a weapon. Participants are asked to report the frequency of

each unwanted experience in the past month, and since the age of 14. Those individuals who endorsed at least one experience of sexual assault were included in this study.

In the current study, Alcohol-Involved Assault was coded to reflect whether or not the participant endorsed any assault via “c: incapacitation of the survivor due to drunkenness or being ‘out of it.’” Participants were also asked to describe any pre-existing relationship with the perpetrator of the sexual assault by choosing from the following options: stranger, acquaintance, casual date, friend, romantic partner, spouse. Survivor-Perpetrator Relationship was coded as an ordinal variable to reflect the closeness of the relationship between the participant/survivor and the perpetrator of the sexual assault.

Assault Severity was dichotomized and coded to reflect whether the survivor experienced unwanted sexual contact (e.g., touching, kissing, fondling) versus attempted or completed rape. On measures of depression and self-concealment, Brown (1996) found that women who experienced attempted or completed rape reported significantly higher symptom levels than women who had not experienced attempted or completed rape. Moreover, Brown’s finding that women who experienced attempted rape did not differ from women who experienced completed rape on measures of depression, self-concealment, social avoidance and distress, or general psychopathology, guided our decision to dichotomize Assault Severity.

Social Reactions to Disclosure. The Social Reactions Questionnaire (SRQ; Ullman, 2000) is a measure used to assess social reactions, or responses, to disclosure of sexual assault. In a sample of college students, the SRQ demonstrated good test-retest reliability over an 8-week period, with test-retest correlations ranging from .64 to .81, $p <$

.001 (Ullman, 2000). Additionally, measure developers demonstrated good convergent validity and concurrent validity.

The SRQ is comprised of 48 items that represent positive and negative reactions to disclosure of sexual assault. Reactions, or responses, are coded according to three subscales (Relyea & Ullman, 2015). The SRQ, as it was used in the current study, measures the survivor's perception of social reactions provided by the disclosure recipient. Positive responses, coded on one subscale, are reactions that provide emotional support or tangible aid. Negative responses, coded on one subscale, are reactions that blame or stigmatize the survivor, distract the survivor, take control from the survivor, and remove focus from the survivor.

Data Analyses

Preliminary Analyses. Data from participants who did not endorse sexual assault (e.g., unwanted sexual contact, attempted rape, completed rape) were excluded from the current study. Due to a Qualtrics glitch, many participants were not shown all items of the Social Reactions Questionnaire, resulting in large amounts of missing data. Specifically, seven of the 48 items had more than 40% missing data, with one item containing approximately 63% missing data. A recent study was conducted in which simulated data were analyzed with varying proportions of missing data. Researchers found that Multiple Imputation reduced bias in the model regardless of the amount of missing data (Madley-Dowd, Hughes, Tilling, & Heron, 2019). To address missing data in the current study, Multiple Imputation was used to create 50 imputed datasets. Following the imputations, the Bar Procedure was utilized to create a single pooled

dataset (Baranzini, 2018). To correct for positive skewness, a logarithmic transformation was applied to SRQ Negative Reactions.

Covariates were selected based on constructs previously identified in the literature as being associated with social reactions to disclosure. Covariates in the current study include Age, Race/Ethnicity, Trauma Frequency, Child Sexual Abuse, and Assault Severity. To determine the importance of and unique variance accounted for by Alcohol-Involved Assault and the Survivor-Perpetrator Relationship, a series of hierarchical regressions were conducted, first with SRQ Negative Reactions and then with SRQ Positive Reactions, as the criterion variable. All predictor variables were centered prior to the regression analyses, in order to aid with interpretation of the results.

Upon completion of preliminary analyses, four hierarchical regressions were conducted. In the first two regression models, SRQ Negative Reactions was entered as the criterion variable. In the final two regression models, SRQ Positive Reactions was entered as the criterion variable. In each regression model, all covariates were entered in the first two steps. Age and Race/Ethnicity, both demographic characteristics that have been found to be associated with social reactions, were entered in the first step. Trauma-specific characteristics, including Trauma Frequency, Child Sexual Abuse, and Assault Severity, were entered in the second step. The final two steps of each regression were varied to determine the relative importance of the predictors of interest in the current study, Survivor-Perpetrator Relationship and Alcohol-Involved Assault, controlling for all other variables entered in the model. In the first regressions with SRQ Negative Reactions and SRQ Positive Reactions as criterion variables, Survivor-Perpetrator Relationship was entered in the third step and Alcohol-Involved Assault in the fourth

step. In the second regressions with SRQ Negative Reactions and SRQ Positive Reactions as criterion variables, predictors were entered in the reverse order (i.e., Alcohol-Involved Assault in the third step and Survivor-Perpetrator Relationship in the fourth step). Results are further described below.

Following each hierarchical regression, the overall model significance was examined. To determine the unique variance contributed by each predictor in each respective regression model, semi-partial correlation coefficients and $R^2\Delta$ values were examined.

Results

Preliminary Analyses

Covariates for the regression analyses were chosen based on a review of the literature (e.g., Ullman, 2003; Ullman, 2010; Ullman & Filipas, 2001b). Following the identification of covariates, Pearson correlation coefficients were computed between SRQ Negative Reactions and SRQ Positive Reactions, Survivor-Perpetrator Relationship, and the following continuous covariates: Age and Trauma Frequency (see Table 1). SRQ Negative Reactions was significantly correlated with Survivor-Perpetrator Relationship and Trauma Frequency. SRQ Negative Reactions and SRQ Positive Reactions were significantly correlated, in accordance with previous literature examining social reactions to disclosure. Means and standard deviations are presented in Table 2.

Predictors of Criterion Variables

In order to understand the associations between the predictors of interest (i.e., Survivor-Perpetrator Relationship and Alcohol-Involved Assault) and SRQ Negative Reactions and the relative importance of each predictor on SRQ Negative Reactions, one hierarchical regression was conducted. Age and Race/Ethnicity were entered in step 1, Trauma Frequency, Child Sexual Abuse, and Assault Severity were entered in step 2, Survivor-Perpetrator Relationship was entered in step 3, and Alcohol-Involved Assault was entered in step 4. The final model significantly predicted SRQ Negative Reactions, as presented in Table 3, and accounted for 10.3% of the overall variance in SRQ Negative Reactions. Semi-partial correlations and significant $R^2\Delta$ values, as shown in Table 5, demonstrate that the Survivor-Perpetrator Relationship accounts for unique variance in the prediction of SRQ Negative Reactions, above and beyond the variance

accounted for by Alcohol-Involved Assault, Age, Race/Ethnicity, Trauma Frequency, Child Sexual Abuse, and Assault Severity, partly supporting the hypothesis.

In order to assess the relative importance of each predictor on SRQ Positive Reactions, a second hierarchical regression was conducted. Age and Race/Ethnicity were entered in step 1, Trauma Frequency, Child Sexual Abuse, and Assault Severity were entered in step 2, Survivor-Perpetrator Relationship was entered in step 3, and Alcohol-Involved Assault was entered in step 4. As shown in Table 4 and consistent with the findings of previous research, the model did not significantly predict SRQ Positive Reactions. Semi-partial correlations and $R^2\Delta$ values, as shown in Table 6, demonstrate that none of the predictors accounted for unique variance in the prediction of SRQ Positive Reactions.

Discussion

The goals of the current study were to replicate previous research findings regarding the association between the closeness of the survivor-perpetrator relationship and social reactions to sexual assault disclosure as well as the association between alcohol involvement in the assault and social reactions to disclosure. The closeness of the survivor-perpetrator relationship and alcohol involvement in the assault were hypothesized to each contribute unique variance to the prediction of negative social reactions to disclosure. The results indicated that only closeness of the survivor-perpetrator relationship was uniquely associated with negative social reactions.

Survivor-Perpetrator Relationship and Social Reactions to Disclosure

Consistent with the findings from recent literature, the closeness of the survivor-perpetrator relationship was associated with negative social reactions and was not associated with positive social reactions in the current sample of undergraduate females. These findings support recent literature suggesting that those survivors who endorse a closer relationship with the perpetrator of their sexual assault are likely to receive more negative social reactions than their counterparts who endorse sexual assault perpetrated by a stranger or less well-known individual (e.g., Catlin, Scherr, Barlett, Jacobs, & Normile, 2019).

This finding suggests that rape myth surrounding survivor-perpetrator relationships (e.g., stranger rape) persists in our society and impacts social reactions to disclosure. Rape myth refers to “prejudicial, stereotyped, or false beliefs about rape, rape victims, and rapists” (Burt, 1980). In a study of university resident assistants, researchers found that those individuals who scored high on a measure of rape myth acceptance were

less likely to provide material and emotional support to sexual assault survivors. Stronger endorsement of the “Rape is a deviant event” myth (e.g., rape is perpetrated by strangers) was significantly associated with provision of less emotional support (Holland, Gustafson, Cortina, & Cipriano, 2019). Relatedly, individuals may be more hesitant to assign culpability to the perpetrator when he is well-known or intimately acquainted with the survivor. Alternatively, it may be the case that undergraduate women perceive a closer relationship with their perpetrator as greatly impacting others’ reactions to their disclosures. Specifically, rape myth acceptance by the survivor may be associated with perceptions of negative reactions from disclosure recipients.

Alcohol-Involvement and Social Reactions to Disclosure

Researchers have found that alcohol-involvement in sexual assault is associated with negative social reactions to disclosure. In the current study, this finding was not replicated as alcohol-involvement in sexual assault was not significantly associated with negative social reactions. Additionally, in contrast to the hypothesis of the current study, alcohol-involvement did not contribute unique variance to the prediction of negative social reactions. Although the lack of association between alcohol-involvement and negative social reactions is inconsistent with recent findings (e.g., Relyea & Ullman, 2015a), the current findings provide hope that rape myth surrounding alcohol-use in the context of sexual assault is less prevalent among emerging adults today. Alternatively, it may be the case that survivors do not perceive drinking as related to social reactions. It is possible that societal efforts to debunk rape myth in this regard have been more successful than those efforts pertaining to the survivor-perpetrator relationship.

Undergraduate women today may be more likely to recognize that their alcohol use does not reduce the culpability of the perpetrator.

Relative Importance of Predictors of Negative Social Reactions

Age, race/ethnicity, trauma frequency, child sexual abuse, assault severity, alcohol-involvement, and the closeness of the survivor-perpetrator relationship were directly compared as predictors to determine which variables account for the most variance in the prediction of negative social reactions to disclosure. In the current study sample, the closeness of the survivor-perpetrator relationship contributed the most variance to negative social reactions. Surprisingly and contrary to the hypothesis, alcohol-involvement did not add unique variance to negative social reactions. The finding that child sexual abuse and assault severity did not contribute unique variance to the model, given past literature (e.g., Ullman & Filipas, 2001; Ullman, Filipas, Townsend, & Starzynski, 2007), was surprising. This may be a function of decreased variability in the dichotomous measures of child sexual abuse and assault severity used in the current study. Similarly, age and race/ethnicity did not contribute unique variance to the model. This may be due to limited variability in age as all participants were emerging adults between the ages of 18 and 24. Relatedly, dichotomization of race/ethnicity also reduced the ability to detect differences between different groups.

Implications for Training and Intervention

The findings from the current study have a number of implications for prevention and response training, as well as intervention.

Despite continued societal efforts to debunk rape myths regarding the survivor-perpetrator relationship, our results indicate that an association between the survivor-

perpetrator relationship and negative social reactions persists among emerging adults. That is, undergraduate women and their disclosure recipients may accept rape myth purporting that rape can only occur between two strangers.

Regarding prevention and response training, these findings have important implications for university and campus programming. First and foremost, sexual assault prevention and response training should be mandated on campuses. Program developers and administrators should emphasize psychoeducation regarding common survivor-perpetrator relationships to reduce stigma and negative social reactions. Although the findings do not support an association between alcohol-involvement and negative social reactions, programming should continue to provide psychoeducation regarding the commonality of alcohol-involved sexual assault on American college campuses. Notably, in a sample of undergraduate females from two New York universities, 57.1% reported being incapacitated due to "alcohol and drug use and/or other factors" during an experience of sexual assault (Mellins et al., 2017). Psychoeducational programming will be helpful in debunking rape myths for women who have already experienced or who have yet to experience sexual assault. Additionally, this programming will equip disclosure recipients with information necessary to respond in a positive and helpful manner when a sexual assault disclosure takes place.

Regarding intervention, clinicians working with sexual assault survivors should focus on assessing trauma-related cognitions and providing psychoeducation to debunk rape myths.

Limitations

The findings discussed in the current study should be interpreted with caution due to a number of limitations. First, as previously mentioned, there was a large percentage of missing data from the SRQ. Although missing data were addressed with Multiple Imputation and the Bar Procedure (Baranzini, 2018), our parameters may be unstable.

Regarding the sexual assault experiences of the undergraduate women in our sample, we do not have information regarding the exact number of assaults experienced by each individual. Previous literature has suggested that revictimization is associated with negative social reactions to disclosure (Ullman & Peter-Hagene, 2016).

Since the SRQ directions instructed participants to report on general social reactions, we cannot be certain that survivors disclosed all details of each and every assault they experienced. It is possible, therefore, that assault characteristics, including the relationship with the perpetrator and whether alcohol or other substances were involved in the assault, were withheld during the disclosure experience. Furthermore, the current study did not collect any information regarding the disclosure recipient(s). Previous literature has demonstrated the increased likelihood of receiving a negative social reaction when disclosing to a formal support source (e.g., police, university administrator) as opposed to an informal support source (e.g., family, friend; Filipas & Ullman, 2001).

The current study lacks concrete information regarding the role of alcohol and other substances in survivors' assault experiences. First, information regarding the degree of intoxication was not collected. Survivors who endorsed alcohol involvement in the assault responded to a single item on the SES-SFV indicating that they perceived alcohol

or other substances to have facilitated the sexual assault in some way. During collection of the data examined in the current study, the measure developers of the SRQ published an alcohol-specific questionnaire, the SRQ-Alcohol, to determine the specific role alcohol may have played in disclosure experiences and subsequent social reactions (Relyea & Ullman, 2015). The SRQ-A allows for an explicit interpretation that information regarding alcohol-involvement in the assault was disclosed and reacted to. Since the SRQ does not contain any language regarding alcohol or other substances, we cannot be certain that this information, among other assault characteristics, was conveyed during the disclosure. Similarly, the literature has provided support for the idea that survivors with a history of problem drinking may receive more negative and positive social reactions than those survivors without a history of problem drinking (Ullman et al., 2008). We did not collect information regarding the survivor's drinking patterns, limiting the interpretability of our findings surrounding the association between alcohol involvement and negative social reactions.

Directions for Future Research

Future research should address the limitations discussed above. Investigators interested in social reactions as they pertain to alcohol-involved assault should collect more specific information regarding prior drinking patterns, the survivor's degree of intoxication, whether the perpetrator was using alcohol or other substances, and whether information regarding alcohol-involvement was conveyed during the disclosure.

Our findings indicate that rape myth surrounding survivor-perpetrator relationships persists today. Relatedly, our findings suggest that rape myth acceptance may not persist in the context of alcohol-involved assault. Future research should address

disclosure recipients' beliefs and acceptance of rape myth attitudes. Additionally, inclusion of disclosure recipients in assessments and interviews would allow researchers to parse actual social reactions provided by the disclosure recipient from perceived social reactions where the survivor is concerned. Finally, and relatedly, research to date has largely failed to include specific information pertaining to the disclosure recipient. Future research should explore potential associations among demographics of the disclosure recipient and social reactions to disclosure.

Table 1
Correlations among Continuous Predictor and Criterion Variables

Variable	1	2	3	4	5
1. SRQ Negative Reactions	-	.490**	.264**	.155**	-.033
2. SRQ Positive Reactions		-	.088	-.018	.006
3. Survivor-Perpetrator Relationship			-	.172**	.082
4. Trauma Frequency					-.027
5. Age					-

Note: SRQ = Social Reactions Questionnaire; SRQ Negative Reactions are transformed using log10; ** $p < .01$, * $p < .05$.

Table 2
Descriptive Statistics

Variable	Mean	SD
SRQ Negative Reactions	1.45	.68
SRQ Positive Reactions	2.08	.80
Age	20.44	1.81

Note: SRQ = Social Reactions Questionnaire

Table 3

Change Values of Predictors of SRQ Negative Reactions in Hierarchical Regression

Step	Variables Added	R^2	$F(df)$	p	$R^2\Delta$	$F\Delta$	p
1	Age, Race/Ethnicity	.003	.581(2,337)	.560	.003	.581	.560
2	Trauma Frequency, Child Sexual Abuse, Assault Severity	.064**	4.602(5,334)	.001	.061**	7.262	.001
3	Survivor- Perpetrator Relationship	.101**	6.241(6,333)	.001	.037**	13.566	.001
4	Alcohol-Involved Assault	.103**	5.447(7,332)	.001	.002	.720	.397

Note. Predictor Variables were centered prior to analyses. SRQ = Social Reactions Questionnaire; * $p < .05$ ** $p \leq .01$

Table 4

Change Values of Predictors of SRQ Positive Reactions in Hierarchical Regression

Step	Variables Added	R^2	$F(df)$	p	$R^2\Delta$	$F\Delta$	p
1	Age, Race/Ethnicity	.002	.294(2,337)	.745	.002	.294	.745
2	Trauma Frequency, Child Sexual Abuse, Assault Severity	.006	.390(5,334)	.856	.004	.454	.714
3	Survivor- Perpetrator Relationship	.012	.685(6,333)	.662	.006	2.156	.143
4	Alcohol-Involved Assault	.014	.661(7,332)	.705	.002	.521	.471

Note. Predictor Variables were centered prior to analyses. SRQ = Social Reactions Questionnaire; * $p < .05$ ** $p \leq .01$

Table 5

Predictors of SRQ Negative Reactions in the Last Step of Hierarchical Regression

Variable	<i>B</i>	<i>SE B</i>	β	<i>Partial r</i>	<i>p</i>
Age	-.007	.007	-.054	-.056	.308
Race/Ethnicity	-.004	.025	-.008	-.008	.883
Trauma Frequency	.002	.001	.076	.075	.169
Child Sexual Abuse	.055	.033	.093	.092	.094
Assault Severity	.039	.031	.074	.068	.213
Survivor-Perpetrator Relationship	.004**	.001	.205	.190	.001
Alcohol-Involved Assault	.022	.026	.047	.047	.397

Note. Predictor Variables were centered prior to analyses. SRQ = Social Reactions Questionnaire; * $p < .05$ ** $p \leq .01$

Table 6

Predictors of SRQ Positive Reactions in the Last Step of Hierarchical Regression

Variable	<i>B</i>	<i>SE B</i>	β	<i>Partial r</i>	<i>p</i>
Age	.002	.024	.006	.006	.919
Race/Ethnicity	.069	.090	.043	.042	.445
Trauma Frequency	-.002	.005	-.018	-.017	.755
Child Sexual Abuse	-.069	.118	-.034	-.032	.557
Assault Severity	.058	.112	.032	.029	.603
Survivor-Perpetrator Relationship	.007	.004	.095	.085	.122
Alcohol-Involved Assault	-.068	.094	-.042	-.040	.471

Note. Predictor Variables were centered prior to analyses. SRQ = Social Reactions Questionnaire; * $p < .05$ ** $p \leq .01$

Appendix A
Demographics Questionnaire

Please answer these questions about yourself:

1. Age: _____
2. Race (check all that apply)
 - a. African American or Black ___
 - b. American Indian or Alaskan Native _____
 - c. Asian or Asian American ___
 - d. Caucasian or White _____
 - e. Native Hawaiian or other Pacific Islander _____
 - f. Other (specify) _____
3. Ethnicity:
 - a. Hispanic or Latina _____
 - b. Not Hispanic or Latina ___
4. Religion
 - a. Catholic ___
 - b. Jewish ___
 - c. Muslim ___
 - d. Buddhist ___
 - e. Hindu ___
 - f. Atheist ___
 - g. Agnostic ___
5. University and year in school: _____

Appendix B

Trauma History Screen

(Carlson, E.B., Smith, S.R., Palmieri, P.A., Dalenberg, C.J., Ruzek, J.I., Kimerling, R., Burling, T.A., & Spain, D.A., 2011)

Instructions: The events below may or may not have happened to you. Circle “YES” if that kind of thing has happened to you or circle “NO” if that kind of thing has not happened to you. If you circle “YES” for any events: put a number in the blank next to it to show how many times something like that happened.

Event	Yes	No	Number of times something like this happened
1. A really bad car, boat, train, or airplane accident			
2. A really bad accident at work or home			
3. A hurricane, flood, earthquake, tornado, or fire			
4. Hit or kicked hard enough to injure-as a child			
5. Hit or kicked hard enough to injure- as an adult			
6. Forced or made to have sexual contact-as a child			
7. Forced or made to have sexual contact-as an adult			
8. Attack with a gun, knife, or weapon			
9. During military service-seeing something horrible or being badly scared			

10. Sudden death of close family or friend			
11. Seeing someone die suddenly or get badly hurt or killed			
12. Some other sudden event that made you feel very scared, helpless, or horrified			
13. Sudden move or loss of home and possessions			
14. Suddenly abandoned by spouse, partner, parent, or family			

Appendix C

Revised Sexual Experiences Survey
(Koss et al., 2007)

The following questions concern sexual experiences that you may have had that were unwanted. We know that these are personal questions, so we do not ask your name or other identifying information. Your information is completely confidential. We hope that this helps you to feel comfortable answering each question honestly. Place a check mark in the box showing the number of times each experience has happened to you. If several experiences occurred on the same occasion--for example, if one night someone told you some lies and had sex with you when you were drunk, you would check both boxes a and c. The past 12 months refers to the past year going back from today. Since age 14 refers to your life starting on your 14th birthday until today.

1. Someone fondled, kissed, or rubbed up against the private areas of my body (lips, breast/chest, crotch or butt) or removed some of my clothes without my consent (<i>but did not attempt sexual penetration</i>) by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Taking advantage of me when I was too drunk or	0 1 2 3+	0 1 2 3+

out of it to stop what was happening.		
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+
Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+

If this item happened to you, please answer the following questions:

- a. Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- b. Month and year of assault: _____

2. Someone had oral sex with me or made me have oral sex with them without my consent by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Taking advantage of me when I was too drunk or out of it to stop what was happening.	0 1 2 3+	0 1 2 3+
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+
Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+

If this item happened to you, please answer the following questions:

- Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- Month and year of assault: _____

3. A man put his penis into my vagina, or someone inserted fingers or objects without my consent by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Taking advantage of me when I was too drunk or out of it to stop what was happening.	0 1 2 3+	0 1 2 3+
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+
Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+

If this item happened to you, please answer the following questions:

- Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- Month and year of assault: _____

4. A man put his penis into my butt, or someone inserted fingers or objects without my consent by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end	0 1 2 3+	0 1 2 3+

the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.		
Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Taking advantage of me when I was too drunk or out of it to stop what was happening.	0 1 2 3+	0 1 2 3+
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+
Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+

If this item happened to you, please answer the following questions:

- Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- Month and year of assault: _____

5. Even though it didn't happen, someone TRIED to have oral sex with me, or make me have oral sex with them without my consent by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Showing displeasure, criticizing my sexuality or attractiveness, getting angry	0 1 2 3+	0 1 2 3+

but not using physical force, after I said I didn't want to.		
Taking advantage of me when I was too drunk or out of it to stop what was happening.	0 1 2 3+	0 1 2 3+
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+
Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+

If this item happened to you, please answer the following questions:

- a. Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- b. Month and year of assault: _____

6. Even though it didn't happen, a man TRIED to put his penis into my vagina, or someone tried to stick in fingers or objects without my consent by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Taking advantage of me when I was too drunk or out of it to stop what was happening.	0 1 2 3+	0 1 2 3+
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+

Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+
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If this item happened to you, please answer the following questions:

- a. Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- b. Month and year of assault: _____

7. Even though it didn't happen, a man TRIED to put his penis into my butt, or someone tried to stick in objects or fingers without my consent by:	How many times in the past 12 months?	How many times since age 14?
Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	0 1 2 3+	0 1 2 3+
Taking advantage of me when I was too drunk or out of it to stop what was happening.	0 1 2 3+	0 1 2 3+
Threatening to physically harm me or someone close to me.	0 1 2 3+	0 1 2 3+
Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	0 1 2 3+	0 1 2 3+

If this item happened to you, please answer the following questions:

- a. Your relationship to the perpetrator: stranger, acquaintance, casual date, romantic partner, spouse, relative, other)
- b. Month and year of assault: _____

Appendix D

Social Reactions Questionnaire
Ullman, 2000**HOW OTHER PEOPLE RESPONDED...**

The following is a list of behaviors that other people responding to a person with this experience often show. Please indicate how often you experienced each of the listed responses from other people by placing the appropriate number in the blank next to each item.

- | 0 | 1 | 2 | 3 | 4 | |
|-----------------|--------|-----------|------------|---|--|
| NEVER
ALWAYS | RARELY | SOMETIMES | FREQUENTLY | | |
| ___ | | | | | 1. TOLD YOU IT WAS NOT YOUR FAULT |
| ___ | | | | | 2. PULLED AWAY FROM YOU |
| ___ | | | | | 3. WANTED TO SEEK REVENGE ON THE PERPETRATOR |
| ___ | | | | | 4. TOLD OTHERS ABOUT YOUR EXPERIENCE WITHOUT YOUR PERMISSION |
| ___ | | | | | 5. DISTRACTED YOU WITH OTHER THINGS |
| ___ | | | | | 6. COMFORTED YOU BY TELLING YOU IT WOULD BE ALL RIGHT OR BY HOLDING YOU |
| ___ | | | | | 7. TOLD YOU HE/SHE FELT SORRY FOR YOU |
| ___ | | | | | 8. HELPED YOU GET MEDICAL CARE |
| ___ | | | | | 9. TOLD YOU THAT YOU WERE NOT TO BLAME |
| ___ | | | | | 10. TREATED YOU DIFFERENTLY IN SOME WAY THAN BEFORE YOU TOLD HIM/HER THAT MADE YOU UNCOMFORTABLE |
| ___ | | | | | 11. TRIED TO TAKE CONTROL OF WHAT YOU DID/DECISIONS YOU MADE |
| ___ | | | | | 12. FOCUSED ON HIS/HER OWN NEEDS AND NEGLECTED YOURS |
| ___ | | | | | 13. TOLD YOU TO GO ON WITH YOUR LIFE |

- ___ 14. HELD YOU OR TOLD YOU THAT YOU ARE LOVED
- ___ 15. REASSURED YOU THAT YOU ARE A GOOD PERSON
- ___ 16. ENCOURAGED YOU TO SEEK COUNSELING
- ___ 17. TOLD YOU THAT YOU WERE TO BLAME OR SHAMEFUL BECAUSE OF THIS EXPERIENCE
- ___ 18. AVOIDED TALKING TO YOU OR SPENDING TIME WITH YOU
- ___ 19. MADE DECISIONS OR DID THINGS FOR YOU
- ___ 20. SAID HE/SHE FEELS PERSONALLY WRONGED BY YOUR EXPERIENCE
- ___ 21. TOLD YOU TO STOP THINKING ABOUT IT
- ___ 22. LISTENED TO YOUR FEELINGS
- ___ 23. SAW YOUR SIDE OF THINGS AND DID NOT MAKE JUDGMENTS
- ___ 24. HELPED YOU GET INFORMATION OF ANY KIND ABOUT COPING WITH THE EXPERIENCE
- ___ 25. TOLD YOU THAT YOU COULD HAVE DONE MORE TO PREVENT THIS EXPERIENCE FROM OCCURRING
- ___ 26. ACTED AS IF YOU WERE DAMAGED GOODS OR SOMEHOW DIFFERENT NOW
- ___ 27. TREATED YOU AS IF YOU WERE A CHILD OR SOMEHOW INCOMPETENT
- ___ 28. EXPRESSED SO MUCH ANGER AT THE PERPETRATOR THAT YOU HAD TO CALM HIM/HER DOWN
- ___ 29. TOLD YOU TO STOP TALKING ABOUT IT
- ___ 30. SHOWED UNDERSTANDING OF YOUR EXPERIENCE
- ___ 31. REFRAMED THE EXPERIENCE AS A CLEAR CASE OF VICTIMIZATION

- ___ 32. TOOK YOU TO THE POLICE
- ___ 33. TOLD YOU THAT YOU WERE IRRESPONSIBLE OR NOT CAUTIOUS ENOUGH
- ___ 34. MINIMIZED THE IMPORTANCE OR SERIOUSNESS OF YOUR EXPERIENCE
- ___ 35. SAID HE/SHE KNEW HOW YOU FELT WHEN HE/SHE REALLY DID NOT
- ___ 36. HAS BEEN SO UPSET THAT HE/SHE NEEDED REASSURANCE FROM YOU
- ___ 37. TRIED TO DISCOURAGE YOU FROM TALKING ABOUT THE EXPERIENCE
- ___ 38. SHARED HIS/HER OWN EXPERIENCE WITH YOU
- ___ 39. WAS ABLE TO REALLY ACCEPT YOUR ACCOUNT OF YOUR EXPERIENCE
- ___ 40. SPENT TIME WITH YOU
- ___ 41. TOLD YOU THAT YOU DID NOT DO ANYTHING WRONG
- ___ 42. MADE A JOKE OR SARCASTIC COMMENT ABOUT THIS TYPE OF EXPERIENCE
- ___ 43. MADE YOU FEEL LIKE YOU DIDN'T KNOW HOW TO TAKE CARE OF YOURSELF
- ___ 44. SAID HE/SHE FEELS YOU'RE TAINTED BY THIS EXPERIENCE
- ___ 45. ENCOURAGED YOU TO KEEP THE EXPERIENCE A SECRET
- ___ 46. SEEMED TO UNDERSTAND HOW YOU WERE FEELING
- ___ 47. BELIEVED YOUR ACCOUNT OF WHAT HAPPENED
- ___ 48. PROVIDED INFORMATION AND DISCUSSED OPTIONS

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