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Cognitive Bias Modification For Negative Sexual assault Disclosure Experiences: Examining A Mechanism For Improving Post-Disclosure Well-Being

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ABSTRACT

COGNITIVE BIAS MODIFICATION FOR NEGATIVE SEXUAL ASSAULT DISCLOSURE EXPERIENCES: EXAMINING A MECHANISM FOR IMPROVING POST-DISCLOSURE WELL-BEING

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Following a sexual assault, many survivors choose to disclose the experience to others. More commonly, these conversations occur between friends, family members, or significant others, but survivors may also disclose to professionals, such as law enforcement and medical professionals. Unfortunately, support providers often do not respond supportively to disclosing survivors, and unsupportive acknowledgement and turning-against reactions are common. Extant literature has overwhelmingly indicated that these negative reactions have lasting detrimental effects on survivors, including leading to increased symptoms of posttraumatic stress disorder (PTSD) and other adverse outcomes. Although social support and PTSD theories converge to suggest that negative disclosure experiences may be detrimental because of their impact on appraisals, to date this has not been examined empirically. Moreover, although existing literature on disclosure has provided an important basis for interventions aimed at reducing the occurrence of these negative reactions, it is also critical to examine mechanisms that may ameliorate the impact of negative reactions that continue to occur at high rates. Cognitive bias modification (CBM) is an intervention that has been shown to reduce symptoms of anxiety,

depression, and PTSD by training individuals to adopt positively biased appraisals about stressful situations. The current study sought to examine the use of CBM appraisal training at reducing the harmful impact of negative sexual assault disclosure reactions by comparing changes in trauma appraisals following participation in positive CBM training. As expected based on previous research, CBM was effective at improving trauma appraisals over a one-week follow-up ($F[1] = 11.51$, $p = .002$, $d = 1.18$); however, there were no group differences based on post-assault supportive experiences as hypothesized. Potential explanations for null findings, implications, and recommendations for future research are discussed.

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DEDICATION

This project is dedicated to the survivors of sexual violence whom I have been honored to know and whose strength and resolve have inspired me professionally and personally.

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CHAPTER 1

INTRODUCTION

Approximately one in five women will be sexually assaulted in her lifetime (Black et al., 2011). The potential long-term and wide-ranging effects of sexual assault suggest that it may be one of the most severe of the trauma types; victims of sexual assault are at an increased risk for a host of negative outcomes, including posttraumatic stress disorder (PTSD; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992), depression (Acierno et al., 2002), anxiety (Ullman & Siegel, 1993), substance abuse (Ullman & Brecklin, 2002), suicidal ideation (Petrak, Doyle, Williams, Buchan, & Forster, 1997), and an increased risk of being revictimized (for a review, see Breitenbecher, 2001). In addition, survivors of sexual assault are vulnerable to experiencing a variety of negative responses from others following the assault; these responses occur alarmingly often (Filipas & Ullman, 2001) and are considerably detrimental to survivors, leading to more severe PTSD symptoms (e.g., Ullman & Filipas, 2001b), among other adverse consequences. As a result, it is crucial to not only examine the reasons for negative reactions but also ways in which the impact of negative reactions on survivors may be ameliorated.

Although nondisclosure is certainly common, many victims disclose sexual assaults to other people. It is believed that between one half to over 90% of women disclose their assault to at least one person (Ahrens, Campbell, Ternier-Thames, Wasco, & Sefl, 2007; Golding, Siegel, Sorenson, Burnam, & Stein, 1989; Koss, 1985). Of those who disclose, victims tend to disclose to an average of three people (Filipas & Ullman, 2001) and these recipients tend to be informal

support sources, such as friends, significant others, and family members, more often than formal support sources, such as law enforcement, legal, medical, or mental health professionals (Golding et al., 1989). Although some women do contact these formal support sources, such disclosures are less common and tend to occur in combination with disclosures to informal support sources. An examination of a community sample of 1,084 victims found that, of the 80% of victims who disclosed, 97.6% disclosed to informal support sources and 60.7% disclosed to formal support sources, including 38.5% who disclosed to informal support sources only, 3.0% who disclosed to formal support sources only, and 59.0% who disclosed to both (Starzynski, Ullman, Filipas, & Townsend, 2005). A mixed sample of community members, college students, and mental health agency victims revealed similar findings, with almost 40% of victims disclosing only to informal support sources, whereas nearly two-thirds disclosed to both informal and formal support sources (Ullman & Filipas, 2001a). Overall, the most common disclosure recipients are friends and relatives (94.2%), followed by mental health professionals (52.0%), medical professionals (27.1%), police (26.4%), clergy (7.6%), and 43% other, including nearly half of which were romantic partners (Ullman & Filipas, 2001a). A study on campus sexual assault found that only 4% of college women disclosed their assault to a campus authority and only 1% disclosed to a counselor (Fisher, Daigle, Cullen, & Turner, 2003).

Disclosures to formal support sources are more likely among women with children, those attacked by strangers, those with physical injuries, and those who believed their lives were in danger during the assault (Ullman & Filipas, 2001a). Disclosure to both types of support sources was related to history of childhood sexual abuse, suicide attempts, and current PTSD. Survivors who disclosed to both support sources had significantly higher depressive symptoms than survivors disclosing to only informal support sources, although survivors disclosing to only

informal support sources reported greater behavioral self-blame than those disclosing to both support sources (Starzynski et al., 2005).

Content of Disclosures

In comparison to the depth of research about disclosure reactions, little is known about what is actually shared during disclosures. A qualitative analysis of female sexual assault victims found that participants reported a wide range of the detail provided during disclosures, from a minimum of either no detail or simply giving hints to briefly stating the facts to a detailed and complete disclosure of all facts (Smith, 2005). Ullman and Filipas (2001a) found that during victims' initial disclosure about half of women provided an intermediate level of detail about the assault, more than a third described the assault in detail, and only approximately 14% made vague reference or mentioned the assault in passing. The amount of detail shared during disclosure has been found to relate to psychological functioning. Specifically, victims who share more details during disclosure are better off psychologically (Ullman, 1996b; Ullman & Filipas, 2001b), perhaps because greater cognitive processing occurs, allowing the victim to work through upsetting feelings and thoughts about the trauma. Research suggests that cognitive processing relates to fewer psychological symptoms, including symptoms of depression and anxiety (Resick et al., 2008; Resick & Schnicke, 1992). More detailed disclosures may also elicit more positive responses from disclosure recipients (Ullman, 2010). Emerging evidence has found that positive disclosure experiences, compared to negative disclosure experiences, are characterized by significantly greater sharing of overall content including, more specifically, assault-related details, emotions, cognitions, beliefs, and social experiences (Pinciotti, Allen, Milliken, Orcutt, & Sasson, 2019), though it is not clear whether greater sharing of content elicits

more positive responses or whether more positive responses elicit greater sharing of content (or both). Although the causal pathway is not yet known, it appears that survivors' perceptions of disclosures as positive/helpful or negative/unhelpful correspond with their willingness to share more content, which in turn influences psychological functioning (Ullman, 1996b, Ullman & Filipas, 2001b), further emphasizing both the importance and salience of sexual assault disclosure experiences and the need for interventions that may attenuate the negative effects of negative disclosure experiences.

Disclosure Motivation Theories

Several theories have been proposed to explain the motivations behind disclosing behavior. Stiles (1987) proposed a "fever model" of disclosure in which survivors disclose because they are in distress and are attempting to relieve their burden. Davis and Franzoi (1987) proposed three different motivations, the first of which involves *expressive need*. Survivors who disclose due to expressive need do so to express their thoughts and feelings about what happened. Survivors of sexual assault who disclose may be motivated by the need to express their negative assault-related feelings and discuss their perceptions about what occurred. Survivors may also disclose because of *self-knowledge need*, in which their disclosure enables them to gain self-knowledge. This may be one of the key motivators in survivors who disclose to mental health professionals. Last, Stiles (1987) suggested a *self-defense need* to explain survivors who choose not to disclose due to their determination that disclosing would involve too much risk, including receiving negative responses such as blame, not being believed, or other negative consequences. Finally, Jourard (1971) theorized that individuals are motivated to disclose due to the expectation of reciprocity. He described a dyadic effect in which social

relationships are built on a reciprocal process of disclosure. In the case of sexual assault, survivors likely feel more comfortable disclosing to fellow survivors, who may be less likely than non-survivors to minimize the experience or blame them.

Although many studies dichotomize adult disclosures (i.e., survivors either disclosed or they did not), some conceptualize disclosure as more of a process rather than a single event (Smith, 2005). Greenberg and Stone (1992), for example, suggested that trauma disclosure functions on more of a continuum of how much was disclosed. Adapting instructions from a writing task created by Pennebaker, Kiecolt-Glaser, and Glaser (1988), the researchers randomly assigned 60 undergraduate students to either write about their deepest thoughts and feelings related to a traumatic experience that was not previously disclosed in detail (i.e., "undisclosed-trauma condition"), write about their deepest thoughts and feelings related to a traumatic experience that *was* disclosed in detail (i.e., "disclosed-trauma condition"), or write about their daily events, social activities, etc., using detail but no mention of thoughts or feelings relating to the topics (i.e., "control condition"). All participants took part in four days of essay writing. Significant differences in mood and physical symptoms emerged between the undisclosed-trauma and disclosed-trauma conditions; disclosed-trauma participants reported greater immediate decreases in positive mood and greater increases in negative mood and physical symptoms than undisclosed-trauma participants. These unexpected results suggest that repeated disclosure of intimate details of trauma may sometimes intensify negative affect related to trauma experiences, perhaps due to the negative responses of others (Greenberg & Stone, 1992).

Qualitative interviews with 144 female undergraduates with at least one experienced sexual assault revealed that favorable conditions (e.g., trust, confidentiality, feelings of closeness), desire to facilitate coping (e.g., "getting it off her chest"), disclosing to strengthen a

relationship, and altruistic reasons (e.g., wanting to protect others) all motivated disclosure (Smith, 2005). Other research has found that victims disclose to receive support rather than advice (Frazier & Burnett, 1994), and they seek such support from those they believe will be most helpful (Golding et al., 1989). Such disclosures occur when victims believe it will help them feel better, receive aid that is needed, or obtain justice (Bachman, 1993; Feldman-Summers & Norris, 1984; Golding et al., 1989). Women who disclose to the police, specifically, report doing so because they want to get help/medical care, want to prevent further crime, want the offender punished, and/or want to report the crime (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007).

Predictors of Disclosure

Many factors have been identified that predict whether a survivor of sexual violence discloses their experience. Characteristics of the assault are important: adult survivors whose assaults conform more to rape stereotypes and myths (e.g., involving strangers, injury, or weapon) are more likely to disclose than survivors of more typical assault, and tend less to delay disclosing (Sefl, T., Wasco, Ahrens, & Barnes, 2001; Fisher, et al., 2003; Koss, Dinero, Seibel, & Cox, 1988; Ullman, 2003; Ullman & Filipas, 2001a). Survivors' history of sexual violence has also been found to be a detriment of disclosing behavior, as individuals who have been assaulted in the past are less likely to disclose subsequent assaults or, when they do disclose, it tends to be delayed (Ullman, 1996b). This finding is particularly noteworthy given that adult sexual assault survivors who delay disclosing are worse off psychologically (Ullman, 2007).

The ways in which a survivor copes with their sexual trauma may also impact their disclosing tendencies. Survivors who use avoidance coping to reduce negative affect brought on

by the assault report greater psychological symptoms, including PTSD (Foa & Riggs, 1995; Ullman, 1996b). This association may be because survivors who engage in avoidance coping, such as withdrawing from social situations, are limiting their opportunities for disclosure. The presence of psychological symptoms like posttraumatic stress, depression, and anxiety may make survivors more likely to disclose, as more severe post-assault sequelae tend to increase survivors' contact with formal support sources like medical or legal personnel (Ullman & Filipas, 2001a) to deal with the indirect effects of their trauma.

Rape survivors who label the experience as a rape are more likely to disclose than those who do not (Botta & Pingree, 1997; Koss et al., 1988), perhaps because before disclosing to others, survivors must first interpret the sexual experience as unwanted and acknowledge that they have been victimized (Browne, 1991) before others will perceive them as survivors (Williams, 1984). If a survivor does not feel that there is an issue to discuss, it is intuitive that they would not believe they had anything to disclose. Yet, research indicates that whether a survivor labels their experience as a sexual assault is irrelevant as it pertains to long-term physical and psychological health—individuals who do not identify as survivors of sexual assault are equally susceptible to the same negative outcomes following sexual assault (Kilpatrick, 1983). In some ways, these survivors may be considered worse off, as they may experience problems that they are not able to clearly understand or link to the assault itself (e.g., sexual dysfunction, diminished self-esteem; (Kilpatrick, 1983) and are perhaps less likely to seek mental health services. This is particularly troublesome given that between one-third to three-quarters of survivors of sexual assault do not label their experience as such (Fisher et al., 2003), and women who do not disclose their assault report higher rates of depression, posttraumatic stress, and physical health symptoms than women who do disclose, even after controlling for

time since the assault, previous history of sexual violence, and negative reactions from others (Ahrens, Stansell, & Jennings, 2010).

Barriers to Disclosure

Several barriers exist that explain why some survivors choose not to disclose. Survivors of sexual assault in college reported feeling as though their experience was not serious enough, fear of retaliation, lack of evidence, and wanting to keep the victimization a secret from their families as reasons for not reporting to police agencies (Fisher et al., 2003). College-age students asked to identify reasons to not report hypothetical victimizations cited fears of not being believed, shame, embarrassment, and concerns about confidentiality (Sable, Danis, Mauzy, & Gallagher, 2006). Women, specifically, had greater concerns regarding fear, lack of helping resources, and wanting to protect the perpetrator (Sable et al., 2006). Walsh, Banyard, Moynihan, Ward, and Cohn (2010) examined the use of services for college male and female victims following a sexual assault. They found that males (44%) were significantly less likely than females (79%) to disclose to anyone (χ^2 [1, 141] = 13.03, $p < .05$) and that very few survivors of either sex used any services (3%). When asked for reasons why survivors did not use the sexual assault center on campus, the majority (70%) reported feeling as though the incident was not serious enough and a little less than half reported that the experience was private. In addition, survivors cited feelings of shame or embarrassment (50%), concerns that other people would find out (39%), fearing negative consequences for the perpetrator (33%), not being believed (30%), or being blamed for the incident (23%) as barriers to disclosing to the sexual assault center. Another barrier was simply not knowing where to go; less than half of the

students surveyed knew where the on-campus sexual assault center was located (Walsh et al., 2010).

Research examining disclosure in community samples often focuses on availability of resources as a key barrier to disclosure. A study that interviewed both urban and rural adult sexual assault survivors about utilization of mental and physical health services found that both groups cited concerns about cost, particularly for survivors who did not have health insurance (Logan, Evans, Stevenson, & Jordan, 2005). Basic knowledge about the availability of formal support resources, including their location and benefits, may also be a barrier to disclosing. Survivors of sexual assault are often unaware of such services (Logan et al., 2005). For those who are aware of services, there might be hesitation to use services because of stigma or misunderstanding. Rural women cite stigma around discussing rape in their communities and urban women cite perceptions that services using the words "trauma" or "crisis" are available only to survivors in crisis (Logan et al., 2005).

Disclosure Reactions

Unsurprisingly, fears about treatment from others following sexual assault disclosure are not unfounded. A great deal of research has focused on the different types of reactions that survivors of sexual violence tend to receive from others upon disclosing. Researchers typically categorize these reactions based on the Social Reactions Questionnaire (SRQ; Ullman, 2000), a widely used self-report measure of assault-specific social reactions that differentiates between positive reactions (including providing emotional support, instrumental support, and information support)and negative reactions, which will be discussed later. Fortunately, positive reactions are common; most victims who disclose report experiencing at least one instance of a positive

reaction (Ullman, 1999). Ullman (2010) suggests that positive responses are likely given in response to the victim's disclosure and/or reaction and thus represent the support provider's attempt to comfort and support the victim so that the victim might feel better and receive needed assistance.

Emotional support is the most commonly provided of the positive responses, with approximately 80% of victims who received positive reactions reporting receiving emotional support specifically (Filipas & Ullman, 2001; Ullman, 1996a). Victims indicate that emotional support and validation are important to them in response to both the assault and to their own psychological reaction to and methods of coping with the assault (Ullman, 2010). Tangible aid refers to the actions or assistance provided by others, including transportation to the police department and/or hospital, providing childcare, etc. The provision of tangible aid is also common, with 60% of victims reporting receiving such aid (Ullman, 1996a). Not surprisingly, tangible aid is frequently provided by formal support sources, though tangible aid can also be provided by informal support sources as well. This type of response may help buffer the effects of trauma exposure on PTSD (Glass, Perrin, Campbell, & Soeken, 2007), although the availability of tangible aid may be dependent on other factors. For example, victims with fewer resources or those assaulted within the context of a violent relationship may not have access to tangible aid from informal support sources and may instead turn to formal support sources (Davis, 2007). Information support is the last type of positive reaction commonly referenced in the literature and includes providing informational resources to the victim. Similar to other types of positive reaction, information support is common, with some research finding that up to 90% of victims report experiencing this type of support (Ullman, 1996a).

Distinct from positive reactions, negative reactions are defined by more than simply the absence of positive reactions (Ullman, 1996a). Negative responses may be unintentionally harmful, as the support provider may have intended to be supportive but instead was perceived as being dismissive or insensitive (Herbert & Dunkel-Schetter, 1992). Well-intentioned negative responses may be the result of the support provider's awkward or ineffective attempts to respond to the victim's distress and maladaptive coping. Such respondents may respond assertively because of their own discomfort with the victim's distress and lack of knowledge about what is most helpful for victims (Dunkel-Schetter & Skokan, 1990). Negative responses may also be intentional attempts to harm victims (Herbert & Dunkel-Schetter, 1992). Regardless of intention, negative reactions may partially result from the support provider's judgment of the victim's reaction to his/her victimization rather than of the victimization itself, which may occur when victims engage in maladaptive coping or are very symptomatic and the provider believes that the victim should be better recovered. Negative reactions include behaviors such as victim blaming, taking control of the victim's decisions, distraction, egocentric behavior, or treating the victim differently (Ullman, 2000). Unfortunately, similar to positive reactions, victims report experiencing high levels of negative reactions (Campbell, Wasco, Ahrens, Sefl, & Barnes., 2001; Filipas & Ullman, 2001).

Victim blame, widely studied for decades due to its pervasiveness, refers to statements made to or about the victim that imply that the victim is to blame for the assault. Common victim blaming sentiments include questioning or labeling the victim's behavior (e.g., "Why were you drinking?"), character (e.g., "You are a weak person"), or dress (e.g., "What did you expect would happen being dressed like that?"). Victim blame is common from both formal and informal support sources. In fact, research on disclosure has found that between 70 and 80% of

victims who disclose experience at least one incident of victim blame (Filipas & Ullman, 2001; Ullman, 1996a).

Distraction is another common negative response that involves discouraging the victim from discussing the assault, such as by invoking the "forget and move on" adage. Ullman (2010) explains that distraction may be particularly harmful because it implies that the victim is not coping adequately or correctly, is overreacting, or is somehow burdening the respondent by talking about the assault. The latter may in fact be true in some cases, as respondents may use distraction for self-serving purposes even though the response may be presented as victim focused, such as to "help her get her mind off the assault" (Ullman, 2010). Distraction may be experienced as invalidating by victims and may serve to inhibit further disclosures, to the same support provider or others, due to the victim's fear that assault-related conversations will be burdensome to others. Although experienced less frequently than victim blame, distraction is still experienced by the majority of victims, with between 58% and 80% of disclosers reporting having experienced distraction from support providers (Filipas & Ullman, 2001; Ullman, 1996a).

Stigmatizing responses are another type of negative reaction commonly experienced by victims and refers to support providers treating the victim differently or like they are somehow damaged after the assault. Stigmatizing responses "reflect the blatant rejection of the survivor that is due to the stigma of rape in U.S. society" (Ullman, 2010, p. 68). Despite increased public awareness about rape and sexual assault, stigma remains and manifests in the biases and actions of individuals. Not surprisingly, many of these individuals are tasked with responding to survivors of sexual assault personally and professionally. Verbal and behavioral responses that reflect this stigma are received by 80% of victims following disclosure (Filipas & Ullman, 2001). Stigmatizing responses sometimes preclude the dissolution of relationships with friends and

family members—an occurrence that is not uncommon following sexual assault—who may begin to distance themselves from the victim before ultimately breaking off the relationship (Ullman, 2010). Stigmatizing responses may also be well intentioned, particularly for respondents who believe that the victim *is* somehow damaged from the assault. This perception may cause respondents to "walk on eggshells" around the victim out of fear that they may say or do something that causes further damage. Although well intentioned, this behavior can cause the victim to feel stigmatized, judged, or patronized and foster the belief that the victim cannot handle the assault or is not coping with it effectively. Although less detrimental than outright rejection, this type of stigmatizing response may reinforce feelings of helplessness or weakness created by the assault and may cause the victim to question his or her ability to recover (Ullman, 2010).

Egocentric reactions are the fourth type of negative reaction frequently cited by disclosers. Egocentric reactions occur when support providers regard the victim's experience as it relates to the providers themselves, such as by focusing on how difficult the situation is for them and ignoring the victim's experience. Such reactions are self-focused and are particularly common among family members and significant others; egocentric reactions are reported by 80% of victims who disclose (Filipas & Ullman, 2001). Egocentric responses are harmful because they deny the needs of the victim during disclosure and ignore the impact of the assault on the victim. This type of response is detrimental for a number of reasons. First, the victim may not receive the support that he/she needs because the focus has shifted from the victim to the support provider. Second, if the support provider is expressing a desire to get revenge on the perpetrator, the victim may feel an even greater loss of control than what was caused by the rape. Last, if the support provider is expressing high levels of distress, the victim may feel compelled

to comfort and attend to the provider's needs, which may add to the stress that the victim is likely already experiencing by disclosing (Ullman, 2010).

Controlling responses are the fifth and final type of negative reaction most commonly categorized in the literature (Ullman, 2000). This category of responses encompasses behaviors intended to take control of the victim or situation following an assault. Both informal and formal support sources exhibit controlling responses. Formal support sources may inadvertently revictimize victims by taking away their control, such as medical professionals conducting rape examinations insensitively and with a greater focus on evidence collection than on the victim's feelings. Informal support providers may exhibit controlling responses by attempting to force the victim to take a certain course of action, such as reporting their assault to the police. Approximately 80% of victims who disclose report experiencing controlling responses from informal and/or formal support sources (Filipas & Ullman, 2001; Ullman, 1996a).

The aforementioned three positive reactions and five negative reactions are based on the SRQ (Ullman, 2000) but may not reflect the whole spectrum of responses provided to victims who disclose. As such, Ullman (2010) outlines additional reactions, both positive and negative, that are less commonly experienced by victims and about which little is known empirically but are still important to note. Additional positive reactions may include: 1) belief/validation, which may help contextualize the experience; 2) non-blame, which may be especially important if the victim were anticipating blame; 3) listening, which may allow victims the opportunity to be heard and taken seriously; 4) reassurance, which may comfort the victim and feel that others will be there for support when needed; and 5) sharing experiences, in which the respondent discloses one's own victimization experience, which may reassure the victim that their experience is truly understood. Additional negative reactions include: 1) rape myths, which imply that women

invite, enjoy, and are to blame for rape; 2) trust violation, which may occur when respondents tell others about the victim's experience without their permission; 3) minimizing responses, in which the trauma is minimized and/or the victim's coping is pathologized; 4) revictimization, in which a respondent may themselves target the victim and attempt to rape him/her; and 5) disbelief/denial, in which respondents deny that the experience could have happened (Ullman, 2010).

It is also important to note that victims do not always agree with the generally accepted categorization of positive and negative responses. For some, "negative responses" may be perceived positively and vice versa. Campbell, Ahrens, Self, Wasco, and Barnes (2001) completed interviews with 102 rape survivors in which survivors were asked to rate on a 7-point Likert scale how they perceived each reaction they received, from very healing to severely hurtful. Although most survivors perceived reactions commonly labeled as "positive" as healing/positive, a minority of participants did not. For example, 15% of survivors reported that being told that they were believed was actually perceived as hurtful. In addition, only three of the six items the authors classified as "negative" based on previous research were actually perceived as hurtful/negative by the majority of survivors (i.e., being called irresponsible, patronized, or encouraged to keep the rape a secret), whereas the other three yielded mixed findings. Specifically, of survivors who were told to get on with their lives, originally conceptualized as a negative response, a surprising 49% of the sample found the response either a little, moderately, or very healing; 43% found the response a little, moderately, or very hurtful; and an additional 8% found it neither healing nor hurtful. Similarly, of survivors whose disclosure recipient wanted to seek revenge on the perpetrator, also commonly believed to be a negative response, only 21% found the response hurtful. Instead, 61% found the response

healing and 18% found it neither healing nor hurtful. Last, of survivors whose disclosure recipient tried to control their decisions, 27% found this response healing, 68% found it hurtful, and 5% reported that it was neither healing nor hurtful (Campbell, Ahrens, et al., 2001). The findings are an important reminder that disclosure experiences are often more complex than the greater social support literature allows and that survivors' own perceptions of experiences should be considered when conducting research with this population.

Although the vast majority of literature using the SRQ (Ullman, 2000) has characterized the aforementioned reactions as either positive or negative, recent literature has found support for a three-factor model of the SRQ. Taking into account that survivors experience some negative reactions as negative while others are experienced as more mixed (positive and negative), Relyea and Ullman (2015) proposed splitting the negative reactions into two categories: turning-against reactions, which reflect the more negatively valenced reactions, and unsupportive acknowledgement, which reflect the more mixed-valenced reactions. Turning-against reactions include blame and stigmatizing responses and "appear to overtly attack the survivor and reframe the survivor as the problem," whereas unsupportive acknowledgement, which includes controlling, distracting, and egocentric responses, "appear to share a positive aspect of acknowledging the assault as well as a negative aspect of not explicitly providing emotional or tangible support" (Relyea & Ullman, 2015, p. 38). In other words, although the assault is framed as the problem during unsupportive acknowledgement, the experience is often invalidated in some way. Thus, the interpretation of unsupportive acknowledgement as healing or hurtful may depend on the survivor's needs, expectations, and interpretation of the support provider's actions.

Relyea and Ullman's (2015) study, involving a diverse sample of 1,863 women, found that although having an amalgam of negative reactions was statistically adequate, splitting the negative reactions into two factors provided a better fit to the data. Regression analyses found that turning-against reactions were predictive of social withdrawal, increased self-blame, and decreased sexual assertiveness. Conversely, unsupportive acknowledgement reactions were predictive of both adaptive and maladaptive coping and, contrary to hypotheses, increased depression and PTSD. The authors theorize that unsupportive acknowledgement related more to depression and PTSD than turning-against reactions because unsupportive acknowledgement may be more commonly provided by friends and family, from whom survivors may be more expectant of positive reactions, though they did not test this theory. Although unsupportive acknowledgement and turning-against reactions have proven to be distinct, the current study will use the term "negative reactions" to maintain consistency with the terminology in the majority of past literature, although data collection and analysis will take into account these differences in terminology.

Theories and Determinants of Negative Reactions

Negative social reactions are not unique to sexual assault victims. In fact, victims of many different types of negative life events are susceptible to harmful reactions from others, a pattern that has inspired decades of research. The "victimization perspective" posits that social network members may have a difficult time providing effective social support when negative life events arise and may therefore react in negative and harmful ways (Coates, Wortman, & Abbey, 1979; Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter & Wortman, 1981, 1982; Herbert & Dunkel-Schetter, 1992; Silver, Wortman, & Crofton, 1990; Wortman & Lehman, 1985). Herbert

and Dunkel-Schetter (1992) review a variety of determinants of negative social reactions to victims, which include both victim and network member characteristics and will be briefly described here.

Victim affect has been shown to influence the response that is provided by support providers. Depressed affect is evidenced to elicit negative reactions from others, perhaps because individuals suffering from depression are more likely to experience rejection from others (Coyne, 1976; Sacco & Dunn, 1990). The same is true for negative affect in general, as one study found that rape victims who expressed negative affect related to their rape that occurred six months prior experienced more rejection and derogation than rape victims who expressed positive affect (Coates et al., 1979). In addition, the coping behavior exhibited by victims can influence the likelihood of receiving a negative response; victims of many different kinds of negative life experiences (i.e., cancer, AIDS, drug abuse, heart disease, anorexia, depression, obesity, or child abuse) were all blamed less, were rated as having a better chance of improvement, and were perceived as less stressful to others when they were portrayed as coping actively with the event compared to victims who were portrayed as not coping actively (Schwarzer & Weiner, 1991). Moreover, it appears that victims may intentionally alter their social interactions to avoid receiving negative social reactions, such as by withdrawing or avoiding revealing their victim status (Brewin, MacCarthy, & Furnham, 1989).

Many assault-related characteristics predict blame from others. Victims are more likely to be blamed if they had consumed alcohol (Sims, Noel, & Maisto, 2007; Untied, Orchowski, Mastroleo, & Gidyz, 2012), experienced more severe victimization (Ullman & Filipas, 2001b), have a known history of prior sexual experience (Borgida & White, 1978), or were dressed in a way deemed provocative (Workman & Freeburg, 1999). Sexual assault victims with previous

sexual history with the perpetrator, victims with "bad" reputations (e.g., frequent partying, having many sexual partners), and victims who did not physically resist their rapes also tend to elicit greater blame (Cohn, Dupuis, & Brown, 2009; Monson, Langhinrichsen-Rohling, & Binderup, 2000). Moreover, consistent research has shown that rapes committed by strangers yield the least amount of victim blaming compared to rapes committed by dating partners or acquaintances (Abrams, Viki, Masser, & Bohner, 2003; Bell, Kuriloff, & Lottes, 1994; Brown & Testa, 2008; Frese, Moya, & Megías, 2004; Grubb & Harrower, 2009; Sheldon-Keller, Lloyd-McGarvey, West, & Canterbury, 1994), though a study involving predominantly female undergraduate students at a small liberal arts college revealed contradictory results; the participants blamed the victim most when the perpetrator was a stranger, followed by a dating partner, followed least by a family member (Davison & Farreras, 2010). Davison and Farreras suggest this contradiction to previous research is a result of a "calculus effect," in which victim blame increases when perpetrator blame is not high enough to balance out the level of blame. Therefore, when perpetrator blame is moderate or low, the remaining blame must be attributed elsewhere—with the victim being the next logical target (Davison & Farreras, 2010).

Characteristics of support providers can also increase the likelihood that they will provide negative reactions. For example, some negative reactions may be the result of the support provider's need to reduce their own feelings of vulnerability (Coates et al., 1979; Fulero & Delara, 1976; Shaver, 1970; Walster, 1966). According to the defensive attribution theory (Shaver, 1970), the fear of being similarly victimized can lead some to distance themselves from the victim by attributing blame and derogation to the victim, allowing the observer to feel comforted that they will not experience a similar tragedy because they would not be so deserving. Recent research building on this theory has found that defensive attribution of blame

may be an effective mechanism for reducing perceived vulnerability to sexual victimization among women (Pinciotti & Orcutt, in press). This effect appears to be moderated by perceived similarity, however, in which observers who feel particularly similar to the victim in some way become less likely to attribute blame because they are motivated by not being blamed themselves, should they ever be in a similar situation. Among both men and women, greater perceived similarity to a fictional female rape victim predicted greater perceived vulnerability to being sexually assaulted (Pinciotti & Orcutt, in press). The defensive attribution theory overlaps with the just world theory (Lerner, 1971, 1980), which hypothesizes that individuals treat victims poorly because of their belief in a just world in which good things happen to good people and bad things happen to bad people. Thus, a negative life event would only occur to someone who was somewhat deserving of the tragedy. Rather than altering their beliefs about the world to allow for random or undeserved events, some individuals choose to derogate and blame the victim. Just world beliefs have been linked to greater blame attributions toward victims of sexual assault (Kleinke & Meyer, 1990; Strömwall, Alfredsson, & Landström, 2013a, 2013b).

Support providers may be impacted not only by their beliefs about the world and their own vulnerability, but by attributions about the negative life event itself. Victims who are judged to be responsible for the event elicit anger, less willingness to help (Betancourt, 1983; Schmidt & Weiner, 1988), less pity, greater blame, and are perceived as more socially disruptive (Schwarzer & Weiner, 1991). Finally, modest research suggests that negative reactions may simply arise from feelings of helplessness and frustration. For example, a study that involved depressed and non-depressed college students speaking over the telephone with other non-depressed college students found that the perception of depressive behavior in the other was related to greater feelings of helplessness, which were in turn related to less willingness to interact with the other

person in the future, a less favorable impression of the other person, and greater overall negative feelings during the interaction (Dunkel-Schetter, Silver, & Wortman, 1988). Similarly, depressed individuals that do not exhibit improvement also tend to elicit negative reactions and rejection from others (Winer, Bonner, Blaney, & Murray, 1981).

Attributions of blame toward victims have also been found to relate to observer gender. For example, it has been well-documented that men tend to have less positive attitudes of and attribute more blame to victims (e.g., Black & Gold, 2008; Grubb & Harrower, 2008; Kleinke & Meyer, 1990; Workman & Freeburg, 1999), although limited research has found that women blame female victims more than men (Cameron & Stritzke, 2003) or that no gender differences exist (Cassidy & Hurrell, 1995; Yarmey, 1985). Despite some dissent, most research supports men as expressing greater victim blaming sentiments, which may be linked to differences in perceived similarity. Studies examining victim blame has found that increased perceptions of similarity to the victim buffer against victim blaming (Bell, Kuriloff, & Lottes, 1994; Feldman, Ullman, & Dunkel-Schetter, 1998; Fulero & Delara, 1976; Miller, Amacker & King, 2011; Thornton, 1984; Workman & Freeburg, 1999). With the majority of sexual assault research and overall societal coverage of sexual assault focusing on female victims, women may express less victim blame because they feel more similar to the victim than do men. This may be why women also express more empathy for victims than men, a response that also relates to less victim blame (Jimenez & Abreu, 2003).

Respondents' own victimization history also influences the tendency to engage in victim blaming, though studies have found that this relationship is not always in the expected direction. Whereas researchers often hypothesize that, compared to non-victimized participants, victimized participants will attribute less blame to fictional rape victims, this is rarely the case (e.g., Coller

& Resick, 1987; Jenkins & Dambrot, 1987). Instead, this surprising finding may be due to differences in whether one's own victimization is labeled as such. A study using a sample of 157 female college students found that the greatest victim blame was expressed by unacknowledged victims, or victims who endorse nonconsensual sexual experiences meeting the legal definition of rape but do not label the experience as "rape," followed by nonvictims, followed last by acknowledged victims (Mason, Riger, & Foley, 2004). These differences were statistically nonsignificant, however, and so require replication and cautious interpretation. However, the authors surmise that the nonsignificant findings were reflective of a ceiling effect in which participants were not given enough Likert response options to obtain a wider distribution of scores. The findings suggest that acknowledgment of one's own rape may motivate a disclosure recipient to engage—or avoid engaging—in victim blaming.

Outcomes of Social Support

Despite the multitude of explanations for why support providers engage in negative reactions, evidence strongly suggests that the support that is received following a sexual assault is crucial; post-assault support is one of the most salient predictors of posttraumatic outcomes (Ullman, 2010), highlighting the need for investigation into the mechanisms that make these reactions so salient and the ways in which researchers and clinicians may reduce their impact. Although initially believed to do little to protect against negative assault outcomes (Ullman, 1999, 2010), research on the impact of positive reactions to disclosure suggests that there may be some moderate benefit to receiving positive reactions. For example, positive reactions have been found to relate to greater posttraumatic growth (Ullman, 2014) and greater use of adaptive individual (e.g., "I thought hard about what steps to take") and social (e.g., "I tried to get advice

or help from other people about what to do") forms of coping (Ullman & Peter-Hagene, 2014). Positive reactions were also related to better perceived control over recovery, which was in turn related to less symptoms of PTSD, suggesting that positive support promotes survivors' efforts to regain control. Unexpectedly, however, Ullman and Peter-Hagene (2014) found that positive social reactions were correlated with increased PTSD symptoms. This relation was weaker than the relation between negative social reactions and PTSD symptoms, but it was significant nonetheless. Because the model used in the study was largely correlational, the assumption of the direction of the relationship was based on previous research and theory. As such, it is possible that survivors who had greater PTSD symptoms tended to receive more positive social reactions. The authors suggest an alternative explanation, such that survivors who experience more severe traumas may have more severe PTSD symptoms and, unrelatedly, disclose more often and thus receive more positive reactions (Ullman & Peter-Hagene, 2014). It may also be that the category of positive reactions is too broad and that the amalgamation of specific response behaviors might dilute their effects.

Ullman (1996b) found that being listened to was significantly associated with better recovery, whereas being believed was unrelated to recovery, though these two responses are typically lumped together under the overarching category of positive reactions. The literature on positive reactions may also be somewhat convoluted because the effects of positive reactions appear to be related to victims' relationship to the support provider. Filipas and Ullman (2001), for example, found that emotional support provided by significant others was related to more positive affect and that positive reactions overall from significant others were related to fewer symptoms of PTSD compared to positive reactions provided by other support providers. Thus, previous research that suggests that positive reactions have negligible or no effects may not be

encompassing the complex interaction between support provider and victim; instead, it appears that positive reactions that come from persons close to the victim are beneficial while positive reactions that come from others may not be. Clearly, more thorough and robust research on positive reactions is warranted.

Compared to positive reactions, the literature on negative reactions is less ambiguous. Across multiple studies, survivors of sexual assault that receive negative reactions are worse off in terms of self-rated recovery; perceived health (Ullman, 1996b; Ullman & Siegel, 1995); PTSD (Andrews, Brewin, & Rose, 2003; Campbell, Ahrens, et al., 2001; Ullman & Filipas, 2001b; Ullman, Filipas, Townsend, & Starzynski, 2007; Ullman, Townsend, Filipas, & Starzynski, 2007); depression (Campbell & Raja, 2005; Davis, Brickman, & Baker, 1991); self-esteem (Ullman, 2000); alcohol consumption (Ullman, Starzynski, Long, Mason, & Long, 2008); self-blame; use of avoidant coping (Ullman, 1996b); and feelings of guilt, anxiety, distrust of others, and reluctance to seek further help (Campbell & Raja, 2005). A longitudinal examination of negative responses received shortly after violent crimes found that negative reactions predicted greater PTSD at 6-month follow-up (Andrews et al., 2003) and a prospective analysis of sexual and nonsexual assault victims found that the degree of interpersonal friction experienced shortly after the assault was linked to greater PTSD severity three months later (Zoellner, Foa, & Brigidi, 1999). In addition, receipt of negative reactions may have a silencing effect by negatively influencing the likelihood of future disclosures (Ahrens, 2006), thereby limiting opportunities to receive positive reactions or help. The literature on the impact of disclosure reactions has found that whereas positive reactions have negligible to moderate effects on survivor outcomes, negative reactions are much more salient for recovery outcomes, suggesting the need for interventions that may reverse these deleterious effects. What remains unclear,

however, is why exactly these responses are so salient. Understanding the mechanisms that drive the influential nature of these reactions is a crucial first step in reducing their impact.

Overall, survivors of adult sexual assault experience high amounts of both positive and negative reactions from others (Campbell, Wasco, et al., 2001; Filipas & Ullman, 2001). One study found that three-quarters of women reported experiencing a negative reaction to their disclosure (Ahrens, Cabral, & Abeling, 2009), and another found that 20% regretted their decision to disclose altogether (Jacques-Tiura, Tkatch, Abbey, & Wegner, 2010). Negative reactions are unfortunately quite common from formal support providers (Filipas & Ullman, 2001; Starzynski et al., 2005; Ullman & Filipas, 2001b) and police/legal personnel, physicians, and clergy are consistently rated as most unsupportive by survivors (Ullman, 1999). These professionals tend to harbor more negative attitudes toward rape victims in general and more strongly adhere to rape myths (Best, Dansky, & Kilpatrick, 1992; Sheldon & Parent, 2002; Ward, 1988). Although formal support providers are more consistently linked with negative reactions, informal support providers are not immune to providing such reactions. For example, a sample of students exposed to a campus shooting revealed group differences by sexual trauma history; survivors of sexual trauma reported experiencing significantly less family support than students who were not survivors both before and after the campus shooting (Littleton, Grills-Taquechel, Axson, Bye, & Buck, 2012). Moreover, although friends, significant others, and family members are among the most commonly identified when survivors are asked about their most positive disclosure recipient, they also are identified most often as the most negative disclosure recipient (Pinciotti et al., 2019).

In light of findings that survivors did not uniformly experience positive and negative responses as such, Campbell, Ahrens, et al. (2001) performed a series of multivariate analyses of

covariance examining the outcomes of PTSD, depression, and physical health based on survivors' own perception of social responses (i.e., for each reaction, survivors were categorized as either not having experienced the reaction, experienced it and perceived as healing, or experienced it and perceived as hurtful), controlling for time since the assault, victim age and race, use of a weapon, presence of injuries, and relationship to the perpetrator. Even when considering survivors' own perceptions of social responses, the impact of positive/healing reactions was overall negligible. Specifically, PTSD, depression, and physical health were not significantly impacted by experiences of being told the assault was not the survivor's fault, being taken to the police, help finding coping information, and help getting medical care. However, those who had someone believe their account of the assault and perceived this response as healing had less severe symptoms of PTSD and depression and better physical health than survivors who experienced the response and perceived it as hurtful or those who did not receive the response at all. Similarly, survivors who felt they had someone to talk to about the assault and felt that this was healing had less severe symptoms of PTSD and depression and better physical health than survivors who experienced the response and perceived it as hurtful or those who did not receive the response at all (Campbell, Ahrens, et al., 2001).

Of the negative responses, survivors who were called irresponsible or felt that they were patronized by their disclosure recipient had greater PTSD, depression, and physical health problems. This effect was even stronger for survivors who perceived these responses to be hurtful compared to those who perceived it as helpful or those who did not receive the responses. Survivors who were encouraged to keep the rape a secret did not have significantly higher levels of PTSD, depression, or physical health problems. The authors surmised that survivors who receive negative social reactions and perceive these as hurtful are worse off than survivors who

do not receive social reactions at all. Interestingly, for some responses, subjective ratings of helpful/hurtful influenced whether the response was objectively helpful/hurtful, as measured by PTSD, depression, and physical health. This was the case specifically for survivors who were told to move on with their life and whose disclosure recipients wanted to seek revenge on the perpetrator and/or tried to control the survivor's decisions. For these three "mixed" responses, survivors who experienced the response and perceived it as hurtful had significantly higher levels of PTSD, depression, and physical health problems compared to those who perceived it as healing or those who never received the response at all. Conversely, those who received the response but perceived it as healing had significantly lower distress scores, suggesting that these types of reactions are not uniformly experienced as negative and that survivors' perceptions of positive/negative support are sometimes more predictive of psychological and physical outcomes than the response itself (Campbell, Ahrens et al., 2001). Perceptions of reactions as either positive or negative likely develop through cognitive appraisals of oneself, others, and the event itself. Some individuals, as a result of the interpersonal nature of their trauma, may develop a greater propensity for interpreting interactions negatively. Such biases may partially explain the differences in appraisals of reactions from others.

Social Support as a Stress Buffer

The negative effects of negative disclosure experiences are well documented; less clear, however, is precisely why these experiences are so impactful for survivors of sexual assault. The general literature on social support has proposed and examined a number of theories to explain the salience of social support responses (for a review, see Cohen & Wills, 1985). One such theory, originally developed by Lazarus (1966), postulates that response to stress is based on

appraisals. According to this theory, a primary appraisal is made regarding the stressful situation (i.e., threatening or nonthreatening), followed by a secondary appraisal about the controllability of the stressor and/or the availability of coping resources. An individual who perceives a situation as stressful or threatening but does not feel as though they have adequate resources to cope with the situation will likely experience negative affect, physiological responses, and adaptations in behavior (Baum, Singer, & Baum, 1981). Likewise, an individual who feels as though they have adequate coping resources may be protected from some of the negative effects of stress. Consistent with this theory, a recent study utilizing a sample of cancer patients in China found that higher adaptive coping was predicted by higher levels of social support and lower levels of uncontrollability appraisals (Cao, Qi, Cai, & Han, 2018). One common and important coping resource involves others—the availability of social support from friends, significant others, and family can serve to buffer stressful situations. Early theorists suggested that this buffering may occur at two different time points (Cohen & McKay, 1984; Gore, 1981; House, 1981). First, social support may intervene between the stressful situation and the negative response by mitigating the cognitive appraisal of the event as stressful or unmanageable. Receiving social support in the wake of a stressful event may increase the individual's coping self-efficacy, and thus reduce additional stress related to inadequate resources, or may adjust his or her perception of threat or harm caused by the situation. Second, social support may intervene later on, between the stress response and onset of pathology, by providing tangible solutions to or reducing the perceived importance of the problem or by facilitating engagement in functional behaviors (House, 1981). In these situations, social support attenuates appraisals regarding the stress reaction in response to the situation or event. In either case, whether social support buffers against negative reactions to the event itself or negative

reactions to one's coping, it is proposed that the primary mechanism of change involves cognitive appraisals. Indeed, adaptive coping has been found to mediate the relationship between social support and posttraumatic growth (Cao et al., 2018), suggesting that social support facilitates engagement in adaptive behavior.

Given the stress buffering hypothesis, survivors of sexual assault who receive negative disclosure responses may be impacted precisely because the social support has either strengthened previously held negative appraisals or has created new negative appraisals about him or herself, their coping, and/or the event itself. In addition, a lack of helpful social support may generate increased stress because survivors may feel that they do not have the adequate coping resources with which to manage their trauma. This hypothesis may explain the salience and damaging effects of negative disclosure experiences but may also provide the groundwork for treatment that seeks to undo these damaging effects, although this explanation is purely speculative. To date, research has not examined social support and sexual assault experimentally, nor has it focused much on the underlying mechanism driving these relationships. Instead, conclusions are often drawn on speculation rather than data, limiting their application to real-world solutions and highlighting the need for relevant experimental paradigms. Such paradigms may target the maladaptive appraisals identified within the stress buffering hypotheses and provide important empirical support for improving survivor outcomes following negative support experiences within research and beyond.

Cognitive Model of Trauma and PTSD

Similar to the stress buffering hypothesis, many believe that PTSD is maintained by maladaptive appraisals. The cognitive model of PTSD posits that the individual exposed to

trauma processes the traumatic event and/or its sequelae such that the individual continues to experience an impending sense of serious threat in the present moment (Ehlers & Clark, 2000). Although no longer under the category of anxiety disorders, PTSD shares similar cognitive processes responsible for maintaining symptomatology as anxiety disorders, except that cognitions present in anxiety disorders focus on impending threat, whereas cognitions present in PTSD focus on a threat that has already happened yet continues to evoke a sense of current threat. Compared to individuals who recover naturally from traumatic exposure, individuals with PTSD do not perceive the trauma as time limited and tend to perceive the event as having global, negative implications. The cognitive model theorizes that PTSD is characterized by idiosyncratic negative appraisals of the traumatic event, its sequelae, or its consequences.

Such appraisals can take many forms. Cognitive Processing Therapy (CPT), developed from social-cognitive theory, details three types of appraisals used to integrate the traumatic event into autobiographical memory: 1) assimilation, in which new information is altered to match prior beliefs (e.g., a survivor believes in a just world and thus believes they are deserving of the trauma); 2) accommodation, in which beliefs are altered to incorporate new information; or 3) over-accommodation, in which beliefs are altered to the extreme and everything is interpreted through the lens of this new information (e.g., an individual previously believed that the world was safe but now believes that the world is universally dangerous; (Resick & Schnicke, 1992). Pure cognitive theory includes appraisals of overgeneralizing, which may cause an individual to perceive mundane activities as more dangerous than they actually are, or appraisals about one's own behavior or emotions, which may lead to self-blame, doubt, and lower self-efficacy (Ehlers & Clark, 2000). Individuals may also form appraisals about the impact of the traumatic event. For example, survivors of trauma may interpret posttraumatic

symptomatology as indicators that they will never heal and instead are permanently damaged from the experience (Ehlers & Steil, 1995). Rather than appraising symptoms of intrusive thoughts, irritability, and concentration difficulties as a normal and expected part of recovery, individuals with negative appraisals of their symptoms may be inadvertently enhancing PTSD by producing negative emotions (e.g., anxiety, anger) and by engaging in dysfunctional coping strategies (Ehlers & Clark, 2000).

In addition to appraisals about symptoms and the trauma itself, survivors may also develop appraisals about those around them. As stated previously, several explanations exist for why support providers behave in harmful ways, many of which are supported by empirical evidence. Despite this, survivors of trauma may develop negative appraisals to understand the treatment they received. Survivors whose support providers avoid talking about the trauma to minimize their distress may form appraisals that the support provider does not care about them or that they believe that the survivor is to blame for the traumatic event. Such appraisals can produce or exacerbate symptoms of PTSD, such as social withdrawal and isolation, and may negatively impact the likelihood of future disclosures. Taken together, these outcomes may prevent the survivor from receiving therapy or from receiving feedback from others that may correct negative appraisals about the trauma. Support providers who are intentionally uncaring, critical, and rejecting may, if their perspective is considered important, cause the survivor to feel unlikeable or unworthy of close relationships (Ehlers & Clark, 2000). Moreover, certain appraisals tend to evoke certain emotional responses (Beck, 1976). Anger may relate to appraisals that focus on unfairness or violations of personal rules, guilt may relate to appraisals about one's responsibility for the trauma and/or reactions from others, and sadness may relate to

appraisals about perceived loss, such as of oneself before the trauma occurred or of loss of personal relationships (Ehlers & Clark, 2000).

The cognitive theory of PTSD has provided a foundation from which several therapeutic treatments have been created. CPT, considered a gold-standard treatment mode for trauma populations, was specifically developed for survivors of sexual trauma, though it has since been generalized to other trauma populations (Resick, Monson, & Chard, 2017). Broadly, the manualized treatment challenges assumptions that the survivor holds, including assimilated or over-accommodated appraisals, using Socratic dialogue and evaluation of objective evidence. For example, individuals with PTSD have a general tendency to attend to negative information, including a cognitive bias toward perceived threat (Resick et al., 2017); this tendency may also explain why negative disclosure reactions appear to be more consequential than positive disclosure reactions. Reductions in dysfunctional appraisals are predictive of PTSD symptom reduction in trauma-focused cognitive behavioral therapy (Kleim et al., 2013), and this has been reflected in the CPT literature as well; research on CPT has found that CPT outperformed treatment as usual (Chard, 2005; Galovski, Blain, Mott, Elwood, & Houle, 2012; Macdonald, Monson, Doron-Lamarca, Resick, & Palfai, 2011; Monson et al., 2006) and was comparable to prolonged exposure in terms of PTSD and depression reduction (Resick, Nishith, Weaver, Astin, Feuer, 2002). In light of the effectiveness of treatments that target appraisals, studies have recently begun examining mechanisms by which appraisals can be manipulated within experimental designs through a process called cognitive bias modification.

Cognitive Bias Modification

Based on the premise that certain psychopathologies, including anxiety and depression, are derived from and maintained by preferential processing of negatively valenced information (e.g., Beck, 1976, 2008; Beck & Clark, 1997; Mathews & MacLeod, 2005), cognitive bias modification (CBM) was created to help researchers understand the potential causal pathway of cognitive biases in psychopathology (Hallion & Ruscio, 2011). Initially, CBM was used to determine whether symptoms in otherwise healthy individuals could be created from negative cognitive biases (e.g., Mathews & Mackintosh, 2000). These early studies lent support for the theory that symptoms manifest from negative cognitive biases, as the negative biases cultivated from CBM were found to induce anxiety and depression in healthy individuals. CBM research expanded to studies examining whether the induction of positive cognitive biases—and thus, the reduction of already-established negative biases—could reduce symptoms of anxiety and depression in clinical populations (e.g., Papageorgiou & Wells, 2000; Wells & Beevers, 2010). Studies of this kind were mixed, as some found reductions in attentional bias toward negative information and related reductions in depressive symptoms (Wells & Beevers, 2010), whereas others found reductions but no associated change in cognitive biases (Baert, DeRaedt, Schact, & Koster, 2010), and still others found no immediate change in symptomatology (Browning, Holmes, & Harmer, 2010).

Broadly, CBM paradigms involve exposure to an experimental contingency between negatively and positively valenced stimuli and typically target either 1) attentional or 2) interpretation biases. Attentional biases may be manipulated using a dot-probe task (MacLeod, Mathews, & Tata, 1986) in which threatening and positive/benign stimuli are presented on a

computer screen simultaneously followed by a dot probe located strategically on one of the stimuli. Participants must identify the number of dots as quickly as possible, which provides evidence for preferential attention—correct and rapid identification of the probe paired with the negative stimulus suggests preferential attention toward threatening or negative information. Participants may then be trained to adopt preferential attention for positive information by having the probe replace the positive/benign stimulus on the majority of trials, leading to implicit learning of the association and selective attention toward positive/benign stimuli (Hallion & Ruscio, 2011).

Interpretation bias paradigms, another application of CBM, offer a few clear distinctions from attentional bias paradigms. Rather than using pictures or words as stimuli, interpretation bias paradigms instead use sentences and paragraphs (Hallion & Ruscio, 2011). Moreover, whereas attentional bias paradigms often require participants to press a button in response to the stimulus, interpretation bias paradigms require participants to be generative. For example, the participant may be presented with a series of ambiguous sentences in which the positive or negative valence is determined only by the last word of the sentence, which is presented with missing letters and must be solved (Mathews & Mackintosh, 2000). The sentence may read, "In a crisis, I predict my responses will be…," with participants in the positive condition receiving "h-lpf-l" (i.e., helpful) and participants in the negative condition receiving "u-el-ss" (i.e., useless) as the last word. (Woud, Holmes, Postma, Dalgleish, & Mackintosh, 2012). A study examining social anxiety may use a sentence such as, "As you get ready to go to a party, you think the new people you meet there will find you…," with the response options of "fr-e-dly" or "b-r-ng" depending on the valence condition (Hallion & Ruscio, 2011). Participants are typically then asked comprehension questions in order to reinforce the interpretation, for example, "Do you

believe you will be able to respond in a useful way when there is a crisis?" Following completion of this training phase, participants are then presented with new sentences that continue to be ambiguous even after the last word of the sentence is resolved and must select from several different interpretations. For example, the following ambiguous sentence may be presented: "As you give a speech at your friend's wedding, you notice some people in the audience starting to l--gh." Participants who have developed a positive interpretation bias would likely select the positive interpretation (e.g., "As you speak, people in the audience laugh appreciatively"), whereas participants who have developed a negative interpretation bias would likely select the negative interpretation (e.g., "As you speak, the people in the audience find your efforts laughable"; Hallion & Ruscio, 2011).

Much of the CBM research that has yielded favorable reductions in anxiety and depression has relied on attention bias paradigms rather than interpretation bias paradigms (for a review, see Bar-Haim, 2010; Browning, Holmes, & Harmer, 2010; Mohlman, 2004). For example, one meta-analysis of 12 studies found a large effect of CBM on cognitive biases (d = 1.16) and medium effect on symptoms of anxiety (d = 0.61), but only included studies that used the dot-probe paradigm (Hakamata et al., 2010). A larger and more inclusive meta-analysis of 45 CBM studies by Hallion and Ruscio (2011) found that CBM had a moderate effect on cognitive biases and that this effect was actually stronger for interpretation (g = 0.81) than attentional paradigms (g = 0.29), suggesting that interpretation bias paradigms may be more effective at manipulating cognitive biases. Moreover, the authors found a small effect on symptoms of depression and anxiety (g = 0.13), although the effect was only reliable after participants were exposed to a stressor. Given literature that suggests the superiority of interpretation over attentional bias paradigms, the current study will employ the former paradigm.

More recently, CBM research has shifted to include studies examining trauma exposure and PTSD, a disorder also characterized by intrusive, negative cognitions. A systematic review of the CBM-trauma literature found five CBM studies using attentional bias paradigms and three CBM studies using interpretation bias paradigms (Woud, Verwoerd, & Krans, 2017). Attentional bias paradigms were more frequently used with PTSD samples than healthy samples (Khanna et al., 2015; Kuckertz et al., 2014; Schoorl, Putman, Mooren, van Der Werff, & Van Der Does, 2014; Schoorl, Putman, & Van Der Does, 2013), but although CBM appeared to reduce PTSD symptoms (e.g., intrusions), reliability issues with the attentional bias modification task suggest that interpretation bias paradigms may be more reliably used (Woud et al., 2017). The first known uses of CBM appraisal paradigms for PTSD symptoms sought to train healthy participants to engage in functional appraisal to promote emotion regulation either during or immediately after watching distressing films (Schartau, Dalgleish, & Dunn, 2009). Participants in the appraisal group were trained to use appraisals that related to "seeing the bigger picture," whereas control participants were given no appraisal instructions. Participants in the appraisal group, compared to participants in the control group, reported significantly reduced self-reported negative emotional ($F[2, 38] = 5.40$, $p < .01$, $\eta^2 = .22$) and electrodermal responses ($F[2, 34] = 3.99$, $p < .05$, $\eta^2 = .19$). An additional study by the authors involved training healthy participants to engage in functional appraisals when thinking about personal distressing memories. Similar to earlier studies, participants in the appraisal group, compared to participants in the control group, showed significantly reduced negative emotional reactivity and reduced intrusions and avoidance at a one-week follow-up (Schartau et al., 2009).

Woud and colleagues (2012) implemented a few notable changes from previous research—the authors extended the use of CBM-App training, a training targeted specifically at

altering cognitive appraisals (Lang, Moulds, & Holmes, 2009; Schartau et al., 2009), by attempting to modify appraisals following exposure to a stressful event, arguing that the extant research on appraisal modification tended to focus on modifying appraisals that developed relatively early in the appraisal cycle that may not be generalizable to the real world, in which individuals are impacted by their responses to initial, event-focused appraisals. Second, the authors based their training module on items from the Posttraumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999) so that trauma-specific cognitions could be targeted.

Using a sample of 76 healthy participants, the study employed a CBM-App training to induce either a functional or dysfunctional stressor-related appraisal style following the viewing of a 20-minute distressing film. For one week after the training, participants were asked to monitor intrusive memories of the film in a diary and completed the Impact of Event Scale-Revised (IES-R; Weiss & Marmer, 1997) to measure symptoms of PTSD related to the film. The authors found that individuals trained to adopt a positive appraisal style had significantly lower (i.e., improved) PTCI scores relative to baseline both immediately after training and at a one-week follow-up, whereas individuals trained to adopt a negative appraisal style exhibited no significant differences. Moreover, although intrusive memories were rated as generally distressing for all participants, those who received the positive appraisal training reported experiencing less frequent intrusions and had significantly lower levels of PTSD symptomatology overall (Woud et al., 2012). In a later study, Woud, Postma, Holmes, and Mackintosh (2013) replicated the findings of their earlier study in a study in which participants completed CBM-App training *prior* to being exposed to the trauma films. Recently, CBM-App training was modified to reflect themes related to event centrality, rather than posttraumatic

cognitions, in a sample of undergraduates who experienced negative and/or traumatic events. The training was found to reduce event centrality but had no impact on PTSD symptoms (Vermeulen, Brown, Raes, & Krans, 2018).

The study by Woud and colleagues (2012) is important for several reasons. First, it provides further evidence that CBM can be used to target posttraumatic symptoms beyond merely depression and anxiety. Second, it suggests that CBM can be effective when used *following* exposure to a stressor rather than in anticipation of a stressor. Moreover, the authors concluded that CBM training need not explicitly target appraisals, such as in the previous example targeting anxiety specific to social situations, but rather can maintain effectiveness when done more vaguely and covertly. The authors even suggest CBM-App training as a less expensive and more accessible alternative to Cognitive Behavioral Therapy for survivors of trauma. Indeed, recent research using CBM interpretation bias paradigms with PTSD symptoms are promising and may inspire new perspectives on the ways in which trauma is treated. To date, however, interpretation bias paradigms have only been used in "healthy" samples and have more commonly employed contrived traumatic experiences (i.e., distressing films) rather than actually experienced trauma. What is unknown is whether CBM-App training can effectively target and manipulate the overwhelmingly negative effects that arise when survivors of sexual assault are mistreated by others following disclosure. The salience of these experiences suggests that such experiences may trigger the development and/or exacerbation of posttraumatic cognitions. Moreover, negative social reactions may lead to alterations in the survivors' expectancies of future interactions, perhaps by developing an appraisal pattern that is biased toward negative interpretations, thereby reducing the likelihood of future disclosures or help seeking. The current

study seeks to extend the literature on CBM-App training for PTSD by examining changes in appraisals specific to negative sexual assault disclosure experiences.

Summary

Following a sexual assault, many survivors (between 65% and 92%) disclose their assault to at least one person with the intention of receiving help or support (Ahrens et al., 2007), only to experience negative responses (e.g., blaming, taking control, treating differently) quite frequently (Campbell, Wasco, et al., 2001). Whereas positive disclosure responses do little to protect survivors from negative outcomes (Ullman, 2010), negative responses are particularly harmful and have been linked to a variety of negative outcomes, including increased PTSD (Ullman, Filipas, et al., 2007). Negative responses may also reduce the amount of content shared with the recipient during the disclosure (Pinciotti et al., 2019), which may in turn negatively impact psychological functioning (Ullman, 1996b, Ullman & Filipas, 2001b). The stress buffering theory of social support posits that social support may alter cognitive appraisals of the stressful event, perceived ability to cope, perceptions about posttraumatic symptoms, and perceived availability of resources (Cohen & McKay, 1984; Gore, 1981; House, 1981). Similarly, some researchers have conceptualized PTSD as being characterized by idiosyncratic negative appraisals of the traumatic event, its sequelae, or its consequences (Ehlers & Clark, 2000). It appears, then, that the primary mechanism of change in this population may be cognitive appraisals. Specifically, it is not known whether appraisals related to negative social support experiences explain the salience of these experiences and exacerbate posttraumatic symptomatology.

Studies using cognitive bias modification (CBM) have found that individuals can be trained to adopt positive or negative reappraisal styles. Although initially used in depressed and anxious samples, recently CBM has been applied to trauma exposure (e.g., Woud et al., 2012). In the study by Woud and colleagues (2012), individuals trained to adopt positive reappraisal styles reported fewer intrusive memories of the traumatic material, improvements in trauma-specific cognitive appraisals, and lower levels of PTSD symptomatology overall over the subsequent week. Woud and colleagues (2012) provided early evidence for the effectiveness of modifying cognitive appraisals in trauma-exposed samples and have opened the door for further research using CBM and trauma. Given the deleterious effects of negative disclosure reactions for survivors of sexual assault, coupled with how often these responses occur, CBM may be a viable option for reducing the salience of negative social support experiences in this population. To that end, the current study sought to extend previous research using CBM and trauma to determine whether the harmful effects of negative social support experiences following sexual assault may be attenuated using CBM appraisal training. More specifically, the current study examined whether training survivors to adopt a positive reappraisal style resulted in improvements in cognitions about the trauma. Due to ethical concerns that CBM negative appraisal training may exacerbate posttraumatic symptomatology in a victimized sample, the current study used only the CBM positive condition. The effectiveness of CBM positive appraisal training in reducing negative cognitions about the trauma was compared across two groups of survivors who perceived their post-assault support experiences as primarily positive or primarily negative. Participants engaged in a memory reactivation task based on their grouping; participants who rated their support experiences as primarily positive on a 6-point scale wrote about their positive support experiences and participants who rated their support experiences as

primarily negative on a 6-point scale wrote about their negative support experiences. Following the memory reactivation task, participants were asked to complete CBM positive appraisal training with their support experiences in mind. Participants then completed follow-up surveys after one week and the two groups (positive vs. negative) were compared to examine the effectiveness of CBM positive appraisal training in improving trauma appraisals and how this improvement differed based on post-assault support experiences.

Hypotheses

Hypothesis 1 – Manipulation Checks

Hypothesis 1a: Participants in the positive support experiences group would report significantly greater incidence of positive reactions (measured by the SRQ) compared to participants in the negative support experiences group. Participants in the negative support experiences group would report significantly greater incidence of unsupportive acknowledgement and turning-against reactions (measured by the SRQ) than participants in the positive support experiences group.

Hypothesis 1b: Compared to baseline affect, post-writing negative affect would be significantly higher and post-writing positive affect would be significantly lower for participants in the negative support experiences group. Compared to baseline affect, post-writing negative affect would be significantly lower and positive affect would be significantly higher for participants in the positive support experiences group.

Hypothesis 1c: All participants would adopt a positive reappraisal bias of ambiguous sentences as a result of the CBM positive training, as evidenced by a positive Bias Index that is significantly different from zero.

Hypothesis 2 – Trauma Appraisals

Hypothesis 2a: Support experiences group membership would predict baseline trauma appraisals (PTCI scores), such that participants in the positive support experiences group would have significantly fewer trauma appraisals compared to participants in the negative support experiences group.

Hypothesis 2b: Across both support experiences groups, baseline trauma appraisals (PTCI scores) would predict PTCI scores at the one-week follow-up.

Hypothesis 2c: Support experiences group membership would moderate the relationship between baseline trauma appraisals (PTCI scores) and PTCI scores at the one-week follow-up. Specifically, participants in the positive support experiences group would not report significant changes in PTCI compared to baseline PTCI scores as a result of CBM training at the one-week follow-up, whereas participants in the negative support experiences group would report significant improvement in PTCI scores compared to baseline PTCI scores as a result of CBM training at the one-week follow-up.

CHAPTER 2

METHOD

Power Analysis

The power software, G*Power 3.0.1, was used to determine an appropriate sample size given the mixed-model ANCOVA analyses that were used and the effect size for PTCI score change determined by Woud and colleagues (2012). Based on that study, an anticipated effect size of $f^2 = .25$ (partial $\eta^2 = .06$) for PTCI score change was selected. Based on the effect size, 80% power, and an alpha level of .05, a sample size of 34 total participants was suggested, with 17 participants each in the positive and negative conditions. To account for missing data and attrition, a total of 50 participants was proposed to be sampled.

Participants

Participants were women recruited from Psychology 102 using data from the mass testing survey and two online studies hosted on Northern Illinois University's (NIU) online survey engine, SONA. Men were excluded from the current study due to limited research on men's assault-related social experiences compared to research on women's assault-related social experiences, in addition to literature that suggests that gender influences sexual assault disclosure patterns (e.g., Pinciotti et al., 2019). Inclusion criteria specified an age of 18 years of age or older and fluency in English. A total of 62 participants attended the first study session and 48 returned for the second study session. Four participants were deemed ineligible at baseline

because they had no sexual assault history after age 14 (n = 3) or had never disclosed the experience (n = 1) and did not return for the second study session. After removing participants identified as multivariate outliers and invalid responders, the final sample consisted of 45 participants.[1]

Of the final sample, participants ranged in age from 18 to 25 years (M = 18.69, SD = 1.43) and reported 12 to 14 years of education (M = 12.31, SD = .63). The sample identified their race as the following: 71.1% White/Caucasian (n = 32), 15.6% Black/African American (n = 7). 6.7% Asian (n = 3), 11.1% other/unknown (n = 5). No participants identified as Alaskan Native or Hawaiian/other Pacific Islander. Nine participants (20%) identified their ethnicity as Hispanic or Latino/a, and one participant (2.2%) preferred not to report their ethnicity. The sample identified their sexual orientation as the following: 77.8% heterosexual/straight (n = 35), 17.8% bisexual (n = 8), 2.2% gay/lesbian (n = 1), and 2.2% other (n = 1), who indicated that they identified as pansexual. The majority (66.7%) of the sample identified their marital status as single (n = 30), 17.8% identified as partnered (n = 8), 8.9% identified as engaged (n = 4), and 6.7% identified as living with their significant other (n = 3). No participants identified as married or divorced, separated, or widowed. The majority of the sample (91.1%, n = 41) reported their total annual income as less than $25,000; only one participant reported total annual income in the $25,000 to $50,000 range (2.2%) and three participants did not know their total annual income (6.7%). Regarding total annual household income, 26.7% reported less than $25,000 ($n$ = 12), 28.9% reported income in the $25,000 to $50,000 range ($n$ = 13), 15.6% reported income in the $75,000 to $100,000 range ($n$ = 7), 11.1% reported income in the

[1] See Data Screening section in Results for detailed information about these cases.

$100,000 and above range (n = 5), and 17.8% did not know their total annual household income (n = 8).

A series of independent-samples t tests was run to examine differences in sociodemographic characteristics and outcome variables between participants who returned for follow-up and those who did not. Participants who returned for follow-up were equally as likely as participants who did not return to be in either social support condition and reported similar perceived support, PTCI, and PANAS scores; incidence of positive reactions, unsupportive acknowledgement, and turning-against reactions; and sociodemographic characteristics, with the exception of marital status and years of education. Participants who returned for follow-up were significantly more likely to report their marital status as single, t (43) = 3.56, p = .001, and completed significantly more years of schooling, t (37) = 3.37, p < .01, compared to participants who did not return for follow-up. Additionally, a series of independent-samples t tests and chi-square analyses were run to examine differences in sociodemographic characteristics and outcome variables across recruitment phases.[2] Participants in the second recruitment phase were significantly more likely to be in the negative condition (χ^2 [1] = -5.69, p = .02), identify their race as White (χ^2[1] = 5.02, p = .03), and identify their sexual orientation as heterosexual (χ^2 [1] = 4.19, p = .04).

Procedure

Recruitment occurred in two phases: the first recruitment phase, which involved participants recruited from the Fall 2017 and Spring 2018 semesters, and the second recruitment

[2] See Procedure for detailed information about recruitment phases.

phase, which involved participants recruited from the Fall 2018 semester. Recruitment procedures were amended to increase participation.

First recruitment phase

Participants who consented to participate in the Psychology 102 course mass testing survey completed a measure of adult sexual assault history, the shortened version of the Sexual Experiences Survey-Short Form Victimization (SES-SFV; Koss et al., 2007), and those who endorsed a history of sexual assault were asked to rate the extent to which they perceived the support they received from others following the assault as positive/helpful or negative/unhelpful; an additional response option was provided for participants who did not disclose the assault (i.e., "Not applicable; no one knew about my unwanted sexual experience"). Participants who endorsed an assault history, rated the support they received as positive or negative, and who provided consent to be contacted were emailed an invitation to participate in the current study that included the link to the study listing on SONA. Two additional online studies were used for recruitment purposes and followed the same process as participants recruited from the mass testing survey. Eligible participants selected two time slots to complete the experimental portion of the study. Eligible participants were informed that they would receive partial course credit for their participation and the option to enter their name into a drawing to win two $25 Amazon gift cards. Upon arrival to the session, participants were asked to provide written informed consent and completed a battery of online questionnaires in the lab, including demographics, sexual assault history, sexual assault reactions, posttraumatic cognitions, and current mood.

Second recruitment phase

Recruitment occurred similarly in the second recruitment phase with two exceptions. First, the incentive was increased such that participants were offered the opportunity to enter their name into a drawing to win one $50 Amazon gift card rather than two $25 Amazon gift cards. Second, participants who consented to participate in the Psychology 102 course mass testing survey completed a measure of adult sexual assault history, the shortened version of the Sexual Experiences Survey-Short Form Victimization (SES-SFV; Koss et al., 2007), and the Social Reactions Questionnaire-shortened (SRQ-s; Ullman et al., 2017) was added before the perception of assault-specific support item. All other aspects of the study procedure remained the same.

Following the completion of the questionnaires, participants began the experimental portion of the study. Participants first engaged in a 20-minute memory reactivation task of the support they received from others. Participants who rated the support they received during mass testing as overall positive were asked to write a detailed narrative about their positive support experiences, including the emotional and cognitive impact, whereas participants who rated the support they received as overall negative were asked to write a detailed narrative about their negative support experiences, including the emotional and cognitive impact. The task reflects the methodology of prior memory reactivation paradigms (e.g., Brunet et al., 2008) and is meant to activate emotional responses related to positive or negative social support experiences. Participants were instructed not to attempt to make meaning from the experiences or include positive appraisals of negative support or vice versa, to reduce any positive effects that have been linked to expressive writing paradigms (e.g., Baikie & Wilhelm, 2005; Frattaroli, 2006; Frisina,

Borod, & Lepore, 2004; Park & Blumberg, 2002). The task is solely meant to call to mind these experiences during the CBM appraisal training. Following the memory reactivation task, participants again rated their current mood to ensure the emotional saliency of the task and participated in the CBM positive appraisal training paradigm. While completing the CBM appraisal training paradigm, participants were instructed to think about the positive or negative assault-specific social experiences they wrote about (e.g., "As you read these descriptions we want you to think back to the situations you just wrote about – times in which you talked to someone about your unwanted sexual experience(s) and they did not respond to you in a way that felt helpful or supportive. We want you to try to imagine again what it was like."). All participants completed the CBM positive appraisal training due to ethical concerns about the use of CBM negative appraisal training in this population. At the end of the session, participants were debriefed and asked about distress levels and any relevant risk issues; a trained clinician was available in the event that distraught participants needed to process briefly their emotional reactions, though no participants required this intervention. Participants were reminded of and confirmed their previously scheduled follow-up session one week later to complete a follow-up survey assessing change in posttraumatic cognitions. Participants were debriefed about the purpose of the project and asked once again about distress levels and relevant risk issues; a trained clinician was available in the event that distraught participants needed to process briefly their emotional reactions, though no participants required this intervention.

Measures

Background questionnaire

A nine-item background questionnaire was administered to gather demographic characteristics of the sample. Participants were asked to provide their age, years of education, marital status, sexual orientation, race, ethnicity, total annual income, and total annual household income. Additionally, participants were asked to indicate how long ago their last disclosure occurred. A total of 2.2% last disclosed today (n = 1), 15.6% last disclosed one to six days ago (n = 7), 22.2% last disclosed one to three weeks ago (n = 10), 15.6% last disclosed one to three months ago (n = 7), 22.2% last disclosed four to six months ago (n = 10), 8.9% last disclosed seven to 12 months ago (n = 4), 8.9% last disclosed one to two years ago (n = 4), and 4.4% were unsure when they last disclosed (n = 2).

Index of bias

Consistent with previous research (Woud et al., 2012), raw data from the test/recognition phase were converted into an index score to measure the extent to which the ambiguous sentences were appraised positively. Mean ratings for negative target responses were subtracted from positive targets so that positive scores reflect a positive bias and negative scores reflect a negative bias. Previous research provided evidence for the sensitivity of a bias index as a measurement of CBM appraisal effectiveness at manipulating interpretation biases, as a between-group comparison found that participants who received CBM positive appraisal training reported an overall positive bias (M = 1.54, SD = .83) and participants who received CBM negative appraisal training reported an overall negative bias (M = -.55, SD = 1.28), a difference that was

statistically significant, t (72) = 8.33, $p < .001$, $d = 1.96$ (Woud et al., 2012). Additionally, each group reported a mean bias that was significantly different from zero (positive: t [36] = 11.30, $p < .001$, $d = 1.86$; negative: t [36] = 2.63, $p < .02$, $d = .43$). The results not only suggested that biases were effectively induced in the correct directions but also that positive biases are more strongly induced than negative biases. In the current study, index of bias scores ranged from -1.27 to 2.91 ($M = 1.97$, $SD = 1.10$).

Positive and Negative Affect Schedule

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a 20-item self-report measure of positive and negative affect. Positive and negative affect are not opposite mood factors but rather distinct dimensions whereby positive affect (PA) broadly reflects enthusiasm, activity, and alertness, and negative affect (NA) broadly reflects subjective distress and engagement in aversive mood states. More specifically, high PA is characterized by high energy, concentration, and pleasurable engagement, and low PA is characterized by lethargy and sadness, whereas high NA is characterized by unpleasurable engagement (e.g., fear, guilt, anger, disgust, contempt), and low NA is characterized by calmness. The PANAS instructions can be adapted to various time frames (i.e., year, past few weeks, past week, past few days, today, present moment).

Although the PANAS has been purported to comprise two independent scales, previously evidencing low to moderate correlations between PA and NA (r = -.12 to -.23; Watson et al., 1988), a study using a sample of 1,003 adults from the general population found that a structural equation model in which PA and NA and their errors were correlated fit significantly better than

the previously theorized independent model ($p < .001$), χ^2 (156) = 689.8, RCFI = .94, SRMR = .052, RMSEA = .058. The scales demonstrate good internal consistency, α = .89 for PA and α = .85 for NA. PA and NA were significantly related to measures of depression (r = -.48 and .60, respectively), anxiety (r = -.30 and .60, respectively), and stress (r = -.31 and .67, respectively). Hierarchical linear regression analysis found that both PA and NA accounted for significant variance in depression, but PA (8.3%) accounted for almost twice as much variance as NA (4.7%; Crawford & Henry, 2004). Test-retest reliability of the PANAS over one week is strong (r = .79 for PA and r = .81 for NA). One-week test-retest reliability of the PANAS for present moment affect was adequate (r = .54 for PA and r = .45 for NA), suggesting sensitivity to changes in mood states (Watson et al., 1988).

Participants are asked to rate on a 5-point Likert-type scale from 1 = *very slightly or not at all* to 5 = *extremely* the extent to which they have felt each listed emotion (e.g., distressed, enthusiastic, nervous, attentive) during the chosen time frame. Two sum scores are computed for PA and NA and both range from 10-50, with higher scores indicating higher levels of PA/NA. Because the PANAS was used in the current study to measure momentary changes in mood states, participants were instructed to answer the questions based on their mood in the current moment twice: once prior to a writing task meant to evoke a positive or negative mood state and once following the writing task. The PA and NA scales were used to measure changes in affect resulting from the affect-inducing writing task. In the current study, internal consistency for the PA scale was strong at baseline pre-writing (α = .85), post-writing (α = .88), and follow-up (α = .86). Similarly, internal consistency for the NA scale was strong at baseline pre-writing (α = .91), post-writing (α = .92), and follow-up (α = .92).

Perception of Assault-Specific Support

In light of research that the positive and negative reactions measured in the SRQ (Ullman, 2000) are not uniformly perceived as positive or negative and that perceptions of reactions are more predictive of negative outcomes (Campbell, Ahrens, et al., 2001), participants in the current study answered a single item in which they rated the extent to which they perceived the support they received following their assault as positive or negative. The instructions included examples of positive and negative reactions drawn from the SRQ (i.e., "People act many different ways when responding to someone that has experienced an unwanted sexual advance. Sometimes people respond in a way that feels **positive or helpful,** such as by listening, telling you that it was not your fault, providing emotional support, or helping you access resources [e.g., medical care, legal help]; while other times, people respond in a way that feels **negative or unhelpful,** such as by blaming you for what happened, treating you differently, minimizing your experience, or focusing on themselves. In thinking about the all the ways that others [including friends, family members, significant others, or professionals] responded to you after your unwanted sexual advance, how positive/helpful or negative/unhelpful would you rate the support you received overall? *Note: You may have experienced a combination of helpful and unhelpful responses, but please respond with your impression of the support you received* ***overall.***"). Participants rated the support they received on a 6-point Likert scale from 1 = *very negative/unhelpful* to 6 = *very positive/helpful.* An additional response option was provided for participants who have never disclosed (i.e., "Not applicable; no one knew about my unwanted sexual experience"). Participants' responses on this item ranged from 1 to 6 (M = 4.45, SD = 1.23), and 81.8% reported social support that was somewhat to very positive/helpful. Scores on

this item significantly correlated in the expected direction with the condition into which they were grouped based on their earlier screening responses (r = -.48, p = .001).

Posttraumatic Cognitions Inventory

The Posttraumatic Cognitions Inventory (PTCI; Foa et al., 1999) is a 36-item self-report measure of trauma-related appraisals. Principal components factor analysis with oblimin rotation and inspection of the scree plot suggested a three-factor model, which the authors labeled as Negative Cognitions About Self, Negative Cognitions About the World, and Self-Blame for the trauma. Items were considered for selection from the original pool if they loaded more than .50 on a given factor and less than .30 on the other factors. Of items that met these criteria, the authors examined their content to ensure diversity of content, applicability to various types of trauma, moderate inter-item correlations, and strength of correlation with a PTSD measure. In total, 21 items were chosen to represent Negative Cognitions About Self, seven items were chosen to represent Negative Cognitions About the World, and five items were chosen to represent Self-Blame. The three scales were significantly correlated with one another (Negative Cognitions About Self and Negative Cognitions About the World, Spearman P = .75; Negative Cognitions About Self and Self-Blame, P = .68; Negative Cognitions About the World and Self-Blame, P = .57, all p < .001) and demonstrated strong internal consistency: Negative Cognitions About Self, α = .97; Negative Cognitions About the World, α = .88; Self-Blame, α = .86; total PTCI score, α = .97. Convergent validity of the PTCI was found with measures of trauma-related cognitions (i.e., Personal Beliefs and Reactions Scale; Mechanic & Resick, 1999; rs .20 to .74), PTSD (rs = .57 - .78), depression (rs .57 to .75), and state (rs .44 to .70) and trait anxiety

(*r*s .48 to .77). Test-retest reliability over a one-week follow-up (*r*s = .75 - .89) and three-week follow-up (*r*s = .80 to .86) suggest reliability over time (Foa et al., 1999), though scores are also malleable over a one-week follow-up when targeted specifically by intervention (Foa & Rauch, 2004; Woud et al., 2012; Woud et al., 2013). Recent literature has replicated the fit of the three-factor model and strong internal consistency of the PTCI in motor vehicle accident survivors (Beck et al., 2004) and sexual assault survivors (Andreu, Peña, & de La Cruz, 2017).

Items are rated on a 7-point Likert-type scale from 1 = *totally disagree* to 7 = *totally agree*. Example items include, "I have permanently changed for the worst" (Negative Cognitions About Self), "The world is a dangerous place" (Negative Cognitions About the World), and "There is something about me that made the event happen" (Self-Blame). Because the three scales are comprised of differing numbers of items, PTCI scales are made comparable by computing the mean item response for each scale. Thus, scores on the three scales range from 1 to 7. The total score is computed by summing all items except three experimental items and ranges from 1 to 231, where higher numbers indicate endorsement of more maladaptive appraisals. To maintain consistency with prior research (Woud et al., 2012), the total PTCI score was used. The PTCI does not instruct participants to consider their cognitions within a specific time frame but has been shown to change significantly over one week following CBM training (Woud et al., 2012). In the current study, internal consistency for the PTCI was strong at baseline (α = .96) and follow-up (α = .95).

Sexual Experiences Survey-Short Form Victimization

The Sexual Experiences Survey-Short Form Victimization (SES-SFV; Koss et al., 2007) is a 17-item self-report instrument that assesses sexual assault experiences since the age of 14

and in the past year. Because the SES-SFV reflects an induced rather than latent model, examination of internal consistency is not appropriate. Whereas the latter assumes that a set of observed variables are caused by an unobserved construct, the former assumes that observed variables combine to form a new variable reflective of a set of experiences. In an induced model, items in categories need not correlate with one another because different experiences of sexual violence are not necessarily related to or predictive of others (Clark & Watson, 1995; Cronbach & Meehl, 1955). Temporal stability instead is established through test-retest, although limited data exist. The original SES (Koss & Gidycz, 1985) yielded high test-retest reliability over a one-week follow-up (93%) and was moderately correlated with interview responses (r = .61 to .74).

Participants are asked to identify, on a 4-point Likert-type scale, how many times each type of victimization experience happened to them in the aforementioned time frames from 0 to 3+ times. Victimization experiences include nonconsensual completed or attempted rape: Touching or clothing removal, oral penetration, anal penetration, and vaginal penetration. The items are behaviorally specific to capture the most accurate prevalence rates (e.g., "Since age 14, someone had oral sex with me or made me have oral sex with them without my consent by:") and include five potential perpetrator tactics, including verbal pressure, criticizing, threats of harm, use of force, and taking advantage of intoxication. Participants are then asked whether any of the experiences occurred one or more times (yes/no), the sex of the perpetrator(s) (female only, male only, both males and females), and whether they have ever been raped (yes/no). Participants in the current study were categorized as having a history of sexual assault if they endorse one or more of the victimization experiences described in the SES-SFV. Of the final

sample of participants with at least one nonconsensual sexual experience, 88.9% endorsed nonconsensual sexual contact, 64.4% endorsed nonconsensual vaginal penetration, 62.2% endorsed attempted oral penetration, 57.8% endorsed attempted vaginal penetration, 44.4% endorsed nonconsensual oral penetration, 26.7% endorsed nonconsensual anal penetration, and 24.4% endorsed attempted anal penetration.

Social Reactions Questionnaire

The Social Reactions Questionnaire (SRQ; Ullman, 2000) is a 48-item self-report measure of positive and negative social reactions experienced by sexual assault survivors following victimization. Principal components factor analysis with varimax rotation produced seven factors: 1) emotional support/belief, comprised of 14 items with factor loadings between .45 and .83 (e.g., "Told you that you were not to blame"); 2) treat differently, comprised of six items with factor loadings between .41 and .76 (e.g., "Acted as if you were damaged goods or somehow different now"); 3) distraction, comprised of six items with factor loadings between .31 and .79 (e.g., "Told you to stop talking about it"); 4) take control, comprised of seven items with factor loadings between .40 and .67 (e.g., "Made decisions or did things for you"); 5) tangible aid/information support, compromised of five items with factor loadings between .57 and .80 (e.g., "Helped you get medical care"); 6) victim blame, comprised of three items with factor loadings between .59 and .72 (e.g., "Told you that you could have done more to prevent this experience from occurring"); 7) egocentric, comprised of four items with factor loadings between .63 and .80 (e.g., "Expressed so much anger at the perpetrator that you had to calm him/her down"). Internal consistency was adequate to very good for all SRQ subscales:

emotional support, $\alpha = .93$; treat differently, $\alpha = .86$; distraction, $\alpha = .80$; take control, $\alpha = .83$; tangible aid, $\alpha = .84$; victim blame, $\alpha = .80$; egocentric, $\alpha = .77$.

Initially, the subscales were separated into positive and negative reactions. The negative reactions subscales (i.e., treat differently, distraction, take control, victim blame, egocentric) were all significantly positively correlated with each other ($p < .001$), with Pearson correlation values between .15 and .72. Similarly, the positive reactions subscales (i.e., emotional support/belief, tangible aid/information support) were significantly correlated with each other, $r = .58$, $p < .001$. Emotional support was significantly negatively correlated with blame, take control, and treat different ($p < .005$) and unrelated to distraction and egocentric. Of the negative reactions, tangible aid was only significantly correlated with distraction, although the relationship was surprisingly positive ($r = .19$, $p < .005$). Concurrent validity was established by comparing participant scores on the SRQ with responses provided on open-ended items. Test-retest SRQ correlations were statistically significant at $p < .001$, with Pearson's values between .64 and .81 (Ullman, 2000).

Recently, it was suggested that a three-factor model (positive reactions, unsupportive acknowledgement, and turning against) was more psychometrically sound than the previously used two-factor model (positive and negative reactions; Relyea & Ullman, 2015). Confirmatory factor analysis of the five negative reaction subscales was run using both the initial one-factor model of negative reactions and a new two-factor model wherein negative reactions were split into unsupportive acknowledgement and turning against. Although both models yielded adequate fit, the model that split negative reactions into unsupportive acknowledgement and turning against fit significantly better according to a chi-square difference test and all fit indices

were lower compared to the model with only one negative reactions factor. In addition, unsupportive acknowledgement factor loadings were an average of .06 higher than loadings onto the broader negative reactions factor. However, turning-against factor loadings did not differ very much from factor loadings onto the broader negative reactions factor (average difference of .005). Based on results from the confirmatory factor analysis, the unsupportive acknowledgement scale (α = .85) consisted of 13 items—all egocentric and distraction items plus three items from take control. The turning-against scale (α = .92) consisted of 13 items—all blame and treat different items plus four items from take control. Positive reactions evidenced convergent validity with perceived social support (r = .25), positive individual coping (r = .30), positive interpersonal coping (r = .42); unsupportive acknowledgement was significantly related to depression (r = .29), PTSD (r = .44), characterological self-blame (r = .23), maladaptive coping (r = .31), positive individual coping (r = .32), and positive interpersonal coping (r = .21); and turning against was significantly related to depression (r = .23), PTSD (r = .36), characterological self-blame (r = .29), and maladaptive coping (r = .36). Out of 1,863 female survivors of sexual assault, 99% reported experiencing one or more positive reactions, 94% reported experiencing one or more unsupportive acknowledgement reactions, and 78% reported experiencing one or more turning-against reactions.

Items are presented on a 5-point Likert-type scale from 0 = *never* to 4 = *always* that indicate the frequency with which participants experienced each reaction from disclosure recipients. Individual subscales and general scales (i.e., positive reactions, unsupportive acknowledgement, and turning against) are computed by taking the mean of the corresponding items. The current study used the general scales to provide an overall estimate of survivors'

experiences of the three types of general reactions. In the current study, internal consistency for the scales was strong at baseline—positive reactions (α = .93), unsupportive acknowledgement (α = .89), and turning against (α = .95)—and follow-up—positive reactions (α = .93), unsupportive acknowledgement (α = .92), and turning against (α = .94).

CBM-App Paradigm

Training phase

CBM-App training is based on an interpretation bias paradigm in which sentence completion tasks are presented on the computer and participants are trained to adopt a positive reappraisal style (Woud et al., 2012).[3] Sentences were constructed ambiguously such that the meaning of each sentence can only be determined from the last word of the sentence, which is presented as a word fragment that must be completed. The word fragments were constructed so that there is only one possible solution. The word fragment, when completed, produces a sentence that is positively valenced (i.e., functional reappraisal). CBM-App materials were constructed by Woud and colleagues (2012) to reflect themes from the "Self" subscale of the PTCI, such as, "If I think about the event, I will not be able to handle it." Items were intentionally broad and were not created to specifically reflect the targeted stressful event. An example CBM-App statement is, "In a crisis, I predict my responses will be h-lpf-l," wherein "h-lpf-l" is resolved as "helpful." To ensure thorough processing of the sentence meaning, comprehension questions followed in just under half of the sentences (e.g., "Do you believe you will be able to respond in a useful way when there is a crisis?") Participants answered either yes

[3] The original study by Woud and colleagues (2012) included both positive and negative conditions.

or no to each comprehension question. Comprehension questions were counter-balanced such that participants should have answered yes or no equally often. In addition, error feedback was provided for incorrect responses. The sentences were not directly related to social support reappraisals. A total of 72 training sentences and 32 comprehension questions were included. An additional eight emotionally neutral filler sentences were also included, creating a total of 80 sentences presented in blocks of 10 sentences each. The 10 blocks were presented in the same order; however, sentence order within each block was individually randomized. Each trial was presented as follows: sentences were displayed without the final word fragment and participants were instructed to read the incomplete sentence and press a key to advance once the sentence had been processed. After the advance key was pressed, the sentence disappeared and was replaced by the final word fragment only. Participants were instructed to type the missing letter of the fragment as quickly as possible. Once the missing letter was filled in, the completed correct word appeared on the screen. A comprehension question or new sentence was then presented

Induced reappraisal bias phase

The effectiveness of the CBM-App training was measured in this final two-phase procedure in which participants were instructed to interpret ambiguous sentences. During the initial encoding stage, ten novel ambiguous sentences were randomized and presented. Similar to the training phase, the sentences were also based on themes from the PTCI. Each sentence was introduced with a distinctive title but remains ambiguous even after the sentence is resolved (e.g., “People come to terms with the aftermath of these types of events in many different ways. My reactions are very indicative of the way I seem to be dealing with it”). After reading each

sentence, participants were instructed to imagine themselves in the situation and rated using a 10-point Likert-type scale how vividly they were able to do so. Mean vividness ratings in the current study ranged from 3.5 to 9.0 (M = 6.27, SD = 1.38), suggesting that participants overall were able to vividly imagine themselves in the presented situations. A surprise recognition phase was then presented, during which the titles of the 10 original encoding-phase sentences were presented followed by a set of four related sentences. The four sentences represent one possible positive (e.g., "People come to terms with the aftermath of these types of events in many different ways, but my reactions mean my coping skills are healthy") and negative (e.g., "People come to terms with the aftermath of these types of events in many different ways, but my reactions mean my coping skills are poor") interpretation of the original sentence (i.e., targets). Two additional sentences (i.e., foils) were provided with either a general positive or negative meaning reflecting content broadly related to the original sentence but not actually solving the ambiguity of the sentence (e.g., "People come to terms with the aftermath of these types of events in many different ways, but my reactions mean my coping skills are trustworthy/ suspicious"). Participants were instructed to rate on a 4-point Likert-type scale how close in meaning each of the four sentences were to the original encoding sentence. An index of bias was computed to measure the extent to which a positive bias was induced by subtracting participants' mean scores on negative targets from their mean scores on positive targets.

CHAPTER 3

RESULTS

Data Screening

All analyses were performed in SPSS for Windows. Prior to running analyses, the data were screened for quality using three forced-response questions implemented throughout the initial and follow-up questionnaires (e.g., "If you are still reading, select disagree to this item."). A total of five participants were removed for responding invalidly to two or more of the forced-response items. Problematic cases were identified using standardized residuals, Mahalonobis distances, Cook's distances, leverage values, covariance ratio, standardized DFFit, and standardized DFBEta. A total of five cases were removed from analyses because they were identified as problematic according to multiple indicators (i.e., Mahalonobis distance value > 7.81 and leverage values > .15), two of which were also flagged as univariate outliers on the age and education variables. Missing data analysis found that 76% (n = 35) of the cases had no missing data on any of the demographic or outcome variables of interest. One case was flagged for missing 50% of the variables and was subsequently removed. Little's MCAR test confirmed that data were missing completely at random, χ^2 (28) = 37.37, p = .11. After removing invalid responders and multivariate outliers, a final sample of 45 participants was used for analyses.

Normality was assessed by examining Q-Q plots, skewness and kurtosis, and the Shapiro-Wilk test of normality. Skewness and kurtosis were computed for PANAS and PTCI scores at baseline and follow-up using the critical z-value of 2.58 (p < .01) to determine whether the

variables evidenced significant skewness or kurtosis. Baseline pre-writing NA (2.70) and post-writing PA (2.62) standardized values were significantly, positively skewed. None of the remaining variables were significantly skewed or kurtotic. The Shapiro-Wilk test of normality confirmed that the distribution of pre-writing NA (.847, $p < .01$) and post-writing PA (.908, $p < .05$) scores were significantly non-normal.

Bivariate correlations were performed on all the variables to determine which demographic variables should be included as covariates. Covariates were selected based on significant relations ($p < .05$) to both independent and dependent variables; however, no demographic variables significantly correlated with PTCI scores at baseline follow-up and thus no covariates were included in the analyses (see Table 1).

Hypothesis 1a

A paired-samples *t* test was conducted to determine whether writing about positive or negative assault-specific social reactions had a significant impact on mood. Because normality is an assumption of paired-samples *t* tests and was violated, the Wilcoxon signed-rank test was substituted to determine changes in baseline PA and NA scores pre- and post-writing. The Wilcoxon signed-rank test is a nonparametric test that examines changes in scores across time points and does not assume normality in the data (Keppel & Wickens, 2004). Hypothesis 1a would be supported if a significant, positive difference ($p < .05$) emerged between baseline and post-writing negative affect (NA) and a significant, negative difference ($p < .05$) emerged between baseline and post-writing positive affect (PA) for participants in the negative support experiences group. Additionally, Hypothesis 1a would be supported if a significant, positive difference ($p < .05$) emerged between baseline and post-writing PA and a significant, negative

Table 1

Bivariate Pearson and Point-Biserial Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Baseline PTCI	--												
2. Follow-up PTCI	.82***	--											
3. Age	-.18	-.14	--										
4. Education	-.28	-.35*	.74***	--									
5. Race	.03	.12	-.06	-.10	--								
6. Ethnicity	.02	.06	.08	-.11	.43**	--							
7. Sexual orientation	.08	.11	.19	.10	.08	.10	--						
8. Marital status	.15	.13	-.22	-.03	.00	-.20	.19	--					
9. Perceived support	-.47***	-.36*	.25	.26	.01	.03	-.24	-.16	--				
10. Last disclosure	-.22	-.22	.16	.08	-.10	.07	.25	-.03	.13	--			
11. SRQ-Turning Against	.34*	.26	-.02	-.05	-.12	-.12	.09	.09	-.58***	-.19	--		
12. SRQ-Unsupportive Acknowledgment	.20	.14	.05	.06	-.13	-.09	.05	-.12	-.41**	-.12	.76***	--	
13. SRQ-Positive Reactions	-.11	-.07	.08	.11	-.13	-.04	-.21	-.26	.39**	-.04	-.03	.28	--
Mean or %	113.09	98.59	18.69	12.31	66.7%	79.5%	77.8%	66.7%	4.45	4.38	.81	1.06	1.69
SD	40.88	36.28	1.43	.63	--	--	--	--	1.23	2.13	.81	.70	.64
Observed range	40-198	38-162	18-25	12-14	0-1	0-1	0-1	0-1	1-6	1-10	0-2.77	0-2.69	0-2.88
n	45	37	45	45	45	44	45	45	44	45	50	49	50

Note. Education measured in years; race (1 = *White/Caucasian,* 0 = *nonwhite*); ethnicity (1 = *Hispanic or Latino/a,* 0 = *non-Hispanic or Latino/a*); sexual orientation (1 = *heterosexual,* 0 = *non-heterosexual*); marital status (1 = *single,* 0 = *not single*); perceived support (1 = *very negative/unhelpful,* 2 = *mostly negative/unhelpful,* 3 = *somewhat more negative/unhelpful;* 4 = *somewhat more positive/helpful;* 5 = *mostly positive/helpful;* 6 = *very positive/helpful*); last disclosure (1 = *today,* 2 = *1-6 days ago,* 3 = *1 to 3 weeks ago,* 4 = *1 to 3 months ago,* 5 = *4 to 6 months ago,* 6 = *7 to 12 months ago,* 7 = *1 to 2 years ago,* 8 = *3 to 5 years ago,* 9 = *6 to 10 years ago,* 10 = *over 10 years ago*).
PTCI = Posttraumatic Cognitions Inventory (Foa et al., 1999); SRQ = Social Reactions Questionnaire (Ullman, 2000).
*** $p \leq .001$, ** $p \leq .01$, * $p < .05$.

difference ($p < .05$) emerged between baseline and post-writing NA for participants in the positive support experiences group. A Wilcoxon signed-rank test revealed that for participants in the negative condition, PA significantly reduced from pre- to post-writing (pre-writing M = 19.24, SD = 6.81; post-writing M = 15.62, SD = 6.26; Z = -2.94, p = .003). NA increased from pre- to post-writing, but the difference was not statistically significant (pre-writing M = 22.05, SD = 9.85; post-writing M = 24.43, SD = 10.56; Z = -1.72, p = .09). Similarly, for participants in the positive condition, PA significantly reduced from pre- to post-writing (pre-writing M = 23.52, SD = 8.33; post-writing M = 21.07, SD = 9.36; Z = -2.84, p = .005), whereas NA did not change as a function of the written memory reactivation task (pre-writing M = 18.34, SD = 8.81; post-writing M = 17.59, SD = 6.84; Z = -.26, p = .80). See Figure 1.

Hypothesis 1b

A one-sample t test was conducted to determine whether participants adopted a positive reappraisal bias of ambiguous sentences as a result of the CBM positive training. Hypothesis 1b would be supported if the sample's mean index of bias is positive and significantly greater than zero ($p < .05$). As hypothesized, the index of bias score for the overall sample was positive (M = 1.97, SD = 1.10) and significantly greater than zero, t (42) = 7.12, $p < .001$.

Hypothesis 1c

An independent-samples t test was conducted to determine whether participants in the positive support experiences group, compared to participants in the negative support experiences group, report significantly greater incidence of positive reactions and significantly less incidence

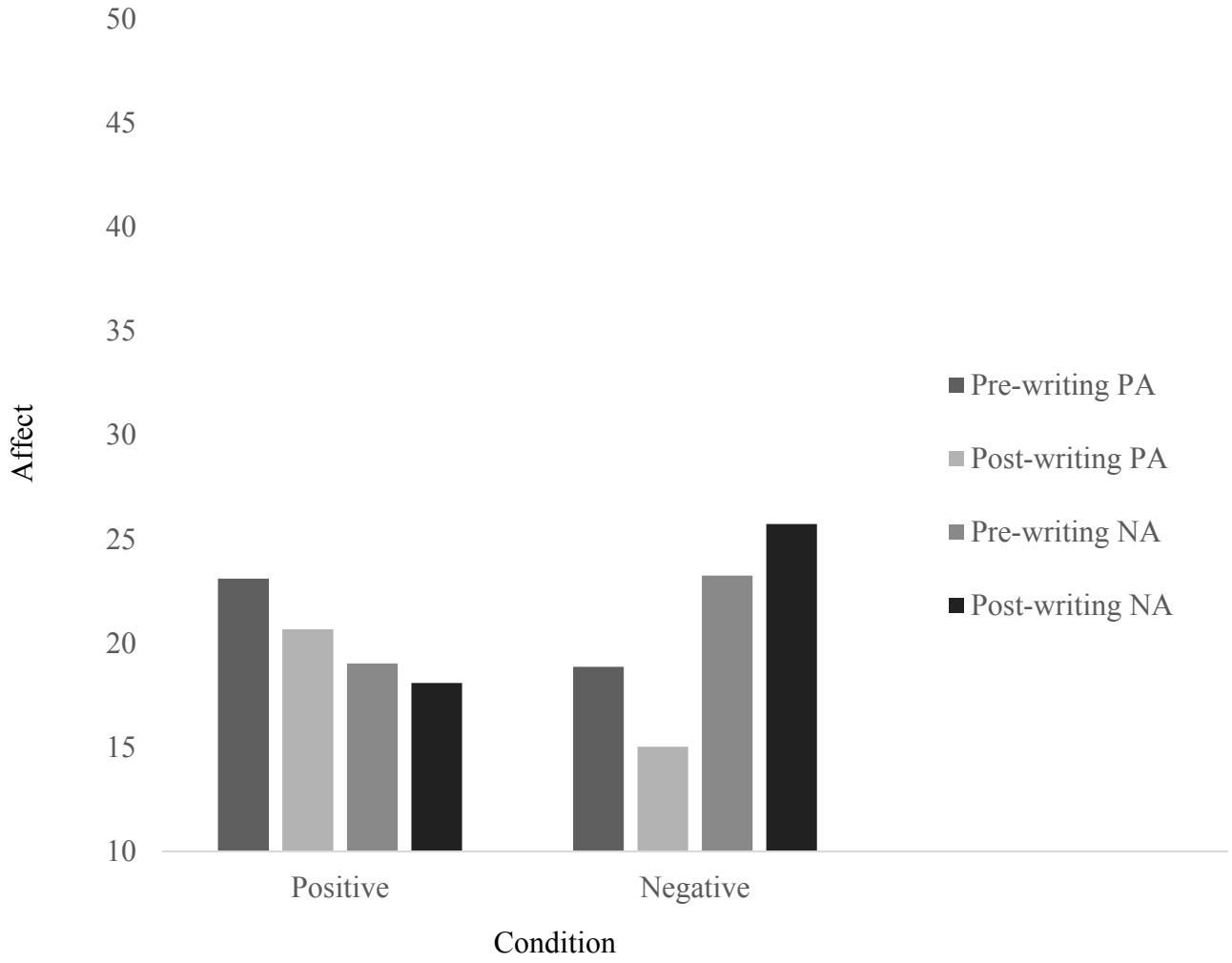

Figure 1. Changes in positive affect (PA) and negative affect (NA) by condition following memory reactivation task.

Note. Higher numbers indicate greater affect.

of unsupportive acknowledgement and turning-against reactions. Hypothesis 1c would be supported if participants in the positive support experiences group reported significantly greater incidence of positive reactions ($p < .05$) and significantly less incidence of unsupportive acknowledgement and turning-against reactions ($p < .05$) compared to participants in the negative support experiences group. As hypothesized, participants in the negative condition endorsed significantly more instances of Turning-Against reactions ($M = 1.12$, $SD = .92$) compared to participants in the positive condition ($M = .62$, $SD = .70$; t [43] = 2.08, $p = .04$, $d = .61$). Participants in the positive condition endorsed marginally more instances of positive reactions ($M = 1.85$, $SD = .61$) compared to participants in the negative condition ($M = 1.47$, $SD = .66$), though the difference was only marginally significant (t [43] = -1.97, $p = .06$, $d = .60$). Participants did not significantly differ in their endorsement of unsupportive acknowledgement in positive ($M = .90$, $SD = .63$) or negative conditions ($M = 1.24$, $SD = .79$; t [42] = 1.57, $p = .12$, $d = .48$).

Recoding of SRQ subscales and post-hoc analyses were conducted to further explore the reactions experienced by participants in positive and negative conditions. New variables were created which summed endorsement of each of the three types of reactions and dichotomized variables were then created to examine the percentage of participants in either condition that endorsed each of the three types of reactions. Chi-square tests compared group differences in endorsement of the reactions. Participants did not significantly differ across groups in endorsement of turning against (χ^2 [1] = 1.80, $p = .19$), unsupportive acknowledgement (χ^2 [1] = .12, $p = .61$), or positive reactions (χ^2 [1] = 1.41, $p = .42$). Specifically, 82.8% of participants in the positive condition endorsed turning against compared to 95.2% in the negative condition (total sample endorsement = 88.0%, $n = 44$); 92.9% of participants in the positive condition

endorsed unsupportive acknowledgement compared to 95.2% in the negative condition (total sample endorsement = 93.9%, *n* = 46); and 100.0% of participants in the positive condition endorsed positive reactions compared to 95.2% in the negative condition (total sample endorsement = 98.0%, *n* = 49). See Table 2.

Table 2

Endorsement of Social Reactions Across Conditions

	Positive condition			Negative condition					
Social reaction	*M*	*SD*	%	*M*	*SD*	%	*t*	*p*	*d*
Turning Against	.62	.70	82.8	1.12	.92	95.2	2.08	.04	.61
Unsupportive Acknowledgement	.90	.63	92.9	1.24	.79	95.2	1.57	.12	.48
Positive Reactions	1.85	.61	100	1.47	.66	95.2	-1.97	.06	.60

Note. % indicates the percentage of participants in each condition who endorsed experiencing one or more incidence of the respective social reaction.

Hypothesis 2a

An independent-samples *t* test was conducted to determine whether participants in the positive support experiences group, compared to participants in the negative support experiences group, report significantly fewer baseline trauma appraisals (PTCI scores). Hypothesis 2a would be supported if participants in the positive support experiences group endorsed significantly fewer baseline trauma appraisals compared to participants in the negative support experiences group ($p < .05$). Hypothesis 2a was not supported as there was no significant difference in

baseline trauma appraisals for participants in the positive (M = 105.77, SD = 41.74) and negative conditions (M = 123.10, SD = 38.49; t [43] = 1.42, p = .16).

Hypothesis 2b

A Pearson correlation was conducted to determine if baseline PTCI scores predict PTCI scores at the one-week follow-up. Hypothesis 2b would be supported if significant, positive correlations emerged between baseline and follow-up PTCI scores. Hypothesis 2b was supported as baseline PTCI scores were significantly, positively predictive of follow-up PTCI scores (r = .82, p < .001).

Hypothesis 2c

A mixed-model ANOVA with time (baseline vs. follow-up) as a within-subjects factor and condition (positive vs. negative social experiences) as a between-subjects factor on trauma appraisals (PTCI scores) was computed. Prior to analysis, the assumptions of ANOVA were tested. As described previously, multivariate outliers were removed from analysis and PTCI scores were examined for non-normal distribution. Homogeneity of variance was tested using Levene's test of equality of error variances to examine whether variance between the two groups differed. Levene's test confirmed that the error variances did not differ across conditions at baseline, F(35, 1) = .44, p = .51, or follow-up, F(35, 1) = .26, p = .62. Additionally, Box's M, which examines the equality of covariance matrices, was nonsignificant, suggesting that the covariance matrices across conditions are equal, Box's M = 4.72, p = .22. The final assumption of ANOVA regarding sphericity cannot be computed using Mauchly's test of sphericity with only two levels of the repeated measures because only one set of difference scores cannot be

compared against additional difference scores; Mauchly's test is appropriate only for three or more levels. Thus, in the case of repeated-measures ANOVA with only two levels, examination and confirmation of previously described assumptions are sufficient.

Hypothesis 2c would be supported if participants in the positive support experiences group reported no significant differences ($p > .05$) in trauma appraisals (PTCI scores) compared to baseline trauma appraisals (PTCI scores) and compared to participants in the negative support experiences group. Conversely, Hypothesis 2c would be supported if participants in the negative support experiences group reported significantly decreased/improved ($p < .05$) trauma appraisals (PTCI scores) compared to baseline trauma appraisals (PTCI scores) and compared to participants in the positive support experiences group. As expected, the main effect of time on PTCI scores was significant, $F(1) = 11.51$, $p = .002$, $d = 1.18$, suggesting that the CBM intervention effectively reduced PTCI scores from baseline ($M = 104.86$, $SD = 40.99$) to follow-up ($M = 97.88$, $SD = 38.18$). The time*condition interaction was nonsignificant, however, suggesting that the effectiveness of CBM at reducing PTCI scores did not differ as a function of condition, $F(1) = 1.23$, $p = .27$, $d = .39$; positive M difference = 6.15, negative M difference = 8.31. Thus, the primary hypothesis of the current study was not supported (see Table 3 and Figure 2).

Table 3
Mixed-Model Analysis of Variance Findings Examining Effectiveness of CBM Training

	Time	*M*	*SD*	*n*		
Positive condition	Baseline	104.39	41.60	23		
	Follow-up	95.52	36.87	23		
Negative condition	Baseline	121.14	35.18	14		
	Follow-up	103.64	36.06	14		
Total	Baseline	104.86	40.99	37		
	Follow-up	97.88	38.18	37		
	df	Mean Squares	*F*	*p*	*d*	partial η^2
Time	1	3025.73	11.51	.002	1.18	.25
Condition	1	2691.96	1.03	.32		.03
Time*Condition	1	324.11	1.23	.27	.39	.03

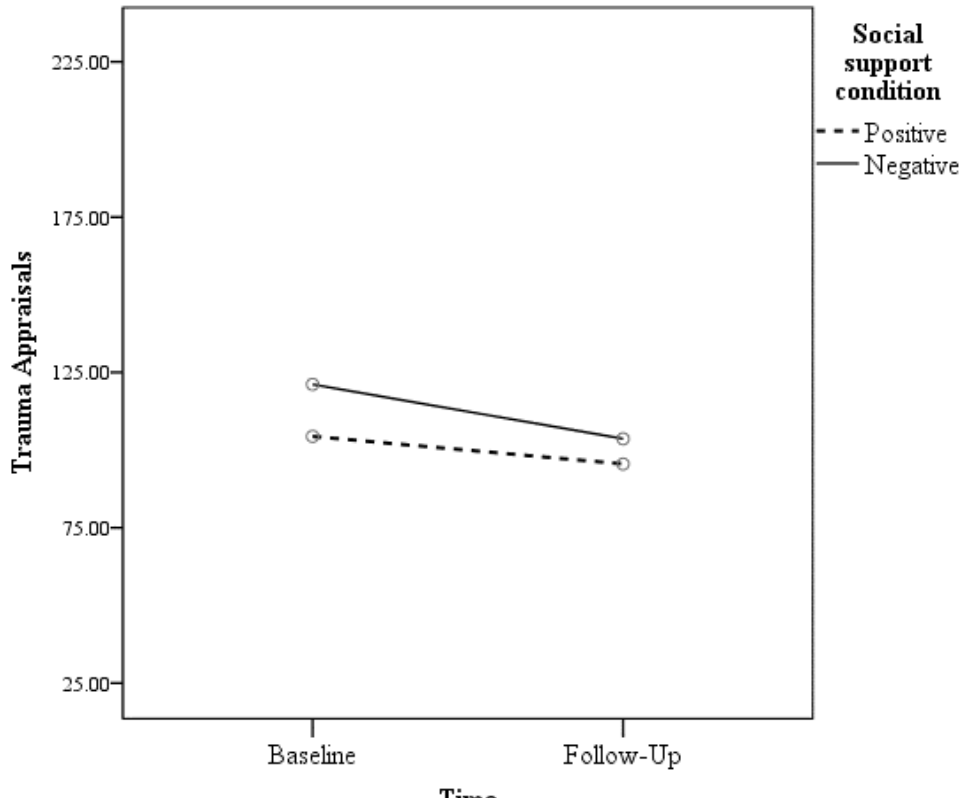

Figure 2. Change in trauma appraisals for sexual assault survivors with positive and negative disclosure experiences following cognitive bias modification.

Note. Higher numbers indicate greater endorsement of trauma appraisals.

CHAPTER 4

DISCUSSION

Following sexual assault, many women choose to disclose the experience to others, frequently to informal sources like friends, family, and significant others, and less commonly to formal sources like medical, legal, and law enforcement professionals (Golding et al., 1989; Pinciotti et al., 2019; Starzynski et al., 2005). Of the 50% to 90% of sexual assault survivors who disclose, the majority are met with at least one negative reaction (Campbell, Wasco et al., 2001; Filipas & Ullman, 2001), which may encompass reactions such as victim blame, distraction, stigmatizing responses, egocentric reactions, and controlling responses (Ullman, 2000). Extant literature has found that negative reactions following sexual assault are strongly linked to a variety of negative mental health outcomes, including self-rated recovery, perceived health, depression, PTSD, self-esteem, alcohol consumption, self-blame, use of avoidant coping, feelings of guilt, anxiety, distrust of others, and reluctance to seek further help (Ahrens, 2006; Andrews et al., 2003; Campbell, Ahrens, et al., 2001; Davis, et al., 1991; Campbell & Raja, 2005; Relyea & Ullman, 2015; Ullman, 1996b, 2000; Ullman & Filipas, 2001b; Ullman, Filipas, et al., 2007; Ullman & Siegel, 1995; Ullman, et al., 2008; Ullman, Townsend, et al., 2007). Conversely, positive reactions, which include the provision of emotional support, instrumental support, and tangible aid, are similarly common but appear to only lead to moderate benefits at best (Campbell, Wasco, et al.,; Filipas & Ullman, 2001; Ullman, 1996b, 1999, 2000, 2010, 2014). Interventions that seek to target maladaptive appraisals, such as CBM, may be a unique

avenue to attempt to ameliorate the adverse impact of negative social support experiences following sexual victimization given promising recent studies utilizing CBM in individuals exposed to distressing films meant to evoke a traumatic response (Woud et al., 2012). To that end, the current study sought to use a CBM appraisal paradigm focused on trauma appraisals to improve these beliefs in survivors of sexual assault with negative social support experiences.

Manipulation check hypotheses were minimally supported. As expected, the memory reactivation task significantly reduced positive affect for participants in the negative condition; however, unexpectedly, positive affect significantly reduced for participants in the positive condition as well and the memory reactivation task did not significantly increase negative affect for participants in either condition. Of note, negative affect trended in the expected directions—increased for participants in the negative condition and decreased for participants in the positive condition—though the differences were not statistically significant. Consistent with hypotheses, the CBM intervention was effective at inducing a positive reappraisal bias of ambiguous trauma-related sentences as evidenced by the positive index of bias mean score that was significantly greater than 0 across conditions. Last, as expected, participants in the negative condition endorsed significantly more instances of turning-against reactions than participants in the positive condition; however, contrary to expectation, these groups did not differ in endorsement of unsupportive acknowledgement. Although nonsignificant, it is worth noting that participants in the negative condition reported more instances of unsupportive acknowledgement than participants in the positive condition, as expected. Moreover, contrary to predictions, participants in the positive condition endorsed only marginally ($p = .06$) more instances of positive reactions than participants in the negative condition. The group differences in

unsupportive acknowledgement and positive reactions may have reached statistical significance with a larger sample size and greater statistical power, in particular because the effect sizes across all three types of reactions were similar and in the medium effect size range.

Trauma appraisal hypotheses were partially supported. Unexpectedly, participants in either condition did not differ in baseline trauma appraisals; however, baseline trauma appraisals were predictive of follow-up trauma appraisals as expected. The primary hypothesis, that the CBM intervention would effectively improve trauma appraisals for participants in the negative condition but have no impact on trauma appraisals for participants in the positive condition, was not supported. The CBM intervention significantly improved/reduced trauma appraisals for participants in both groups, but this effect did not differ as a function of group membership.

Implications of Negative Evidence

Null findings in the current study may be further explored through several potential interpretations. According to Cronbach and Meehl (1955), three interpretations exist to explain null findings: 1) the test does not measure the construct variable, 2) the theoretical network used to generate the hypothesis is incorrect, or 3) the experimental design did not properly test the hypothesis.

The construct of interest in the current study is trauma appraisals as measured by the PTCI and how these beliefs may be impacted by CBM training. Regarding the first explanation, it is possible that CBM training may have a stronger impact for survivors with negative compared to positive social support experiences on outcomes beyond posttraumatic cognitions. For example, Woud and colleagues (2012) found that CBM training also impacted symptoms of

PTSD (i.e., intrusive memories). Perhaps the groups in the current study did not differ in their cognitive appraisals about their social support following CBM training but did experience reductions in other symptoms contingent on group membership. Similarly, the PTCI may not be the most accurate reflection of maladaptive social support appraisals. The PTCI is comprised of items targeting negative appraisals about oneself, the world, and self-blame that may be impacted by the trauma itself but less so by social support experiences. Consistent with this, PTCI scores improved across groups over the one-week follow-up, suggesting that CBM training can effectively target posttraumatic cognitions measured by the PTCI. However, social support experiences following sexual victimization may be less impactful on posttraumatic cognitions measured by the PTCI and instead impact survivors' beliefs about the availability of and their worthiness in utilizing future social support. For example, the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet & Farley, 1988) examines individuals' perceptions about the availability of social support (e.g., "There is a special person who is around when I am in need"), and the Social Constraints Scale (SCS; Lepore, Silver, Wortman, & Wayment, 1996) examines relationship strain specifically tied to a stressful event (e.g., "How often did you feel as though you had to keep your feelings about [EVENT] to yourself because they made other people uncomfortable?"). Survivors who disclose once then stop disclosing (i.e., "crisis disclosers") may do so because of the reaction they received from the support provider (Ahrens et al., 2010), perhaps developing the appraisal that they do not have adequate social support resources. Baum and colleagues (1981) posited that secondary appraisals regarding the availability of coping resources, such as support providers, may increase an individual's self-efficacy to effectively cope with stressful situations. CBM training may change

beliefs about the availability of social support and therefore increase the likelihood that survivors will utilize support providers in the future; however, it is important to ensure that the correct construct variable is examined.

The second explanation proposed by Cronbach and Meehl (1955) suggests that the theoretical framework on which the hypotheses were based is incorrect. In the current study, baseline PTCI scores did not differ across the groups as predicted. It was hypothesized that survivors who experienced negative social reactions from others would report significantly worse maladaptive posttraumatic appraisals due to social support theories that suggest that social support may influence individuals' appraisals about stressful situations (in this case, sexual assault) or their perceived availability of resources available to help cope with events (Baum et al., 1981; Lazarus, 1966). Availability of positive support resources may mitigate the cognitive appraisals of the event as unmanageable and instead increase individuals' coping self-efficacy or may provide tangible resources following the onset of pathology to increase engagement with functional behaviors (House, 1981). Such theories make sense within the context of trauma as it is believed that PTSD is maintained in large part by maladaptive appraisals (Ehlers & Clark, 2000), yet recent research with sexual assault survivors suggests that these theories may not fully explain the salience of social support. A study using female undergraduate students found that posttraumatic cognitions only partially explained the relationship between negative social reactions and symptoms of PTSD and positive reactions were not at all predictive of posttraumatic cognitions or symptoms of PTSD (Morris & Quevillon, 2018). A similar pattern was found at the bivariate level in which negative reactions were significantly correlated with posttraumatic cognitions, but positive reactions were not. Given these findings, it is possible that

posttraumatic cognitions only partially explain the robust link between negative social reactions and adverse outcomes in survivors, as these reactions likely influence other aspects of recovery beyond cognitive appraisals that have yet to be examined. Thus, interventions aimed at ameliorating the negative impact of negative social support experiences may be more effective if they address aspects of recovery beyond posttraumatic appraisals.

The final interpretation, that the experimental design did not properly test the hypothesis, may be the most likely explanation for the current study's null findings. For one, the experimental design was contingent on the assumption that participants were considering their positive or negative social support experiences during the CBM training as instructed. A memory reactivation task was employed to activate participants' memories of their respective social support experiences. Statistical analyses suggested that this task was somewhat effective—participants experienced significant reductions in PA from pre- to post-writing, though this contradicted predictions that participants in the positive support experiences group would experience increases in PA due to the activation of memories of supportive encounters. Instead, it seems as though reactivating memories of any assault-related content, even if considered subjectively positive, ultimately leads to a decrease in PA. Further, contrary to predictions, neither group experienced any significant change in NA, though nonsignificant increases in NA were in the expected direction. The lack of significant change in NA may be a result of the focus of the memory reactivation task, which was on assault-related support experiences and not on the assault itself. This task was sufficiently emotional to reduce PA and evidence slight but nonsignificant changes in NA, the latter of which may reach statistical significance when participants directly report on traumatic experiences but perhaps not when

indirectly describing such experiences. It is also possible that the memory reactivation task did not effectively activate memories of social support experiences as proposed. Last, the instructions prior to beginning the CBM training specify that participants should be considering these respective social support experiences throughout the intervention but the absence of a manipulation check following the instructions reduces the ability to confirm that participants adequately read and comprehended the instructions. Further, it may be difficult for participants to consider one emotionally valenced aspect of their social support while suppressing another. Participants may also have forgotten these instructions over time, as the entire CBM training takes approximately 40 minutes to complete.

In addition to potential issues with the memory reactivation task and CBM training instructions, the mechanism by which participants were grouped was faulty. Participants were asked to rate, on a 6-point Likert-type scale, the extent to which they perceived their overall social support following the sexual assault as positive or negative, and this information was used to classify survivors into those who had mostly positive or mostly negative supportive experiences. These responses were to be validated with the SRQ subscales of positive reactions, unsupportive acknowledgement, and turning-against reactions (Relyea & Ullman, 2015; Ullman, 2000) such that participants who indicated that their social support was mostly positive were expected to endorse significantly more positive reactions and fewer unsupportive acknowledgement and turning-against reactions, and vice versa. Despite these predictions, the groups only significantly differed in their endorsement of turning-against reactions, with participants in the negative condition endorsing significantly more turning-against reactions than participants in the positive condition as expected. Participants in the positive condition endorsed

only marginally more positive reactions, and no significant differences were found in endorsement of unsupportive acknowledgement.

The issues with grouping are particularly surprising given the circumstances in which the three SRQ subscales were created. Following literature that suggested that survivors did not uniformly perceive what was previously categorized as positive and negative reactions as such (e.g., Campbell, Ahrens, et al., 2001), Relyea and Ullman (2015) factor analyzed the SRQ using a sample of community-recruited women and determined that splitting negative reactions into unsupportive acknowledgement and turning-against reactions yielded a better fit to the data and better captured nuances of survivors' social support experiences. Findings from the current study suggest, however, that these categories still may not fully account for the factors that contribute to the perception of social support as positive or negative. Indeed, it has recently been found that sexual assault disclosures perceived as positive are predicted by characteristics of the disclosure itself (i.e., content and context), over and above the effects of social reactions from others (Pinciotti et al., 2019). Still, Relyea and Ullman (2015) differentiate unsupportive acknowledgement and turning-against reactions such that the latter reflects more negatively valenced items that significantly correlated with perceived social support ($r = -.17$, $p < .001$), whereas the former represents more mixed-valenced reactions that did not significantly correlate with perceived social support ($r = -.04$, $p > .05$), so the significant relation between participants' subjective perception of social support and turning-against reactions in the current study is more theoretically and empirically consistent than a significant relation with unsupportive acknowledgement would have been.

Given that positive reactions are experienced, on average, more frequently by survivors than turning-against reactions (Pinciotti et al., 2019; Relyea & Ullman, 2015), survivors may be more likely to report that their social support overall was positive despite being more impacted by the turning-against reactions (e.g., Morris & Quevillon, 2018). If so, participants may not have been accurately grouped given the study's overall aim to reduce the adverse impact of negative social support experiences. Given that 88% of the sample experienced at least one turning-against reaction, including 82.8% of those within the positive support condition, this may explain why all participants, regardless of grouping, experienced improvements in posttraumatic cognitions. Despite null findings, it appears that CBM can be effective for survivors with negative support experiences; instead, the empirical challenge may lie in finding an adequate sample of survivors who did not have negative support experiences to serve as a sufficient comparison group.

Null findings may also result from insufficient dosing. As previously observed (Woud et al., 2012), CBM can effectively reduce symptoms of intrusion and improve PTCI scores, the latter of which was also the case in the current study. A CBM intervention specifically targeting trauma appraisals presumably caused or reinforced by negative social support experiences may require a larger dose of CBM than is provided in a single session. Findings from studies examining positive and negative disclosure experiences suggest that negative social interactions with others following sexual victimization involve a mixture of factors and are perhaps more complex than previously believed (e.g., Pinciotti et al., 2019) and thus more sessions of CBM, or perhaps making CBM more idiographic, may be required to address the complicated mechanisms by which survivors are adversely impacted by these experiences. Conversely, such

experiences may be more complex and unique to the individual such that a standardized computer intervention may not be sufficient to combat the maladaptive thinking patterns that are ingrained following negative supportive experiences. Interventions provided by trained clinicians may be more effective at targeting these nuances. CPT, for example, is a trauma-focused intervention that directly targets assimilated and over-accommodated appraisals that develop following traumatic experiences (Resick & Schnicke, 1992). In the latter half of CPT, patients begin to examine their maladaptive appraisals associated with trust, power/control, safety, intimacy, and esteem, related to both oneself and others. As expected, CPT effectively targets themes measured by the PTCI as evidenced by improvements in PTCI scores over the course of treatment, and, importantly, such improvements precede changes in PTSD symptoms (Schumm, Dickstein, Walter, Owens, & Chard, 2015). Thus, trained clinicians may be better equipped to address maladaptive trauma appraisals than a standardized computer program when such appraisals are complicated by consequential social support experiences.

Limitations and Future Directions

The current study has several limitations to acknowledge. First, the study is limited by its sample. To maintain consistency with the vast majority of literature on sexual assault and social support, only cisgender female participants were recruited. Although sexual victimization risk is ostensibly higher for female college students than male college students, college men are still victimized at a rate of about 5.4% and are at equal—if not greater—risk of experiencing negative reactions from others following assault disclosure (Howard, Potter, Guedj, & Moynihan, 2018). Nonbinary and transgender individuals remain a largely understudied population in the social

support literature despite experiencing alarmingly high rates of sexual violence (see Stotzer, 2009, for a review), and, as a result, individuals who identify as transgender were not included in the current study. Conclusions cannot be drawn from the current study about the ways in which nonbinary and transgender individuals are impacted by negative support experiences or how the impact of these experiences may be reduced using CBM. Future research using CBM would benefit from inclusion of male and nonbinary/transgender participants to determine the extent to which the training is beneficial for individuals of other genders. Although CBM proved effective in general for improving posttraumatic cognitions in female survivors of sexual assault, given the current study's focus on social support, the sample included only survivors who had disclosed to at least one other individual. It remains unknown, then, how CBM might impact nondisclosers and whether nondisclosure may differentially impact effects on PTCI or other outcomes. Future research may also wish to target survivors of sexual violence regardless of disclosure status to determine the effectiveness of CBM with sexual assault survivors generally.

Additionally, due to the reliance on an undergraduate sample, findings may not generalize to sexual assault survivors who present for mental health treatment and may experience more severe posttraumatic symptomatology. Foa and Rauch (2004), for example, examined changes in PTCI scores for female sexual and nonsexual assault survivors over the course of trauma-focused treatment. Using a sample of only survivors with a primary diagnosis of PTSD, they found a mean pre-treatment PTCI score of 138 (SD = 38), a score that is higher than that of the sample used in the current study (M = 113.1, SD = 40.9). Moreover, the mean decrease in PTCI scores was 58.9 compared to 14.5 in the current study. Although the study by Foa and Rauch involved a longer term treatment with a substantially larger dose, the findings

provide further evidence that PTCI scores are malleable over time using a targeted treatment in a sample of diagnosed assault survivors. Thus, future research using CBM training would benefit from recruitment of assault survivors with a diagnosis of PTSD to understand the impact of training on a sample with more severe symptomatology. A final sample limitation to note involves the sample size. After accounting for attrition, invalid responding, multivariate outliers, and missing data, a sample of 45 participants was used for analyses. Although this size exceeds the proposed *n* based on power estimates, nonsignificant but medium effect size differences in social reactions across conditions suggest that a larger sample size may have allowed for these group differences to reach statistical significance as predicted.

The study is also limited by its methods. Because baseline appraisal bias was not measured, it cannot be definitively determined that the CBM training influenced reappraisal bias. Baseline appraisal bias scores would provide stronger evidence that the CBM training induced a positive reappraisal bias. Information was not collected regarding frequency of disclosure; previous research has found that survivors tend to disclose to approximately three people each (Filipas & Ullman, 2001), though the range can vary quite widely (Pinciotti et al., 2019). As such, it is unclear whether the extent of disclosure prior to CBM may confound the findings of the current study, highlighting the need for future studies to collect more detailed information about disclosure. Similarly, it is not known how much time passed between participants' sexual victimization and their participation in the study. Given that participants were recruited based on sexual victimization experiences that occurred after the age of 14, coupled with the age range of the current sample (18 to 25), the sample could have theoretically included survivors who were assaulted within the past month and those who were assaulted up to 11 years ago. Participants

with more distal assaults may be more prone to retrospective memory bias (e.g., Lalande & Bonanno, 2011), especially if they had disclosed less frequently and had fewer opportunities to reconsolidate their trauma-related memories. Although strengthened by its longitudinal design, outcomes are only measured one week post-CBM training and thus it is unclear whether the dosing of CBM provided in a single session is adequate to influence PTCI scores in this sample over the long term, and thus future research would benefit from examination of CBM outcomes in sexual assault survivors over a longer period. Further, a comparison group of sexual assault survivors who did not complete CBM would provide stronger evidence that improvements in PTCI scores over the follow-up could be attributed to the intervention and not merely the passing of time. It would also be interesting for future research to include a group of survivors who participated in the memory reactivation task but not CBM; findings from such a study could more strongly suggest that CBM was effective above and beyond the effect of exposure to the trauma memory.

In addition, the study is limited in that it is unclear what factors influenced survivors' perceptions of their overall social support as positive or negative. Although participants who rated their social support as negative overall were more likely to endorse turning-against reactions from others, no significant differences were found in unsupportive acknowledgement or positive reactions as predicted. Future studies may address this limitation in one of several ways. First, future studies may wish to group survivors based solely on their endorsement of turning against, unsupportive acknowledgement, and positive reactions, rather than on their rating of social support on a single item. Second, future studies may wish to employ an instrument or item that assesses exactly why survivors may perceive their support as positive or

negative. For example, the Sexual Assault Inventory of Disclosure (SAID; Pinciotti et al., 2019) includes items in which survivors indicate why they perceived positive and negative disclosures as such. Research using the SAID has also found that other aspects of disclosure, such as content shared, may explain the perception of social support experiences as positive or negative over and above the effects of social reactions, highlighting the need for additional research examining the mediating factors that contribute to these perceptions so that interventions may better target them and lead to better outcomes for survivors who experience secondary victimization from negative social support experiences.

Conclusions

To the author's knowledge, the current study is the first to examine the use of CBM with survivors of sexual assault. The primary goal of the study, to reduce the negative impact of negative sexual assault disclosure experiences, was partially met; overall, survivors reported significant improvements in posttraumatic cognitions over a one-week follow-up after participating in a CBM appraisal intervention. Although the impact of the intervention did not differ as a function of participant grouping as predicted, several possibilities may explain null findings, including the notable prevalence of negative disclosure reactions in both negative as well as positive social support groups. Survivors who labeled their post-assault social support as overall positive and reported no negative disclosure experiences were the exception to the rule, suggesting that null findings in the current study do not necessarily indicate that CBM cannot effectively target maladaptive trauma appraisals in survivors with negative support experiences. Instead, the current study highlights the need for further examination and more stringent

grouping methodology—or examination of the effectiveness of CBM in sexual assault survivors without any disclosure-contingent grouping.

Despite these and other limitations, the current study represents an exciting new avenue for CBM research using individuals exposed to trauma, specifically, survivors of sexual trauma. Moreover, findings from the current study may be clinically applicable. Survivors reported significant improvements in posttraumatic cognitions over a short period of time and with only a small dosing of intervention, suggesting that these beliefs are malleable. Mental health providers tasked with treating survivors of sexual assault may want to implement interventions that target trauma appraisals, particularly survivors who may have salient social support experiences, both positive and negative. CPT, for example, challenges trauma survivors to examine and restructure maladaptive beliefs about themselves, others, and the world that developed or were strengthened following trauma exposure (Resick & Schnicke, 1992). This work may be extended to include beliefs that developed or were strengthened following negative disclosure experiences. Similarly, other trauma-focused interventions may be supplemented by processing the meaning and impact of these support experiences and challenging maladaptive beliefs related to such experiences when relevant. Survivors may benefit from increased understanding of potential negative biases that have developed following trauma and/or negative support experiences and use of therapeutic techniques that reappraise biased beliefs to be helpful and more adaptive.

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APPENDIX A

CONSENT FORMS

Informed Consent for CBM Session

I agree to participate in Part 1 of the 2-part research project titled *Stressful Social Experiences and Word Recognition* being conducted by Caitlin Pinciotti, M.A., Department of Psychology at Northern Illinois University. I have been informed that the purpose of the study is to understand how thinking about stressful or upsetting social experiences influences performance on a word recognition task. I understand that the study involves two parts: two in-person laboratory sessions one week apart. I understand that it is important that I complete both portions of the study.

I understand that I will be asked to write about stressful social experiences that I have had relating to unwanted sexual experiences and then participate in a word recognition task. In addition, I will be asked to complete a few questionnaires. The questionnaires contain questions concerning: stressful social experiences (for example, *Other people saw your side of things and did not make judgments*); my thoughts (for example, *I can't rely on other people*); my perceptions about my current social support (for example, *There is a special person in my life who cares about my feelings*); and how I have been feeling lately (for example, *I had trouble falling asleep*). I will also be asked about any experiences I have had with unwanted sexual advances.

I understand that it is possible that when answering some of the questions I may experience some discomfort. My participation in this study will contribute to our understanding of people's stressful social experiences and will assist in the development of intervention programs. I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact the faculty advisor on this project, Dr. Holly Orcutt, Department of Psychology, Northern Illinois University, at (815) 753-0372. I understand that if I wish further information regarding my rights as a research subject, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that any information gathered during this research study is intended to be used for research purposes only and I understand that the researcher does not, for the purposes of this research, have authority to address, or duty to report, sexual violence, misconduct, or harassment. If I wish to report an instance of sexual violence, misconduct, or harassment, I understand that I need to contact the University's Title IX Coordinator, Karen L. Baker, at 815-753-6017 or kbaker@niu.edu, or visit the University's Title IX website at http://niu.edu/sexualmisconduct/help/report.shtml for other reporting options.
I have been informed that potential risks and/or discomforts I could experience during this study include upsetting or distressing thoughts or feelings when answering questions related to sexual assault victimization and potential traumatic life events. I am aware that if I feel upset during or after the study, I can contact the Crisis Line at (815) 758-6655. The Crisis Line is available 24-hours-a-day. In addition, I will be provided with contact information for Holly Orcutt; she can be reached during standard business hours.

The study should last approximately 90 minutes. I understand that all of the information provided in the questionnaires will be kept in the strictest of confidence and will not be available to anyone other than the experimenters conducting the study. However, your confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties and to the degree permitted by law. Additional resources for support services will be provided at the end of the study following the interviews and questionnaires.

I understand that there may be no direct benefit to me by participating in this research study. By completing this first part of the experiment, I will earn 4 points toward the partial course credit option in my Psychology 102 course. In addition, I understand that if I complete both parts of the study (i.e., Part 1 and Part 2), I will have the option to enter my name two times into a drawing to win a $20/50 Amazon gift card.

Any further information about the experiment may be obtained by contacting Holly Orcutt, Department of Psychology, Northern Illinois University, at (815) 753-0372.

I have read the above statements. I understand the purpose of the study and have been given the chance to ask questions and express concerns about the research project. I understand that I can withdraw from the study at any time for any reason. I understand that Northern Illinois University does not provide compensation for treatment of injuries that may occur as a result of participation in this research. I give my informed consent to be a participant in this study. I have been given a copy of the consent form.

_____	_____
Participant (signature) and Date	Witness (signature) and Date
_____	_____
Name (please print)	Name (please print)

Informed Consent for Follow-Up Survey

I agree to participate in Part 2 of the research project titled *Stressful Social Experiences and Word Recognition* being conducted by Caitlin Pinciotti, M.A., Department of Psychology at Northern Illinois University. I have been informed that the purpose of the study is to understand how thinking about stressful or upsetting social experiences influences performance on a word recognition task.

I understand that for Part 2 of this study, I will be asked to complete a few questionnaires. The questionnaires contain questions concerning: stressful social experiences relating to unwanted sexual experiences (for example, *Other people saw your side of things and did not make judgments*); my thoughts (for example, *I can't rely on other people*); my perceptions about my current social support (for example, *There is a special person in my life who cares about my feelings*); and how I have been feeling lately (for example, *I had trouble falling asleep*).

I understand that it is possible that when answering some of the questions I may experience some discomfort. My participation in this study will contribute to our understanding of people's stressful social experiences and will assist in the development of intervention programs. I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact the faculty advisor on this project, Dr. Holly Orcutt, Department of Psychology, Northern Illinois University, at (815) 753-0372. I understand that if I wish further information regarding my rights as a research subject, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that any information gathered during this research study is intended to be used for research purposes only and I understand that the researcher does not, for the purposes of this research, have authority to address, or duty to report, sexual violence, misconduct, or harassment. If I wish to report an instance of sexual violence, misconduct, or harassment, I understand that I need to contact the University's Title IX Coordinator, Karen L. Baker, at 815-753-6017 or kbaker@niu.edu, or visit the University's Title IX website at http://niu.edu/sexualmisconduct/help/report.shtml for other reporting options.

I have been informed that potential risks and/or discomforts I could experience during this study include upsetting or distressing thoughts or feelings when answering questions related to sexual assault victimization and potential traumatic life events. I am aware that if I feel upset during or after the study, I can contact the Crisis Line at (815) 758-6655. The Crisis Line is available 24-hours-a-day. In addition, I will be provided with contact information for Holly Orcutt; she can be reached during standard business hours.

The study should last approximately 30 minutes. I understand that all of the information provided in the questionnaires will be kept in the strictest of confidence and will not be available to anyone other than the experimenters conducting the study. However, your confidentiality will

be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties and to the degree permitted by law. Additional resources for support services will be provided at the end of the study following the interviews and questionnaires.

I understand that there may be no direct benefit to me by participating in this research study. By completing this first part of the experiment, I will earn 1 point toward the partial course credit option in my Psychology 102 course. In addition, I understand that if I complete both parts of the study (i.e., Part 1 and Part 2), I will have the option to enter my name two times into a drawing to win a $25/50 Amazon gift card.

Any further information about the experiment may be obtained by contacting Holly Orcutt, Department of Psychology, Northern Illinois University, at (815) 753-0372.

I have read the above statements. I understand the purpose of the study and have been given the chance to ask questions and express concerns about the research project. I understand that I can withdraw from the study at any time for any reason. I understand that Northern Illinois University does not provide compensation for treatment of injuries that may occur as a result of participation in this research. I give my informed consent to be a participant in this study. I have been given a copy of the consent form.

_____	_____
Participant (signature) and Date	Witness (signature) and Date
_____	_____
Name (please print)	Name (please print)

APPENDIX B

BACKGROUND QUESTIONNAIRE

1. What is your current age? _____

2. How many years of schooling have you completed? _____
(e.g., graduated high school = 12; graduated college = 16)

3. What is your current employment status? (check only one)
[] Part time
[] Full time
[] Retired
[] Unemployed
[] Unemployed Student

4. What is your current marital status? (check only one)
[] Single
[] Partnered
[] Living with significant other
[] Engaged
[] Married
[] Divorced, separated, or widowed

5. What is your sexual orientation?
[] Heterosexual/Straight
[] Gay/Lesbian
[] Bisexual
[] Asexual
[] Other, please specify.

6. What is your ethnic background? (check only one)
[] Hispanic or Latino
[] Not Hispanic or Latino
[] Unknown

7. What is your racial background? (check *all* that apply)
[] Caucasian or White
[] African American or Black
[] Asian
[] American Indian or Alaskan Native
[] Native Hawaiian/other Pacific Islander

[] Unknown

8. Please estimate your total annual household income.

[] Less than $25,000
[] $25,000-$50,000
[] $50,000-$75,000
[] $75,000-$100,000
[] more than $100,000
[] Unknown

9. Please estimate your total annual income.

[] Less than $25,000
[] $25,000-$50,000
[] $50,000-$75,000
[] $75,000-$100,000
[] More than $100,000
[] Unknown

10. Approximately how long ago did you last tell someone about any unwanted sexual advances you have experienced?

APPENDIX C

POSITIVE AND NEGATIVE AFFECT SCHEDULE (WATSON, CLARK, & TELLEGEN, 1988

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you feel this way right now, that is, at the present moment OR indicate the extent you have felt this way over the past week (circle the instructions you followed when taking this measure).

1	2	3	4	5
Very Slightly or Not at All	**A Little**	**Moderately**	**Quite a Bit**	**Extremely**

_____ 1. Interested	_____ 11. Irritable
_____ 2. Distressed	_____ 12. Alert
_____ 3. Excited	_____ 13. Ashamed
_____ 4. Upset	_____ 14. Inspired
_____ 5. Strong	_____ 15. Nervous
_____ 6. Guilty	_____ 16. Determined
_____ 7. Scared	_____ 17. Attentive
_____ 8. Hostile	_____ 18. Jittery
_____ 9. Enthusiastic	_____ 19. Active
_____ 10. Proud	_____ 20. Afraid

Scoring Instructions:

Positive Affect Score: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect.

Negative Affect Score: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect.

APPENDIX D

POSTTRAUMATIC COGNITIONS INVENTORY (FOA ET AL., 1999)

We are interested in the kind of thoughts which you may have had after a traumatic experience. Below are a number of statements that may or may not be representative of your thinking. Please read each statement carefully and tell us how much you AGREE or DISAGREE with each as they relate to any unwanted sexual experiences by putting the appropriate number between 1 & 7 in the box to the right of the statement. People react to traumatic events in many different ways. There are no right or wrong answers to these statements.

1	2	3	4	5	6	7
Totally Disagree	**Disagree Very Much**	**Disagree Slightly**	**Neutral**	**Agree Slightly**	**Agree Very Much**	**Totally Agree**

1. The event happened because of the way I acted

2. I can't trust that I will do the right thing

3. I am a weak person

4. I will not be able to control my anger and will do something terrible

5. I can't deal with even the slightest upset

6. I used to be a happy person but now I am always miserable.

7. People can't be trusted

8. I have to be on guard all the time

9. I feel dead inside

10. You can never know who will harm you

11. I have to be especially careful because you never know what can happen next

12. I am inadequate

13. If I think about the event, I will not be able to handle it

14. The event happened to me because of the sort of person I am

15. My reactions since the event mean that I am going crazy
16. I will never be able to feel normal emotions again
17. The world is a dangerous place
18. Somebody else would have stopped the event from happening
19. I have permanently changed for the worse
20. I feel like an object, not like a person
21. Somebody else would not have gotten into this situation
22. I can't rely on other people
23. I feel isolated and set apart from others
24. I have no future
25. I can't stop bad things from happening to me
26. People are not what they seem
27. My life has been destroyed by the trauma
28. There is something wrong with me as a person
29. My reactions since the event show that I am a lousy coper
30. There is something about me that made the event happen
31. I feel like I don't know myself anymore
32. I can't rely on myself
33. Nothing good can happen to me anymore

Scoring Instructions:

Negative Cognitions about the Self: 2, 3, 4, 5, 6, 9, 12, 14, 16, 17, 20, 21, 24, 25, 26, 28, 29, 30, 33, 35, 36 (divide by 21 for mean score)

Negative Cognitions about the World: 7, 8, 10, 11, 18, 23, 27 (divide by 7 for mean score)

Self-Blame: 1, 15, 19, 22, 31 (divide by 5 for mean score)

Total Score: Sum all items

APPENDIX E

SOCIAL REACTIONS QUESTIONNAIRE (ULLMAN, 2000)

Instructions: The following is a list of behaviors that other people responding to a person who experienced an unwanted sexual advance often show. Please indicate how often you experienced each of the listed responses from other people about your most serious unwanted sexual advance you by selecting the appropriate number.

0	1	2	3	4
Never	**Rarely**	**Sometimes**	**Frequently**	**Always**

____ 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

General Scales:

1. Turning Against: 17, 25, 33, 2, 10, 12, 18, 26, 44, 4, 27, 34, 43

2. Unsupportive Acknowledgment: 3, 20, 28, 36, 5, 13, 21, 29, 37, 45, 11, 19, 35

3. Positive reactions: 1, 6, 7, 9, 14, 15, 22, 23, 30, 31, 39, 40, 41, 46, 47, 8, 16, 24, 32, 48

Specific Scales:

1. Emotional Support: 1, 6, 7, 9, 14, 15, 22, 23, 30, 31, 39, 40, 41, 46, 47

2. Tangible Aid: 8, 16, 24, 32, 48

3. Blame: 17, 25, 33

4. Stigma/treat differently: 2, 10, 12, 18, 26, 44

5. Control: 4, 11, 19, 27, 34, 35, 43

6. Egocentric: 3, 20, 28, 36

7. Distract: 5, 13, 21, 29, 37, 45

APPENDIX F

SEXUAL EXPERIENCES SURVEY-SHORT FORM VICTIMIZATION (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 and stopping one year ago from today.

	Sexual Experiences	How many times in the past 12 months?	How many times since age 14?
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 *(but did not attempt sexual penetration)* by:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

		How many times in the past 12 months?	How many times since age 14?
2	**Someone had oral sex with me or made me have oral sex with them without my consent by:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

3	**If you are a male, check box and skip to item 4 ☐** **A man put his penis into my vagina, or someone inserted fingers or objects without my consent by:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

		How many times in the past 12 months?	How many times since age 14?
4	**A man put his penis into my butt, or someone inserted fingers or objects without my consent by:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

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:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	B Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	C Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

		How many times in the past 12 months?	How many times since age 14?
6	**If you are male, check this box and skip to item 7. ☐ 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:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

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:**	0 1 2 3+	0 1 2 3+
	a 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.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	b Showing displeasure, criticizing my sexuality or attractiveness, getting angry but not using physical force, after I said I didn't want to.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	c Taking advantage of me when I was too drunk or out of it to stop what was happening.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	d Threatening to physically harm me or someone close to me.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
	e Using force, for example holding me down with their body weight, pinning my arms, or having a weapon.	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

8. I am: Female ☐ Male ☐ My age is _____years and _____months.

9. Did any of the experiences described in this survey happen to you 1 or more times?

Yes ☐ No ☐

What was the sex of the person or persons who did them to you?

Female only ☐
Male only ☐
Both females and males ☐

I reported no experiences ☐

10. Have you ever been raped? Yes ☐ No ☐

APPENDIX G

PERMISSION FOR MEASURES

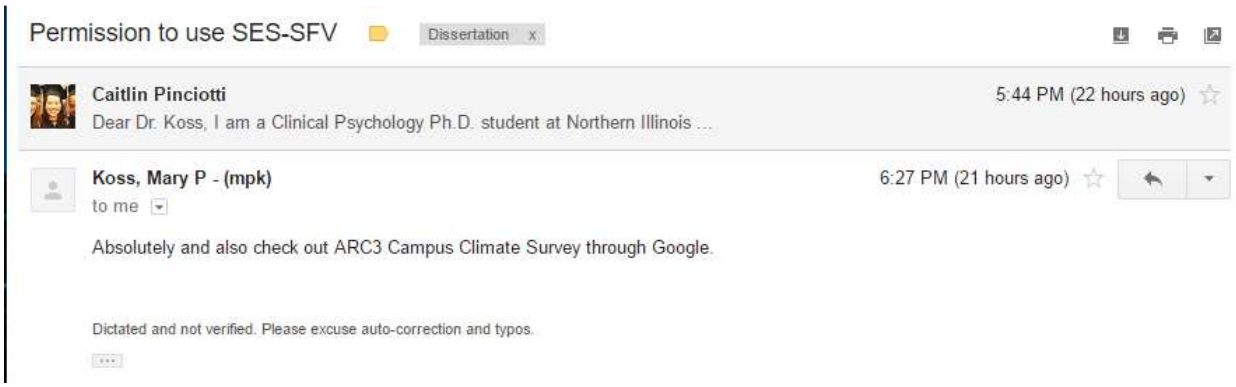
Ullman, Sarah E. 5:53 PM (0 minutes ago)

to me

Hi Caitlin,

Yes you may use the SRQ. I am attaching the measure and scoring instructions and a recent paper that may be useful. I would be interested in knowing of your findings once you have them with the measure.

Sincerely,
Sarah Ullman



Permission to use SES-SFV Dissertation x

Caitlin Pinciotti 5:44 PM (22 hours ago)
Dear Dr. Koss, I am a Clinical Psychology Ph.D. student at Northern Illinois ...

Koss, Mary P - (mpk) 6:27 PM (21 hours ago)
to me

Absolutely and also check out ARC3 Campus Climate Survey through Google.

Dictated and not verified. Please excuse auto-correction and typos.

PTCI measurement Dissertation x

Ellen Kubis <ekubis@mail.med.upenn.edu> 8:29 AM (6 hours ago)
to me

Ms. Pinciotti,

Attached is a copy of the PTCI measurement and Dr. Foa gives you permission to use the measurement.

There is no fee for the use of the measurement.

Thank you,
Ellen

PDF Ptci1.pdf

Positive and Negative Affect Schedule (PANAS)

Description: A measure of positive affect (PA) and negative affect (NA).

Format: List of 20 adjectives that measure positive feelings, such as joy or pleasure, and negative feelings, such as anxiety or sadness. There are 10 adjectives for each dimension.

Scoring: A 5-point scale is used ranging from 1 (very slightly or not at all) to 5 (extremely). Two scores, one for each scale, are yielded, with higher scores representing greater affect on the respective subscale.

Administration and Burden: Self-administered; 2-5 minutes.

Psychometrics for SCI: Cronbach's alpha has been reported at .89 for the PA scale and .85 for the NA scale, indicating adequate reliability. In addition, the correlations of the PA and NA scales with anxiety and depression scales showed that PA is more strongly negative related to depression than anxiety, and PA explained significantly more variance on a measure of depression.

Languages: English, Korean, Italian.

QoL Concept: The PANAS is a measure of Subjective Well-Being, which corresponds to **Box E** (subjective evaluations and reactions; affect) of Dijker's Model.

Permissions/Where to Obtain: Public domain; The PANAS can be obtained from the article:

Watson D, Clark LA. Development and validation of brief measures of positive and negative affect: The PANAS scales. J Personality Soc Psychol 1988; 54:1063-70.

APPENDIX H

MEMORY REACTIVATION WRITING TASK INSTRUCTION

Positive Script:

Now I am going to ask you to write. I want you to write about all the times in which you told someone about your unwanted sexual experience and they responded to you in a way that felt helpful or positive. Please write about each one of these helpful/positive conversations in detail, including what led up to the conversation, what you said or did, what they said or did, and how you felt and thought about the conversation. Please write what was said as word-for-word as you can remember; you are encouraged to include quotes. In doing so, **do not** try to make meaning about what happened, you should only describe what happened based on the prompts provided. **Do not write about any negative conversations you have had—although these conversations may be significant, for this purpose you should only write about your positive conversations.** It is important for you to know that your name will not be connected, in any way, with your essays, and your essays will be regarded with strict confidentiality. You will be asked to write for 20 min, and I will let you know when time is up.

When the conversation happened:

Who I was speaking to:

Where I was:

What led up to the conversation (e.g., why did the conversation occur?):

What I did or said to him/her (in as much detail as you are able to remember):

What he/she did or said to me (in as much detail as you are able to remember):

If you remember any thoughts or feelings you had during the conversation, please try to label the feelings that came up, and state any thoughts you remember having as word-for-word as you can:

Negative Script:

Now I am going to ask you to write. I want you to write about all the times in which you told someone about your unwanted sexual experience and they responded to you in a way that felt **unhelpful or negative**. Please write about each one of these unhelpful/negative conversations in detail, including what led up to the conversation, what you said or did, what they said or did, and how you felt and thought about the conversation. Please write what was said as word-for-word as you can remember; you are encouraged to include quotes. In doing so, **do not** try to make meaning about what happened, you should only describe what happened based on the prompts provided. **Do not write about any positive conversations you have had— although these conversations may be meaningful, for this purpose you should only write about your negative conversations.** It is important for you to know that your name will not be connected,

in any way, with your essays, and your essays will be regarded with strict confidentiality. You will be asked to write for 20 min, and I will let you know when time is up.

When the conversation happened:

Who I was speaking to:

Where I was:

What led up to the conversation (e.g., why did the conversation occur?):

What I did or said to him/her (in as much detail as you are able to remember):

What he/she did or said to me (in as much detail as you are able to remember):

If you remember any thoughts or feelings you had during the conversation, please try to label the feelings that came up, and state any thoughts you remember having as word-for-word as you can:

APPENDIX I

CBM INSTRUCTIONS

Thank you for taking part in this experiment.

In this task, you will be asked to read a series of statements.

As you will see, most of these statements relate to thoughts and feelings that people might have had if they have been through a traumatic experience.

As you read these descriptions we want you to think back to the situations you just wrote about – times in which you talked to someone about your unwanted sexual experience(s) and they did not respond to you in a way that felt helpful or supportive, and try to imagine again what it was like [As you read these descriptions we want you to think back to the situations you just wrote about – times in which you talked to someone about your unwanted sexual experience(s) and they responded to you in a way that felt helpful or supportive, and try to imagine again what it was like].

Then, when you read these statements your task is to imagine yourself in the situation described, keeping in mind your past experience.

The last line of the statement always has the final section missing from it.

When you press the 'advance' button, the missing word or words will appear, but some will in an incomplete form (like this: w – r - : both the 'o' and the 'd' are missing from 'word'.)

Your job is to use the statement you have just read to help you complete the word correctly, so that it finishes the statement.

When you know what the incomplete word is, press the advance key. Then select the FIRST missing letter on the keyboard and enter it (this would be 'o' in the example above). When you have found it, the correct word will be displayed.

After a number of such statements you will be asked a question about a randomly selected statement to see if you have understood it. For your answer (which will be 'yes' or 'no') you will be using the arrow keys as indicated on screen.

Don't worry if this seems complicated – you will do some practice first with neutral statements which should make it clearer. If you have any questions at this stage, please ask now. Otherwise, press the advance key to try an example.

APPENDIX J

CBM SENTENCES

CBM Sentence Only List

SET 1					
No.	Sentence	pfrag	pword	pletter	Sentence type
1	Somehow, since going through the whole experience, I feel that something inside me has	g - o w n	g r o w n	r	trauma
3	These days, slight upsets leave me	i n d i - f - r e n t	i n d i f f e r e n t	f	trauma
4	Because the weather was pleasant you decided to have your lunch	o - t s i d e	o u t s i d e	u	neutral
25	I now have a feeling that other people find me	w - - t h w h - l e	w o r t h w h i l e	o	trauma
7	Going through the trauma means my life has been	e n - i c h - d	e n r i c h e d	r	trauma
9	I consider my behaviour during the event was	c - m - e n d a b l e	c o m m e n d a b l e	o	trauma
SET 2					
No.	Sentence	pfrag	pword	pletter	Sentence type
11	Since the event I feel like I've become	m a t - r e	m a t u r e	u	trauma
13	Not being able to overcome all my fears means that I am	o - d - n a r y	o r d i n a r y	r	trauma
15	You noticed that the clutch on your car was starting to stick. You booked it in early for it's 6 monthly	s - r v - c e	s e r v i c e	e	neutral
16	When a situation requires that I control my anger it is likely to lead to my doing something	s - n - i b l e	s e n s i b l e	e	trauma
17	The recurring thoughts which I keep having about the event must mean that I am	p r - c - s s i n g i t	p r o c e s s i n g i t	o	trauma
19	If I think back to the event it will make me	a c - - p t i t	a c c e p t i t	c	trauma
SET 3					
No.	Sentence	pfrag	pword	pletter	Sentence type
22	The experience has caused me to have a sense of myself as being a	s - r v - v - r	s u r v i v o r	u	trauma
23	When it comes to it, I feel my trust in myself for doing the right thing has	g r - a t e n - d	g r e a t e n e d	e	trauma
24	Having finally persuaded your partner to take a break, you have gone ahead and booked your holiday of a	l - f e t - m e	l i f e t i m e	i	neutral

6	Even now after so much time I am still thinking about the event. I believe that at this stage such regular thoughts about the event should be	c o - m o n	c o m m o n	m	trauma
27	Nowadays when I reflect on how well I know myself, my inner self seems to have become more	f - - i l i a r	f a m i l i a r	a	trauma
29	If I were to consciously think back to the event I would	b e c - l m	b e c a l m	a	trauma
SET 4					
No.	Sentence	pfrag	pword	pletter	Sentence type
32	When a thought about a traumatic event comes to mind, the best thing is to	q u - - t l y p o n d - r i t	q u i e t l y p o n d e r i t	i	trauma
33	The way I tend to respond during emergency situations is	l - u d a b l e	l a u d a b l e	a	trauma
35	When I am around other people I feel	i n c - - d e d	i n c l u d e d	l	trauma
36	Now that I have been through this, my thoughts of the future are that things that will happen to me from now on will be	a l r - - - t	a l r i g h t	i	trauma
38	One of the things that makes your job more pleasurable is your relationship with your	c - l l - - g u e s	c o l l e a g u e s	o	neutral
39	It seems likely that in the future my feelings may become	m a n - g - a b l e	m a n a g e a b l e	a	trauma
SET 5					
No.	Sentence	pfrag	pword	pletter	Sentence type
41	My reactions during the event were	u - d e r s t - - d a b l e	u n d e r s t a n d a b l e	n	trauma
43	Since what I have been through, I feel emotionally	s t r - n g - r	s t r o n g e r	o	trauma
44	I expect that if I think back to the event then my ability to handle the thoughts will be	c o n - - d e r a - l e	c o n s i d e r a b l e	s	trauma
45	You have to be contactable at any time, anywhere. You sometimes wonder how people managed before without	m - b i l e p - - - e s	m o b i l e p h o n e s	o	neutral
47	When push comes to shove I know I will be	c a - - b l e	c a p a b l e	p	trauma
49	My feeling is that by having gone through the experience of the trauma, my life has been	e n h - - c e d	e n h a n c e d	a	trauma

SET 6					
No.	Sentence	pfrag	pword	pletter	Sentence type
51	I see my future as	p - - m i s i - g	p r o m i s i n g	r	trauma
53	I find it impossible to block recurring thoughts of the event from my mind. This reaction suggests that I am quite	s - n e	s a n e	a	trauma
55	Compared to how I used to be my mood these days has	i - p - o v e d	i m p r o v e d	m	trauma
56	If I have strong emotions in the future I believe these will lead me to be	c - - s t - u c t i v e	c o n s t r u c t i v e	o	trauma
58	Since the event I sense that control of my anger will be	s t r - - g t h - n e d	s t r e n g t h e n e d	e	trauma
59	After having contracted food poisoning, your enthusiasm for seafood has	d i - - n i s h - d	d i m i n i s h e d	m	neutral
SET 7					
No.	Sentence	pfrag	pword	pletter	Sentence type
61	Following this experience I feel that when I am with others I am somehow more	c o n - e c t - d	c o n n e c t e d	n	trauma
63	I feel if people knew what had happened they would	r e s - - c t m e	r e s p e c t m e	p	trauma
64	When contemplating my future the thoughts that appear are	i n t - r e - t i - g	i n t e r e s t i n g	e	trauma
65	When experiencing a traumatic event, selfish thoughts about saving oneself are to be	e x - e c t e d	e x p e c t e d	p	trauma
67	My reactions since the event show that I must be	c o p - - g	c o p i n g	i	trauma
69	It has been almost 6 years now since your lounge last saw a lick of paint. You decide it is time for	r - - - c o r a t - n g	r e d e c o r a t i n g	e	neutral
SET 8					
No.	Sentence	pfrag	pword	pletter	Sentence type
71	Trying to imagine how events could have been different to avoid disaster indicates that you are an active	p r - b l - m s - l v e r	p r o b l e m s o l v e r	o	trauma
73	When unpleasant thoughts about the event pop into mind unexpectedly it shows you are	a d j - - t i n g	a d j u s t i n g	u	trauma
75	Buying and selling a house are among some of life's most stressful	e v - - t s	e v e n t s	e	neutral

76	When I have thoughts about the event I will find these	m - n - g e - b l e	m a n a g e a b l e	a	trauma
77	Reflecting back over the contents of the traumatic event is likely to make the emotional impact seem	r e d - - e d	r e d u c e d	u	trauma
79	In future I will find it hard to control my emotions, which will lead to me being	c - m f - r t e d	c o m f o r t e d	o	trauma

Note. No. = number; pfrag = CBM positive fragment; pword = CBM positive word; pletter = CBM positive missing letter.

CBM Sentences and Comprehension Questions

SET 1					
No.	Sentence	pfrag	pword	pletter	Sentence type
2	In a crisis I predict my response will be	h - l p f - l	h e l p f u l	e	trauma
	Question: Do you believe you will be able to respond in a useful way when there is a crisis?				
5	Having angry feelings about some of the people in the traumatic event shows that your way of thinking is	n - t u r - l	n a t u r a l	a	trauma
	Question: Is it your belief that having negative thoughts about others who were present at the event is unreasonable?				
8	Even now after so much time I am still thinking about the event. This is a sign that I am	d - a l i n g w - t h i t	d e a l i n g w i t h i t	e	trauma
	Question: Do you view the fact that you are still having thoughts about the bad event as part of the normal healing process?				
10	I view the fact that I am unable to control my emotions under conditions of intense stress as a sign of	n o - m a l i - y	n o r m a l i t y	r	trauma
	Question: Do you consider the fact that you struggle to contain your feelings when under pressure to be a bad thing?				
SET 2					
No.	Sentence	pfrag	pword	pletter	Sentence type
12	Looking back on it I view the way I conducted myself during the crisis as	h - n o u r - b l e	h o n o u r a b l e	o	trauma
	Question: In retrospect, do you now view your conduct during the crisis as admirable?				
14	I now see myself as someone who, when there is an emergency, will react	a p - - o p r i a t - l y	a p p r o p r i a t e l y	p	trauma
	Question: Does this mean that when there is a crisis you know your reactions will be unsuitable?				

18	My expectations for the future are	h o - e f - l	h o p e f u l	p	trauma
	Question: Are your expectations for your future positive?				
20	I keep having these unwanted memories about the event. This kind of re-experiencing of something unpleasant indicates that I am dealing with it in a way that is quite	t - p i c - l	t y p i c a l	y	trauma
	Question: Is it true that you see intrusive recollections of the event as signaling that you are not coping in a normal way?				
SET 3					
No.	Sentence	pfrag	pword	pletter	Sentence type
21	It seems to me that the number of bad things which happen to me are	d e - r e a s - n g	d e c r e a s i n g	c	trauma
	Question: Does it appear to you that the amount of bad things which happen in your life are becoming fewer?				
26	If I need help I have the feeling that help from others is very likely to be	f o - t h c - m i n g	f o r t h c o m I n g	r	trauma
	Question: Is it the case that you now believe that you are less able to rely on others to help you?				
28	Since what happened my feelings about myself are of a person who is intrinsically	g - o d	g o o d	o	trauma
	Question: Do you perceive yourself now as someone who is worthy?				
30	My experience has changed the way I am with others – I now feel more	i - v - l v e d	i n v o l v e d	n	trauma
	Question: Has your experience caused you to feel more remote when in the company of others?				
SET 4					
No.	Sentence	pfrag	pword	pletter	Sentence type
31	My reaction since the event shows that I am coping	w - l l	w e l l	e	trauma
	Question: Do you think that your reactions following the event mean you are dealing with it in a good way?				
34	Reflecting on memories of unpleasant events means that later on they are likely to seem more	m u t - d	m u t e d	e	trauma
	Question: Is it your feeling that by mentally revisiting bad events it will make subsequent memories seem even worse?				
37	When I think of how I have changed, I feel that as a person I have somehow	i m - - o v e d	i m p r o v e d	p	trauma
	Question: Do you feel that as a person you are better?				

40	I might find it harder now than usual to control my anger. Given what I have been through I am more likely than before to behave in a way which is	a d - i r - b l e	a d m i r a b l e	m	trauma
	Question: Is it true that when you lose your temper these days you will be less able to behave in a commendable way?				
SET 5					
No.	Sentence	pfrag	pword	pletter	Sentence type
42	After a negative experience, reliving the events in your minds eye indicates you are emotionally	i n t - - l i g - n t	i n t e l l i g e n t	e	trauma
	Question: Is the act of thinking deliberately about a negative event indicative that you are emotionally strong?				
46	Not being able to control my emotions means I am	h u - a n	h u m a n	m	trauma
	Question: Does a difficulty in controlling your emotions suggest you are falling apart?				
48	I would say that compared to my previous self I am now very often	c - - t e n t e d	c o n t e n t e d	o	trauma
	Question: In comparison with previously, are you more at ease?				
50	I want to control bad things which happen to me and feel this is	p o - - i b l e	p o s s i b l e	s	trauma
	Question: Is it true that you feel less able to exert control over bad events in your life?				
SET 6					
No.	Sentence	pfrag	pword	pletter	Sentence type
52	When I next find myself in a stressful situation, I doubt I will be able to control my feelings. Others will react to me with	c o - p a s s - o n	c o m p a s s i o n	m	trauma
	Question: Do you expect that others will react with concern towards you if you break down?				
54	When faced with a crisis, I now believe that I will react in a way which is	r - l - a b l e	r e l i a b l e	e	trauma
	Question: Do you believe that you will respond in an erratic way in a critical situation?				
57	Thinking back to the event is something that	i n t r - g - e s m e	i n t r i g u e s e	m i	trauma
	Question: Do you find thinking back to the event a positive experience?				
60	Since the traumatic event I have permanently changed for the	b e - - e r	b e t t e r	t	trauma
	Question: Are you not as good a person as you were before the traumatic event?				

SET 7					
No.	Sentence	pfrag	pword	pletter	Sentence type
62	I sense that feeling normal emotions will return	s - o n	s o o n	o	trauma
	Question: Do you think that in the near future, you will be feeling normal emotions again?				
66	I view myself as being	s t - o n g	s t r o n g	r	trauma
	Question: Do you see yourself as feeble?				
68	My expectations that good things will happen to me in the future are very	o p - i - i s t i c	o p t i m i s t i c	t	trauma
	Question: Do you expect that good things will happen to you in the future?				
70	The accident happened so long ago yet I still find it disturbs me. The time it is taking me to get over it is	s t - n d - - d	s t a n d ar d	a	trauma
	Question: Is it true that you are unduly concerned about the amount of time it is taking you to get over the event?				
SET 8					
No.	Sentence	pfrag	pword	pletter	Sentence type
72	I believe that my reactions since the event mean that I am	n - - m - l	n o r m a l	o	trauma
	Question: Do you think your reactions following the event indicate that there is nothing unusual about you?				
74	If afterwards you have thoughts of the event that are distressing this is	t h - - a p - u t i c	t h e r a p e u t i c	e	trauma
	Question: Do you consider it unhelpful to experience upsetting thoughts following a traumatic event?				
78	I think of myself as someone who is	e m p - w e r - d	e m p o w e r e d	o	trauma
	Question: Do you consider yourself someone who is strong?				
80	Because of my experience when I think of other people I now feel more	c - m p - r a b l e	c o m p a r a b l e	o	trauma
	Question: Is it the case that you feel that your experience has caused you to view yourself rather differently relative to others?				

Note. No. = number; pfrag = CBM positive fragment; pword = CBM positive word; pletter = CBM positive missing letter.

APPENDIX K

MEASUREMENT OF INDUCED REAPPRAISAL BIAS

No.	Title	Ambiguous Encoding Sentence	ptarget	ntarget	pfoil	nFoil
1	A life changing event	When I think back to how I was before the event I realize the experience has really caused me to change.	Since this life changing event I have now turned into someone who is a better person than before.	Since this life changing event I have now turned into someone who is a worse person than before.	Since this life changing event I have now turned into a studious person.	Since this life changing event I have now turned into a lazy person.
2	The whole story	I have a pretty good idea of how people would judge me if they knew the whole story of what had happened.	If people knew the whole story of what had really happened then they would judge me to be brave.	If people knew the whole story of what had really happened then they would judge me to be a coward.	If people knew the whole story of what had really happened then they would consider me to be an accurate story teller.	If people knew the whole story of what had really happened then they would consider me to be a poor story teller.
3	Looking to the future	Going through this devastating experience has really made me re-evaluate what the future is likely to hold for me.	It seems to me that the future is rosy and I am optimistic about what it holds for me.	It seems to me that the future is gloomy and I am pessimistic about what it holds for me.	It seems to me now that the future will hold more experiences where I succeed at work.	It seems to me now that the future will hold more experiences where I fail at work.
4	My view of my behaviour	Now that I have judged how I behaved during the traumatic event, I have a changed view of my own level of competence.	Having judged my own behaviour during the traumatic event, I now view myself as quite competent.	Having judged my own behaviour during the traumatic event, I now view myself as rather incompetent.	Having judged my own behaviour during the traumatic event, I now view myself as having a stylish clothes sense.	Having judged my own behaviour during the traumatic event, I now view myself as having an outdated clothes sense.

5	Disturbing memories	My thoughts frequently seem to be interrupted by snippets of disturbing memories at the most unexpected moments. I can guess what others would think if I explained this to them.	If I explained how my thoughts are interrupted by disturbing memories others would be sympathetic towards me.	If I explained how my thoughts are interrupted by disturbing memories others would think I am having some kind of a breakdown.	If I explained how often my thoughts are interrupted by memories others would think I am looking forward to my holiday.	If I explained how often my thoughts are interrupted by memories others would think I am overworked.
6	Getting angry these days	These days, when I feel myself getting angry I can predict how I am likely to respond in the end.	Nowadays, when I feel myself getting angry I know I will be able to avoid a bad outcome.	Nowadays, when I feel myself getting angry I know I will ultimately lose control.	Nowadays, when I feel myself getting angry I know I will ultimately give myself a treat.	Nowadays, when I feel myself getting angry I know I will ultimately punish myself.
7	Looking at myself	Like other people who have been through similar experiences, I find I now look at myself differently.	Now when I think about it, I feel I look on myself in a more sympathetic way than previously.	Now when I think about it, I feel I look on myself in a more negative way than previously.	Now when I reflect on myself, I feel as if I know myself better than I did before.	Now when I reflect on myself, I feel as if I know myself even less than before.
8	Aftermath of events	People respond during the aftermath of these types of events in many different ways. My reactions are very telling of the way I seem to be coping with it.	People respond in different ways and my reactions mean my coping skills are healthy.	People respond in different ways but my reactions mean my coping skills are poor.	People respond in different ways but my reactions reveal my high intelligence.	People respond in different ways but my reactions reveal my low intelligence.

9	Aware of others' feelings towards me	I was unable to control my emotions during the event. This experience has made me realise how others respond to my feelings under such circumstances.	The experience has had the effect of leaving me thinking that others are concerned about me.	The experience has had the effect of leaving me thinking that others are unconcerned about me.	The experience has had the effect of leaving me feeling that others think I am good at corresponding.	The experience has had the effect of leaving me feeling that others think I am bad at corresponding.
10	Dealing with upsets	The way I respond to difficult situations has definitely changed from before. I can see the impact that having gone through such an experience has had on the way I deal with upsets these days.	Compared with previously I now find that my ability to deal with upsets in life has improved.	Compared with previously I now find that my ability to deal with upsets in life has diminished.	Compared with previously I now find that my ability to deal with upsets means my friends are often sympathetic.	Compared with previously I now find that my ability to deal with upsets means my friends are often annoyed.
11	A walk in the park	It is a warm summer day as you walk through the park. You notice a family having a picnic and your thoughts turn to doing the same thing.	As you walk through the park in the summer you think of having a picnic with your family.	As you walk through the park in the summer you think your family do not like picnics.	As you walk through the park in the summer you feel a pleasant breeze on your face.	As you walk through the park in the summer you notice it is starting to rain.

Note. ptarget = positive target; ntarget = negative target; pfoil = positive foil; nfoil = negative foil. Target and foil sentences reflect recognition sentences that are used to assess induced bias following bias modification.

APPENDIX L

DEBRIEFING

Debriefing for Mass Testing

Thank you for completing a shortened version of the Sexual Experiences Survey (Koss et al., 2007). This survey assesses unwanted sexual experiences that people sometimes have. If you have any questions about this survey, you may contact Caitlin Pinciotti (cpinciotti@niu.edu).

Debriefing for CBM Session

Thank you for your participating in Part 1 of the *Stressful Social Experiences and Word Recognition* study. The purpose of this study is to examine how thinking about stressful social experiences influences performance on a word recognition task. This information will add to our understanding of the ways in which these experiences are particularly harmful for survivors of unwanted sexual experiences, and how researchers and clinicians might be able to reduce these negative effects by training survivors to think differently.

If you have any questions or comments about this study or the results obtained, please contact the Principal Investigator, Caitlin Pinciotti; cpinciotti@niu.edu. Though you may feel some stress or discomfort related to completing this survey, the distress is typically fleeting. However, if you find that you are distressed following your participation in this study, please contact either the PI or Dr. Holly Orcutt (the faculty advisor of this project, horcutt@niu.edu) or one of the local or national resources found below. You may also seek out therapy services at a local facility (see the attached list of local resources).

Thank you again for your participation. Please click the button below to indicate that you have read and understand this form, and that you will contact Caitlin Pinciotti or Dr. Holly Orcutt if you have any questions or concerns about the study, and Northern Illinois University's Office of Research Compliance at (815) 753-8588 if you have any questions about your rights as a research participant.

DeKalb County Resources

Campus Services

Counseling & Consultation Services, NIU (STUDENTS ONLY) (formerly The Counseling and Student Development Center - CSDC)

Phone: 815/753-1206
Address: Campus Life Building-200
Fees: None for counseling. Modest testing fees.
Hours: 8:00 a.m. – 4:30 p.m. Monday-Friday
Open whenever NIU is open, including breaks.
After Hours: Assistance after hours available by calling—815/753-1212

Description of Services: This service provides students with short-term, individual and group counseling for a broad range of personal concerns. Career counseling services include interest assessment, workshops, and use of computerized career counseling programs. Educational counseling services include assistance with test anxiety and study skills. Assessments of drug and alcohol abuse are also provided. First appointment scheduled with 3-7 days. (Handicapped Accessible).

Community Counseling Training Center, NIU (formerly The Counseling Laboratory)

Phone: 815/753-9312

Address: 416 Graham Hall
Fees: None for students, faculty, or staff.
Hours: Call for available counseling hours.

Description of Services: A wide range of services are offered by the counselors including both personal and vocational counseling. In general, the approach used is one that promotes growth and focuses on increasing emotional well-being and self-awareness. All counselors are doctoral or masters level students who are being supervised by members of the counseling faculty. First appointments scheduled within 3-5 days.

The Couple and Family Therapy Clinic of NIU, NIU (formerly The Family Therapy Clinic)
Phone: 815-753-1684
Address: Wirtz Hall 146
Fees: The cost of services are determined by a sliding fee scale. No client is turned away due to the inability to pay. This gives clients of all income levels access to our high-quality care.
Hours: Monday, Tuesday – 12 noon – 9:00 pm; Wednesday, Thursday - 9:00 am - 9:00pm; Friday - 9:00 am - 5:00 pm
Website: http://www.chhs.niu.edu/familytherapyclinic/contact/index.shtml

Description of Services: The Couple and Family Therapy Clinic at NIU is a training and research facility that is an integral component of the specialization in Marriage and Family Therapy Program (SMFT). They provide clinical services to individuals, couples, and families with a unique perspective of addressing the issues in a larger systemic context. They follow rigorous training standards as set forth by our accrediting organization, being accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

Psychological Services Center, NIU
Phone: 815/753-0591
Address: Normal Rd and Lincoln Hwy.
Fees: No fee for therapy for students; fee for assessments for students. Faculty, staff, and community members charged on a sliding scale.
Hours: Monday – 11:00 a.m. – 7:00 p.m.
Tuesday – 12:00 noon – 8:00 p.m.
Wednesday-Friday-9:00 a.m. to 5:00 p.m. Open whenever NIU is open, including breaks.

Description of Services: Individual, couples, family, and group psychotherapy, Intellectual, personality, and academic assessments. Clients are generally seen by advanced level graduate student staff under faculty supervision. Services tailored to meet a client's specific needs. First appointment scheduled with 7 days. (Handicapped accessible.)

Community Resources

KishHealth System Behavioral Health Services (formerly Ben Gordon Center)
Phone: 815/756-4875
Address: 12 Health Services Dr., DeKalb, IL 60115
Fees: Sliding fee scales based on income. Insurance accepted.
Hours: Monday-Thursday- 8:00 a.m. – 8:30 p.m.
Friday-8:00 a.m.-5:00 p.m.
After Hours: 815/758-6655 Crisis Line

Description of Services: Comprehensive counseling services to all residents of DeKalb County. Services to all persons affected by mental health problems, substance abuse, and family/child welfare concerns. 24-hour sexual assault/abuse services can be accessed through the Crisis Line. First appointment scheduled within 30 days. (Handicapped accessible and on Campus Bus Route).

Braden Counseling Center
Phone: 815/787-9000
Address: 2580 DeKalb Ave., Suite C., Sycamore, IL 60178
951 S. 7th St., Suite G., Rochelle, IL 60168
Fees: Sliding fee scales based on income. Insurance accepted.

Description of Services: Free initial consultation. Specializes in counseling individuals, couples and families in various stages of life. Has flexible scheduling with Sycamore and Rochelle locations. Also offers a variety of evaluations, including same-day DUI evaluations, and legal and forensic work for attorneys.

Village Counseling
Phone: 815/756-9907
Address: 1211 Sycamore Rd., DeKalb, IL 60115
Fees: Sliding fee scales based on income. Insurance accepted.
Hours: Monday-9:00 a.m.-10:00 p.m.
Wednesday/Thursday-9:00 a.m.-9:00 p.m.
Friday-10:00 a.m.-10:00 p.m.

Description of Services: Provides relationship-centered counseling, including life counseling for individuals, couples, families, adolescents, and children, as well as marriage and family counseling.

Family Service Agency, Center for Counseling
Phone: 815/758-8616
Address: 14 Health Services Dr.-DeKalb
Fees: $75.00 per visit. Insurance accepted, including NIU Student Insurance. Payment plans and scholarship funds available.
Hours: Monday-Wednesday-9:00 a.m. – 8:00 p.m.
Thursday – Friday – 8:00 a.m. – 4:00 p.m. Additional hours available by appointment.

Description of Services: Individual, couple, group counseling for children, adults, senior citizens, and families. First appointment scheduled within 1-7 days. (Handicapped accessible and on Campus Bus Route).

Living Rite, The Center for Behavioral Medicine.
Phone: 815-758-8400
Address: 1958 Aberdeen Court, Suite 2, Sycamore, IL 60178
Fees: Based on insurance. Self-pay options are available.

Description of Services: Individual and Group Therapy. Therapy to deal with chronic pain.

Safe Passage, Inc.
Phone: 815-756-7930
Hotline/Crisis: 815-756-5228
Address: P.O. Box 621, DeKalb, IL 60115

Description of Services: A wide variety of services are offered to victims and perpetrators of domestic and sexual violence including crisis intervention and medical advocacy for victims of domestic and sexual violence, short- and long-term housing for victims and their children, counseling, legal advocacy, children's services, community education, a batterer's intervention program, and a Latina outreach program.

National Resources

People Against Rape (PAR; 1-800-877-7252)
Rape, Abuse, Incest National Network (RAINN; 1-800-656-4673; http://www.rainn.org/)
Suicide Prevention Hotline (1-800-273-8255, http://www.suicidepreventionlifeline.org/)
National Alliance on Mental Illness (NAMI; 1-800-950-6264; http://www.nami.org/)
National Center for PTSD (NCPTSD; http://www.ptsd.va.gov/)

Debriefing for Follow-Up Survey

Thank you for your participating in Part 2 of the *Stressful Social Experiences and Word Recognition* study. The purpose of this study is to examine the use of Cognitive Bias Modification (CBM) for individuals who have had negative social support experiences following an unwanted sexual experience. This information will add to our understanding of the ways in which these experiences are particularly harmful for survivors of unwanted sexual experiences, and how researchers and clinicians might be able to reduce these negative effects by training survivors to think differently.

If you have any questions or comments about this study or the results obtained, please contact the Principal Investigator, Caitlin Pinciotti; cpinciotti@niu.edu. Though you may feel some stress or discomfort related to completing this survey, the distress is typically fleeting. However, if you find that you are distressed following your participation in this study, please contact either the PI or Dr. Holly Orcutt (the faculty advisor of this project, horcutt@niu.edu) or one of the local or national resources found below. You may also seek out therapy services at a local facility (see the attached list of local resources).

Thank you again for your participation. Please click the button below to indicate that you have read and understand this form, and that you will contact Caitlin Pinciotti or Dr. Holly Orcutt if you have any questions or concerns about the study, and Northern Illinois University's Office of Research Compliance at (815) 753-8588 if you have any questions about your rights as a research participant.

DeKalb County Resources

Campus Services

Counseling & Consultation Services, NIU (STUDENTS ONLY) (formerly The Counseling and Student Development Center - CSDC)

Phone:	815/753-1206
Address:	Campus Life Building-200
Fees:	None for counseling. Modest testing fees.
Hours:	8:00 a.m. – 4:30 p.m. Monday-Friday
	Open whenever NIU is open, including breaks.
After Hours:	Assistance after hours available by calling—815/753-1212

Description of Services: This service provides students with short-term, individual and group counseling for a broad range of personal concerns. Career counseling services include interest assessment, workshops, and use of computerized career counseling programs. Educational counseling services include assistance with test anxiety and study skills. Assessments of drug and alcohol abuse are also provided. First appointment scheduled with 3-7 days. (Handicapped Accessible).

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