ARTICLE

SOCIAL REACTIONS TO SEXUAL ASSAULT DISCLOSURE, COPING, PERCEIVED CONTROL, AND PTSD SYMPTOMS IN SEXUAL ASSAULT VICTIMS

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The social reactions that sexual assault victims receive when they disclose their assault have been found to relate to posttraumatic stress disorder (PTSD) symptoms. Using path analysis and a large sample of sexual assault survivors (N = 1863), we tested whether perceived control, maladaptive coping, and social and individual adaptive coping strategies mediated the relationships between social reactions to disclosure and PTSD symptoms. We found that positive social reactions to assault disclosure predicted greater perceived control over recovery, which in turn was related to less PTSD symptoms. Positive social reactions to assault disclosure were also associated with more adaptive social and individual coping; however, only adaptive social coping predicted PTSD symptoms. Negative social reactions to assault disclosure were related to greater PTSD symptoms both directly and indirectly through maladaptive coping and marginally through lower perceived control over recovery. © *2014 Wiley Periodicals, Inc.*

Social reactions to sexual assault disclosure can have a significant effect on victims' recovery after the assault, and can either help or hinder the recovery process. Although the relationships between positive and negative social reactions and posttraumatic stress disorder (PTSD) symptoms have been investigated before, there is still much to learn about

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the many psychological mechanisms that can mediate these relationships. We know, for example, that negative social reactions to disclosure are related to maladaptive coping strategies and, in turn, to PTSD symptoms (Ullman, Townsend, Filipas, & Starzynski, 2007). We know less, however, about the different effect social reactions can have on adaptive coping strategies that involve others (i.e., social coping) and more solitary forms of coping (i.e., individual coping, Orchowski, Untied, & Gidycz, in press) because most studies combine all forms of adaptive coping into one single measure.

Further, most research on coping strategies as predictors of PTSD has only compared maladaptive versus adaptive forms of coping (Littleton, Horsley, John, & Nelson, 2007) and has failed to distinguish between social and individual coping. Finally, perceived control over recovery has emerged as the only protective psychosocial factor against PTSD symptoms (Ullman, Filipas, Townsend, & Starzynski, 2007), and thus deserves further exploration as a mediator between social reactions to sexual assault disclosure and PTSD symptoms (Peter-Hagene & Ullman, in press). We investigated maladaptive coping, individual and social adaptive coping strategies, and perceived control over recovery as potential mechanisms through which negative and positive social reactions relate to PTSD symptomatology.

Social Reactions to Assault Disclosure

As many as 92% of sexual assault survivors disclose the assault to at least one person (Ahrens, Campbell, Ternier-Thames, Wasco, & Sefl, 2007; Starzynski, Ullman, Filipas, & Townsend, 2005; Ullman & Filipas, 2001), and most of them receive a mixture of positive and negative social reactions in response to their sexual assault disclosure (Filipas & Ullman, 2001; Starzynski et al., 2005). Common negative social reactions to assault disclosure include blaming the victim, treating the victim differently (i.e., as if she were damaged in some manner), attempting to control the victim's actions (i.e., force victim to tell others or go to the police), or focusing on one's own feelings rather than the victim's. Positive social reactions to assault disclosure include providing emotional (i.e., listening) and practical (i.e., seeking and reaching resources) support and telling the victim it was not her fault (Ullman, 2000). Both these types of social reactions to disclosure have significant effects on victims' recovery after the assault, although the deleterious effects of negative reactions to disclosure tend to be stronger than the protective effects of positive reactions to assault disclosure.

Negative social reactions to sexual assault disclosure have robust negative effects on recovery (Davis, Brickman, & Baker, 1991; Ullman, 1996; Campbell, Wasco, Ahrens, Sefl, & Barnes, 2001) and seem to play a crucial role in the development of PTSD symptoms (Ullman, Filipas et al., 2007; Ullman, Townsend et al., 2007). There are several possible psychological mechanisms that drive this effect. First, unsupportive responses to victims can lower victims' perceived control over recovery (Frazier et al., 2011) or attributions about their own capacity to take charge of their recovery process and control their feelings and thoughts in the aftermath of the assault (e.g., Frazier, 2003). Perceived control over recovery is indeed related to less social withdrawal and distress in sexual assault survivors (Frazier, Mortensen, & Steward, 2005). Blaming the victim or attempting to control her actions and feelings after sexual assault may reinforce the loss of control experienced during assault and translate into perceptions of poor control over recovery (Peter-Hagene & Ullman, in press).

Second, negative social reactions to assault disclosure might lead survivors to disengage from seeking support from others, and to rely on potentially maladaptive and

avoidant coping strategies instead (Ullman, Townsend et al., 2007). If victims feel their social networks are betraying them by responding negatively to their assault disclosure, they may engage in greater maladaptive coping to escape feelings of anger, sadness, or anxiety. Negative social reactions to assault disclosure might also negatively affect positive *social* coping, by discouraging victims' attempts to seek help from friends or talk to others about feelings related to the assault.

Negative reactions, however, might not necessarily impair *individual* forms of adaptive coping (e.g., meditation, planning, cognitive restructuring), especially for victims who do not rely entirely on others for support during recovery. In fact, Orchowski et al. (in press) found that social reactions of victim blaming were associated with greater problem-solving coping. It is possible, therefore, that negative social reactions to assault disclosure can encourage women to not only adopt maladaptive coping strategies but also engage in positive individual strategies when they cannot rely on others for support.

Although the effect of negative social reactions to assault disclosure on recovery is robust, positive reactions do not seem to provide a similarly powerful protective effect against negative outcomes (Ullman, 1999; Ullman, 2010). There are, however, reasons to believe that positive social reactions to assault disclosure could affect both perceived control over recovery and positive social coping, and perhaps in turn help reduce PTSD symptoms. Health psychology research shows that social support increases feelings of self-efficacy, which in turn improves health outcomes (e.g., Chlebowy & Garvin, 2006). In the context of sexual assault, support such as spending time with the survivor, giving her somewhere to stay, or providing resources after an assault can increase victims' perceived control over their recovery process (that is, their perceived self-efficacy for coping with the assault). Positive reactions to assault disclosure may also lead victims to feel better and therefore engage in more adaptive forms of coping and fewer maladaptive forms of coping (Ullman, Townsend et al., 2007). It is also possible that positive social reactions to assault disclosure are more strongly related to social forms of adaptive coping, rather than to individual forms of adaptive coping. Thus, it is important to separate the effects of social reactions to assault disclosure on these different types of coping, because social reactions might affect one form of coping and not another.

Finally, positive social reactions to sexual assault disclosure may lead to more PTSD symptoms, even though research shows that general measures of social support (not specific to assault) are related to less PTSD symptoms in sexual assault survivors (Ullman, 1999, 2010). Perhaps this surprising positive relation exists because victims who disclose to more people typically get a mix of both positive and negative reactions from others to disclosure (Ullman, 2010), and perhaps victims of more severe trauma are more likely to both disclose to more people and to develop PTSD symptoms, not because of a causal link between positive reactions to assault disclosure and PTSD symptoms.

Coping Strategies

Coping is the process of attempting to manage the demands created by stressful events that are appraised as taxing or exceeding a person's resources (Lazarus & Folkman, 1984). A common response to stressful life events such as rape is engagement in effortful attempts to avoid or reduce negative affect (Littleton et al., 2007). Unfortunately, such strategies can be ineffective and even maladaptive. Maladaptive coping strategies such as denial, disengagement, substance use to cope, and social withdrawal can protect women from the immediate reality of trauma, but in the long run may thwart recovery, because recovery requires dealing with the trauma and its effects. In fact, avoidant coping strategies are

related to more PTSD symptoms (Ullman, Filipas et al., 2007). For example, Gutner, Rizvi, Monson, and Resick (2006) interviewed female rape and physical assault victims within 1 month postassault and then 3 months later. Increased maladaptive coping strategies (e.g., wishful thinking, social withdrawal) over time were related to increased PTSD symptoms.

Few studies have examined distinct forms of adaptive coping, successful strategies such as cognitive restructuring (i.e., identification and rebuttal of automatic, maladaptive cognitions about the assault such as self-blame), expressing one's emotions, and seeking social support. These coping strategies lead to better recovery and decreased PTSD symptoms over time (e.g., Gutner et al., 2006), Thus, there are reasons to believe that adaptive coping strategies might serve as protective factors against PTSD symptoms. Adaptive strategies, however, generally have a weaker influence on PTSD symptoms than maladaptive coping (Ullman, Filipas et al., 2007).

As discussed earlier, social reactions to assault disclosure are related to coping, especially when it comes to negative reactions and maladaptive coping (Ullman et al., 2007). Only two studies have examined how *adaptive* coping strategies are affected by positive social reactions to assault disclosure (Orchowski et al., in press; Ullman & Najdowski, 2011). Both these studies fail to distinguish between social and individual coping strategies, although it would be reasonable to expect these two forms of coping to (a) be differentially affected by social reactions and (b) to differentially affect PTSD symptoms. Specifically, social coping strategies should act as mediators of positive social reactions to assault disclosure effects on PTSD symptoms, whereas individual coping strategies might not. For example, Orchowski and colleagues (in press) found that social reactions to assault disclosure that provided emotional support to college women survivors of sexual assault were associated with increased coping by seeking emotional support–a construct that is included in our conceptualization of social forms of adaptive coping. Prosocial coping is generally related to positive outcomes, although social forms of coping are also likely to be more sensitive to other interpersonal factors such as social reactions to assault disclosure, and thus may result in more negative outcomes (see Folkman & Moskowitz, 2004). Perhaps disaggregating positive forms of coping may also show distinct effects on recovery in sexual assault victims.

Perceived Control Over Recovery

Rape is traumatic because it entails a significant loss of control over one's body during the assault, and can lead to a shattering of women's beliefs about their own safety in the world, increased feelings of vulnerability, and lower perceived control over recovery and self efficacy (Janoff-Bulman, 1992; Perloff, 1983; Schepple & Bart, 1983). Although attributions of past and future control do not seem to enhance sexual assault survivors' recovery (Frazier, 2003; Frazier, Steward, & Mortensen, 2004; Ullman, Filipas et al., 2007), there is consistent evidence that attributions of present control, specifically perceived control over the recovery process, are associated with fewer PTSD symptoms in sexual assault survivors (Frazier, 2003; Ullman, Filipas et al., 2007). In one sample of sexual assault survivors, present control (control over the recovery process) was associated with less distress partly because it was associated with less social withdrawal (a maladaptive form of coping) and more cognitive restructuring (an adaptive form of coping) in sexual assault survivors (Frazier et al., 2004). Perceived control over recovery also negatively predicts PTSD symptoms and binge drinking (Frazier, 2003; Frazier et al., 2011; Ullman et al., 2007). In addition, unsupportive social reactions are negatively related to perceived

control (Frazier et al., 2011). Thus, we wanted to explore the role of perceived control over recovery as a mediator between social reactions to assault disclosure and PTSD symptoms.

Present Study

The present study tested a mediational model of social reactions to assault disclosure and PTSD symptoms in a large sample of sexual assault survivors. Several direct effects were hypothesized based on the theory and past literature discussed above. We expected negative social reactions to assault disclosure to relate to greater PTSD symptoms directly and through maladaptive coping and perceived control over the recovery process. Theoretically, we expected that victims who receive more negative reactions to assault disclosure of blame, control, and stigma from others would feel further disempowered, and that such responses would reinforce the loss of control women have already experienced in the assault and result in lower perceived control over recovery. We expected positive reactions to assault disclosure to relate to more adaptive forms of social coping and less PTSD symptoms, because positive, validating responses to disclosure may lead victims to use more adaptive forms of coping such as seeking support and taking better care of themselves. We did not make specific predictions about the effect of positive social reactions to assault disclosure on positive individual coping; these forms of coping in particular might be less sensitive to social reactions to assault disclosure than are maladaptive and social forms of coping.

METHOD

Sample

A volunteer sample of women ($N = 1863$) from the Chicagoland area, ranging in age from 18 to 71 years (mean [*M*] = 31.1, standard deviation [*SD*] = 12.2), completed a mail survey. The sample was racially/ethnically diverse (45% African American, 35% White, 2% Asian, 8.1% other; 14% Hispanic, assessed separately). Overall, the sample was well educated, with 34.6% having a college degree or higher, 43.5% having some college education, and 21.9% having a high school education or less. Just under half of the sample (46.8%) was currently employed, although income levels were relatively low, with 68% of women having household incomes of less than $30,000. The response rate was 85% which was the percentage of eligible women sent mail surveys who returned completed surveys.

Procedure

We recruited adult women from the Chicagoland area via weekly advertisements in local newspapers, on Craigslist, and through university mass mail. In addition, we posted fliers in the community, at other Chicago colleges and universities, as well as at agencies that cater to community members in general and victims of violence against women in particular (e.g., community centers, cultural centers, substance abuse clinics, domestic violence, and rape crisis centers). Interested women called the research office and were screened for eligibility using the following criteria: (a) had an unwanted sexual experience at the age of 14 or older, (b) were 18 years of age or older at the time of participation, and (c) had previously told someone about their unwanted sexual experience. We sent eligible participants packets containing the survey, an informed consent sheet, a list of

community resources for dealing with victimization, and a stamped return envelope for the completed survey. The survey had questions about current social contact and social support, psychological symptoms, alcohol/drug use and treatment seeking, stressful life experiences, unwanted sexual experiences, PTSD symptoms, and various postassault factors, such as attributions of blame, coping, assault disclosure, help seeking, and social reactions to assault disclosure. We mailed participants $25 money orders for their participation upon receipt of their completed surveys. The university's institutional review board approved all study procedures and documents as complying with federal regulations for the ethical conduct of human subjects' research.

Measures

Sexual assault. Sexual victimization in both childhood (prior to 14 years of age) and adulthood (at 14 years of age or older) was measured using a modified version of the Sexual Experiences Survey (SES; Koss, Gidycz, & Wisniewski, 1987) that assesses various forms of sexual assault including unwanted sexual contact, verbally coerced intercourse, attempted rape, and rape resulting from force or incapacitation (e.g., from alcohol or drugs). Testa, VanZile-Tamsen, Livingston, and Koss (2004) reported their revised 11-item SES measure had good reliability ($\alpha = .73$); similar reliability was found in this sample ($\alpha = .77$).

Social reactions to assault disclosures. Women completed the Social Reactions Questionnaire (SRQ; Ullman, 2000), reporting how often they received 48 different social reactions from any support provider they told since the assault on a scale ranging from 0 (*never*) to 4 (*always*). Responses were averaged to create subscales assessing the frequency with which participants received *positive reactions* to assault disclosure (e.g., emotionally or informationally supportive reactions such as "Held you or told you that you are loved" or "Helped you get information of any kind about coping with the experience") and *negative reactions* to assault disclosure (e.g., blaming or stigmatizing the victim reactions such as "Told you that you could have done more to prevent this experience from occurring" or "Said he/she feels you're tainted by this experience"). On average, women reported "rarely" receiving negative reactions to assault disclosure ($M = .96$, $SD = .80$) and "sometimes" receiving positive reactions to assault disclosure ($M = 2.22$, $SD = .95$). The SRQ has good test-retest reliability (rs = .68 to .77) and evidence of several forms of validity as reported by Ullman (2000). The subscales were also reliable in this sample with Cronbach's $\alpha = .93$ for negative reactions to assault disclosure and .92 for positive reactions to assault disclosure.

Perceived control over recovery. Perceived control over recovery from assault was assessed using seven items from the Rape Attribution Questionnaire (RAQ) to assess present control (Frazier, 2003). On a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), women were asked specifically to rate their perceptions of control over recovery from their sexual assault in the past year ($M = 3.71$, $SD = .71$). Frazier (2003) reported an average alpha of .75 for present control over recovery from assault across four time periods in one year. The scale was also reliable in our sample (Cronbach's $\alpha = .70$; $M = 3.60$; $SD = .78$).

Maladaptive coping. Participants completed the Brief COPE, a 28-item self-report scale of coping strategies (Carver, 1997). Strategies used in the past 12 months to cope with the assault were assessed on a scale ranging from 1 (*I didn't do this at all*) to 4 (*I did this a lot*).

Maladaptive coping was computed based on a factor analysis as the average of responses to eight items comprising the behavioral disengagement, denial, self-blame, and substance use subscales ($M = 16.35$, $SD = 5.78$, $\alpha = .81$).

Adaptive coping. In past research, approach and/or adaptive forms of coping had weaker relationships with PTSD symptoms (Littleton et al., 2007; Ullman, Filipas et al., 2007). Therefore, we performed a factor analysis of the COPE items to disaggregate adaptive coping into two forms: individual and social coping. *Adaptive individual coping* includes 12 items assessing adaptive, active forms of individual coping ($M = 29.19$, $SD = 7.81$, $\alpha = .83$), such as "I thought hard about what steps to take." *Adaptive social coping* includes four items assessing active, adaptive interpersonal forms of coping ($M = 9.07$, $SD = 3.72$, $\alpha = .87$), such as "I tried to get advice or help from other people about what to do." All items referred to participants' coping in the past 12 months.

PTSD symptoms. PTSD symptoms were assessed with the Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995), a standardized 17-item instrument based on the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV) criteria (American Psychiatric Association, 2000). On a scale ranging from 0 (*not at all*) to 3 (*almost always*), women rated how often each symptom (i.e., reexperiencing/intrusion, avoidance/numbing, hyperarousal) bothered them in relation to the assault during the past 12 months. The PDS has acceptable test–retest reliability for a PTSD diagnosis in assault survivors over 2 weeks ($\kappa = .74$; Foa, Cashman, Jaycox, & Perry, 1997). The 17 items were summed to assess the extent of posttraumatic symptomatology ($M = 20.75$, $SD = 12.76$, $\alpha = .93$ in this sample).

RESULTS

Bivariate correlations revealed that both negative and positive social reactions to assault disclosure were positively related to PTSD symptoms, but the relation was stronger for negative reactions (Table 1). In fact, all predictors were positively related to PTSD symptoms, except for perceived control over recovery, which was negatively related to PTSD symptoms (confirming its role as a unique protective factor). In addition, negative reactions to assault disclosure were not related to perceived control over recovery, but were positively related to all coping strategies. Positive reactions to assault disclosure were related to adaptive coping strategies and perceived control, but unrelated to maladaptive coping. Thus, we found encouraging support for our meditational paths hypotheses. As for the

Table 1. Bivariate Correlations Between Social Reactions, Coping, Perceived Control, and Symptoms

	1.	*2.*	*3.*	*4.*	*5.*	*6.*	*7.*
1. Negative social reactions	—	.18*	.42*	.27*	.12*	−.05	.44*
2. Positive social reactions		—	.07	.30*	.43*	.32*	.37*
3. Maladaptive coping			—	.18*	.05	−.22*	.55*
4. Adaptive individual coping				—	.57*	.36*	.20*
5. Adaptive social coping					—	.23*	.10*
6. Perceived control over recovery						—	−.18*
7. PTSD							—

Note. PTSD = posttraumatic stress disorder. All Ns range from 1486–1781.
*$p \leq .001$.

mediators, maladaptive coping was unrelated to adaptive social coping, but positively related to individual coping. Maladaptive coping was also negatively related to perceived control over recovery.

To test our hypotheses, we used a path analysis model (i.e., observed variables structural equation model) with maximum likelihood estimation (AMOS 19, Arbuckle, 2010). All measures were univariate normal with skew less than 3 and kurtosis less than 4 (Kline, 1998). We used the untransformed variables, given that with larger samples, effects of violations of normality assumptions regarding kurtosis are minimal (Tabachnick & Fidell, 2001).

The main purpose of our model was to test individual paths and direct and indirect effects of social reactions to assault disclosure on coping, perceived control over recovery, and PTSD symptoms. Our model, however, also had a good fit with comparative fit index (CFI) of .99, Tucker-Lewis index (TLI) of .99, and root mean square error of approximation (RSMEA) of .057; χ^2 (3, N = 1865) = 14.28, $p = .001$. Although the model chi-square was significant, it was relatively low considering the very high power of this large sample. Fit indices exceed the recommendation of 0.95 and the RMSEA is lower than 0.06, indicating good fit (Hu & Bentler, 1999). Thus, although we did not set out to test explanatory models of PTSD symptoms, the mediation paths suggested by previous theory and research and defined in the present model show good fit to our data. To clarify, path analysis was used instead of (or rather, in addition to) regression because it allows for the inclusion of multiple predictors and mediators in the same model and allows us to calculate direct, indirect, and total effects for all predictors and mediators as a part of the same analysis. Thus, although path analysis is often used to assess the fit of a theoretical model to the empirical data, it can also be a useful tool in testing more complex mediation models and revealing the complex relationships between multiple predictors and mediators that could not be gleaned from traditional regression analyses.

As predicted, negative social reactions to assault disclosure were related to greater PTSD symptoms directly and indirectly through maladaptive coping (see Figure 1 for standardized coefficients). Unexpectedly, negative reactions to assault disclosure also related to survivors' greater reliance on adaptive *individual* coping, but adaptive individual coping was only weakly related to PTSD symptoms and did not mediate the effect of negative social reactions to assault disclosure on PTSD symptoms.

Positive social reactions to assault disclosure were weakly but positively related to PTSD symptoms, a counterintuitive effect that is somewhat surprising, but that has been established before (Ullman, Filipas et al., 2007). Although positive reactions to assault disclosure were related to greater use of both positive individual and social forms of adaptive coping, as predicted, neither strategy mediated the relation between social reactions to assault disclosure and PTSD symptoms. Positive social reactions to assault disclosure were unrelated to maladaptive coping, but were related to better perceived control over recovery, which in turn was associated with less PTSD symptoms. Thus, perceived control over recovery emerged as the only protective factor against PTSD symptoms, and mediated the relation between social reactions to assault disclosure and PTSD symptoms.

To assess the individual role of each mediator in more detail (rather than infer it from significance tests of each path), we also employed the bootstrapping techniques recommended by Preacher and Hayes (2008) for testing multiple mediators simultaneously. The disadvantage, however, was that although we could test all mediators together, we could only test the indirect effects of social reactions separately (i.e., these techniques only allow one exogenous variable at a time). Thus, these analyses were meant to supplement the structural paths conducted in AMOS that tested all variables in one model.

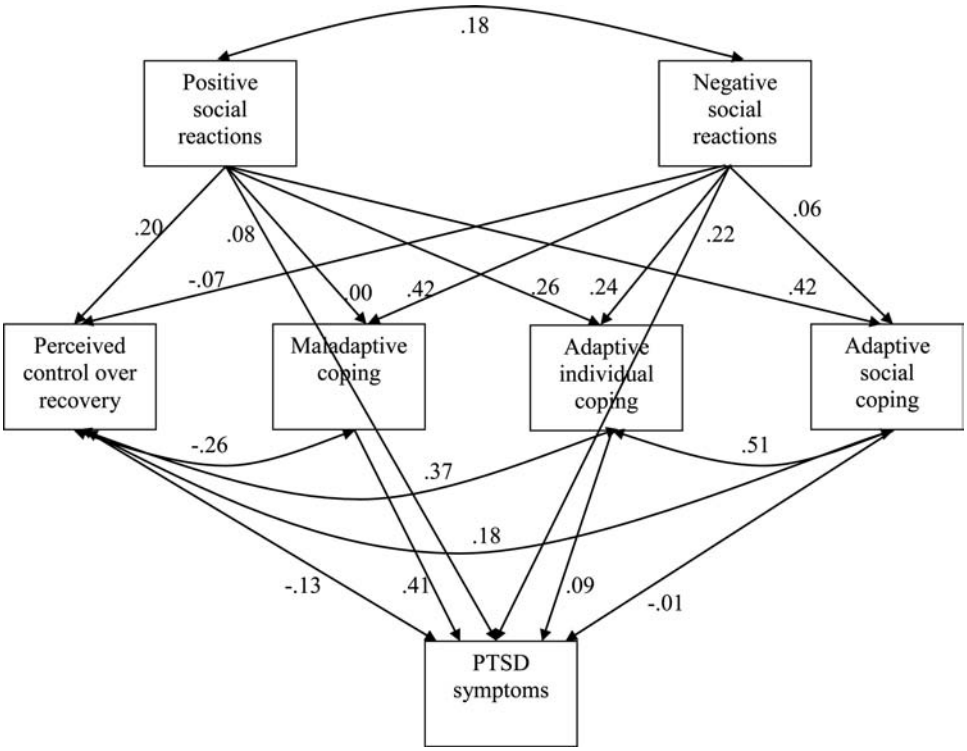

Figure 1. Structural model of the relations of social reactions, coping, perceived control, and PTSD symptoms.

We confirmed that the direct effects of positive reactions to assault disclosure ($B = 1.65$, standard error [*SE*] = .33, $p < .001$) and negative reactions to assault disclosure ($B = 3.94$, $SE = .39$, $p < .001$) on PTSD symptoms were positive and significant. Furthermore, the effects of both positive and negative reactions to assault disclosure were partially mediated by maladaptive coping and adaptive individual coping, and perceived control over recovery mediated only the relation between positive reactions to assault disclosure and PTSD symptoms (see Table 2).

Table 2. Indirect Effects of Social Reactions on PTSD Mediated by Perceived Control and Coping

	Positive social reactions				*Negative social reactions*			
	Point estimate	*SE*	*BCa CI Lower*	*BCa CI Upper*	*Point estimate*	*SE*	*BCa CI Lower*	*BCa CI Upper*
Total	.54	.28	.0079	1.1056	3.51	.30	2.9621	4.1179
Perceived control over recovery	−.36	.09	−.5638	−.2019	.09	.06	−.0159	.2314
Maladaptive coping	.59	.20	.1987	.9671	3.03	.26	2.5137	3.5877
Adaptive individual coping	.58	.13	.3547	.8367	.38	.13	.1363	.6607
Adaptive social coping	−.27	.17	−.6149	.0783	.01	.06	−.1076	.1298

Note. SE = standard error; CI = confidence interval. Significant indirect effects are indicated by CIs that do not include 0. BCa – bias corrected and accelerated; Bootstrap samples = 1000.

Overall, our results revealed that perceived control over recovery and coping mediated the relation between social reactions to assault disclosure and PTSD symptoms. In addition, these analyses demonstrate the importance of considering the effects of negative and positive social reactions to assault disclosure together in the same model. When the two exogenous variables were analyzed separately, they appeared to operate through similar mediating paths; when they were analyzed together with the path model, they each affected PTSD symptoms through different mediators (maladaptive coping and perceived control over recovery, respectively).

DISCUSSION

The present study builds on and extends past research by testing a theoretical model of predictors of PTSD symptoms in a large, diverse sample of adult sexual assault victims. We used path analyses to examine the relation between social reactions to assault disclosure, coping strategies, perceived control over recovery, and current PTSD symptoms. Our results revealed that perceived control over recovery and maladaptive coping mediated the effects of positive and negative social reactions to assault disclosure on PTSD symptoms.

As predicted, negative social reactions to assault disclosure were positively related to PTSD symptoms, and maladaptive coping mediated this effect. Thus, in line with previous research (Ullman, 1996; Ullman, Townsend et al., 2007), we found that social reactions of control, blame, treating the victim differently, and other negative reactions to assault disclosure, are related to avoidant forms of coping, perhaps because they increase victims' feelings of self blame and helplessness and decrease their trust in others. In turn, although maladaptive coping strategies alleviate negative affect in the short term, they result in long-term negative outcomes because survivors do not actively engage in trying to recover but instead avoid dealing with the trauma. In time, this could negatively affect recovery from PTSD symptoms and result in increased symptomatology.

A seemingly counterintuitive finding was that negative social reactions to disclosure were related to greater use of individual adaptive coping strategies (Ullman, 1996; Ullman & Najdowski, 2011). Our study, in line with Orchowski and colleagues (in press), indicates that this may only be true for social forms of adaptive coping, but not for individual forms. Combining all forms of adaptive coping into one single measure, therefore, can result in an inaccurate picture of the complex relationships between social reactions and coping. As expected, negative social reactions do little to help with social adaptive coping. When recipients of assault disclosures blame, control, or dismiss victims, it is no surprise that victims do not rely on seeking their emotional support to help recover, as these reactions are perceived as harmful. In turn, victims might turn to meditation, cognitive restructuring efforts, and active planning. These findings raise an interesting question: What are some of the individual traits and contextual variables that affect victims' responses to negative reactions? In other words, why do some victims engage in maladaptive coping, while others resort to adaptive individual coping strategies, when attempts at seeking support are thwarted? Future studies could perhaps rely on this three-category model of coping strategies to investigate such potential moderators.

In line with previous research that has shown weaker effects of positive social reactions to disclosure on PTSD symptoms (Ullman, Filipas et al., 2007), we also found a weak but positive relation between these variables. Because our model is largely correlational, the causal relationships are difficult to establish, and we rely on previous research and theory to infer them. In this case, perhaps survivors of more severe traumas tend to both disclose

more and receive more positive social reactions as a result and develop more severe PTSD symptoms (Littleton, 2010; Ullman & Filipas, 2001). Thus, we doubt that positive social reactions to assault disclosure can *cause* more severe PTSD symptoms.

As predicted, positive social reactions to assault disclosure were related to greater use of both adaptive individual and especially adaptive social forms of coping. These paths suggest that supportive responses from others may promote survivors' use of more adaptive coping strategies, especially social forms coping. Positive social reactions to assault disclosure were also related to better perceived control over recovery, which was associated with less PTSD symptoms. Supportive responses to assault disclosure seem to promote survivors' efforts to regain control after assault over what they can influence–their recovery process. Although we are the first to show evidence that such reactions to assault disclosure may enhance perceived control over recovery in sexual assault victims specifically (Peter-Hagene & Ullman, in press), Frazier and colleagues (2011) also found that unsupportive interactions may relate to poorer perceived control over recovery in other trauma survivors.

Negative social reactions to assault disclosure were associated with less perceived control over recovery, and positive social reactions to assault disclosure were associated with more perceived control over recovery. Thus, we built on past work showing that perceived control over recovery is related to less PTSD symptoms in rape and sexual assault victims (Frazier, 2003; Ullman, Filipas et al., 2007) by identifying possible precursor variables that may influence this protective mediating factor. Our findings suggest that if we can teach people how to respond more positively to survivors' disclosures, then we can indirectly increase women's perceived control over recovery and adaptive social coping, and in turn potentially reduce PTSD symptoms. Given that most victims get a mixture of both positive and negative social reactions to assault disclosure from others, due to telling multiple people about the assault (Ullman, 2010), interventions should encourage social reactions to assault disclosure that are helpful to victims' recovery process and discourage those that are not (Foynes & Freyd, in press). Such an approach fits in with recent calls for social network-oriented treatment and prevention approaches in the area of violence against women (Goodman & Smyth, 2011; Ullman, 2010).

Although the sample size was suitably large for the demands of structural equation modeling, the generalizability of our findings is limited by the cross-sectional design and nonrepresentative sample of the study. In addition, although our path model had good fit, good fit can also result when (a) the model is equivalent to an alternative model that reflects reality, (b) the model fits data from a nonrepresentative sample but does not fit the population, or (c) the number of parameters is so great that it cannot have poor fit (Kline, 1998). Thus, as noted before, we do not draw extensively on the good fit of our model, but rather focus on the interpretation of individual path coefficients and the relation between our variables based on past theory and empirical research in this area. The longitudinal data that are currently being collected from this sample may also help clarify the direction of effects.

Unlike past studies of PTSD symptoms in sexual assault victims (Frazier, 2003, Frazier et al., 2005; Ullman, Townsend et al., 2007), this study had a larger, racially/ethnically and socioeconomically diverse sample and examined social reactions to assault disclosure, coping, control, and PTSD symptoms as part of the same model. Therefore, the model tested here is more comprehensive than past models of the link between social reactions to assault disclosure and PTSD symptoms and is theoretically grounded. We chose to present a multiple mediators model instead of a series of alternate models given our interest in understanding how various cognitive and emotional responses to assault may

simultaneously mediate the social reactions to assault disclosure–PTSD symptoms associations. This is a more conservative and comprehensive approach. This and other possible models should be evaluated with longitudinal data in sexual assault survivors from a variety of subpopulations (e.g., college, treatment, community), so that mediational pathways can be evaluated and appropriate inferences can be drawn for treatment and intervention with a variety of sexual assault population subgroups.

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