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Review

Social reactions to disclosure of interpersonal violence and psychopathology: A systematic review and meta-analysis

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HIGHLIGHTS

- Negative social reactions to victimization disclosure predict worse psychopathology.
- Controlling, distracting, and treating survivors differently were especially harmful.
- Positive social reactions do not appear to be protective against psychopathology.
- Perceiving others' reactions more positively was somewhat protective.
- Negative social reactions were a stronger risk factor than perceptions.

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ABSTRACT

Public attention has been increasingly paid to how friends, family members, and others can best support survivors of sexual assault and other forms of violence. The broader social support literature posits that perceiving social support positively is more important to mental health than the degree to which social support is actually received, and that negative interactions with social supporters are more harmful than positive interactions are helpful (potentially because negative reactions violate survivors' expectations of their social supporters). This may be especially true after a crisis, such as interpersonal violence. Thus, this systematic review and meta-analysis summarizes the literature on social reactions to interpersonal violence. Meta-regression analyses were performed on 1871 correlations from 51 studies reflecting the degree to which receiving specific reactions more frequently, or perceiving reactions more positively, was associated with psychopathology. Results indicated that negative social reactions to disclosure—especially reactions involving controlling, distracting, and treating survivors differently—were associated with worse psychopathology, whereas positive social reactions did not appear to be protective. Perceiving reactions more positively was associated with less severe psychopathology, but (although causation cannot be concluded) positive perceptions' potential benefit appeared to be smaller than the potential risk conveyed by negative reactions. These findings indicate that interventions which reduce the degree to which survivors receive negative social reactions are needed.

1. Introduction

Sexual assault (SA) and other forms of interpersonal violence (e.g., child sexual abuse (CSA), intimate partner violence (IPV)) can have serious mental health consequences, including depression, anxiety, and posttraumatic stress disorder (PTSD) (Campbell, Dworkin, & Cabral, 2009; Chen et al., 2010; Dworkin, 2018; Dworkin, Menon, Bystrynski, & Allen, 2017; Jordan, Campbell, & Follingstad, 2010). Growing attention has been paid to the importance of the social contexts in which survivors of interpersonal violence recover—and in particular, the role of interactions with social supporters—in affecting survivors' outcomes (Campbell et al., 2009; Ullman, 2010a). Indeed, most survivors disclose to at least one informal responder (e.g., friends, family, romantic partners), and fewer disclose to formal responders (e.g., mental health, medical, police) (Sylaska & Edwards, 2014; Ullman, 2010b). The ways that survivors are treated by these responders are associated with the development of post-trauma psychopathology (Sylaska & Edwards, 2014; Ullman, 2010a). In light of growing awareness of the harm of

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these reactions, public dialogue has focused on how to best support survivors of interpersonal violence. Advancing the empirical knowledge base regarding the impact of social support on psychopathology subsequent to violence exposure is a critical task to inform recommendations in this regard. Thus, in this manuscript, after connecting the research on social reactions to interpersonal violence to broader theories of the impact of social support, we present a systematic review and meta-analysis of research testing associations between social reactions and psychopathology.

1.1. Types of social support and their effects on well-being

When considering the impact of social support on well-being, the broader social support literature has distinguished perceptions of social support from the nature of social support that is actually received. Higher levels of *perceived social support*, or a person's subjective evaluation of the anticipated and actual quality of support available to them, are generally protective against psychopathology (Taylor, 2011), including PTSD (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003). *Received social support*, or the objectively-observable behaviors enacted by support persons, is correlated only moderately with perceived social support (Haber, Cohen, Lucas, & Baltes, 2007), and evidences a more mixed association with psychopathology. Specifically, negative social interactions are consistently associated with worse psychopathology (Lincoln et al., 2010; Prati & Pietrantoni, 2010; Rook, 1984; Schuster, Kessler, & Aseltine, 1990; Taylor, 2011; Thoits, 1995), but positive social interactions do not tend to demonstrate a relationship with psychopathology (Taylor, 2011; Thoits, 1995). In some cases, positive social interactions have even been associated with worse psychopathology cross-sectionally (e.g., Bolger, Zuckerman, & Kessler, 2000), although this may be because individuals who are more distressed and in need of more assistance are offered more support (Kaniasty & Norris, 1995).

These patterns can be considered in terms of expectancy violations theory, which asserts that individuals expect certain behaviors from others, depending on setting, situation, and person (Burgoon, 1993). People tend to be much more attuned to expectancy-violating behaviors in interpersonal relationships, whereas expectancy-confirming behaviors are taken for granted and thus go unnoticed. In particular, negative expectancy violations (i.e., behaving in a worse manner than expected) are likely to be especially salient given that bad events tend to have stronger effects than good ones (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). When social supporters interact in negative ways with individuals, this likely represents a negative expectancy violation, which may produce cognitive re-appraisals and emotional distress. In contrast, when social supporters interact in positive ways with individuals, this is likely consistent with survivors' expectancies of social supporters, and thus does not negatively affect well-being. As a result, social support theorists suggest that “relationships may be better for the having of them than for the using of them” (Taylor, 2011, p. 199).

1.2. Social reactions to interpersonal violence

According to the stress-buffering hypothesis, social support is especially beneficial to health under times of stress or adversity (S. Cohen & Wills, 1985; Taylor, 2011), and research has increasingly demonstrated the importance of reactions of others in recovery from trauma (S. B. Campbell & Renshaw, 2018; Wagner, Monson, & Hart, 2016). Expectancy violations may be more harmful after trauma, when the ability of social supporters to “step up” is put to the test. Of the forms of trauma, expectancy violations may be even more potent following SA and other forms of interpersonal victimization, given that they are highly-stigmatized forms of trauma (Kennedy & Prock, 2018). When survivors disclose, this creates an opportunity for their positive expectancies of their social supporters to be violated, given that social supporters may have problematic beliefs about victimization or limited knowledge of how to respond due to the stigmatized nature of these experiences (Banyard, Moynihan, Walsh, Cohn, & Ward, 2010). Although many survivors of violence report disclosing to others to obtain help, support, or understanding (Ahrens, Campbell, Ternier-Thames, Wasco, & Sefl, 2007) and may be distressed by a violation of these explicit expectations, any responses that violate basic expectations of caring or concern from social supporters in response to a crisis may be harmful. Indeed, research emphasized the harm of social reactions to victimization that involve betrayal (Freyd, 1994), which could be considered as a violation of an expectancy of protection. In addition, cognitive theories of the development of PTSD emphasize the importance of trauma-related beliefs (Ehlers & Clark, 2000; Resick, Monson, & Chard, 2016), which could include the development or confirmation of beliefs that others cannot or will not provide help or support when needed. In addition, social interactions after victimization may affect beliefs about oneself (e.g., self-blame) (Kennedy & Prock, 2018) as well as beliefs about appropriate coping strategies (e.g., approach versus avoidance) (S. B. Campbell, Renshaw, Kashdan, Curby, & Carter, 2017) that could affect recovery processes.

Following the broader literature on social support, social support offered in response to interpersonal victimization can be considered in terms of both received support and perceptions of that support. *Received support in response to interpersonal violence*, termed “social reactions,” includes objectively-observable interactions with others regarding victimization, both positive and negative. These social reactions are typically assessed using the Social Reactions Questionnaire (SRQ) (Ullman, 2000). The SRQ was developed by using qualitative data and existing literature to generate a set of reactions commonly received by SA survivors. Survivors are asked to indicate how often they received each reaction from others following victimization. Factor analyses of the SRQ have characterized social reactions both in terms of valence (i.e., positive or negative) and specific types of positive (e.g., emotional support) and negative (e.g., victim blame, distraction) reactions. Overall, the vast majority of survivors who disclose report receiving both positive social reactions (97%) and negative social reactions (98%) (Filipas & Ullman, 2001). *Perceived support in response to interpersonal violence*, in contrast, reflects survivors' appraisals of these social reactions (e.g., perceptions of the degree to which the social reactions they receive are helpful or satisfying). Unlike the general form of perceived social support described previously, which reflects perceptions of both anticipated and actual support provided, perceived support in response to interpersonal violence reflects perceptions of the actual social reactions received. Importantly, qualitative research has shown that survivors sometimes report positive appraisals of negative social reactions and negative appraisals of positive social reactions (Ahrens & Aldana, 2012; Dworkin, Newton, & Allen, 2018; Lorenz et al., 2018), indicating that perceptions do not necessarily correspond to the actual social reactions received.

Evidence suggests that the relationship of these various types of victimization-specific social support to psychopathology largely parallels the broader social support literature. Specifically, the frequency with which survivors report receiving negative social reactions is associated with worse psychopathology, the frequency with which survivors report receiving positive social reactions has nonsignificant associations with psychopathology, and more positive perceptions of social reactions are associated with lower psychopathology. Next, we review the literature on each of these types of support in relation to psychopathology.

1.3. Negative social reactions

Negative social reactions have been consistently found to be harmful (Ullman, 2010a). This is consistent with broader research and theory regarding social support, which finds negative forms of received support to be especially insidious. Some differences in associations have

been noted across studies.

1.3.1. Differences by type of negative social reaction

The SRQ identifies five specific types of negative social reactions (Ullman, 2000). *Treat differently/stigmatize reactions* involve a disclosure recipient rejecting a survivor (e.g., pulling away from or avoiding the survivor) or treating the survivor differently (e.g., acting as if the survivor is "damaged goods" or different, saying that the survivor is tainted by the victimization). *Egocentric reactions* involve responses based on prioritizing the disclosure recipient's own needs and not the survivor's (e.g., responding with so much distress that the survivor feels compelled to reassure the disclosure recipient, wanting to seek revenge). *Distraction reactions* involve efforts by the disclosure recipient to discourage the survivor from thinking or talking about the violence or their distress. *Take control reactions* involve taking the decision-making process out of the hands of the survivor (e.g., making decisions for the survivor, telling others about the survivor's experience without permission) or otherwise infantilizing the survivor (e.g., treating the survivor like a child, minimizing the experience). Finally, *victim blame reactions* communicate that the victimization was the fault of the survivor (e.g., saying the survivor was irresponsible, not cautious enough, or could have done more to prevent the victimization). Later work with the SRQ identified two broad domains of negative social reactions: reactions that involve *turning against* the survivor (i.e., victim blame, treat differently/stigmatize, controlling reactions that infantilize or ignore the wishes of the survivor) and those that involve *unsupportive acknowledgement* (i.e., egocentric, distract, controlling reactions that involve efforts to help without prioritizing the survivor's autonomy) (Relyea & Ullman, 2015).

Studies examining the degree to which specific negative social reactions are related to psychopathology have generally found that most or all types of negative reactions are associated with psychopathology (Campbell, Wasco, Ahrens, Sefl, & Barnes, 2001; Ullman, 1996). There is evidence from cross-sectional and prospective studies of child and adult SA that reactions that involve turning against a survivor (e.g., blaming, treating differently, infantilizing forms of control) are related to significantly worse psychopathology, whereas reactions that acknowledge the victimization but fail to provide help (e.g., distracting, taking control, egocentric) may be relatively less harmful (Relyea & Ullman, 2013; Ullman & Relyea, 2016). There may also be different effects within these categories of reaction type. For example, Nikulina, Bautista, and Brown (2016) found in bivariate analyses that only blaming reactions (a type of "turning against" reaction) were related to depression, whereas all negative reactions except for treating the survivor differently (a type of unsupportive acknowledgment) were related to PTSD. Similarly, in a study of adult SA survivors, egocentric reactions (a type of unsupportive acknowledgment) were the only type of negative reaction not associated with psychopathology (Ullman, 2000). In contrast, in a sample of children presenting to child assessment centers for assessment of CSA, Zajac, Ralston, and Smith (2015) studied children's reports of their mother's "skeptical preoccupation" (involving questioning the child's role in the abuse and continually seeking more information about the abuse; similar to blame) and "vengeful arousal" (involving expressing a desire to harm the perpetrator; similar to egocentric reactions). Vengeful arousal was related to increased PTSD (but not depression) at baseline and 9-month follow-up, whereas skeptical preoccupation was not related to either PTSD or depression at either point. Although these findings generally support the idea that most specific types of negative social reactions are predictive of psychopathology (with the possible exception of egocentric reactions and other forms of unsupportive acknowledgment), the relative impact of different negative social reactions on psychopathology remains unclear.

1.3.2. Associations between negative social reactions and various forms of psychopathology

Most studies of interpersonal violence disclosure indicate that receiving more negative social reactions is associated with greater severity of several types of psychopathology, including PTSD (Andrews, Brewin, & Rose, 2003; Borja, Callahan, & Long, 2006; DeCou, Cole, Lynch, Wong, & Matthews, 2017; Edwards, Dardis, Sylaska, & Gidycz, 2015; Hakimi, Bryant-Davis, Ullman, & Gobin, 2018; Hassija & Gray, 2012; Jacques-Tiura, Tkach, Abbey, & Wegner, 2010; Littleton, 2010; Nikulina et al., 2016; Sigurvinsdottir & Ullman, 2016; Ullman, 2000, 2007; Zajac et al., 2015), depression (DeCou et al., 2017; Hakimi et al., 2018; Littleton, 2010; Nikulina et al., 2016; Sigurvinsdottir & Ullman, 2016), and general distress/recovery (Campbell et al., 2001; Edwards et al., 2015; Ullman, 1996), although several studies did not find associations for anxiety (Orchowski & Gidycz, 2015), PTSD (Orchowski & Gidycz, 2015), general trauma symptoms (Deitz, Williams, Rife, & Cantrell, 2015), internalizing psychopathology (Zajac et al., 2015), or depression (Orchowski & Gidycz, 2015; Sciolla et al., 2011; Zajac et al., 2015). Although these studies have been mostly cross-sectional, Littleton (2010) studied college rape victims and found that negative social reactions predicted PTSD longitudinally. Similarly, Zajac et al. (2015) studied CSA and found prospective associations between negative reactions and PTSD (but not depression) longitudinally. Therefore, it appears that negative social reactions are associated with PTSD, and possibly other forms of psychopathology.

1.3.3. Differences in associations with negative social reactions across types of violence

It is unclear whether negative social reactions received in response to disclosures of different types of violence vary in their psychological effects. Although most studies of SA have found associations between negative social reactions and psychopathology (Borja et al., 2006; Campbell et al., 2001; DeCou et al., 2017; Jacques-Tiura et al., 2010; Littleton, 2010; Nikulina et al., 2016; Orchowski & Gidycz, 2015; Sigurvinsdottir & Ullman, 2016; Ullman, 1996; Ullman, 2000; Ullman, 2007), one found no significant associations (Deitz et al., 2015). In terms of non-SA forms of interpersonal violence, significant associations have been found among women exposed to lifetime physical and/or sexual assaults (Hassija & Gray, 2012), survivors of IPV (Edwards et al., 2015), adult survivors of a recent violent crime (Andrews et al., 2003), children disclosing CSA (Zajac et al., 2015), and adult women disclosing CSA (Ullman, 2007). In contrast, Sciola et al. (2011) found that women reporting reactions to CSA disclosure involving high degrees of support were no different from those reporting reactions with low degrees of support. This evidence suggests that negative social reactions are associated with worse psychopathology across forms of violence, but more research is needed to conclude whether survivors of other types of interpersonal violence are equally impacted.

1.3.4. Demographic differences in associations with negative social reactions

Few studies have compared the impact of negative social reactions across demographic profiles. Studies of both college students (Borja et al., 2006; DeCou et al., 2017; Edwards et al., 2015; Hassija & Gray, 2012; Littleton, 2010; Nikulina et al., 2016; Ullman, 2007) and community members (Andrews et al., 2003; Campbell et al., 2001; Jacques-Tiura et al., 2010; Sigurvinsdottir & Ullman, 2016; Ullman, 1996; Ullman, 2000) have found significant associations between negative social reactions and psychopathology. Although most studies on negative social reactions have assessed women exclusively, in a prospective study of violent crime victims, Andrews et al. (2003) found that the effects of negative responses on 6-month PTSD symptoms were greater for women than men. Several studies suggest the impact of negative social reactions on psychopathology may vary by race and/or ethnicity, with some evidence that African American women may be more strongly affected by negative social reactions (Hakimi et al., 2018; Jacques-Tiura et al., 2010). Nikulina et al. (2016) found ethnic identity did not protect survivors receiving negative social reactions from psychopathology, but that ethnic affiliation may be protective when

receiving high levels of negative messages about SA experiences. In a sample of 1863 SA survivors, Sigurvinsdottir and Ullman (2016) found that negative social reactions had greater impact on a) bisexual and lesbian women's PTSD symptoms than heterosexual women, and b) bisexual women's problem substance use than heterosexual women. Results suggest that members of marginalized groups (e.g., racial or sexual orientation minorities) may be at risk of poorer recovery, but it remains unclear whether other demographic differences exist in the impact of negative social reactions.

1.3.5. Differences by source of negative social reaction

It is possible that negative social reactions vary in their psychological impact depending on whether they come from formal responders (e.g., police, healthcare workers) or informal responders (e.g., friends, family, romantic partners), as survivors would likely have different expectancies of these different support sources. In the only study to our knowledge to separately test associations between negative social reactions and psychopathology for informal and formal responders, negative social reactions from informal responders were associated with psychopathology, whereas negative social reactions from formal responders were not (Borja et al., 2006). Four studies to our knowledge have assessed reactions from informal responders only, and these studies are split in their findings: two found no significant association between negative social reactions and psychopathology (Deitz et al., 2015; Sciolla et al., 2011), and two found that negative social reactions were associated with significantly worse psychopathology (Andrews et al., 2003; Zajac et al., 2015). Most other studies have assessed reactions from any source, and all but one (Orchowski & Gidycz, 2015), found significant associations between negative social reactions and psychopathology. This indicates that more research is needed to conclude whether the effects of negative social reactions vary by the source of the reaction.

1.4. Positive social reactions

Although the literature on positive social reactions is much sparser than that on negative social reactions and is mostly cross-sectional in nature, most studies have failed to find associations between positive social reactions and psychopathology (Littleton, 2010; Orchowski & Gidycz, 2015; Ullman, 2010a, 2010b; Ullman & Relyea, 2016). Some studies have found positive cross-sectional associations between positive social reactions and psychopathology (DiMauro & Renshaw, 2019; Ullman, 1996; Ullman & Peter-Hagene, 2016)—indicating that positive social reactions may be associated with worse psychopathology—but these associations were reduced to nonsignificance prospectively (Ullman & Peter-Hagene, 2016). This is consistent with broader research on social support, which finds few effects of positive received support compared to negative forms of received support (Taylor, 2011; Thoits, 1995), perhaps due to expectancy confirmation as described previously. Although it is possible that distressed people seek and receive more social reactions, both positive and negative, the scarcity of longitudinal research leaves open the possibility that positive social reactions may actually increase distress.

1.4.1. Differences by type of positive social reaction

The SRQ characterizes positive social reactions into two types: emotional support and tangible aid/information support (Ullman, 2000). *Emotional support reactions* include communicating that the survivor is not to blame and is a good person who is loved, expressing belief and understanding, spending time with the survivor, and listening empathically. *Tangible aid/information support reactions* involve helping a survivor explore options and access services (e.g., driving a survivor to the hospital) without forcing the survivor to engage with those services.

Six published studies to our knowledge examined specific forms of positive social reactions in relation to psychopathology. These studies generally find no association between emotional support and psychopathology (Flicker, Cerulli, Swogger, & Talbot, 2012; Ullman, 1996; Zajac et al., 2015), although some specific forms of emotional support have been associated with lower psychological symptoms. For example, among community women who have histories of SA, being listened to was associated with less severe psychological symptoms (Ullman, 1996) whereas being believed by someone was associated with less severe PTSD symptoms (Campbell et al., 2001). In contrast, tangible aid has demonstrated positive associations with psychopathology in some cross-sectional studies (Sigurvinsdottir & Ullman, 2016; Ullman, 1996), but not others (Campbell et al., 2001; Flicker et al., 2012; Ullman, 2000). Despite these potentially different effects, most studies report only aggregated associations across forms of positive social reactions, and it is unclear whether observed positive associations would be reduced to nonsignificance prospectively. Additional research is thus needed to understand the response-specific associations between positive social reactions and psychopathology.

1.4.2. Associations between positive social reactions and various forms of psychopathology

Most studies have failed to find associations between positive social reactions and PTSD symptom severity (Andrews et al., 2003; Borja et al., 2006; Campbell et al., 2001; DeCou et al., 2017; Edwards et al., 2015; Elklit & Christiansen, 2013; Flicker et al., 2012; Jacques-Tiura et al., 2010; Orchowski & Gidycz, 2015; Relyea & Ullman, 2013; Ullman, 2000; Zajac et al., 2015), global distress (Borja et al., 2006; Borja, Callahan, & Rambo, 2009; DeCou et al., 2017; Edwards et al., 2015; Zajac et al., 2015), anxiety (Orchowski & Gidycz, 2015), internalizing psychopathology (Zajac et al., 2015), problem drinking (Sigurvinsdottir & Ullman, 2016), or depression (Campbell et al., 2001; DeCou et al., 2017; Flicker et al., 2012; Orchowski & Gidycz, 2015; Zajac et al., 2015). Only one study to our knowledge found negative associations between positive reactions and a specific form of psychopathology: in a study of community members with a history of SA, positive social reactions were negatively related to depression when controlling for other reactions (Relyea & Ullman, 2013). Several studies found positive associations between positive reactions and specific forms of psychopathology. In a study of disclosure of SAs to romantic partners, DiMauro and Renshaw (2018) found that women who reported more positive social reactions from their partners upon disclosing SA had more severe PTSD symptoms in bivariate correlations. In a community sample of survivors of adult SA, Ullman (1996) found positive multivariate associations between positive social reactions and psychopathology broadly when controlling for assault characteristics and other post-assault reactions. Ullman and Peter-Hagene (2016) found positive cross-sectional bivariate correlations between positive social reactions and PTSD at each of three timepoints, but positive social reactions were not associated with PTSD longitudinally. Other longitudinal studies failed to find associations either cross-sectionally or prospectively (Andrews et al., 2003; Orchowski & Gidycz, 2015; Zajac et al., 2015). Thus, it seems that positive cross-sectional relationships may exist between positive social reactions and PTSD in certain samples, but in general and in prospective research, positive social reactions are unassociated with most forms of psychopathology.

1.4.3. Differences in associations with positive social reactions across types of violence

The only studies that have identified positive associations between positive social reactions and psychopathology have sampled SA survivors (DiMauro & Renshaw, 2019; Sigurvinsdottir & Ullman, 2016; Ullman, 1996; Ullman & Peter-Hagene, 2016), but other studies of this population have failed to find such associations (Borja et al., 2006; Borja et al., 2009; Campbell et al., 2001; DeCou et al., 2017; Elklit & Christiansen, 2013; Jacques-Tiura et al., 2010; Orchowski & Gidycz, 2015; Ullman, 2000). No significant association has been observed among survivors of violent crime (Andrews et al., 2003), IPV (Edwards

et al., 2015; Flicker et al., 2012), or CSA (Zajac et al., 2015). Thus, it is possible that positive social reactions are associated with psychopathology among certain SA samples, but not other forms of violence.

1.4.4. Demographic differences in associations with positive social reactions

Nearly no studies have compared demographic differences in associations between positive social reactions and psychopathology. With regard to sample type, all studies that found positive associations between positive social reactions and psychopathology used community samples (DiMauro & Renshaw, 2019; Sigurvinsdottir & Ullman, 2016; Ullman, 1996; Ullman & Peter-Hagene, 2016), but other studies of community samples failed to find these associations (Campbell et al., 2001; Jacques-Tiura et al., 2010). No associations have been identified in samples of individuals seeking support from formal responders for crime-related needs (Andrews et al., 2003; Elklit & Christiansen, 2013; Flicker et al., 2012; Zajac et al., 2015) or college students (Borja et al., 2006; DeCou et al., 2017; Edwards et al., 2015; Orchowski & Gidycz, 2015). Gender has also been largely unexplored as a potential moderator of effects. Although the only studies to our knowledge that have found positive associations between positive social reactions and psychopathology have been conducted in women (DiMauro & Renshaw, 2019; Sigurvinsdottir & Ullman, 2016; Ullman, 1996; Ullman & Peter-Hagene, 2016), most studies on positive social reactions have been conducted with women. In the only study to our knowledge to separately report results by gender, Andrews and colleagues found that positive social reactions were not associated with PTSD symptoms for men or women exposed to violent crime (Andrews et al., 2003). Together, these results indicate that more research is needed to understand demographic differences in associations with positive social reactions.

1.4.5. Differences by source of positive social reaction

Most studies on associations between positive reactions and psychopathology measure reactions from both informal and formal responders, including three of the four studies that identified positive associations (Sigurvinsdottir & Ullman, 2016; Ullman, 1996; Ullman & Peter-Hagene, 2016). However, DiMauro and Renshaw (2019) found a positive association for disclosures to romantic partners specifically. Studies of disclosure to informal responders (Andrews et al., 2003) or mothers only (Zajac et al., 2015) have not identified these associations. In the only study to our knowledge to compare positive social reactions from informal and formal responders, Borja and colleagues found that neither was associated with psychopathology (Borja et al., 2006). Thus, more research is needed to understand whether the effects of positive social reaction on psychopathology differ as a function of the person providing the reaction.

1.4.6. Differences by simultaneous presence of negative and positive social reactions

Most survivors receive a mix of both positive and negative social reactions (Filipas & Ullman, 2001). In light of the extensive literature suggesting that negative reactions are psychologically harmful, it is possible that the harmful effects of negative social reactions outweigh the benefits of positive social reactions for survivors receiving both types of reactions. Thus, it is possible that survivors who do not receive negative social reactions are able to benefit from positive social reactions. However, no research to our knowledge has tested this question.

1.5. Perceptions of social reactions

In general, perceiving social reactions more positively has been associated with better psychopathology (Andrews et al., 2003; Bal, De Bourdeaudhuij, Crombez, & Van Oost, 2005; R. Campbell et al., 2001; Dunmore, Clark, & Ehlers, 2001; Palo & Gilbert, 2015), and perceiving social reactions more negatively has been associated with worse psychopathology. The broader social support literature has emphasized the importance of perceptions of social support to health and mental health outcomes (Taylor, 2011), and cognitive theories of the development of post-trauma psychopathology emphasize the importance of appraisals of both experiences of trauma and their aftermath in risk for dysfunction (Dunmore et al., 2001; Resick et al., 2016). However, it is difficult to untangle the direction of effects in cross-sectional research, as survivors who are more distressed may appraise social support more negatively (L. H. Cohen, Towbes, & Flocco, 1988; Dworkin et al., 2018) or elicit more negative responses from others (DePrince, Welton-Mitchell, & Srinivas, 2014). Longitudinal research is needed to begin to untangle these effects.

1.5.1. Associations between perceived reactions and various forms of psychopathology

In most studies, positive perceptions of social reactions to disclosure have been associated with less severe PTSD (Andrews et al., 2003; Campbell et al., 2001; Dunmore et al., 2001; Palo & Gilbert, 2015), anxiety (Palo & Gilbert, 2015), depression (Campbell et al., 2001; Dunmore et al., 2001; Palo & Gilbert, 2015), and internalizing symptoms broadly (Bal et al., 2005). Fewer studies found no associations for PTSD (Elklit & Christiansen, 2013; Popiel & Susskind, 1985), depression (Palo & Gilbert, 2015), or general distress (Popiel & Susskind, 1985). Although most of the aforementioned studies were cross-sectional, Andrews et al. (2003) and Dunmore et al. (2001) found that perceiving reactions more positively at baseline was associated with lower PTSD symptom severity 6 months later.

1.5.2. Differences by type of received social reaction being perceived

There is evidence that different social reactions are perceived more or less negatively, which indicates that perceptions may vary as a function of the specific reactions being perceived. Qualitative research indicates that positive reactions, such as emotional support and tangible aid, are perceived positively by most survivors (Ahrens & Aldana, 2012; Campbell et al., 2001; Dworkin et al., 2018). However, a small subset of survivors perceive positive reactions negatively, typically because negative reactions were also offered, the survivor was highly distressed, or the survivor and responder did not have a close relationship (Ahrens & Aldana, 2012; Dworkin et al., 2018). Perceptions of negative reactions are much more varied (Ahrens & Aldana, 2012; Campbell et al., 2001; Dworkin et al., 2018; Lorenz et al., 2018). Survivors report being able to reframe certain negative reactions—especially victim blame (Dworkin et al., 2018; Lorenz et al., 2018), distraction (Dworkin et al., 2018; Lorenz et al., 2018), egocentric reactions (Ahrens & Aldana, 2012; Lorenz et al., 2018), and controlling reactions (Ahrens & Aldana, 2012; Dworkin et al., 2018)—in a positive (or, at least, not entirely negative) light. Survivors report reframing negative reactions in a positive light when positive reactions were also provided or they had a close relationship to the responder (Ahrens & Aldana, 2012; Dworkin et al., 2018).

Only one study to our knowledge has assessed the degree to which perceptions of various specific responses are associated with psychopathology. In a sample of adult female survivors of SA from the community, Campbell et al. (2001) found several social reactions were associated with more severe PTSD and depression if perceived as hurtful as opposed to healing including: being called irresponsible, being patronized, having someone want to seek revenge, being told to get on with their life, and having someone try to take control of their decisions. In contrast, women who experienced these reactions and perceived them as healing had lower PTSD and depression than those who did not receive these reactions. Belief was associated with lower PTSD and depression if it was perceived as healing. This study found no differences for being told the victimization was not their fault, tangible aid, or being encouraged to keep the rape a secret as a function of whether these responses were perceived as healing or harmful.

1.5.3. Differences in associations with perceived reactions across types of violence

The type of interpersonal violence experienced by survivors could affect associations between perceptions and psychopathology, although this has not been directly examined. The only studies that failed to find significant associations between perceptions and psychopathology were conducted with SA survivors (Elklit & Christiansen, 2013; Popiel & Susskind, 1985), but another study of SA found significant effects (Campbell et al., 2001). Significant associations were found in samples of adolescents and adults with a CSA history (Bal et al., 2005; Palo & Gilbert, 2015), as well as adult survivors of SA or physical assault (Andrews et al., 2003; Dunmore et al., 2001). This indicates that more evidence is needed to determine whether there are differences across types of violence in the degree to which perceptions are associated with psychopathology.

1.5.4. Demographic differences in associations with perceived reactions

It is unclear to what degree demographic differences alter observed associations between perceptions of social reactions and psychopathology. In the only study to our knowledge to directly compare associations between perceptions and psychopathology by gender, the prospective effects of support satisfaction on 6-month PTSD symptoms were observed for women, but not men (Andrews et al., 2003). Both studies that failed to find significant associations between perceptions and psychopathology sampled women (Elklit & Christiansen, 2013; Popiel & Susskind, 1985), but other samples of women have found significant effects (Campbell et al., 2001; Palo & Gilbert, 2015). Mixed-gender samples have also evidenced significant associations (Bal et al., 2005; Dunmore et al., 2001). Thus, more evidence is needed to determine whether there are gender differences in the associations between perceptions and psychopathology.

1.5.5. Differences by source of perceived reaction

The nature of the relationship between the survivor and supporter may be important to perceptions of support quality. Formal support providers tend to be perceived more negatively by survivors than informal ones (Fisher, Daigle, Cullen, & Turner, 2003; Golding et al., 1989), and mental health professionals and rape crisis advocates tend to be perceived more positively than religious, medical, or legal/criminal justice sources (Campbell et al., 2001; Fisher et al., 2003; Golding et al., 1989). Several studies suggest that female friends tend to be appraised as the most supportive type of responder (Ahrens, Cabral, & Abeling, 2009; Dworkin et al., 2018; Filipas & Ullman, 2001; Lorenz et al., 2018). Qualitative studies have found that negative social reactions were often interpreted in a more positive light when they came from close supporters, but these studies did not assess perceptions in relation to psychopathology (Ahrens & Aldana, 2012; Dworkin et al., 2018; Lorenz et al., 2018). Close relationships may cast a positive halo on negative reactions, especially if the survivor wants to remain in the relationship and must resolve the cognitive dissonance associated with an expectancy violation to do so. For example, a survivor may view others giving advice or taking control as positive because they are able to recall other instances in which the supporter offered care or assistance.

However, most studies of perceptions have not assessed whether the source of perceived social reactions affects associations between perceptions and psychopathology. Two studies to our knowledge assessed perceptions of informal reactions only; one found a significant association (Andrews et al., 2003) and the other found no association (Elklit & Christiansen, 2013) between perceptions and psychopathology. Two studies to our knowledge have assessed perceptions of reactions from formal responders and psychopathology. Campbell et al. (2001) found that survivors who rated their interactions with medical and/or legal systems as hurtful had worse outcomes. Popiel and Susskind (1985) found that supportiveness ratings were only associated with psychopathology when they pertained to the reactions of physicians. Thus, there is evidence that perceptions of social reactions from formal responders are associated with psychopathology, but it is unclear whether perceptions of social reactions from informal responders are also associated with psychopathology.

1.6. The current study

In sum, broad theories of social support suggest that negative received support is more harmful than positive received support is helpful, and perceptions of support are especially protective, potentially reflecting differences in violations of expectancies. However, it remains unclear whether this pattern of associations is present in the aftermath of victimization. Although this pattern is generally observed in the research on social reactions to interpersonal violence disclosure, the literature is mixed, and synthesis is needed in order to make sense of disparate results. Clarification could inform intervention development and future research needs.

The first goal of this study was to clarify the relative effect of positive social reactions, negative social reactions, and perceived social reactions on psychopathology. Examining both perceived and received social reactions is important to place this literature in the context of larger theories of social support, but also offers a test of two different intervention targets for improving survivors' experiences: the actual behaviors offered by responders and survivors' appraisal of those behaviors. Based on theory and empirical evidence, we hypothesized that negative social reactions would be associated with worse psychopathology cross-sectionally and prospectively (H1a), positive social reactions would be associated with worse psychopathology cross-sectionally but not prospectively (H1b), and more positive perceptions of social reactions would be associated with less psychopathology cross-sectionally and prospectively (H1c).

The second goal of this study was to understand the relative effect of specific types of positive received social reactions (e.g., emotional support, tangible aid/information support) and negative received social reactions (e.g., blame, distraction) on psychopathology. Clarifying this would help to prioritize efforts to improve social reactions to disclosure. We hypothesized that, relative to victim blame, reactions involving unsupportive acknowledgment (distracting, taking control, egocentric) would be less strongly associated with psychopathology both cross-sectionally and prospectively (H2a). In terms of positive received reactions, we hypothesized that tangible aid/information support social reactions would be cross-sectionally associated with worse psychopathology than emotional support, but these associations would not be evident prospectively (H2b).

The final goal of this study was to understand the conditions under which mental health outcomes are associated with positive received reactions, negative received reactions, and perceived reactions. Given the sparse and mixed research in this area, we approached this goal in an exploratory manner. We tested the following moderators: type of psychopathology, whether any negative social reactions were received by a participant, sample characteristics (i.e., mean age, sample type, sample gender, sample race), type of violence being disclosed, and characteristics of disclosure experiences (i.e., number of disclosure recipients, disclosure to a female friend, disclosure to formal responders, type of disclosure recipients assessed).

2. Methods

2.1. Literature search and study retrieval

We used two methods for obtaining eligible articles. First, we conducted searches in Academic Search Complete, ERIC, PsycINFO, PsycARTICLES, and Social Work Abstracts in February 2018 using combinations of the following search terms: (“sexual assault” OR “sexual victimization” OR “unwanted sex*” OR “sexual abuse” OR “sexually victimized” OR victim* OR rape OR violen*) AND (“blame”

OR "belief" OR "emotional support" OR "social support" OR "social reactions") AND ("mental health" OR "depression" OR "anxiety" OR "posttraumatic stress" OR "post-traumatic stress" OR PTSD OR "well-being" OR distress OR alcohol OR drug OR substance OR dependence). Results were not limited by date but were limited to English-language articles. Second, we searched on Google Scholar and PsycINFO for articles citing the paper in which the SRQ's psychometrics were reported (Ullman, 2000). Finally, we contacted researchers who were known to be conducting research on this topic or who had requested the SRQ from its author. We also sent requests for data when partial results were reported in a published article. In total, these efforts yielded 1650 data sources (including journal articles, dissertations, and unpublished datasets) to be evaluated for inclusion.

2.2. Assessing eligibility

Eligible studies had to meet the following criteria: 1) quantitative primary study with $N > 10$ (507 sources excluded); 2) study was not comprised only of individuals with mental disorders or seeking treatment for mental disorders (114 sources excluded); 3) assessed interpersonal victimization (95 sources excluded); 4) quantitatively assessed social reactions received in response to interpersonal violence specifically, as reported by survivors, using any scale (i.e., not limited to the SRQ) (739 sources excluded); 5) assessed survivors' psychopathology in terms of one or more constructs of interest (e.g., PTSD, depression) (55 sources excluded); 6) results not duplicated elsewhere (55 sources excluded); and 7) able to obtain relevant results in English (34 sources excluded). Study eligibility was assessed by the first author. After ineligible sources were excluded, 51 sources were deemed to be eligible (see Fig. 1).

2.3. Data extraction

A codebook was developed by the research team to use for data extraction. After initial training, articles were coded independently. Discrepant codes were resolved in team meetings.

Effect sizes were recorded as a correlation coefficient (r) representing the association between each type of social reaction and scores on a measure of psychopathology. In general, scales assessing perceptions of social reactions assessed the degree to which participants felt that overall responses were helpful or satisfying, and scales assessing received social reactions assessed the frequency with which each type of social reaction was received. The sample size corresponding to each correlation was also recorded to compute variance. When higher scores on measures of psychopathology meant less distress or better mental health, the correlation was multiplied by -1. In longitudinal studies, all correlations representing associations between social reactions and concurrent and later psychopathology were recorded. These coefficients were z-transformed for analyses and converted back to r for data presentation.

Each correlation was characterized in terms of the type of psychopathology it reflected (i.e., depression, PTSD, anxiety, substance use/abuse, general psychological symptoms, other) and whether the social reaction was perceived or received. Received social reactions were additionally characterized in terms of the general valence of the social reaction (i.e., positive, negative) and the specific type of social reaction (i.e., overall positive,[1] overall negative, emotional support, tangible aid/information support, belief, blame, control, distract, treat differently, egocentric, turned against, unsupportive acknowledgment, other).

[1] The SRQ can be scored in terms of the frequency with which any positive or negative reactions were received, or in terms of the frequency with which a specific type of reaction was received. We retained correlations reflecting both types of scoring.

A variety of moderators and descriptive variables were coded. Demographic moderators included the mean age of the sample, percent of women in the sample, percent of the sample that identified their race as White, country in which data collection occurred (US vs. other), and the type of population (i.e., general population, college students, people seeking support for victimization-related needs, other). Type of violence about which social reactions were assessed (i.e., adolescent and/or adult SA, CSA, lifetime SA, IPV, other) was coded. Characteristics of disclosure experiences were also coded, including the mean number of disclosure recipients, the percent of disclosers who disclosed to a female friend, and the percent of disclosers who disclosed to a formal responder. Methodological variables coded included whether the SRQ was used to assess social reactions, whether the assessment of social reactions referred to a specific type of disclosure recipients (i.e., formal, informal, either), and whether there were any further limits placed on this type (e.g., first person disclosed to). Main data source was coded as the source from which the majority of correlations for a given study were obtained (i.e., peer-reviewed article, dissertation/thesis, unpublished dataset).

2.4. Analyses

Because sampling error was likely not the only source of variation in study effects, and it was likely that random variation existed because the effect sizes represented a sample of a larger population of effect sizes with unknown distribution, we used a random-effects meta-analysis to explicitly model between- and within-study variation (Borenstein, Hedges, Higgins, & Rothstein, 2009). Most studies contributed multiple correlations (average = 37) and were thus nested, so likelihood ratio tests were used to assess the need for multilevel random effects. Three-level structural equation meta-regression models were found to yield the best fit and were tested using the metaSEM package (Cheung, 2015) in R 3.3.1 (R Development Core Team, 2014); level 1 represented individual effect sizes, level 2 represented within-study differences in effects, and level 3 represented between-study differences in effects. Continuous moderators were centered.

2.5. Outliers

To identify outliers, we ran influential case diagnostics using the metafor package in R (Viechtbauer, 2010). We identified and excluded outliers specific to each combination of a specific type of social reaction and psychopathology outcome (e.g., support reactions and PTSD). Outliers were defined as effects with studentized deleted residuals ≥ 2 (Viechtbauer & Cheung, 2010). Outliers were truncated to the upper bound of the 95% confidence interval of the true effect for the applicable social reaction type, which was calculated by running unconditional models in a dataset from which outliers had been removed.

3. Results

The $M = 51$ studies included in the analysis (Supplemental Table 1) contributed a total of $K = 1871$ correlations reflecting at least $N = 6532$ individual participants. Of these, 1364 correlations reflected all participants regardless of type of social reactions received, 246 reflected participants who received only positive social reactions, and 261 reflected participants who received at least one negative social reaction. Of the 1364 correlations reflecting all participants, 401 correlations represented positive social reactions (320 cross-sectional, 81 prospective), 864 correlations represented negative social reactions (691 cross-sectional, 173 prospective), and 102 correlations represented perceptions of social reactions (55 cross-sectional, 44 prospective). The main data source was unpublished datasets for 58% of studies, peer-reviewed journal articles for 29% of studies, and dissertations/theses for the remaining 11%. Nine studies (18%) contributed prospective data. Most studies sampled women exclusively (71%) and college

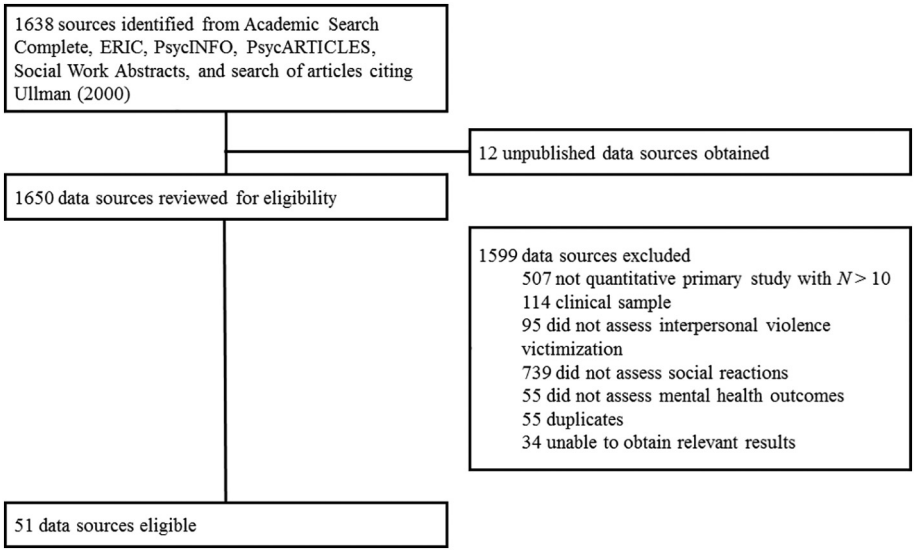

Fig. 1.

students (53%), and most were conducted in the United States (92%). The most common type of violence studied was adolescent/adult SA (47% of studies), followed by CSA (16% of studies), lifetime SA (14% of studies), "other" type of violence (14% of studies), or IPV (10% of studies).

3.1. Publication bias

Publication bias was explored for cross-sectional effects. We first conducted *t*-tests to compare the strength of associations in unpublished versus published data. To prevent studies with multiple effects from unduly weighting estimates, we randomly selected one effect from each study. No difference was identified. We then limited the sample to published effects and again sampled one effect from each study at random to examine funnel plots (Supplemental Figs. 1–3). Visual inspection and Eggar's test did not reveal any substantial asymmetry. Finally, using all published and unpublished cross-sectional correlations, we computed fail-safe *Ns,* which represent the number of additional correlations that would be needed to reduce the observed average correlation to nonsignificance. These values were 58,168 for positive social reactions, 3,114,053 for negative social reactions, and 6693 for perceptions of social reactions, indicating that the correlations were robust to unpublished null effects.

3.2. Outliers

Fifty outliers were identified: 14 (3.49% of effects) for positive reactions, 31 (3.59% of effects) for negative reactions, and 5 (4.90% of effects) for perceptions. Outliers did not differ from nonoutliers on most study characteristics. However, outliers were significantly more likely to be identified in effects representing studies of adolescent/adult SA, $\chi^2(1) = 5.93$, $p = .01$, and significantly less likely to be identified in effects representing lifetime SA, $\chi^2(1) = 5.65$, $p = .02$.

3.3. Are perceived or received social reactions more strongly associated with psychopathology?

First, we tested the cross-sectional association of positive social reactions (including the degree to which positive reactions were received overall and the degree to which emotional support and tangible aid/information support specifically were received), negative social reactions (including the degree to which negative reactions were received overall and the degree to which blame, control, distraction, treat differently, egocentric, turning against, and unsupportive acknowledgment specifically were received), and perceived social reactions with psychopathology ($m = 50$, $k = 1066$, level 2 $R^2 = 0.51$, level 3 $R^2 = 0.61$). Reporting more negative social reactions was positively associated with psychopathology, $r = 0.20$, $p < .001$ (consistent with H1a), reporting more positive social reactions was positively associated with psychopathology, $r = 0.06$, $p < .001$ (consistent with H1b), and perceiving social reactions more positively was negatively associated with psychopathology, $r = -0.10$, $p < .001$ (consistent with H1c). When comparing the size of effects, reporting more negative social reactions was associated with worse psychopathology than reporting more positive reactions, $\Delta r = 0.15$, $p < .001$. Perceiving social reactions positively was associated with less severe psychopathology than receiving more positive social reactions, $\Delta r = -0.16$, $p < .001$.

To understand the prospective association between perceived and received social reactions and psychopathology, we limited the sample of effects to those representing social reactions measured at one time point and psychopathology measured at a subsequent time point ($m = 9$, $k = 298$, level 2 $R^2 = 0.61$, level 3 $R^2 = 0.62$). Negative social reactions remained positively associated with psychopathology, $r = 0.15$, $p < .001$ (consistent with H1a). Positive social reactions no longer evidenced a statistically-significant association with psychopathology, $r = 0.00$, $p = .99$ (consistent with H1b), and perceiving social reactions more positively was negatively associated with psychopathology, $r = -0.12$, $p \leq .01$ (consistent with H1c).

3.4. Are specific types of social reactions differentially associated with psychopathology?

We examined cross-sectional associations between specific types of positive and negative social reactions with psychopathology (Table 1). With the exception of emotional support, which evidenced no significant association, all types of social reactions were positively associated with psychopathology. The relative strength of these associations was then tested. Against H2a, associations were larger than victim blame for controlling reactions, $\Delta r = 0.08$, $p < .001$, distracting reactions, $\Delta r = 0.06$, $p < .001$, being treated differently, $\Delta r = 0.07$, $p < .001$, turning against, $\Delta r = 0.06$, $p < .01$, and unsupportive acknowledgment, $\Delta r = 0.05$, $p < .05$. Associations for blame were no different than egocentric reactions, $\Delta r = 0.00$, $p = .75$. Against H2b, associations were larger than emotional support for tangible aid/information support, $\Delta r = 0.12$, $p < .001$, and belief, $\Delta r = 0.12$, $p < .001$.

Table 1
Associations between specific received social reactions and psychopathology.

	r (*SE*)	95% CI	*m*	*k*
Cross-sectional associations only			29	834
Positive social reactions				
Belief	0.12 (0.03)***	0.06, 0.19	5	18
Emotional support	0.00 (0.01)	−0.03, 0.03	26	107
Tangible aid	0.12 (0.02)***	0.09, 0.15	25	104
Negative social reactions				
Blame	0.17 (0.01)***	0.14, 0.20	26	107
Control	0.25 (0.01)***	0.22, 0.27	26	109
Distraction	0.22 (0.01)***	0.20, 0.25	25	105
Egocentric	0.16 (0.01)***	0.14, 0.19	26	111
Treat differently	0.23 (0.01)***	0.20, 0.26	26	109
Turning against	0.22 (0.02)***	0.18, 0.26	8	36
Unsupportive acknowledgment	0.21 (0.01)***	0.17, 0.26	6	28
Prospective associations only			5	203
Positive social reactions				
Belief	0.17 (0.08)*	0.33, 0.33	1	5
Emotional support	0.02 (0.03)	−0.04, 0.07	5	27
Tangible aid	0.11 (0.03)***	0.06, 0.17	4	24
Negative social reactions				
Blame	0.17 (0.03)***	0.12, 0.23	4	24
Control	0.23 (0.03)***	0.18, 0.28	4	24
Distraction	0.22 (0.03)***	0.17, 0.27	4	24
Egocentric	0.14 (0.03)***	0.09, 0.20	5	27
Treat differently	0.21 (0.03)***	0.15, 0.26	4	24
Turning against	0.23 (0.03)***	0.17, 0.29	1	12
Unsupportive acknowledgment	0.21 (0.03)***	0.15, 0.28	1	12

* $p < .05$, ***$p < .001$; m = number of studies; k = number of correlations.

Similar results emerged in the prospective data. With the exception of emotional support, which evidenced no association, all types of social reactions were positively associated with psychopathology. In partial support of H2a, associations for controlling reactions were larger than victim blame, $\Delta r = 0.06$, $p < .05$, but associations for blame were no different than those for distraction, $\Delta r = 0.05$, $p = .06$, treating differently, $\Delta r = 0.03$, $p = .20$, egocentric reactions, $\Delta r = -0.03$, $p = .28$, turning against, $\Delta r = 0.06$, $p = .06$, or unsupportive acknowledgment, $\Delta r = 0.04$, $p = .15$. In partial support of H2b, associations were larger than emotional support for tangible aid/information support, $\Delta r = 0.09$, $p < .001$, but were no different for belief, $\Delta r = 0.16$, $p = .07$.

3.5. Under what conditions are social reactions associated with psychopathology?

We first tested the association of positive social reactions and perceived social reactions with psychopathology as a function of whether negative social reactions were also received. For 13 studies, we obtained separate unpublished correlations for the subsample that reported any negative received social reactions and those that did not. Of note, the average proportion of samples that reported no negative received social reactions was quite small (12%, range: 1% to 26%), indicating that most survivors who disclose receive negative social reactions. Positive received social reactions were positively associated with psychopathology in subsamples that also received negative social reactions, $r = 0.04$, $p < .01$, and in subsamples that did not, $r = 0.05$, $p = .01$. The difference in association between these subsamples was not statistically significant, $\Delta r = 0.01$, $p = .71$, indicating that no significant moderation was present. Perceived social reactions were significantly associated with psychopathology in subsamples that also received negative social reactions, $r = -0.08$, $p < .001$, but not in subsamples that did not, $r = -0.08$, $p = .07$. The difference in association between these subsamples was not statistically significant, $\Delta r = 0.00$, $p = .90$, again indicating that no significant moderation was present.

For the remaining moderators (Table 2), we separated the data into correlations reflecting positive, negative, and perceived social reactions. We tested separate models for each moderator within these samples. We included both cross-sectional and prospective data in these analyses.

3.5.1. Type of psychopathology

All forms of psychopathology were significantly positively associated with negative social reactions, but only PTSD and substance use were significantly positively associated with positive social reactions. All forms of psychopathology other than substance use/abuse were significantly negatively associated with perceptions of social reactions.

3.5.2. Sample characteristics

With regard to sample type, negative social reactions were associated with psychopathology across all sample types (i.e., general population, college, people seeking formal services for victimization-related needs, other), but positive social reactions were associated with psychopathology in college samples only. Perceptions of social reactions were significantly negatively associated with psychopathology in all samples except for college samples. The proportion of White participants in a sample did not moderate any associations. Sample mean age was a significant moderator for positive reactions only, such that samples with a lower mean age evidenced significantly stronger correlations between positive reactions and psychopathology, $r = -0.04$, $p < .05$. The percent of women in a sample was a significant moderator for perceived reactions only; samples with fewer women evidenced stronger correlations between perceptions of reactions and psychopathology, $r = 0.06$, $p < .05$.

3.5.3. Type of violence

Negative social reactions were associated with psychopathology across samples regardless of violence type (i.e., CSA, adult SA, lifetime SA, IPV, other), but positive and perceived social reactions were only associated with psychopathology in samples reporting adult SA or samples of "other" forms of violence (e.g., stalking, combined physical and SA).

3.5.4. Characteristics of disclosure experiences

The proportion of participants disclosing to formal responders (e.g., police, healthcare professionals) in a given sample did not moderate associations for positive or negative reactions, but was a significant moderator of perceptions, such that samples with fewer people disclosing to formal responders evidenced stronger associations between perceptions and psychopathology, $r = -0.05$, $p < .001$. The proportion of participants disclosing to female peers in a given sample did not moderate associations for positive or negative reactions, and there was insufficient data to test moderation for perceptions of social reactions. Mean number of people told did not moderate associations for positive or negative social reactions, but higher mean number of people told was associated with significantly stronger correlations for perceptions of social reactions, $r = -0.04$, $p < .05$. For both positive and negative social reactions, significant positive associations were observed in studies of disclosure experiences with both informal and formal responders as well as informal responders only, but not studies of formal responders only. Significant negative associations between perceptions of social reactions and psychopathology were observed in studies of disclosure experiences with both informal and formal responders, and studies of informal responders only, but not studies of formal responders only.

4. Discussion

In the first meta-analysis of social reactions to disclosure of interpersonal violence and psychopathology, results highlight the harm of negative received social reactions, the lack of psychological protection

Table 2
Moderators of observed effects.

	Positive received reactions			Negative received reactions			Perceived reactions		
	r (SE)	*m*	*k*	*r (SE)*	*m*	*k*	*r (SE)*	*m*	*k*
Type of psychopathology		39	401		43	864		12	99
PTSD	0.11 (0.02)***	33	107	0.29 (0.01)***	33	226	−0.16 (0.05)***	9	35
Depression	0.00 (0.02)	29	106	0.19 (0.01)***	31	229	−0.17 (0.05)***	8	27
Anxiety	0.05 (0.03)	12	50	0.22 (0.02)***	13	101	−0.16 (0.06)**	2	4
Substance use/abuse	0.06 (0.02)**	12	90	0.11 (0.01)***	13	212	−0.06 (0.05)	2	27
General distress	0.02 (0.02)	15	48	0.21 (0.02)***	16	96	−0.24 (0.06)***	4	6
Sample characteristics									
Sample type		39	401		43	864		12	99
General population	0.03 (0.02)	9	140	0.21 (0.02)***	12	347	−0.08 (0.01)***	4	68
College	0.09 (0.02)***	22	234	0.21 (0.02)***	24	475	−0.01 (0.03)	3	14
Seeking formal services for victimization-related needs	−0.08 (0.05)	4	12	0.17 (0.05)***	3	18	−0.23 (0.03)***	4	11
Other	0.01 (0.05)	4	15	0.26 (0.05)***	4	24	−0.43(0.06)***	1	6
% white participants		33	364		36	765		8	86
≥ 65.14%	0.08 (0.02)***	19	199	0.21 (0.02)***	19	393	−0.10 (0.02)***	2	11
< 65.14%	0.03 (0.02)	13	165	0.21 (0.02)***	16	372	−0.08 (0.01)***	6	75
Sample mean age		36	387		39	815		12	99
≥ 22.49	0.00 (0.02)	18	176	0.22***	20	410	−0.19 (0.05)***	8	84
< 22.49	0.10 (0.02)***	18	211	0.21***	19	405	−0.09 (0.08)	4	15
% women		39	401		43	864		12	99
= 100%	0.06 (0.02)**	27	333	0.21 (0.01)***	31	717	−0.14 (0.06)*	7	77
< 100%	0.05 (0.03)	12	68	0.23 (0.03)***	12	147	−0.21 (0.07)**	5	22
Type of violence		39	401		43	864		12	99
Child sexual abuse	0.04 (0.04)	4	38	0.22 (0.03)***	5	69	−0.12 (0.10)	3	6
Adolescent/adult sexual assault	0.05 (0.02)*	18	137	0.22 (0.02)***	20	308	−0.13 (0.05)*	5	29
Lifetime sexual assault	0.05 (0.04)	7	109	0.21 (0.03)***	5	255	−0.07 (0.11)	1	48
Intimate partner violence	0.04 (0.05)	4	67	0.15 (0.03)***	5	113	N/A	0	0
Other violence	0.09 (0.04)*	5	50	0.25 (0.03)***	6	119	−0.28 (0.07)***	3	16
Source of social reactions									
Mean number of people told		7	110		8	281		3	56
≥ 3.60	0.05 (0.01)***	3	55	0.24 (0.02)***	4	150	−0.07 (0.07)	2	36
< 3.60	0.04 (0.01)**	5	55	0.23 (0.02)***	5	131	−0.06 (0.07)	2	20
% of sample disclosing to formal responders		15	217		14	456		8	81
≥ 53.94	0.04 (0.03)	8	61	0.22 (0.03)***	7	123	−0.13 (0.05)*	6	36
< 53.94	0.04 (0.03)	8	156	0.22 (0.02)***	8	333	−0.15 (0.05)**	3	45
% of sample disclosing to a female peer		8	93		8			N/A	N/A
≥ 79.30	0.07 (0.05)	4	26	0.22 (0.04)***	4	60	N/A	N/A	N/A
< 79.30	0.09 (0.05)	4	67	0.21 (0.05)***	4	104	N/A	N/A	N/A
Social reactions assessed in relation to:		37	386		42	836		12	99
Either formal or informal responders	0.05 (0.02)**	29	351	0.22 (0.01)***	32	761	−0.16 (0.05)**	10	49
Informal responders only	0.08 (0.04)*	7	33	0.21 (0.03)***	9	73	−0.22 (0.10)*	2	26
Formal responders only	0.23 (0.12)	1	2	0.11 (0.12)	1	2	−0.20 (0.10)	1	24

* $p < .05$, ** $p < .01$, *** $p < .001$; m = number of studies; k = number of correlations.

afforded by positive received reactions, and the importance of survivors' perceptions of reactions. These results are consistent with theories of the relative importance of positive and negative received and perceived social support, and provide strong evidence that these patterns are evident for support provided specifically in relation to interpersonal victimization. In addition, these findings emphasize that recovery from victimization is not simply an internal process; rather, the social ecology surrounding survivors may shape outcomes (Campbell et al., 2009).

4.1. The harm of negative received reactions

This study highlights the harm of negative social reactions to survivors of interpersonal violence, consistent with prior theory and research. Negative social reactions were consistently associated with psychopathology regardless of characteristics of studies and samples. Notably, although these correlations were small (*r*s ranged from 0.14 to 0.25, depending on the type of reaction), their magnitude was comparable to or larger than other risk factors for PTSD identified in a prior meta-analysis (e.g., trauma severity $r = 0.23$, prior trauma $r = 0.12$, psychiatric history $r = 0.11$) (Brewin et al., 2000). This indicates that negative social reactions may be an important risk factor for the multiply-determined phenomenon of post-trauma psychopathology.

It is possible that negative social reactions are harmful because they likely represent an expectancy violation. When survivors disclose violence, they are typically seeking assistance and support (Ahrens et al., 2007). Other survivors may disclose without explicit expectations of the specific social reactions they receive, but with a general belief that the people whom they tell will care about their experience and needs. When they instead receive negative social reactions, this may violate pre-existing beliefs about the responsiveness and supportiveness of others. Although some survivors may disclose for reasons other than seeking support, and some may even expect negative reactions from others, negative social reactions likely represent an expectancy violation in most cases. For survivors who have negative expectancies (e.g., due to PTSD and/or general negative schemas), these reactions may confirm their negative worldview and thereby maintain psychopathology.

However, causality cannot be concluded from this finding. It is possible that distressed people are more likely to notice negative social reactions (L. H. Cohen et al., 1988), or that disclosure recipients are more likely to respond negatively to highly distressed people (DePrince et al., 2014). It is also possible that the receipt of negative social reactions is reflective of generally poor social support, and its significant association with psychopathology reflects this deficit rather than the unique importance of trauma-related received support. Future research should attempt to assess both general received social support and trauma-specific negative social reactions prospectively to untangle

these associations.

There was evidence that certain negative social reactions may be more harmful than others. Although victim blame is often regarded as a particularly harmful form of social reaction to violence disclosure, this analysis suggests that other reactions that might be well-intentioned—like controlling survivors, treating them differently, distracting them, or otherwise unsupportively acknowledging them—may actually be especially important to avoid. This is somewhat surprising, as victim blame theoretically represents an expectancy violation. However, it is perhaps possible that the messages communicated by more egregiously negative social reactions (e.g., that the victimization is the survivor's fault) may be easier for survivors to avoid internalizing than those communicated by more subtly negative or well-intentioned social reactions (e.g., that distraction is a preferred method of coping). Major expectancy violations may also lead survivors to experience cognitive dissonance and therefore reframe victim blame in a less negative light to maintain the relationship. Indeed, qualitative research indicates that survivors reframe victim blame when it is expressed by a responder with whom the survivor is close, or when positive responses are also provided (Dworkin et al., 2018; Lorenz et al., 2018).

On the other hand, reactions that involve (for example) controlling survivors or treating them differently could be insidious expectancy violations that lead survivors to develop negative views of themselves and others (e.g., "I am not competent to make decisions for myself"). These cognitions are a symptom of PTSD that are considered to be key to the development of post-trauma psychopathology (Ehlers & Clark, 2000; Resick et al., 2016). Both controlling and distracting reactions could be harmful when they encourage avoidance versus approach coping in reaction to trauma triggers or negative emotional states, given that avoidance coping is thought to interfere with recovery from trauma and approach coping is thought to promote recovery (Foa & Kozak, 1986). It is notable that qualitative research indicates that distraction and controlling reactions are often perceived positively by survivors (Ahrens & Aldana, 2012; Dworkin et al., 2018; Lorenz et al., 2018), potentially because they assist survivors in avoiding immediate distress, but it is possible that this occurs at the expense of long-term emotional processing.

4.2. The lack of protection of positive received reactions

Positive social reactions to disclosure of interpersonal violence did not appear to protect against psychopathology in the long term, consistent with theories of received support and empirical research on social reactions (Littleton, 2010; Orchowski & Gidycz, 2015; Taylor, 2011; Ullman, 2010a, 2010b; Ullman & Relyea, 2016). When viewed through the lens of expectancy violations theory, these positive reactions likely represent a confirmation of expectations that drove survivors to seek out a given responder, and as such, do not offer added benefit. Although negative reactions might interfere with natural recovery processes by leading to unhelpful trauma-related cognitions or avoidance coping, positive reactions might not halt recovery in this manner, leading survivors to recover or fail to recover as a function of other risk factors. It also is possible that positive social reactions are insufficient to overcome other risk factors for psychopathology after violence. Namely, given the relatively stronger association of negative social reactions with psychopathology and evidence from this study that most survivors receive negative social reactions, it is possible that the benefits of positive social reactions are negated because survivors also receive negative social reactions. According to expectancy violations theory, these negative social reactions are likely to be more salient and thus more harmful, as evidenced by the relative strength of the association for positive versus negative reactions. Although we did not find evidence of moderation by the simultaneous presence of negative social reactions, subsamples that experienced only positive social reactions were quite small, and thus may have produced correlations with large variances that affected the precision of effects and our ability to detect moderation. This should be explored in future research.

When considering positive social reactions as a whole, survivors who reported receiving more positive social reactions reported *more* psychopathology cross-sectionally, but this effect was no longer evident in prospective data, consistent with the two published prospective studies on this topic (Littleton, 2010; Peter-Hagene & Ullman, 2018). Importantly, this does not suggest that positive reactions are unhelpful, as survivors report appreciating these reactions in qualitative research (Ahrens & Aldana, 2012; Dworkin et al., 2018), and we did not assess positive outcomes such as posttraumatic growth that have been associated with positive social reactions in past research (Ullman, 2014). Instead, positive social reactions may be best thought of as a safer alternative to negative social reactions. It is important to note that positive social reactions were only associated with more psychopathology in college samples, in studies of "other" forms of violence (e.g., combined samples of physical and SA), and in samples with a lower mean age. These samples might carry other risk factors (e.g., more injury associated with violence) that should be explored as a moderator of the effect of positive social reactions in future research.

Tangible aid/information support was associated with more psychopathology both cross-sectionally and longitudinally. This finding likely indicates that survivors who are more distressed (and thus require more aid) receive more of this reaction, consistent with past research on crisis support (Kaniasty & Norris, 1995). It also is possible that tangible aid/information support is itself harmful, which could be true if it encourages short-term expressions of distress (Itkowitz, Kerns, & Otis, 2003; Taylor, 2011), is perceived as unhelpful advice-giving, or leads survivors to engage with service systems (e.g., law enforcement) that impose additional stress. In addition, receiving "visible" forms of support, such as tangible aid, may have added emotional costs to recipients of the support when compared to taken-for-granted, "invisible" forms of support (e.g., emotional support) (Bolger et al., 2000). Tangible aid might also be more salient to survivors who are distressed, potentially leading distressed survivors to report more tangible aid reactions even if they are not receiving them at a greater frequency.

4.3. The importance of perceptions of social reactions

Perceptions of social reactions had a small but significant cross-sectional and prospective association with psychopathology. That is, survivors who perceived the social reactions they received in a more positive light at one time point tended to have somewhat less psychopathology at that same time point and the next time point. This is consistent with the limited empirical research on this topic (Andrews et al., 2003; Bal et al., 2005; Campbell et al., 2001; Dunmore et al., 2001; Palo & Gilbert, 2015), theories of the importance of perceptions of social support to well-being generally (Taylor, 2011), and theories of the importance of cognitive appraisals to trauma recovery (Dunmore et al., 2001). Given that most survivors receive both positive and negative reactions (Filipas & Ullman, 2001), it is possible that survivors receive a small benefit from perceiving positive reactions positively, and from reframing negative reactions more positively (perhaps as an effort to resolve the cognitive dissonance associated with expectancy violations). However, it is important to note that the magnitude of this effect was much smaller than the effect for negative social reactions, indicating that negative social reactions may be a stronger risk factor for psychopathology than positive perceptions are protective. Reframing a negative reaction in a positive light is likely insufficient to outweigh its harm, and may not be adaptive if a negative reaction is inherently harmful.

Again, the causal direction of this association is difficult to determine. Survivors who have more severe psychopathology might also be more likely to perceive reactions negatively (L. H. Cohen et al., 1988; Dworkin et al., 2018) or elicit negative social reactions that they accurately perceive negatively (DePrince et al., 2014). Survivors may also be reflecting on their current mental health when they rate a

reaction as more helpful. However, the fact that this association was evident longitudinally increases confidence in the causal direction of these results. Future prospective research that controls for baseline levels of psychopathology will be important in confirming this finding. This analysis also did not take into account the specific reactions being appraised, including whether perceptions were of positive or negative received reactions. Given that perceived social support is thought to mediate the relationship between received support and health (Norris & Kaniasty, 1996), research should examine whether perceptions of reactions mediate the relationship between the valence of reactions received and psychopathology.

4.4. Strengths, limitations, and implications

Strengths of this study include the broad study search strategy and extensive retrieval of unpublished data that resulted in a large number of effects included. This reduced publication bias and strengthened the conclusions that could be drawn. In addition, the examination of prospective effects provided new evidence of the temporal association between social reactions and psychopathology. Finally, the use of meta-analytic methods permitted the examination of differences in the magnitude of correlation as a function of study-level characteristics (e.g., sample type), which would not have been possible in primary studies.

However, there were several limitations, which suggest future directions for this field of study. First, given the correlational nature of these data, it is not possible to conclude causality. Although it is impossible to fully control the social reactions received by survivors, trials that attempt to improve the reactions of potential disclosure recipients and assess the mental health of survivors who disclose to these individuals would help to clarify whether changing social reactions affects survivors' mental health. To understand the feasibility of these efforts, it will be important to test different strategies for changing disclosure recipient behavior in different populations (e.g., college students who might receive a disclosure, people who have recently received a disclosure). Second, there were relatively less data of certain types—especially prospective data, data comparing survivors who received negative social reactions versus those who only received positive reactions, and data on responses from formal responders—so it is unclear whether this analysis was underpowered to detect certain effects. Future research should prioritize these clear gaps in the literature. Third, the primary studies were mostly comprised of White women, which limits the generalizability of results and emphasizes the need for more research in diverse samples of survivors. More research is needed on underrepresented (e.g., racial/ethnic minority, LGBTQIA, disabled) and marginalized (e.g., immigrant, homeless, sex workers) survivors, especially given that they may have more negative expectations for supportive responses to violence disclosures (Janoff-Bulman & McPherson Frantz, 1997). Fourth, research is needed to understand whether the observed patterns of results are due to expectancy violations, as we did not explicitly assess expectations or whether expectations were violated. Prospective studies that include assessments of expected and actual responses could clarify this issue, as could mixed-method designs that ask survivors for their perspective on how reactions affected their mental health. In addition, testing moderation in outcomes as a function of the degree to which expectancies are violated would be helpful. Fifth, these studies rely on self-reported reactions, which may differ from the actual reactions received. The reactions were also largely assessed by the SRQ, which may raise concerns about measurement effects. Sixth, we were unable to test the degree to which perceived and received support affect each other after interpersonal violence. Future research should examine how received reactions affect perceptions of support (consistent with mediated relationships found in Norris & Kaniasty, 1996), perhaps by complementing self-report surveys with qualitative interviews that explore survivors' perceptions of these relationships. Seventh, there were scant data available on social reactions to disclosure of alcohol-related sexual assault. Recently, a new version of the Social Reactions Questionnaire designed to assess these specific reactions was published (Relyea & Ullman, 2015). More studies of disclosure of alcohol-related sexual assaults using this measure or others are needed, given that both social reactions and psychopathology may differ in these populations (Lorenz & Ullman, 2016; Ullman, Lorenz, & Kirkner, 2018).

These findings have several implications for intervention. First, although the effects were relatively small, they highlight the need for interventions targeted at possible disclosure recipients that aim to decrease the degree to which trauma survivors receive negative social reactions, especially controlling survivors, treating them differently, or distracting them. In light of evidence that most survivors perceive emotional support positively and perceive a lack of emotional support negatively (Ahrens & Aldana, 2012; Dworkin et al., 2018), emotional support could be encouraged in these interventions as a lower-risk alternative to negative social reactions, even though it is not expected to have a direct positive effect. In addition, these interventions should include guidance for disclosure recipients to gauge survivors' perceptions of what would be helpful and satisfying, and tailor their reactions accordingly. One such intervention involving a 2-h educational session delivered to college students who might receive a disclosure in the future is currently being tested, with preliminary results indicating that participants' anticipated negative reactions decreased from pretest to posttest (Edwards & Ullman, 2018). Second, in interventions targeting survivors of interpersonal violence who are deciding whether to disclose, clinicians can provide psychoeducation about the potential ramifications of negative disclosure reactions, help survivors develop a balanced view of the relative costs and benefits of disclosing, and assist them as they develop networks of individuals who provide social support that they perceive positively. Third, for survivors who are experiencing distress related to negative social reactions, clinicians can use cognitive approaches to help survivors identify whether distorted cognitions are present in their perceptions of received social reactions, and if so, develop more balanced cognitions. Finally, clinicians could help survivors identify ways that their social supporters may encourage or discourage maladaptive coping (e.g., via distraction) and help them engage in healthy coping despite these influences.

5. Conclusion

This study is the first meta-analysis of the growing literature on social reactions to victims of interpersonal violence and psychopathology. Results showed significant negative effects of received negative social reaction on psychopathology, nonsignificant effects of received positive social reactions on psychopathology, and small negative effects of perceived positive social reactions on psychopathology. This review supports intervention efforts to reduce negative social reactions. Interventions that effectively reduce negative social reactions and improve appraisals of social reactions in a more positive direction should significantly enhance recovery from the psychological effects of interpersonal violence exposure.

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Contributors

Authors ERD, CDB, and SEU designed the study. ERD and CBD had primary responsibility for designing the codebook and coding data,

with oversight from SEU. ERD conducted the analyses and wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of Interests

All authors declare that they have no conflicts of interest.

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Declarations of interest

None.

Appendix A. Supplemental data

Supplementary data to this article can be found online at 10.1016/j.cpr.2019.101750.

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