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Preventing Posttraumatic Stress Related to Sexual Assault Through Early Intervention: A Systematic Review

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Abstract

Sexual assault survivors come into contact with a variety of community responders after assault, and these interactions may play an important role in mitigating distress. Given theoretical understandings of the importance of early experiences in the development of posttraumatic stress, early contact with formal systems (e.g., healthcare, criminal justice, social services) and informal responders (e.g., friends, family) might be particularly important in preventing posttraumatic stress. However, the effectiveness of these early interventions is unclear. Understanding the key elements of early interventions, both formal and informal, that successfully prevent the development of posttraumatic stress could help to improve community responses to sexual assault and ultimately promote survivor wellbeing. In this systematic review, we investigate the types of experiences with responders in the early aftermath of assault that are associated with posttraumatic stress, the duration of effects on posttraumatic stress, and the role of the timing of these responses in the development of posttraumatic stress. Findings indicate that responder contact alone is not typically associated with significant differences in posttraumatic stress, and there is insufficient evidence to indicate that the timing of seeking help is associated with posttraumatic stress, but the quality of services provided and perceptions of interactions with certain responders appear to be associated with posttraumatic stress. While many effects were short-lived, interventions that were perceived positively may be associated with lower posttraumatic stress up to a year post-assault. These findings support the importance of offering best-practice interventions that are perceived positively, rather than simply encouraging survivors to seek help.

Keywords

PTSD; mental health and violence; support seeking; help-seeking; intervention

In the past 40 years, as awareness of the problem of sexual assault and its impact on survivors has increased, community responses to sexual assault have moved beyond a focus on offender accountability and community safety—for example, through criminal justice responses—to the promotion of survivor well-being. To accomplish this, there has been increased attention to coordinating and improving responses from formal responders, like

those in criminal justice, human service, and healthcare systems (Campbell & Ahrens, 1998; Campbell et al., 1999), and informal responders, like friends and family (Ahrens, Campbell, Ternier-Thames, Wasco, & Sefl, 2007; Fisher, Daigle, Cullen, & Turner, 2003; Ullman & Filipas, 2001; Ullman, 1996, 1999; Ullman, 2010) in order to improve outcomes for survivors.

A central (but typically not sole) goal of these efforts to promote survivor well-being involves reducing the psychological toll of sexual assault on survivors. Indeed, sexual assault is associated with heightened risk for a broad range of psychiatric disorders ranging from substance use disorders to mood disorders to posttraumatic stress disorder (Dworkin, Menon, Bystrynski, & Allen, 2016). Of these outcomes, posttraumatic stress (PTS), or the spectrum that includes both posttraumatic stress disorder as well as symptoms that fall below a diagnostic threshold, is a particularly important psychological outcome to consider when understanding the impact of responder contact on survivors for several reasons. First, of the mental disorders linked to sexual assault, the association with PTS has been among the most strong and consistent across studies (Dworkin et al., 2016). Second, although potentially-traumatic life events such as sexual assault are associated with a broad range of psychiatric disorders, trauma and stressor related disorders are unique in that they are the only disorders for which the occurrence of such an event is a necessary precursor to the onset of symptoms (APA, 2013). Moreover, they are the only class of disorders for which an individual must endorse symptoms specifically linked to a traumatic life event, such as re-experiencing the event through nightmares, intrusive recollections, or flashbacks. Since PTS has a clearly identifiable cause, unlike any other disorder, it is uniquely possible to identify people who are at risk for developing these symptoms immediately after the triggering event and offer services that mitigate its harm (Forneris et al., 2013). Third, there is a clear causal mechanism between post-assault responses and the development of PTSD, unlike other disorders. When survivors have negative experiences in the immediate aftermath of sexual assault, this could prolong the experience of trauma (i.e., secondary victimization) and increase peritraumatic distress, which is predictive of the development of PTSD in the longer term (Ozer, Best, Lipsey, & Weiss, 2005). Thus, PTS is particularly important to understand as it relates to early contact with responders.

Indeed, contact with responders after sexual assault at any point in recovery has been broadly linked to PTS. Across types of trauma (including sexual assault), social support was the strongest identified correlate of PTS in a meta-analysis of risk factors for PTSD (Brewin, Andrews, & Valentine, 2000). With regard to sexual assault in particular, social reactions—or the nature of the interpersonal help and support (or lack thereof) provided by informal or formal responders—have received a great deal of research attention in relation to PTS. Evidence is relatively consistent that negative social reactions (e.g., victim blame) are associated with increased PTS, while the evidence to support the association between positive social reactions and PTS is more mixed (Ullman, 2010). In addition, sexual assault survivors' interactions with specific services have been studied in association with PTS (see Campbell, Dworkin, & Cabral, 2009 for a review). For example, when survivors' legal cases are not moved forward in the criminal justice system, or when survivors experience secondary victimization from that system, they evidence higher PTS (Campbell, Wasco, Ahrens, Sefl, & Barnes, 2001; Campbell & Raja, 2005). Similarly, when survivors rate

medical systems as hurtful, they evidence higher PTS than those who do not (Campbell et al., 2001). In contrast, survivors who are able to access mental health services evidence lower PTS (Campbell et al., 2001). It is important to note that this relationship is likely not uniform across survivors of sexual assault. While literature on the multilevel barriers to help-seeking among sexual assault survivors is sparse, the broader literature on recovery from violent victimization suggests that survivor demographic characteristics, institutional barriers, and societal norms and stigma (e.g., racism, ableism, classism) may interact to affect which survivors seek help, whether the help that they seek is received and is high quality, and how that help is experienced by survivors (Liang, Goodman, Tummala-Narra, & Weintraub, 2005; McCart, Smith, & Sawyer, 2010; Sabina & Ho, 2014).

The early aftermath of sexual assault may offer a critical period for determining survivor risk or resilience following sexual assault. Evidence suggests that peritraumatic distress is associated with the development of PTS (see Brewin & Holmes, 2003 for a review), and responder interactions can create an opportunity for the continuation or mitigation of distress from the rape. In addition, the first month post-assault is a time of increased opportunity for intervention, both because of the increased availability of formal responders during this time (Ahrens et al., 2010) and the higher likelihood if informal disclosure soon after the assault (Ahrens et al., 2010; Ullman, 1996; Ullman & Filipas, 2001). This creates multiple early opportunities for responders to affect survivors' likelihood of developing PTS. Further, part of the increased attention to formal and informal responses to sexual assault has involved an emphasis on early intervention in mitigating distress. For example, several psychological interventions have been designed as early responses to rape to prevent avoidance and impart coping skills without prescribing symptoms. These include an emergency-department-based video intervention (Resnick et al., 2007) and multi-session cognitive-behavioral interventions (Foa, Hearst-Ikeda, & Perry, 1995). In addition, campuses have worked to improve early responses through, for example, bystander intervention education programs (Banyard, Plante, & Moynihan, 2004). However, the importance of interactions with responders in the immediate aftermath of sexual assault has not been reviewed, and so it is not known which early responses are associated with later PTS or how long their effects last. In addition, it is unclear whether early responses are particularly critical in affecting PTS. While past reviews have addressed interventions meant to *treat* psychopathology in victims of sexual assault (Regehr, Alaggia, Dennis, Pitts, & Saini, 2013) and explored the role of rape crisis centers and two manualized interventions in preventing distress after sexual assault (Decker & Naugle, 2009), no review to date has explored the broad types of responses that are available to sexual assault survivors in the early aftermath of assault in terms of their success in preventing PTS. In addition, although a past review detailed the success of formal interventions to prevent PTS (e.g., critical incident stress debriefing) in the acute aftermath of multiple forms of trauma (Forneris et al., 2013), sexual assault is a particularly common trauma (Black et al., 2011) that is unique in the types of interventions available to treat it (e.g., Sexual Assault Nurse Examiners), the types of social reactions elicited by disclosure (e.g., stigma) and amount of research attention dedicated to these rape-specific reactions (see Ullman, 2010 for a review), and the severity of its impact on PTS relative to other forms of trauma (Dworkin et al., 2016). Thus, a review of the role of sexual assault survivors' early experiences with formal and informal responders in the development

of PTS is needed. Our research questions were as follows: 1) what types of early responses to sexual assault are associated with later PTS?, 2) at what points in time are these early responses associated with PTS?, and 3) are these early responses more impactful than later responses in the development of PTS? Drawing together this literature has the potential to inform the development of new, promising interventions and the continued refinement of existing interventions for survivors of sexual assault.

Method

Literature Search and Eligibility Criteria

Our first search involved the identification of studies relevant to questions 1 (i.e., what types of early responses to sexual assault are associated with later PTS?) and 2 (i.e., at what points in time are these early responses associated with PTS?). Using Boolean operators, we searched the abstracts of scholarly journals in PsychInfo and Pubmed using search terms related to a variety of post-assault responder contact types, (reaction OR response OR intervention OR treatment OR prevention OR formal OR informal OR social OR “help-seeking” OR “help seeking” OR disclosure OR police), sexual assault-related terms (“sexual assault” OR rape OR “sexual victimization”), and PTSD-related terms (ptsd OR “posttraumatic stress disorder” OR “post-traumatic stress”). The “AND” Boolean operator was used between these groups of terms to ensure that every search result contained at least one key word from each of the three search term groups. Only studies published in English were included, although we did not limit our search by date. This resulted in 468 results in PsychInfo and 366 in PubMed. We also searched the references of every eligible article.

In our second search, we identified studies relevant to question 3. We used the same approach as in the first search, but replaced the responder contact type search terms with search terms relating to timing of post-assault responder contact (delayed OR early OR timing). This approach yielded 60 results in PsychInfo and 57 in PubMed.

The first author then applied the following eligibility criteria to these articles:

1. Eligible studies must have studied survivors of adult sexual assault. Some studies also included survivors of physical assault; given the dearth of research in this area, these studies were included if they also reported results for survivors of sexual assault, even when separate results were not presented.
2. Resource access must have been specific to the assault. Thus, studies that assessed only general perceptions of social support were not included.
3. Eligible studies must have assessed resource access within one month of assault, before PTSD can be diagnosed (APA, 2013). Rape-specific medical services and police reporting were assumed to have occurred within one month even if no timeframe was provided. Studies that assessed general help-seeking experiences that could have occurred at any point in time, without reporting specifically on those experiences that occurred within the first month post-assault, were not included. This review does not focus on longer-term interventions, such as

prolonged exposure and rape crisis counseling, which are unlikely to begin before PTS has developed following sexual assault.

4. Eligible studies must have assessed PTS.

Included Studies

Fifteen studies were identified to be eligible: 13 addressed question 1 (types of responder variables associated with later PTS), eight addressed question 2 (duration of effect of responder variables on PTS), and three addressed question 3 (relative impact of early vs. delayed responses on PTS). The characteristics of these studies are summarized in Table 1. Studies reflected research from a wide range of countries and were mixed in terms of recruitment site; most studies recruited either from the community or from formal responders. All studies used validated measures of PTS, although Campbell and colleagues combined a validated measure of PTS with a measure of depression (Campbell et al., 2001). Given the substantial intercorrelation between these two scales reported in the study, we felt confident that reported scores reflected PTS. Using validated measures for contact with responders was relatively less common, and there was little overlap across studies with regard to responder contact variables assessed.

Results

We first review the combined results related to the type of responder contacted and the duration of any impact of responder contact on PTS. Then, we review the results related to the relative impact of early versus delayed responder contact.

Type of Responder and Duration of Impact

See Table 1 for a summary of key findings related to the association between contact with each type of responder and PTS at multiple points post-assault.

Experiences with formal and informal responders—Only one study assessed early help-seeking experiences generally (i.e., whether or not help was sought from any source) in association with later PTS. Feehan and colleagues reported on 233 male and 141 female survivors of past-year physical or sexual assaults from a birth cohort in New Zealand (Feehan, Nada-Raja, Martin, & Langley, 2001). They found no association between having sought help within the first 48 hours post-assault and current PTS.

Experiences with informal responders—While many studies using a cross-sectional, retrospective approach assessed general experiences with informal responders at any point post-trauma as a correlate or predictor of PTS, only two studies assessed the association between contact with informal responders within the first month post-assault and PTS at a later point in time. Elklit and Christiansen (2013) studied women seeking help from a hospital-based rape crisis center within 72 hours of a rape and reported on the 136 women who completed a 3-month follow-up assessment. Andrews and colleagues conducted 1-month and 6-month assessments with 104 men and 34 women, recruited through hospitals and police services, who had experienced a recent physical or sexual assault (Andrews, Brewin, & Rose, 2003). Since none of the men in this study experienced sexual assault, we

report only on the results for women (18% of their original sample of 39 women had been sexually assaulted). Both studies thus reported on assault survivors who sought early formal help, and both used the Crisis Support Scale to measure early contact with informal responders specific to the assault, enhancing their comparability. Major differences include the fact that Andrews and colleagues recruited a mixed physical and sexual assault sample, while Elklit and Christiansen focused on rape alone, and Elklit and Christiansen assessed 3-month PTS with the Harvard Trauma Questionnaire whereas Andrews and colleagues assessed 6-month PTS with the Posttraumatic Stress Disorder Symptom Scale.

Both studies assessed the receipt of specific positive responses (e.g., availability of others, being able to confide in others, receiving emotional support, receiving practical support) within the first month, and provide mixed evidence for their association with reduced PTS at follow-up. While Andrews and colleagues (2003) found no bivariate support for the association between the frequency of positive support received and PTS at 6 months, and Elklit and Christiansen (2013) found no association between these variables in the context of their multivariate model at 3 months, Elklit and Christiansen did identify a significant bivariate association. Specifically, perceived positive support was significantly negatively associated with PTS, such that receiving more support that was perceived positively within the first two weeks post-assault was associated with lower PTS symptom severity at 3 months post-assault.

Each study also assessed survivors' perceptions of responses (i.e., feeling let down, satisfaction with support). As a whole, both studies found either a lack of association or the presence of less PTS at follow-up when perceptions were more positive. With regard to feeling let down, while Elklit and Christiansen found no bivariate or multivariate association between feeling let down by responses within the first two weeks post-assault and PTS at 3 months post-assault, Andrews and colleagues identified a significant positive bivariate association, such that greater frequency of feeling let down by responses within the first month post-assault was associated with greater severity of PTS at 6 months post-assault. With regard to support satisfaction, both studies identified a bivariate association between support satisfaction and later PTS, such that more frequent receipt of support with which participants were satisfied was associated with lower PTS symptom severity at 3 and 6 months. However, in the context of Elklit and Christiansen's multivariate model, support satisfaction was no longer significant at 3 months.

Together, these findings suggest that receipt of positive responses may be related to lower PTS at 3 months but not 6 months, and certain operationalizations of perceptions of early support received may be related to lower PTS at 3 and 6 months, but both may be less important than other predictors (e.g., negative affect, past trauma) in predicting PTS. It is important to note that both studies only reflect assault victims who have sought help from the medical or criminal justice systems, who make up a minority of survivors (Fisher, Daigle, Cullen, & Turner, 2003; Rennison, 2002), and are unlikely to represent the broader population of survivors.

Experiences with formal responders—Most identified studies assessed contact with formal responders in relation to PTS. Experiences with three types of formal responses—psychotherapy, criminal justice, and healthcare—were assessed.

Psychotherapy: Five studies tested early psychotherapeutic interventions to prevent the development of PTS or treat acute distress.

Foa and colleagues conducted two studies of the same 4-week cognitive-behavioral program (Foa et al., 1995, Foa, Zoellner, & Feeny, 2006) involving psychoeducation about common reactions to trauma, relaxation training, imaginal exposure (i.e., orally recounting the assault), *in vivo* exposure (i.e., confronting previously-avoided trauma-related stimuli), and cognitive restructuring. All participants were less than 13 days post-assault with the exception of two participants in the control condition. Participants were all female. One of these studies ($N = 20$) identified a significant reduction in symptoms from the start of the program to the end as compared to the control group (Foa et al., 1995), but the other, larger study ($N = 90$) did not identify any significant group differences, and neither study identified a significant group differences after 5.5-6 months.

Two studies tested a video intervention administered concurrent to a forensic medical exam within 72 hours of rape in relation to PTS as compared to a standard care control. The video intervention had two components: (a) a description of the forensic examination and a demonstration of undergoing the exam and successfully coping and (b) psychoeducation about common reactions to trauma as well as the introduction of behaviorally-based coping skills (e.g., self-guided *in vivo* exposure). Resnick and colleagues randomly assigned 68 of 140 women to view the full 17-minute video immediately before the forensic exam (Resnick et al., 2007), and found that viewing the video was associated with significantly lower PTS among women with a prior history of rape and higher PTS among women without such a history at 6 weeks post rape. No significant differences were identified at 6 months post rape. Miller and colleagues randomly assigned female rape survivors to a nine-minute version of the video including only the psychoeducation component immediately after the exam (Miller, Cranston, Davis, Newman, & Resnick, 2015). Of the original 164 participants, 74 were retained through the 2-month follow-up. In contrast to Resnick and colleagues' findings, women *without* a prior rape history who saw the video evidenced significant reductions in PTS scores relative to the other groups after two weeks, while no such effect was seen for those with a prior rape history. No effect was noted after two months.

One study implemented a modified eye movement desensitization and reprocessing protocol in 17 female sexual assault survivors who had no prior sexual assault history (Tarquinio, Brennstuhl, Reichenbach, Rydberg, & Tarquinio, 2012). The protocol was administered within 24 and 72 hours after assault and lasted an average of 1 hour and 45 minutes. No control group was used. The researchers found a significant reduction in PTS scores at post-treatment as compared to pre-treatment, but they found no further significant reduction after 4 weeks or 6 months. Because of the lack of a control group, causal conclusions cannot be drawn regarding the role of the intervention; it is possible that these symptom changes reflect natural recovery rather than the effectiveness of the intervention per se.

Overall, these studies suggest that early psychological treatment following sexual assault may reduce risk for PTS for at least several weeks after the intervention. It appears that effects may differ depending on the type of survivors treated, although these group differences vary from study to study.

Criminal justice: Five studies assessed contact with the police in association with symptoms of PTS. Darves-Bornoz and colleagues (1998) conducted a prospective study of 73 survivors of sexual assault seeking help from a hospital-based sexual assault specialty center (gender was not specified). They found no differences in PTS at one year post-assault for those who immediately filed a police report versus those who did not. Similarly, Feehan and colleagues (2001) described 233 male and 141 female survivors of past-year physical or sexual assaults from a birth cohort in New Zealand using a cross-sectional design, and found no difference in PTS depending on whether or not the police had knowledge of the assault. Consistent with these findings, Walsh and Bruce (2011) studied 41 adult women who had been raped in the past five years in the US using a cross-sectional design, and found no difference in PTS depending on whether the survivor had reported the assault to the police. In contrast with these findings, a separate study by Walsh and Bruce (2014) assessed 834 men and women who had been sexually assaulted since age 14, and in the context of a multivariate model predicting police reporting, found that more severe re-experiencing and hyperarousal symptoms increased the likelihood of a police report, while more severe avoidance symptoms decreased the likelihood of a report. Also in contrast to the null findings, Maddox and colleagues used a small, cross-sectional sample of 22 people (21 female and 1 male) who had reported a rape to the police within 18 months, all of whom met diagnostic criteria for PTSD, and identified that higher perceptions of retrospectively-recalled police officer empathy during the interview were associated with lower symptoms of PTS (Maddox, Lee, & Barker, 2011). These findings provide initial evidence that positive perceptions of interactions with police are associated with lower PTS, and police reporting alone may be associated with higher scores within certain PTS symptom clusters rather than PTS overall, although more research is needed in this area.

Healthcare: One cross-sectional study of 102 women survivors of sexual assault described their experiences with rape-related medical care along with other community systems (Campbell et al., 2001). Participants had experienced sexual assault an average of 8.25 years prior to participating in the study. While the timing of contact with the healthcare system related to the rape was not assessed, since forensic evidence must be collected within 72-96 hours (Logan, Cole, & Capillo, 2007) and rape survivors are unlikely to need non-forensic acute medical services for rape-related needs after one month, we assumed that these contacts had occurred within the first month post-rape. The researchers assessed both depression and PTS at the time of the study, and created a composite psychological wellbeing score due to substantial intercorrelation between these scores. Survivors who had received information about HIV evidenced significantly less distress than those who did not, survivors who received the morning after pill evidenced significantly less distress than those who did not, and survivors who rated the medical system as hurtful evidenced significantly more distress than those who rated it as healing or neither healing nor hurtful.

Timing of Responses

We also investigated whether early responder contact is particularly influential in the development of PTS. Three studies assessed the timing of assault disclosure to any informal or formal responder in relation with PTS. Ullman and Filipas (2001) conducted a cross-sectional study of 323 women survivors of adult sexual assault who were recruited through community advertisements. Bivariate associations were not presented, but in a multivariate model including extent of disclosure and social support variables, the timing of disclosure was not associated with PTS. Ahrens and colleagues studied 103 women survivors of adult sexual assault using a cross-sectional design and community advertisements (Ahrens, Stansell, & Jennings, 2010). They assessed disclosure to any type of support provider, and categorized assault survivors as nondisclosers (i.e., those who never disclosed), slow starters (i.e., those who first disclosed 3.58 years after the assault), crisis disclosers (i.e., those who began disclosing within two days and ceased disclosing within one week), and ongoing disclosers (i.e., those who disclosed within one week and did not stop disclosing). Using the univariate data presented in the article, we calculated an effect size of $d = -0.06$ that represents the difference in PTS between two subsets of the sample: (a) slow starters and (b) those who disclosed within one week (i.e., a combined group of crisis and ongoing disclosers), suggesting that the timing of disclosure is not associated with PTS in this sample. In contrast, Feehan and colleagues' cross-sectional study of 233 male and 141 female survivors of past-year physical or sexual assaults found that seeking help more than 48 hours post-assault was associated with PTS for men, but not for women, while seeking help within 48 hours post-assault was not associated with PTS for either gender (Feehan et al., 2001). Importantly, though, only 5.6% of the men had experienced sexual assault, while one third of the women (32.8%) had been sexually victimized, suggesting that assault type could be a potential confound of this gender difference. While each of these studies is limited by its cross-sectional design, these findings together suggest that the timing of first disclosure is likely not associated with later PTS for female survivors of sexual assault. More research is needed to understand this effect in men.

Discussion

In this systematic review, we summarized the empirical literature on the role of early interventions in the development of PTS after sexual assault. While the literature on this topic was sparse and mixed, it appears that early intervention is associated with later PTS in certain cases. It is important to note when considering these findings that the prevention of PTS is not the sole goal of early intervention. Sexual assault is associated with widespread negative outcomes for survivors across multiple domains of functioning, and the success of early interventions in mitigating these outcomes should be the target of future research. Further, certain interventions may be helpful, but not sufficient, in reducing PTS, and may depend on individual differences in survivors and/or the other post-assault responses that they receive. Indeed, even the most effective early intervention might not reduce PTS for a survivor who receives multiple other harmful responses.

What Types of Early Interventions are Associated with PTS?

Overall, the existing literature provides modest evidence that several types of intervention in the early aftermath of a sexual assault may impact the likelihood that survivors will evidence PTS. Notably, however, the findings are quite mixed. Some studies suggested that seeking early informal intervention (e.g., disclosing to friends or family) is unrelated to PTS (Andrews et al., 2003; Feehan et al., 2011) and other studies suggest that these early contacts can make a difference (Elkit & Christiansen, 2013). Similar mixed findings emerged for formal therapy, with evidence that early psychotherapeutic interventions may have no impact (Foa et al., 2006), may reduce risk for PTS (Foa et al., 1995; Miller et al., 2015; Tarquinio et al., 2012), or might have differential effects for women—including harmful effects on PTS—depending on their trauma histories (Resnick et al., 2007). These mixed findings were also apparent in studies of early interactions with the criminal justice system (Darves-Bornoz et al., 1998; Feehan et al., 2001; Maddox et al., 2011; Walsh and Bruce, 2011; 2014). Only one study examining early contacts with the healthcare systems was identified; this study suggested that particular types of information (i.e., information about HIV) and services (i.e., the morning after pill) were associated with reduced reports of posttraumatic distress.

Across studies of responses with informal responders, the criminal justice system, and the health care system, there was evidence that survivor's *perceptions* of these interactions may play an important mediating role in the relationship between services offered and PTS outcomes. Specifically, positive perceptions of interactions with certain responders appear to be associated with lower PTS and negative perceptions are associated with higher PTS at follow-up (Andrews et al., 2003; Campbell et al., 2001; Elkit & Christiansen, 2013; Maddox et al., 2011). Similarly, there is evidence that the type of services or support received may make a difference, such that those who receive best-practice medical and psychological treatment may be less likely to report PTS (Campbell et al., 2001). In contrast, simply contacting responders (e.g., reporting to the police, seeking help) was not typically associated with significant differences in PTS.

At this time, there is no formal or informal intervention that has clear research support as the most efficacious for reducing risk of PTS. This may reflect the fact that there are important individual differences in the types of information, support, or intervention that will be most helpful. While past studies have identified such differences (e.g., Miller et al., 2015; Resnick et al., 2007, most studies included in this analysis did not explore for whom these interventions might be effective. Outside the sexual assault literature, the work of Bryant and colleagues (1998) suggests that cognitive behavioral therapy in the two weeks following a traumatic life event may dramatically reduce the risk for developing posttraumatic stress disorder among trauma survivors selected for the presence of acute stress disorder. Moreover, these beneficial effects persist for 6 months. This could suggest that an important individual difference in producing treatment effects for sexual assault survivors might be clinically significant trauma-related symptoms following the assault. It is also important to note, when understanding the lack of consistent findings, that many of the naturally-occurring responses to survivors do not let themselves to random assignment. For example, survivors cannot be randomly assigned to confide in friends or family, file a police report, or seek medical services following a sexual assault. Thus, it is difficult to draw conclusions

about the role of early intervention relative to individual differences that lead survivors to seek and not seek such interventions on PTS outcomes.

Many evidence-based community interventions (e.g., rape crisis advocacy, crisis hotlines, Sexual Assault Nurse Examiners) do not have data to support their impact on PTS or other forms of psychopathology. While preventing PTS is not the only goal of these interventions, and evidence of a lack of effect on preventing PTS specifically thus should not be taken as evidence of their ineffectiveness broadly, conducting research on their psychological impact has the potential to increase funding and community support for these resources. Indeed, there are some promising targets for research on the role of existing community responses in the prevention of PTS. For example, there is some evidence for the effectiveness of collaborative care (involving coordinated collaborative decision-making across health and mental-health providers to select evidence-based treatments) versus treatment as usual in preventing PTS (Forneris et al., 2013). Similar approaches developed to respond to sexual assault, like Sexual Assault Response Teams, are thus a promising avenue for investigation. Similarly, there has been limited research on the efficacy of psychological interventions to prevent PTS among sexual assault specifically. Given evidence that sexual assault is more strongly associated with PTSD than other traumas (Dworkin et al., 2016) and the pervasiveness of societal victim-blaming messages (Suarez & Gadalla, 2010) that could affect survivors' cognitions, early psychological intervention might have a different effect in this population than for trauma survivors more broadly. While approaches like psychological debriefing (e.g., critical incident stress debriefing) lack research support, there are a number of cognitive-behavioral interventions that do not yet have sufficient evidence to draw conclusions about their effectiveness (Forneris et al., 2013) and should be tested in survivors of sexual assault.

At What Point in Time are Early Interventions Associated with PTS?

The findings of the literature reviewed suggest that the impacts of some early interventions may be short-lived (e.g., Foa et al., 1995; Miller et al., 2015), although this relationship appears to differ by intervention type: in some of the studies reviewed, some impact was apparent at 3 to 12 month follow-up (Elklit & Christiansen, 2013). Notably, survivors' perceptions of interventions, particularly those involving informal responders, appeared to be associated with longer-lasting effects (e.g., Andrews et al., 2003; Campbell et al., 2001; Elklit & Christiansen, 2013; Maddox et al., 2011). The effects of early psychotherapeutic interventions, in contrast, do not appear to endure as long as some other early experiences. To have an enduring impact, early psychological interventions might need to identify and incorporate active ingredients from other interventions. From this review, it appears that effectively engaging natural supports in psychological interventions and enhancing their ability to respond in ways that are perceived positively is one potential element that could be incorporated. Indeed, there have been broader efforts to engage partners and family members of veterans to assist them in recovering from trauma, and these efforts have had some success (Galovski & Lyons, 2004; Monson, Taft, & Fredman, 2009). With the permission of survivors, these interventions could be conducted with family members, friends, or romantic partners present, or dual sessions could be held to instruct these natural supports on how to

best support survivor well-being. Doing so might help to ensure that survivors have support and reminders to implement the skills taught in these interventions in their daily lives.

Are Early Interventions More Efficacious than Delayed Interventions?

While there is little research on the relative impact of early versus delayed responder contact, there is no evidence that delayed help-seeking—which is one avenue through which survivors access responders—is associated with different PTS outcomes. This is unsurprising, given that help-seeking alone, apart from the types of services received as a result of this help-seeking and survivors' perceptions of those services, was not associated with PTS. Since peritraumatic distress is associated with the development of PTS (Brewin & Holmes, 2003), though, there is reason to believe that the perceptions or quality of services received at different points post-assault would have a greater impact in the immediate aftermath of assault. While there has been a great deal of research on the relative impact of negative and positive social reactions on PTS (for a review, see Ullman, 2010), none of this research has explored the timing of these responses. It is possible that negative social reactions, which have been found to correlate with PTS (Ullman, 2010), might be especially detrimental in the early aftermath of assault because they would enhance peritraumatic distress in that time frame. In contrast, survivors who have spent several years recovering from assault might be more resilient to such negative reactions.

Issues of Generalizability of Findings to Survivors of Sexual Assault Broadly

It is important to note that the studies included in this review, while representing a number of countries, ultimately reflect only a narrow subset of survivors of sexual assault. Numerous demographic differences have been identified in help-seeking, including gender and race (McCart, Smith, & Sawyer, 2010; Sabina & Ho, 2014), that could affect the demographics of study samples. Indeed, since these studies sampled mostly women, it is not clear whether these findings would extend to men, who appear to be less likely to report sexual assault than women and less likely to be believed when they do report (Davies, 2002). Structural inequities in service systems could also differentially affect survivors in terms of whether they access the help that they seek, as well as how this help is experienced, which could undermine cross-system comparisons. More research is needed to understand how the multilevel influences on help-seeking experiences affect the success of early intervention efforts.

Conclusion

In this article, we reviewed the empirical research on a variety of early community interventions to sexual assault, which we defined broadly as responses to sexual assault survivors delivered by formal or informal responders in the first month post-assault. Despite increasing attention to the role of early responses in the development of PTS, there is a dearth of research on the effectiveness of these early responses in preventing PTS among survivors of sexual assault. Since survivors are particularly likely to contact community responders in the early aftermath of assault, and these experiences have the potential to mitigate or extend peritraumatic distress, it is critically important to understand their role in survivors' recovery. Continued research on when, for whom, under what conditions, and how

these early interventions are effective in mitigating PTS and other outcomes has the potential to inform strategies to improve outcomes for survivors of sexual assault.

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Summary Tables

Critical Findings

- Perceptions of early responses and the degree to which needed services are offered as part of early responses appear to be associated with higher levels of PTS.
- There is little evidence that simply contacting responders (e.g., reporting to the police) is associated with PTS independent of experiences and perceptions with these responders.
- The relative importance of early versus delayed intervention is, at this point, based on theoretical understandings of the development of PTS and does not yet have research support.

Implications for Practice, Policy, and Research

- Efforts to encourage survivors to disclose assault must be coupled with training and policies to ensure that recipients of disclosure are prepared to react in a supportive and helpful manner. For example, campus-based sexual assault task forces should ensure that members of the campus community are trained in best-practice responses to sexual assault.
- Certain psychological early interventions (e.g., psychoeducational video coupled with the forensic medical exam) are a promising preventative strategy for PTS, but their effectiveness may depend on individual differences in survivors, and they should incorporate active ingredients of other effective responses (e.g., engage natural supports).
- Research is needed to test the psychological impact of sexual-assault-specific formal responders that are likely to come into contact with survivors in the early aftermath of assault (e.g., rape crisis services, Sexual Assault Nurse Examiners)
- Research is needed to understand how sociocultural differences in survivors of sexual assault (e.g., race/ethnicity, gender identity, sexual orientation, socioeconomic status) might affect which interventions are sought and received, how these interventions are experienced, and their ultimate effectiveness.

Table 1

Description of Included Studies

Citation	Questions Addressed			Recruitment site	PTS measure	Responder contact measure	Relevant statistical analyses
	Type of responder	Duration of effects	Early vs. late				
Abrens, Stansell, & Jennings, 2010			×	Community advertisements (US)	Posttraumatic Diagnostic Scale (Foa et al., 1997)	Researcher-created questions about who survivors told and how long after assault they were told	Univariate (means and standard deviations)
Andrews et al., 2003	×	×		Police and medical services (England)	Posttraumatic Stress Disorder Symptom Scale-Self Report (Foa, Riggs, Dancu, & Rothbaum, 1993)	Crisis Support Scale (Joseph, Andrews, Williams, & Yule, 1992)	Correlation, multiple regression
Campbell et al., 2001	×			Community advertisements (US)	Combined Symptom Checklist 90 Revised, Crime-Related PTS Scale (Saunders, Arata, & Kilpatrick, 1990) and Center for Epidemiological Studies Depression Scale (Radloff, 1977)	Researcher-created questions about whether survivors contacted each of five social systems, services received, and perceptions of responders	ANCOVA
Darves-Bornoz et al., 1998	×	×		Hospital-based sexual assault specialty center (France)	Structured Interview for PTSD (Davidson, Smith, & Kudler, 1989)	Whether they lodged a complaint immediately (assessment measure not described)	Chi square
Elklit & Christiansen, 2013	×	×		Rape crisis center (Denmark)	Harvard Trauma Questionnaire Part IV (HTQ; Mollica et al., 1992)	Crisis Support Scale (Joseph, Andrews, Williams, & Yule, 1992)	Correlation, hierarchical regression
Feehan et al., 2001	×		×	Birth cohort (New Zealand)	Post Traumatic Stress Disorder section of the Diagnostic Interview Schedule (DIS; Schumacher et al., 1997)	Researcher-created questions about whether the assault was brought to the attention of the police and whether help was sought within 48 hours	Bivariate odds ratio, logistic regression

Citation	Questions Addressed			Recruitment site	PTS measure	Responder contact measure	Relevant statistical analyses
	Type of responder	Duration of effects	Early vs. late				
Foa et al., 1995	×	×		Referrals by police, victim advocates, and hospital ER staff (US)	Robins, Helzer, Cottler, & Goldring, 1989) Posttraumatic Stress Disorder Symptom Scale-Self Report (Foa, Riggs, Dancu, & Rothbaum, 1993)	N/A (intervention study)	ANOVA
Foa, Zoellner, & Feeny, 2006	×	×		Referrals by police, victim advocates, medical professionals, and hospital ER staff; media advertisements (US)	Structured Clinical Interview for DSM-IV PTSD and acute stress disorder module (First, Spitzer, Gibbon, & Williams, 1995); PTSD Symptom Scale-Interview (PSS-I; Foa et al., 1993).	N/A (intervention study)	ANOVA
Maddox et al., 2011	×			Rape crisis center, social networks, psychologist referrals (United Kingdom)	Posttraumatic Diagnostic Scale (Foa et al., 1997)	Barrett-Lennard Relationship Inventory (Barrett-Lennard 1978)	Correlation
Miller et al., 2015	×	×		Hospital-based forensic nursing program (US)	Posttraumatic Stress Disorder Symptom Scale-Self Report (Foa, Riggs, Dancu, & Rothbaum, 1993)	N/A (intervention study)	ANCOVA
Resnick et al., 2007	×	×		Hospital-based forensic nursing program (US)	Posttraumatic Stress Disorder Symptom Scale-Self Report (Foa, Riggs, Dancu, & Rothbaum, 1993)	N/A (intervention study)	Hierarchical multiple regression
Tarquinio et al., 2012	×	×		Other research projects, family doctors, victim aid organizations (France)	French version of the Impact of Event Scale	N/A (intervention study)	MANOVA

Citation	Questions Addressed			Recruitment site	PTS measure	Responder contact measure	Relevant statistical analyses
	Type of responder	Duration of effects	Early vs. late				
Ullman & Filipas, 2001			×	Community advertisements (US)	(IES) (Horowitz et al., 1979; Zilberg et al., 1982) Posttraumatic Diagnostic Scale (Foa, 1995)	Researcher-created question about timing of disclosure	Correlation, simultaneous multiple regression
Walsh & Bruce, 2011	×			Advertisements (US)	Clinician-Administered PTSD Scale (Weathers, Keane, & Davidson, 2001)	Researcher-created question about whether assault reported to police	T-test
Walsh & Bruce, 2014	×			Advertisements online and in undergraduate psychology courses (US)	PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993)	Researcher-created question about whether assault reported to police	Logistic regression

Table 2
Key Findings (Responder Type and Duration of Association with PTS)

Type	Citation	Sample	Responder contact variable	Association between responder contact and PTS at...			
				Time of study (retrospective designs)	2-6 weeks	2-3 months	6-12 months
Combined Informal & Formal							
	Feehan et al., 2001	233 male and 141 female survivors of past-year physical or sexual assault	Help sought within 48 hours	No	--	--	--
Informal							
	Andrews et al., 2003	34 female survivors of past-month physical or sexual assault	Frequency of positive support received within 1 month of assault	--	--	--	No
			Frequency of support satisfaction within 1 month of assault	--	--	--	Yes (-)
			Frequency of negative responses received within 1 month of assault	--	--	--	Yes (+)
Formal							
	Elklit & Christiansen, 2013	136 female survivors of sexual assault in past 72 hours	Frequency of perceived positive support related to assault received within 2 weeks of assault	--	--	Mixed: Yes (-) in bivariate results No in multivariate model	--
			Satisfaction with support received within 2 weeks of assault	--	--	Mixed: Yes (-) in bivariate results No in multivariate model	--
			Feeling let down by support received within 2 weeks of assault	--	--	No	--
Formal							
Psychotherapy	Foa et al., 1995	20 female survivors of physical or sexual assault in past 2 weeks	Receipt of 4-week preventive cognitive behavioral program (vs. no-treatment control)	--	Yes (-)	--	No

Type	Citation	Sample	Responder contact variable	Association between responder contact and PTS at...			
				Time of study (retrospective designs)	2-6 weeks	2-3 months	6-12 months
	Foa, Zoellner, & Feeny, 2006	90 female survivors of physical or sexual assault in past 2-46 days	Receipt of 4-week preventive cognitive behavioral program (vs. assessment or supportive counseling control)	--	No	--	No
	Miller et al., 2015	164 female survivors of sexual assault in past 72 hours	Psychoeducational video intervention concurrent to forensic medical exam, received within 72 hours of rape (vs. standard care control)	--	Mixed: Yes (-) for those without prior rape history No for those with prior rape history	No	--
	Resnick et al., 2007	140 female survivors of sexual assault in past 72 hours	Psychoeducational video intervention concurrent to forensic medical exam, received within 72 hours of rape (vs. standard care control)	--	Mixed: Yes (-) for those with prior rape history Yes (+) for those without prior rape history	--	No
	Tarquinio et al., 2012	17 female survivors of sexual assault in past 24-78 hours with no prior sexual assault history	Modified eye movement desensitization and reprocessing (no control group)	--	Yes (-)	--	Yes (-)
Criminal justice	Darves-Bornoz et al., 1998	73 survivors of sexual assault that had just taken place (gender and exact time since assault not specified)	Reported assault to police immediately	--	--	--	No
	Feehan et al., 2001	233 male and 141 female survivors of past-year physical or sexual assault	Reported assault to police	No	--	--	--
	Maddox et al., 2011	21 female and 1 male survivors of rape in past 18 months	Perception of police empathy during interview	Yes (-)	--	--	--
	Walsh & Bruce, 2011	41 female survivors of rape in past 3 to 116 months	Reported assault to police	No	--	--	--

Type	Citation	Sample	Responder contact variable	Association between responder contact and PTS at...			
				Time of study (retrospective designs)	2-6 weeks	2-3 months	6-12 months
Healthcare	Walsh & Bruce, 2014	668 female and 166 male survivors of sexual assault since age 14	Reported assault to police	Mixed: Yes (+) for reexperiencing Yes (+) for hyperarousal Yes (-) for avoidance	--	--	--
				Yes (-)	--	--	--
				Yes (-)	--	--	--
				Yes (+)	--	--	--

Note. Yes(-) indicates that the experience was associated with significantly lower PTS; Yes(+) indicates that the experience was associated with significantly higher PTS; No indicates that no statistical association was identified between the experience and PTS