



Examining the Effectiveness of Restorative Justice in Reducing Victims' Post-Traumatic Stress

Alex Lloyd¹ · Jo Borrill²

Received: 20 December 2018 / Accepted: 11 October 2019

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Abstract

Crime victimisation is a significant life event that can lead to the development of post-traumatic symptomology. Compared with the general population, victims of crime are significantly more likely to present with symptoms of post-traumatic stress disorder (PTSD). Restorative justice is an approach to criminal justice that considers the goal of the justice system to restore victims to their state pre-victimisation. The purpose of this review was to evaluate the effectiveness of restorative justice in reducing symptoms of post-traumatic stress that develop following victimisation. Relevant databases were searched to identify quantitative studies measuring post-traumatic symptoms in victims of crime who successfully completed either a restorative justice or customary justice intervention. A total of seven studies were identified examining one or more facet of post-traumatic symptomology. These studies provide modest support that restorative justice did produce a greater improvement on post-traumatic symptoms than customary justice procedures. However, this was only consistently evidenced for symptoms of avoidance and intrusion, whereas there were mixed findings with regard to the subscales of negative alterations in mood and cognition, and arousal and reactivity. Reasons for these inconsistencies are discussed and recommendation made for further empirical work on this subject.

Keywords Restorative justice · PTSD · Victim · Post-traumatic stress

Introduction

Restorative Justice (RJ) is an approach to criminal justice that considers crime an act of harm committed by a perpetrator against an individual or community. This interpersonal transgression creates an obligation for the offender to repair the damage done by such an act and restore the stakeholders to their prior status (Zehr 1990). During the process of repairing the harm, victims are invited to meet with the perpetrator where they are able to discuss the incident. Due to the processes unique to RJ, research has suggested that the intervention has beneficial properties that are absent in other forms of

justice, including positive psychological outcomes for victims. As such, RJ has been promoted as an evidence-based intervention that has additional benefits for victims compared with customary adversarial justice.

Restorative Justice

Restorative justice emerged in the 1970s as an alternative approach to criminal sentencing. It considers acts of criminality to be violations of interpersonal relationships between the offender and victim. These violations subsequently create obligations of the offender to repair this relationship and 'restore' the community to its prior status (Zehr 1990). In the pursuit of this goal, offenders, victims, and the wider community convene to engage in 'restorative discussions' and decide on the appropriate course of action following a criminal act (Umbreit et al. 1994). The offender subsequently engages in a range of rehabilitative activities, which aim to reintegrate the individual into the community (Tyler et al. 2007). Through engaging in restorative activities, it is suggested that the individual comes to re-define themselves as a law-abider and subsequently no longer engages in criminal activity (Sherman and Strang 2007). The effectiveness of RJ has been demonstrated in a

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s12207-019-09363-9>) contains supplementary material, which is available to authorized users.

✉ Alex Lloyd
alex.lloyd120@gmail.com

¹ Royal Holloway, University of London, Egham Hill, Egham TW20 0EX, UK

² University of Westminster, London, UK

meta-analysis, which found reoffending rates to be lower in RJ compared with other justice interventions (Latimer et al. 2005). Further, RJ is effective at reducing recidivism in both adult (Sherman et al. 2015a) and adolescent offenders (Wong et al. 2016). While the operationalisation of RJ differs across jurisdictions, the overarching aim to rehabilitate offenders within the community is consistent across RJ in the Western legal system (Miers 2001).

Along with benefits to offender outcomes, RJ also has benefits for victims of crime that are not found in customary adversarial justice. Victims are given a central role in the process of RJ, with the aim that they should receive information about their victimisation ending with emotional restoration and apology (Sherman and Strang 2003). This is achieved through victim-offender conferences (VOCs), which are conversations facilitated by a restorative justice practitioner. VOCs provide both the victim and offender an opportunity to discuss their thoughts and feelings related to the incident (Strang et al. 2006). During the meeting, plans for reparation are discussed and these terms are agreed by both parties upon the conclusion of the conference. Reparation can take the form of financial restitution, community service, or preventative courses aimed at educating the perpetrator (Braithwaite 2002). In restorative meetings, the victim's rights are acknowledged, and repairing the harm done to this individual is a central focus.

Advocates of restorative justice argue that this approach to criminal justice has significantly better outcomes for victims of crime compared with other systems. The traditional model of justice in the Western legal system is the adversarial system. Under this approach, disputing parties are positioned against one another and must provide evidence for their version of events. These accounts are then evaluated by an impartial body, who then judge in favour of one party (Bottoms and Roberts 2010). Critics of the traditional adversarial approach to justice have argued that this system neglects the rights of the victim and fails to address the harms caused to them (Strang and Sherman, 2003). In some cases, adversarial justice has the potential to re-traumatise victims (Bolitho 2015; Campbell and Raja 1999), therefore posing a barrier to the improvement of victim outcomes.

There have been a number of reviews that have aimed to evaluate RJ with relation to victim outcomes. In a qualitative review by Choi et al. (2012), the authors found cases of victim dissatisfaction with RJ processes. They reported incidents in which victims felt that the offender's apologies were insincere or inadequate, and therefore the meetings failed to achieve their restorative purpose (Daly 2002). This review would suggest a divergence between theoretical models of RJ and practiced cases. Should there be miscommunication or conflict in goals during the meeting there is the risk of the individual becoming revictimised (Umbreit et al. 1994), which can contribute towards poorer psychological outcomes (Wemmers 2002). Yet, quantitative reviews have found that victims were

generally satisfied with their experience of RJ (Latimer et al. 2005; Strang et al. 2013). These authors found that victims felt their rights had been acknowledged and their needs had been met through RJ, whereas this was not evident in customary justice procedures.

Post-traumatic Stress in Victims of Crime

This emphasis on the harmed party is noteworthy as crime victimisation can cause the onset of significant psychological pathology, including post-traumatic stress. Post-traumatic stress disorder (PTSD) is a trauma and stressor-related disorder that develops following actual or perceived threat to one's life, or threat of serious injury causing a severe emotional response (American Psychiatric Association 2013). The prevalence of PTSD following crime victimisation has been estimated at 10–25% (Walters et al. 2007; Wohlfarth et al. 2002) and these estimates are higher for victims of violent crimes such as rape, where rates of PTSD have been found in up to 65% of victims (Rothbaum et al. 1992). The condition poses a significant public health issue, having been implicated in lower life-expectancy rates (Kubansky, Koenen, Spiro, Vokonas, & Sparrow, 2007), and is often comorbid alongside other major psychiatric disorders, such as depression (O'Donnell et al. 2004).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association 2013) divides the symptoms of post-traumatic stress into four subscales. These are characterised by arousal and reactivity, which reflects the individual's physiological arousal; intrusion, an inability to escape re-experiencing the incident; avoidance, which refers to avoiding cues related to the incident; and negative alterations in mood or cognition, which includes anger towards the self or others, negative beliefs about the world, and cognitions of self-blame (Ruggiero et al. 2003). Together, these constitute post-traumatic stress symptoms (PTSS), which are indicative of clinical manifestations of PTSD.

Cognitive behavioural therapy (CBT) is the strongly recommended treatment for clinical cases of PTSD (American Psychological Association, 2017). The intervention is designed to alleviate symptoms of post-traumatic stress through two key mechanisms. The first, known as 'cognitive restructuring', encourages patients to reassess maladaptive thought processes associated with the traumatic incident (Harvey et al. 2003). Overgeneralisation, for example, leads individuals who have experienced trauma to expect the incident to reoccur more than is statistically probable. In CBT, these negative appraisals are evaluated using sound, rational thought with the aim of reducing trauma-based anxiety (Ehlers and Clark 2000). Complementing this process is exposure to trauma-related cues which aims to habituate victims to trauma-related stimuli, thus reducing stress (Paunovic and Öst 2001). The use of these treatments has been

demonstrated to be an effective intervention to reduce PTSD symptomology in a civilian sample (Bryant et al. 2008).

Potential for Restorative Justice to Decrease Post-traumatic Stress

Victim outcomes are central to RJ and it has been argued that VOCs mirror key features of CBT that make it conducive to the improvement of post-traumatic symptomology (Strang et al. 2006). During VOCs, victims are able to hear the offender's account of the incident and the events that led to their victimisation. This presents an opportunity for the victim to hear a version of events that challenges maladaptive beliefs of culpability for the incident, thereby reflecting the structure of CBT treatment. In a real-world case study, Walters (2015) interviewed family members of a homicide victim who had undertaken a VOC with the perpetrator in their case. Relatives are often secondary victims in cases of crime and can develop symptoms of trauma following the victimisation of a family member (Amick-McMullan et al. 1991). Following the completion of the VOC, the victim's family described having their questions about the event answered by the perpetrator, thereby clarifying the circumstances of the crime. This challenged specific beliefs about the case that had previously been a source of distress for the family members and exacerbated their trauma. In CBT, practitioners similarly aim to challenge negative beliefs about a traumatic incident and replace them with rational appraisals that promote healthy coping strategies (Ehlers and Clark 2000). Consistent with this case study, it was found that victims who participated in conferences encountered explanations as to why they were victimised and were satisfied with these explanations (Strang et al. 2006). As such, VOCs are able to replicate the CBT mechanism of challenging maladaptive beliefs about a traumatic incident, which can facilitate the improvement of post-traumatic stress symptomology.

VOCs also present an opportunity for the victim to gain exposure to a trauma-related cue in the form of the perpetrator within a controlled environment. In CBT, practitioners encourage clients to imagine stimuli related to the incident to habituate the individual, thereby reducing hyperarousal responses (Paunovic and Öst 2001). Similarly, meeting with the perpetrator exposes the victim to a prominent cue related to the crime. In cases where this encounter is carefully monitored, it can lead to a reduction in aversive reactions to these cues. For example, Koss (2014) found that clinical rates of PTSD decreased significantly following involvement in restorative conferences. Specifically, levels of arousal were lower after participants had completed conference, though this result was only marginally significant. Through processes not found elsewhere in the criminal justice system, RJ has qualities conducive to the reduction of PTSS in victims of crime.

One of the primary aims of VOCs is to elicit a genuine apology from the offender for the harm they caused, thereby 'emotionally restoring' the victim (Rossner 2017). Empirical work examining whether this goal is achieved has found that apologies were often present in these meetings (Strang & Sherman, 2003), and victims were satisfied with these apologies (Shapland 2016). Apology is significant within post-traumatic stress symptomology, as it has been evidenced to act as a therapeutic process supporting victims to forgive the individual responsible for their victimisation (Petrucci 2002). Through acts of forgiveness, individuals experience subsequent reductions in anger, reflecting one facet of PTSS (Fehr et al. 2010). The relationship between forgiveness and PTSS has been tested explicitly, and it was found that forgiveness acts as a mediator between a traumatic incident and the development of PTSS (Orcutt et al. 2005). In a case study examining RJ, it was found that the presence of apology had a significant positive impact on secondary victims of crime (Walters, 2015). Therefore, through presenting victims with an opportunity to receive an apology, VOCs provide another route to the reduction of post-traumatic stress.

Experimental Studies Evaluating Restorative Justice

The effectiveness of RJ in reducing PTSS has been examined in lab-based studies. In these paradigms, participants were asked to imagine they had been subject to a criminal incident, after which they were randomly assigned to imagine participating in either RJ or customary justice procedures. Using diverse measures including questionnaires (Paul and Schenck-Hamlin 2017; Winkel et al. 2010) and physiological measures (Witvliet et al. 2008), these studies consistently support the claim that RJ is more effective at reducing PTSS compared with customary justice. However, these lack the ecological validity of studies involving real victims of crime and do not account for the variability of restorative conferences (Braithwaite 2002). Thus, such hypothetical studies are limited when evaluating the effectiveness of restorative processes in reducing PTSS.

The Current Research

To date, there have been no reviews that examine whether RJ produces any psychological benefit to victims compared with customary justice procedures. While previous reviews have found victims are typically satisfied with their experiences of RJ (Latimer et al. 2005; Strang et al. 2013), there has been mixed results regarding the relationship between self-reported victim satisfaction in criminal justice and cognitive or emotional states post-victimisation (Kunst et al. 2014). Therefore, although victims may express greater satisfaction with RJ, it cannot be inferred that this leads to more positive psychological outcomes. Considering the prevalence of PTSS following

crime victimisation (Walters et al. 2007) and the negative health implications resulting from PTSS (Kubansky et al., 2007), there is a need to understand how the justice system can affect clinically relevant outcomes for victims of crime. To address this, the present review will examine whether RJ produces a greater reduction in post-traumatic symptomology compared with customary justice procedures. The question will be addressed through a systematic review of the quantitative research on this subject.

Method

Eligibility Criteria

Studies were limited to those that had been published in an English-language, peer-reviewed journal. Only empirical studies that employed a quantitative methodology were included. The eligibility criteria for studies in the present review were developed using the PICO (Schardt et al. 2007). This tool was developed to guide clinical systematic reviews to ensure they concisely frame a research question. It divides these criteria into four sections: population, which refers to the group of interest; intervention, the novel approach or trial being tested; comparison, the approach the intervention is tested against; and outcomes, which are the dependent variable(s) of importance. The PICO was used to formulate the eligibility criteria and identify relevant literature.

In the current study, the population of interest was victims of real crimes, rather than the general population who were asked to imagine being victimized. However, no restriction was placed on the type of crime victims experienced, as PTSS can develop following a range of criminal events (Walters et al. 2007). The independent variable examined in the current review was the type of justice intervention participants received. The intervention of interest was RJ, to examine whether this impacted PTSS symptoms. This was compared with customary adversarial justice, which is used across the Western legal system. Only studies that tested the difference between RJ and another justice intervention were included to ensure any changes in the outcome measure(s) were due to RJ, rather than criminal justice involvement generally.

The outcome, or dependent variable in the present review, was PTSS, which were based on the criteria defined in the DSM-5 (American Psychiatric Association 2013). The DSM-5 categorises PTSS into the four following subscales: arousal and reactivity, avoidance, cognition and mood change, and intrusion. Within each of these subscales are a further set of criteria, which were used as outcome measures in the present review. For example, to meet the diagnostic criteria for the subscale of avoidance, an individual must present with one of the following criteria: avoidance of thoughts, feelings or physical sensations that bring up memories of the traumatic event,

or avoidance of people, places, conversations, activities, or objects of situations that bring up memories of the traumatic event (American Psychiatric Association 2013). Studies that examined at least one criterion within one subscale of the trauma and stressor-related disorder were considered for inclusion. Finally, only studies that utilised inferential statistical tests were included, as this reduced the likelihood of identifying differences when no true effect exists (a Type I error).

Information Sources

Systematic searches of titles and abstracts were conducted of Web of Knowledge, WileyOnline, ProQuest (including PsychINFO, PsychEXTRA, PILOTS, and Applied Social Sciences Index & Abstracts), Medline, ERIC, Pubmed, and Scopus. The search was restricted to the years 2000–2019 to capture current practice. All searches were conducted in August 2019.

Search Strategy

The search term was constructed from the literature on RJ and PTSD. The current review sought to capture research conducted on victim outcomes of RJ processes, but unlike previous reviews, these outcomes were derived from a clinical criteria. As the review was focused on symptoms of post-traumatic stress rather than solely the clinical manifestation, a phrase was developed to capture both clinical and non-clinical presentations of this disorder. Therefore, the final search term was ('restorative justice' OR 'victim-offender conference' OR 'victim-offender mediation') AND victim AND ('post traumatic stress' OR PTSD OR 'mental health' OR 'arousal and reactivity' OR avoid* OR mood* OR intrus*).

Studies were considered for inclusion if they met the following criteria:

- Utilised RJ as a court-ordered intervention in response to a crime.
- Included participants who undertook VOCs that were guided by RJ theory.
- Compared RJ with another justice intervention.
- Included an outcome measure that was related to one or more subscales of the DSM-5 criteria for PTSD.
- Evaluated the difference between conditions using an inferential statistical test.

Data Collection and Analysis

Studies identified through the screening process were assessed using the Critical Appraisal Skills Programme for randomised controlled trials (CASP; 2014). For studies that were not randomised control trials, the CASP framework was applied

where appropriate, as it has been recognised as a useful tool in appraising other empirical work (Higgins and Green 2011). This tool was utilised to evaluate the methodologies of the papers included for review, which aided in identifying commonalities and theoretically relevant discrepancies between studies.

Results

The initial search yielded 1134 articles, which was reduced to 848 once duplicates were excluded. After examining a previous review (Strang et al. 2013), a further six studies were identified. A total of 854 studies were screened through their title and abstract, resulting in 27 studies being identified for full-text analysis. From this set, 20 were excluded for failing to meet the inclusion criteria of this review. Reasons for exclusion were based on a lack of inferential statistical analysis,

absence of comparative justice procedure, VOCs that were not guided by RJ theory, RJ that did not include VOCs, or a combination of these factors (see Supplementary Material). Overall, a total of seven studies were included for review (see Fig. 1).

Sampling Method

A total of 1373 participants were recruited in total across the studies reviewed (see Table 1). None of the studies included in the review used a random sampling method. Participants were victims of real crimes recruited through judicial institutions such as court referrals following victimisation (Angel et al. 2014; Beven et al. 2005; Calhoun and Pelech 2013; Davis 2009; Gal and Moyal 2011; Sherman et al. 2005; Sherman et al., 2015b). Five studies included adult participants (Angel et al. 2014; Beven et al. 2005; Davis 2009; Sherman et al. 2005; Sherman et al. 2015b) and two studies examined

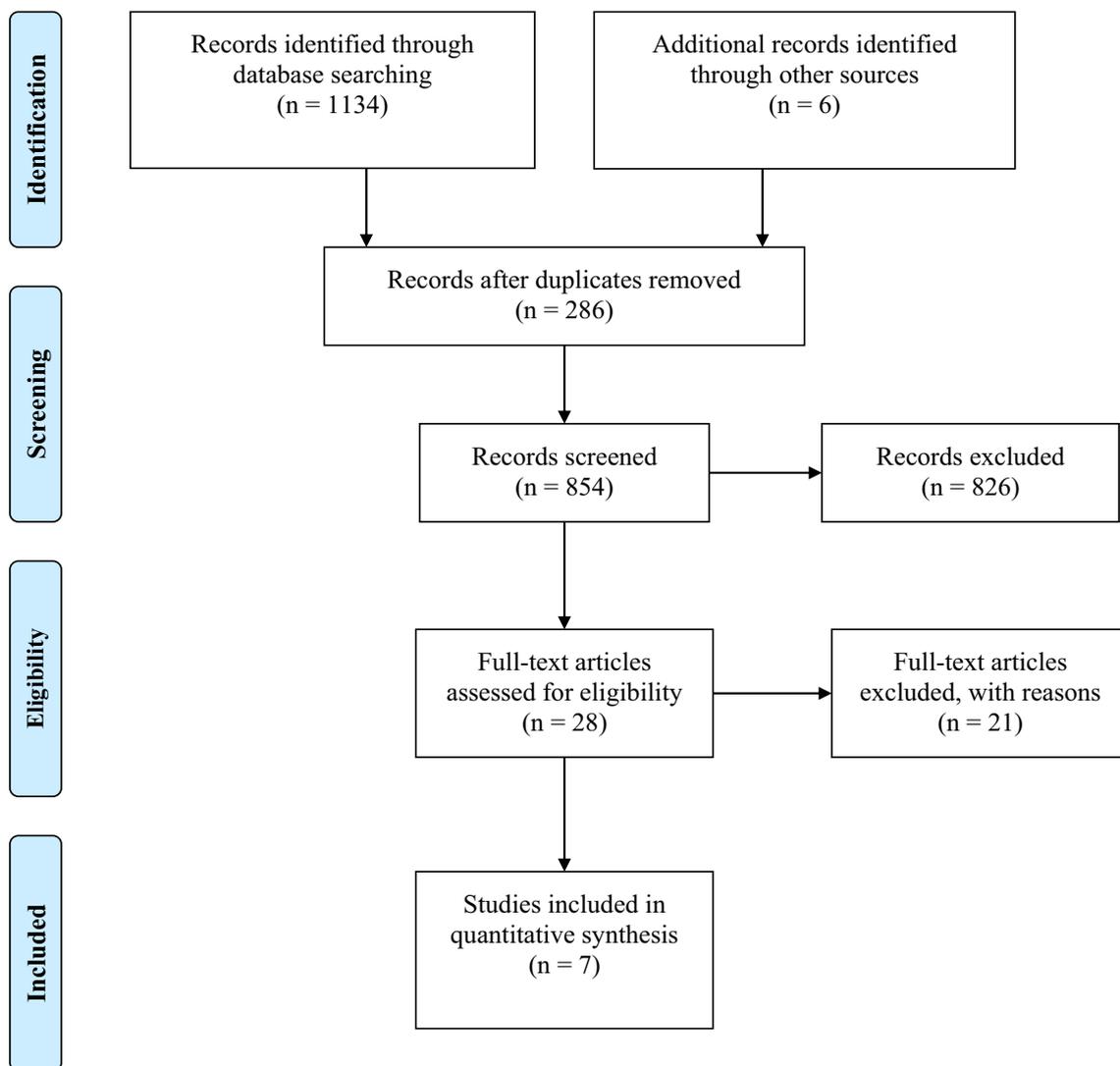


Fig. 1 Flowchart outlining literature review search results and selection process (adapted from Moher et al. 2009)

Table 1 Summary of studies included for review

Reference	Sample size	Sample features	Manipulated variable	PTSS outcome(s) of interest	Operationalisation of outcome measure	Main result
Angel et al. (2014)	<i>N</i> = 192	Victims of burglary or robbery (14% physically injured, 15% verbally threatened)	Assignment to RJ or customary justice	Avoidance symptoms Intrusion symptoms Arousal and reactivity symptoms	The Revised Impact of Event Scale (IES-R; Weiss and Marmar 1997)	Significant reduction in avoidance subscale ($p = .024$) Significant reduction in intrusion subscale ($p = .04$) No significant difference in hyperarousal subscale ($p = .276$) Significantly higher ratings of safety in the RJ group ($p < .001$) Significantly more positive feelings towards offender in RJ group ($p < .001$)
Beven et al. (2005)	<i>N</i> = 83	Victims of stealing, burglary, assault, fraud, and disorderly conduct	Assignment to RJ or customary justice	Arousal and reactivity: hypervigilance Negative mood or cognitions: irritability or aggression	Two-item Likert scale measuring perceptions of safety Single-item Likert scale measuring their feelings towards the offender	Significantly lower emotional distress after exposure to traumatic reminder in RJ group ($p < .05$) Significantly lower exaggerated blame of self or others in RJ group ($p < .05$) Significantly lower negative thoughts and assumptions about oneself or the world in RJ group ($p < .05$) Significantly less anger towards defendant ($p = .01$) Significantly less fear of revenge ($p = .01$) Model 1: unadjusted for age—significant main effect of intervention on attitudes towards the case ($p = .017$)
Calhoun and Pelech (2013)	<i>N</i> = 67	Victims of property crime, violence, or both	Assignment to RJ or customary justice	Intrusion: emotional distress after exposure to traumatic reminder Negative mood or cognitions: exaggerated blame of self or others Negative mood or cognitions: overly negative thoughts and assumptions about oneself or the world	8-item 6-point Likert scale 'offender redressed harm' 6-item 6-point Likert scale 'offender responsibility' 7-item 6-point Likert scale 'experiencing hopefulness for future'	Significantly lower emotional distress after exposure to traumatic reminder in RJ group ($p < .05$) Significantly lower exaggerated blame of self or others in RJ group ($p < .05$) Significantly lower negative thoughts and assumptions about oneself or the world in RJ group ($p < .05$) Significantly less anger towards defendant ($p = .01$) Significantly less fear of revenge ($p = .01$) Model 1: unadjusted for age—significant main effect of intervention on attitudes towards the case ($p = .017$)
Davis (2009)	<i>N</i> = 465	51% victims of assault, 29% victims of burglary, 7% victims of grand larceny, 13% other	Assignment to RJ or customary justice	Negative mood or cognitions: negative affect Arousal and reactivity: hypervigilance Negative mood or cognitions: negative affect	Coded interviews Coded interviews Single-item 4-point Likert scale	Significantly less anger towards defendant ($p = .01$) Significantly less fear of revenge ($p = .01$) Model 1: unadjusted for age—significant main effect of intervention on attitudes towards the case ($p = .017$)
Gal and Moyal (2011)	<i>N</i> = 232 (196 adults, 36 juveniles)	86% victims of violent crime (juvenile sample) 25% victims of violent crime (adult)	Assignment to RJ or customary justice	Negative mood or cognitions: negative affect	Single-item 4-point Likert scale	Model 4: adjusted for age and interaction—no significant main effect of conference ($p = .537$)

Table 1 (continued)

Reference	Sample size	Sample features	Manipulated variable	PTSS outcome(s) of interest	Operationalisation of outcome measure	Main result
Sherman et al. (2005)	N = 146	Victims of property crime, violent crime, burglary, or robbery	Assignment to RJ or customary justice	Negative mood or cognitions: exaggerated blame of self or others Arousal and reactivity: irritability or aggression	Single-item Likert scale	No significant difference in self-blame ($p = .38$)
Sherman et al. (2015b)	N = 188	Victims of property or violent crime	Assignment to RJ or customary justice	Arousal and reactivity: hypervigilance Negative mood or cognitions: negative affect Negative mood or cognitions: negative affect Arousal and reactivity: irritability or aggression	Single-item Likert scale Unreported Unreported Unreported	Significantly less desire to do harm to the perpetrator ($p = .0002$) Significantly less anxiety about revictimisation ($p = .00$) Significantly less anger about the crime ($p = .01$) Significantly less bitterness about the crime ($p = .00$) No significant difference in desire to do harm to the offender ($p = .10$)

juvenile victims aged under 18 (Calhoun and Pelech 2013; Gal and Moyal 2011).

Baseline characteristics of the samples recruited, which included crime severity, age, and gender, did not differ significantly between the intervention and comparison groups. This was with the exception of one study (Gal and Moyal 2011), where this difference was controlled for in the data analysis.

Operationalisation of the Intervention

All studies operationalised the RJ intervention in the form of VOCs. Many features of the operationalisation of RJ were consistent across the seven studies included for review. Each involved mediated discussions between the offender and their victim about the criminal incident. During these meetings, both offenders and victims were able to give accounts related to the criminal incident and victims were able to recommend interventions that would benefit the offender to reduce their risk of reoffending. All VOCs were guided by RJ theory, with the aim of eliciting a genuine apology from offenders and emotionally restoring victims. The studies reviewed included data from victims who had successfully completed the conferences with the perpetrator involved in their case.

There were some notable differences in the operationalisation of RJ across the studies included. One study included an additional component to the RJ intervention, which was based on transformative justice (Beven et al. 2005). This required participants to involve family members and support groups in identifying issues that may have contributed to their offending lifestyle. Further, all but one of the studies included required offenders to be sentenced by the court in addition to receiving the RJ intervention. The one exception to this was a study on archival data conducted by Davis (2009), where cases that went through RJ mediation in this paper were not accompanied by any form of court proceedings. Moreover, victims included in this study were known to the offender and had contact following mediation. A final difference in cases where RJ was accompanied by a ruling by the court was whether RJ was implemented prior to, or after the court proceeding. In majority of studies included in this review, VOCs were scheduled after the offender had received their court sentence. However, in one study (Beven et al. 2005), VOCs were conducted prior to sentencing, and the report resulting from the RJ conference was used to inform the offender's sentence.

The operationalisation of the comparison intervention, customary adversarial justice, was variable and depended on the local judicial systems, which included the USA, UK, Canada, and Australia. However, they shared similar properties as the customary justice groups were allocated their sentences by the

court and victims were not required to formally meet with the offender as part of the sentence.

Negative Alterations in Mood and Cognition Symptoms

Studies that included measures of negative alterations in mood and cognitions following a traumatic event asked participants about feelings of anger, bitterness, self-blame, and beliefs about the world. A number of the studies reviewed found that RJ significantly improved cognitions of anger compared with customary justice procedures. Participants were asked to report their feelings towards both the perpetrator and the case using Likert-type scales. In adult victims, it was consistently evidenced that anger was lower in the RJ group compared with the group receiving the customary justice intervention (Beven et al. 2005; Davis 2009; Gal and Moyal 2011). Further, reductions in anger were found to hold up to 10 years following the intervention (Sherman et al. 2015b).

RJ also supported improvements in mood and cognition in an adolescent sample. Juvenile victims who participated in RJ reported higher rates of agreement when asked whether the offender had taken appropriate levels of responsibility for the event compared with victims that had received customary justice (Calhoun and Pelech 2013). This outcome indicated those in the RJ condition had less exaggerated blame on the self or others for the criminal incident. The same study also found that participants who experienced RJ expressed fewer negative thoughts about the world and had greater hopefulness for the future, reflecting another criterion within this subscale.

Yet, there were some notable discrepancies amongst studies measuring negative alterations in mood and cognition. Compared with adult victims, one study examining adolescent victims reported worse outcomes when this group was exposed to the RJ condition (Gal and Moyal 2011). This study compared customary justice and RJ in an adult and adolescent sample. Consistent with previous studies, they found that adult participants reported significantly lower anger and bitterness towards the case in the RJ condition, whereas adolescent victims reported higher levels of anger and bitterness towards the case in the RJ condition (Gal and Moyal 2011). Further discrepancies were found in measures of cognitions of self-blame. While support was found for a reduction of these cognitions in an adolescent sample (Calhoun and Pelech 2013), this was not the case for adult participants aged 17 and above, where no statistically significant difference was observed (Sherman et al. 2005).

Arousal and Reactivity Symptoms

Victims who were allocated to the RJ condition reported lower levels of hyperarousal compared with those that were allocated to the customary justice intervention. Participants assigned

to RJ reported feeling safer and had less fear of revenge after participating in VOCs (Beven et al. 2005; Davis 2009). Further, improvements in hyperarousal displayed longevity, as anxiety of revictimisation was lower in victims who had received RJ compared with those whose cases had been adjudicated by the courts up to 10 years after receiving the intervention (Sherman et al., 2015b). Consistent with these findings, symptoms of irritability and aggression were significantly different between justice interventions. Victims who had participated in RJ expressed less desire to do harm to the perpetrator compared with participants who received the customary justice intervention (Sherman et al. 2005). However, unlike symptoms of hyperarousal, differences in desire to do harm to the perpetrator did not remain statistically significant between conditions in a 10-year follow-up (Sherman et al. 2015b).

Further notable inconsistencies were identified within the literature. An RCT using a validated scale to measure arousal and reactivity in an adult sample found no significant differences between participants who completed RJ compared with those who went through customary justice (Angel et al. 2014). Participants reported similar levels of negative outcomes such as hypervigilance or heightened startle reaction after being victims of burglary or robbery.

Intrusion Symptoms

Symptoms of intrusion, where the traumatic event is re-experienced following an incident, were significantly different between RJ and customary justice. Adult participants who received RJ reported significantly fewer intrusion symptoms 6 months after the criminal incident compared with individuals who went through customary justice (Angel et al. 2014). This was also evidenced in adolescent participants, who reported significantly less emotional distress after experiencing a traumatic reminder following participation in RJ compared with customary justice interventions (Calhoun and Pelech 2013). While Calhoun and Pelech (2013) did not use a validated scale to measure this variable, their measure did show acceptable levels of reliability (Peterson 1994).

Avoidance Symptoms

Only a single study examined symptoms related to avoidance of stimuli related to the traumatic incident. While the evidence base was limited, it was found that levels of avoidance symptoms were significantly lower in participants who had received RJ compared with participants who had received customary justice (Angel et al. 2014). However, the effect size for this difference was small-moderate (SMD = .03; Faraone 2008).

Discussion

The current paper reviewed the quantitative research on the subject of PTSS outcomes following restorative justice. Overall, the evidence reviewed presented only moderate evidence for the claim that RJ reduced post-traumatic stress in victims of crime. While a number of studies did find improvements in the subscales of the DSM-5 diagnostic criteria for post-traumatic stress, this was consistently evidenced for only two of the four subscales of the disorder. Therefore, while existing research tentatively supports the claim that RJ is a victim-centred approach to criminal justice that benefits these individuals, further research is needed to validate these observations.

Negative Alterations in Mood and Cognition

Several studies reported that participants who experienced contact with the offender displayed fewer cognitions of anger towards the perpetrator of the transgression and fewer cognitions of self-blame (Beven et al. 2005; Calhoun and Pelech 2013; Davis 2009; Sherman et al., 2015b). Yet the efficacy of RJ in reducing negative cognitions of self-blame did not have categorical support (Sherman et al. 2005). This is noteworthy as higher rates of self-blame have been associated with poorer coping strategies following a traumatic incident (Foa et al. 1999).

Cognitive restructuring aims to address maladaptive thought processes that exacerbate trauma-related anxiety, with particular focus on false beliefs such as self-blame (Harvey et al. 2003). Complementing this, RJ aims to discuss the role of the offender in the criminal incident, directly addressing responsibility for the event (Strang et al. 2006). Procedurally, this is supported through the requirement of a guilty plea in court before restorative conferences are recommended in some jurisdictions (e.g., Ministry of Justice 2015). However, the lack of support found for improvements in self-blame is consistent with research that has failed to find evidence for the efficacy of cognitive restructuring in reducing PTSS (Foa et al. 2005) and has implicated the technique in detrimental outcomes for severe sufferers of PTSD (Moser et al. 2010). Self-blame reflects a complex coping strategy also subject to social reaction (Ullman et al. 2007), and crime severity (Kamphuis et al. 2003), which were not accounted for in the analysis of the studies examining this outcome. Therefore, the absence of control measures is a limitation of the methodology. These conflicting findings raise the need for further research to examine the conditions in which RJ is effective and the routes through which psychological benefit for the victim may be achieved.

RJ may be particularly effective at addressing cognitions of anger as conferences are designed with the aim of restoring the harm caused to the victim, with one route being through the

expression of apology by the perpetrator. Apology can aid the reduction of anger through promoting forgiving motivations towards the perpetrator of an interpersonal transgression (Orcutt et al. 2005). However, in their lab-based study, Winkel et al. (2010) found that apologies were only associated with improvements in anger when viewed as helpful by the participants. Evidence has suggested that insincere or forced apologies can be harmful to the restorative process (Choi et al. 2012). Yet, overall perceptions of apologies were positive in actual RJ conferences (Sherman et al. 2005). As such, while RJ can be conducive to improvements in PTSS, this relies on the victim's perceptions of offender motivations within this context. These findings reinforce the need for procedural safeguards, such as an admission of guilt, when evaluating the suitability of offenders to participate in VOCs.

Population differences were observed on the PTSS subscale of negative alterations in mood and cognitions, as adolescent participants reported higher rates of anger and bitterness following RJ conferences (Gal and Moyal 2011). In a complementary qualitative analysis, juvenile victims described poor implementation of VOCs as the reason for their dissatisfaction with the restorative process. Two victims specified parents 'taking over' the meeting which diminished their role in the conference as an equal participant (Gal and Moyal 2011, p.1026). Victims of crime benefit from control following a traumatic incident as a means of coping with the incident (Lazarus and Folkman 1984). Yet, young people involved in RJ were denied this opportunity through inadequate mediation, highlighting the potential of conferences to exacerbate PTSS (Wemmers 2002). This is counter to the aims of RJ and reflects the necessity of high practitioner standard and effective mediation in order to achieve positive outcomes for the victims. In cases where these standards are met, RJ can support long-term benefits to victims' mood and cognitions (Sherman et al., 2015b). Future research should account for the quality of VOCs when examining their impact on PTSS, as this can influence the direction of the effect that this intervention has on victim outcomes.

Arousal and Reactivity

This review found mixed evidence for the benefits of RJ on the subscale of arousal and reactivity. Conferences present an opportunity for the victim to meet the perpetrator in a controlled environment, thus exposing them to a stimulus related to the incident. This mirrors the process of exposure utilised in CBT, which aims to reduce anxiety and its associated physiological reactions related to the incident (Paunovic and Öst 2001).

Yet, Angel et al. (2014) observed that the only subscale of post-traumatic stress to be unimproved by RJ was arousal and reactivity. This is in contrast to lab-based studies, where it has been observed that compared with RJ, rates of arousal were

higher in customary adversarial justice and in the absence of justice (Witvliet et al. 2008). These contradictory findings may be attributed to methodological differences, as the data from Angel et al. (2014) was collected 3 months following random allocation to either RJ or customary justice. Rates of arousal and reactivity have been evidenced to consistently decrease in the time following a traumatic incident (Orth et al. 2006). Therefore, a shorter interval between intervention and outcome measurement may be more appropriate to observe an effect.

Intrusion and Avoidance

Participants who experienced RJ had fewer symptoms of intrusion and avoidance compared with those who were allocated to receive the customary justice intervention (Angel et al. 2014; Calhoun and Pelech 2013). These findings are consistent with a CBT framework that encourages patients to reduce anxiety related to the incident through exposure to cues connected to the event. Prolonged exposure aims to habituate individuals to these stimuli and therefore reduce anxiety associated with the incident and associated stimuli (Paunovic and Öst 2001). Through this mechanism, victims are no longer motivated to avoid stimuli related to the incident and are able to manage cues in the environment that might lead to intrusive thoughts related to the incident (Smith et al. 1999). There has been criticism of imaginal exposure, where habituation occurs through imagining trauma-related stimuli, as some patients are unable to immerse themselves and therefore fail to benefit from the technique (Schottenbauer et al. 2008). As such, VOCs may be able to overcome the limitations of imaginal exposure through the use of a physical cue related to the traumatic event. This can support the process whereby participants to habituate to trauma-related stimuli and subsequently experience fewer symptoms of intrusion and avoidance.

Methodological Limitations of the Studies Reviewed

Inconsistencies in the findings could be addressed through improving several methodological limitations that were evident across the studies reviewed. A common methodological limitation was the absence of measures of crime severity in the analysis. One study included an index of crime severity as a covariate (Gal and Moyal 2011). However, other studies failed to measure features of the crime, such as whether the crime was violent, on post-traumatic stress. This is significant as PTSD severity has been found to alter the effectiveness of CBT (Moser et al. 2010). Further, offence severity has been linked to the success of restorative outcomes in lab-based studies, with more severe crimes being associated with fewer restorative outcomes (Paul and Schenck-Hamlin 2017). Therefore, while these studies demonstrated a trend for RJ to improve symptoms of post-traumatic stress, whether this

differs with the severity of the incident was not addressed in the research reviewed.

Studies also failed to record concurrent treatments, including CBT, being sought alongside the intervention, which could conflate the effects of RJ. Due to the additional time involved for participants assigned to RJ, these individuals would have been more likely to have access to additional treatments. This is particularly pertinent in context of the criminal justice system, where case disposition times can be variable (Goelzhauser 2012). To overcome these limitations, future studies should aim to control for confounding variables such as time elapsed since the criminal incident, additional treatments, and crime severity. This would assist in the application of RJ as it would provide practitioners with guidance on the circumstances in which restorative meetings might put victims at risk of further harm.

Future research should aim to reduce the heterogeneity across studies to allow closer methodological and population comparisons. One route to achieve this would be to standardise the outcome measures used to address this topic. The PTSD Checklist—civilian version (PCL-C) would be an appropriate tool for future research as it has been subject to validation with civilian victims of trauma (Ruggiero et al. 2003) and has demonstrated good psychometric validity (Blanchard et al. 1996; Wilkins et al. 2011). Incorporating these recommendations into future studies would improve experimental rigor and allow for a more nuanced examination of the conditions in which RJ could be an effective intervention to reduce PTSS.

Limitations, Implications, and Conclusions

The findings of the present review should be considered in context of several limitations. As studies were included that measured outcomes related to post-traumatic stress, rather than relying on scales of post-traumatic stress specifically, there is potential for interpretive differences regarding outcomes related to PTSS. In order to address this, outcomes were selected on the basis of being included in the clinical diagnostic criteria for PTSD, the DSM-5 (American Psychiatric Association 2013). This is the primary clinical measure for this disorder and has a clear set of diagnostic criteria, which were used to guide the outcomes compared in the present review. A further limitation is that only seven studies were identified as eligible for inclusion. This can limit population and design comparisons drawn from this restricted number of studies. As such, any population of methodological differences identified in the present review should be treated with caution.

This area of research has important practical applications in the implementation of restorative justice. With a greater understanding of the conditions under which RJ is beneficial for

victims, additional resources can be allocated within the criminal justice system to facilitate victims' attendance of meetings. Currently, resources are limited and motivating victims to attend conferences can be problematic due to lack of understanding of the process (Restorative Justice Council 2017). The presence of victims in restorative conferences has been demonstrated to increase the remorse of offenders, which has been implicated in reducing rates of recidivism (Saulnier and Sivasubramaniam 2015). Therefore, victim involvement in VOCs has additional benefits for both participants and communities that are affected by repeat offending.

In conclusion, it has been suggested that restorative justice is an alternative approach to criminal justice that can improve PTSS in victims of crime. The processes enacted in RJ are absent from other forms of criminal justice, which gives the approach characteristics that can produce psychological benefit for victimized individuals. This review has evaluated the quantitative evidence comparing RJ with customary justice and has found only moderate evidence in support of reductions of PTSS following RJ. While improvements were found in symptoms of avoidance and intrusion, there were mixed findings with regard to whether RJ could produce improvements in negative alterations in mood and cognition, and arousal and reactivity. Important methodological limitations may have contributed to these inconsistencies and it is important that further research is conducted on this topic. Nevertheless, the restorative approach to criminal justice addresses the harm done to victims of crime, with greater attention paid to these stakeholders and their involvement following the incident.

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