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Psychological Interventions for Individuals Bereaved by Homicide

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Psychological Interventions for Individuals Bereaved by Homicide: A Systematic Review

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Abstract

Research has demonstrated that approximately 45–50% of individuals show healthy levels of psychological and physical functioning in the first 12 months post-loss. Homicidal bereavement (loss due to murder or manslaughter) does not appear to follow this pattern. Homicide-related mental health difficulties are a serious problem worldwide, displaying high rates of lifetime incidence, high chronicity, and role impairment. Individuals are at increased risk to develop symptoms of post-traumatic stress disorder (PTSD), complicated grief (CG), and depression. Nevertheless, a systematic review specifically on the efficacy of psychological interventions following homicidal loss has not yet been conducted. The current systematic review (registered via PROSPERO) aimed to review the psychological interventions available and report their effectiveness. Of 77 records, 7 met predefined inclusion criteria. Studies presented different methodologies, tested different clinical models, and treatment conditions. Thus, a narrative systematic review was conducted. Studies included manualized interventions to deliver 1:1 and group sessions. Cognitive behavioral therapy, restorative retelling, and eye movement desensitization and reprocessing were the main models used together with psychoeducational elements about trauma and grief responses. Overall, symptoms of PTSD, CG, and depression decreased significantly postintervention. Sustained improvements were reported for PTSD and depressive symptoms at the follow-up measurements. Mixed results were found regarding how individual (age, gender) and external factors (time since loss, relationship with the deceased) impact on symptom progression. As a result of differences in methodologies, categorization of therapies, methodological differences, and small sample sizes, important questions remain unanswered. Further randomized controlled trials and *expert consensus* could be considered.

Keywords

bereavement, loss, homicide, mental health, trauma, psychological interventions

Research has demonstrated that approximately 45–50% of individuals are likely to adjust relatively well following “natural losses,” showing healthy levels of psychological and physical functioning in the first 12 months post-loss (Bonanno & Mancini, 2008). However, homicidal bereavement (i.e., loss due to murder or manslaughter) does not appear to follow this pattern. Homicide-related mental health difficulties are a serious problem worldwide, displaying high rates of lifetime incidence, high chronicity, and role impairment. Thus, given the scope of the problem and severity of its consequences, ensuring the availability of effective services for those bereaved by homicide is of significant public health and social importance. Nevertheless, a systematic review specifically on the efficacy of psychological interventions following homicidal loss has not yet been conducted. Consequently, it remains largely unclear which clinical models and interventions homicidally bereaved individuals benefit from.

Homicidally bereaved individuals are at greater risk of developing severe and prolonged psychological distress and mental health impairments (e.g., Boelen, de Keijser, & Smid,

2015; van Denderen, de Keijser, Kleen, & Boelen, 2015) when compared with individuals bereaved by nonviolent losses (e.g., Kristensen, Weisaeth, & Heir, 2012). This may be a consequence of both, the particular characteristics of the homicide itself (i.e., sudden, unexpected, violent, and premeditated), and the unusual post-loss reality, which often involves protracted legal procedures and media attention (Amick-McMullan, Kilpatrick, Veronen, & Smith, 1989; Kaltman & Bonanno, 2003; Mezey, Evans, & Hobdell, 2002; Alves-Costa, Hamilton-Giachritsis, & Halligan, 2018a). Recent qualitative studies have found that homicidally bereaved individuals perceive profound changes in their views of themselves and the

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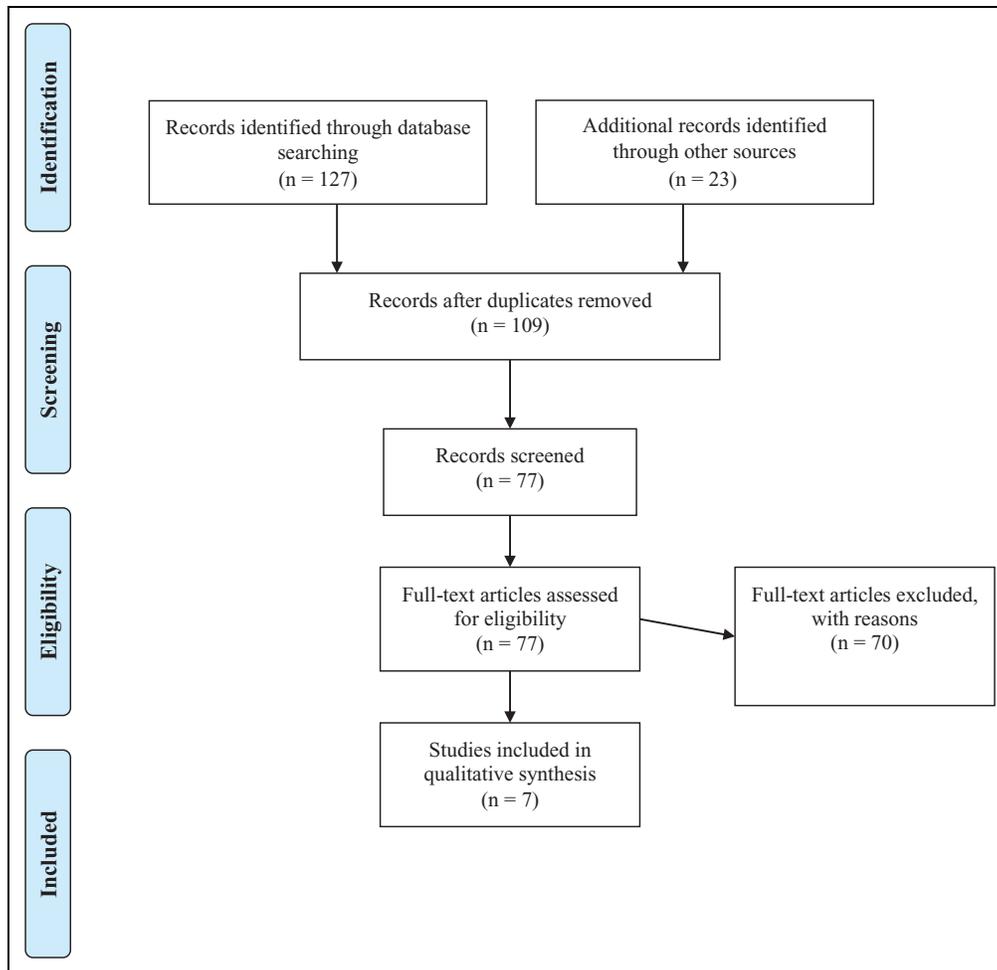


Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram.

world post-homicide, which may contribute to ongoing psychological distress (Alves-Costa et al., 2018a; Alves-Costa et al., 2018b; van Wijk, Leiden, & Ferwerda, 2017). Recent developments in the field have demonstrated that homicidally bereaved individuals are likely to report symptoms of post-traumatic stress disorder (PTSD; e.g., Rheingold & Williams, 2015; van Denderen, de Keijser, Huisman, & Boelen, 2016), depression (Rheingold & Williams, 2015; van Denderen et al., 2015), and complicated grief (CG¹; Rheingold & Williams, 2015; van Denderen et al., 2015, 2016), which can impact many areas of their lives. For some individuals, the co-occurrence of mental health difficulties remains clinically significant for many years after the loss (Murphy et al., 2003, Alves-Costa et al., 2018a). Prolonged post-loss mental health difficulties have also been linked with the development of physical health impairments such as sleeping and eating difficulties (Armour, 2002; Mastrocinque et al., 2015; Miller, 2009; Rheingold et al., 2015; van Wijk et al., 2017), headaches, stomach complaints, bowel complaints, tiredness, and cardiac issues (van Wijk et al., 2017).

Some developments have been made, for example, the GRIEF Approach Intervention takes a systemic, modular approach to

tackling a range of mental health sequelae following from violent bereavements and can be adapted according to the individual's particular areas of difficulty (Rheingold & Williams, 2018). Despite the enormous value of the research conducted previously, little is known about the efficacy of such interventions, and a reference to systematic, empirical research is seldom provided. Thus, this article critically reviews the available evidence to investigate and report the efficacy of the evidence.

Method

The systematic review protocol was published via PROSPERO prior to searches being conducted (registration number: CRD42016037229).

Literature Search

A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher, Liberati, Tetzlaff, Altman, & Group, 2009) diagram was used to describe the systematic review process (Figure 1). Records were searched from the earliest indexed studies to January 2019 using core electronic

databases: APA PsycNET (searches across PsycINFO, PsycEXTRA, PsycTESTS, and PsycARTICLES), PubMed, The Cochrane Library (Cochrane Database of Systematic Review), and Web of Science. The following research terms were used: “Victim” OR “Victims” OR “Co-victim” OR “Co-Victims” OR “Covictim” OR “Covictims” OR “Survivor” OR “Survivors” AND “Homicide” OR “Homicides” OR “Homicidal” OR “Homicidally” OR “Murder” OR “Murders” OR “Wrongful Death” OR “Wrongful Deaths” OR “Killing” OR “Killings” OR “Manslaughter” AND “Traumatic Bereavement” OR “Traumatic Grief” OR “Mourning” OR “Mournings” OR “Traumatic loss” OR “Traumatic losses.” Additionally, the reference lists of all relevant papers and reviews concerning interventions for bereaved individuals were scanned, and key researchers in the area contacted by e-mail.

Inclusion/Exclusion Criteria

This review focused exclusively on homicidal bereavement. The population, exposure, comparison, and outcome of interest framework used was as follows: *P*: homicidal bereaved individuals, *E*: psychological outcomes, *C*: pre- and posttreatment measurements, and *O*: effectiveness of psychological interventions.

Studies were included if they (1) examined psychological interventions following an experience of homicidal bereavement—murder or manslaughter, (2) included a sample of at least 50% homicidally bereaved individuals, (3) included family members or others with a close relationship to the person who died (e.g., adoptive family, close friend), (4) included standardized outcome measures of mental health and grief, (5) included a comparison group or used pre- and posttreatment comparisons, and (6) were peer-reviewed manuscripts written in English.

After removing duplicates, the first author screened titles and abstracts for all the eligible studies. Records that did not meet the inclusion criteria mentioned above were excluded. Two authors (FAC and HC) discussed the inclusion and exclusion of 30 randomly selected papers, from any stage of the screening process, in order to assess reliability and consistency. Cohen’s κ indicated a substantial level of agreement between raters ($k = .91, p = .001$). Any disagreements were discussed with the additional authors until consensus was reached.

Quality Assessment

Hawker’s Checklist (Hawker, Payne, Kerr, Hardey, & Powell, 2002; supplementary table) was used to assess the methodological quality of all the papers included. This checklist includes a 5-point Likert-type scale (ranging from 0 = *poor quality* to 4 = *good quality*). This sought to limit bias that can occur while synthesizing evidence.

Data Synthesis

The included records were highly diverse in terms of methodological designs, models of interventions, and outcome

measures. Thus, a narrative synthesis of the data was conducted (Centre for Reviews and Dissemination, University of York, 2008).

Results

Study Characteristics

The initial search generated 127 articles. An additional 23 records were identified through other sources (paper reference lists, books). After removing 41 duplicates, titles and abstracts of 109 records were screened. Seventy-seven articles were identified for full-text reading and assessed for eligibility. Authors were e-mailed when unclear samples were reported (e.g., number of homicidally bereaved individuals, if a mixed sample). Following this review, 70 records were excluded, as they did not include at least 50% of individuals bereaved through homicide and/or they lacked a group comparator or pre–posttreatment design.

This left seven studies, which met the inclusion criteria and were included in the review. These studies were conducted in the United States ($N = 5$; Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008; Salloum, Avery, & McClain, 2001; Tuck, Baliko, Schubert, & Anderson, 2012), Japan ($N = 1$; Asukai, Tsuruta, & Saito, 2011) and the Netherlands ($N = 1$; van Denderen, de Keijser, Stewart, & Boelen, 2018) and were published in peer-reviewed journals between 2001 and 2018 (Figure 1). Study participants were referred by clinics, medical centers, and victim support services (Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; van Denderen et al., 2018), advertised in community centers or media platforms (Salloum, 2008; Salloum et al., 2001; Tuck et al., 2012; van Denderen et al., 2018). Overall, studies targeted PTSD, CG, and depressive symptoms.

Participants

Overall, the number of participants included in the analyses was relatively small, ranging from 8 to 89². Five studies included adult participants (18–80 years old; Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; Tuck et al., 2012; van Denderen et al., 2018). Two studies included children and adolescents (8–19 years old; Salloum, 2008; Salloum et al., 2001). Participants were predominantly women, African American, or European American (other backgrounds included Japanese and European) and from low-to-medium incomes. Most of the adult participants were married and college educated.

Characteristics of Bereavement and Relationship With the Deceased

Time since loss varied. Among the studies that included adults, time since loss ranged from 2 months to 28 years. The majority of the participants were parents of the victim (other relatives included romantic partner and sibling). Some were witness to the homicide or aftermath (Rheingold et al., 2015; Saindon

et al., 2014; Salloum, 2008). Participants reported having positive relationships with the deceased (Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008). Children and adolescents (Salloum, 2008; Salloum et al., 2001) were more likely to have lost a family member (e.g., parent, uncle, aunt, or cousin) or friend.

Victim–Perpetrator Relationship

Only two studies have considered the victim's gender; victims were reported to be both males (Tuck et al., 2012) and females (van Denderen et al., 2018). The perpetrator was suggested to be known to the victim, but unknown to the participants, as reported in one study (Tuck et al., 2012).

Mental Health, Substance Misuse, and Violence

Participants did not report having any mental health difficulties or substance misuse prior to the loss. Pre-intervention, some participants were on stable doses of medication³ (Asukai et al., 2011) and others reported taking psychotropic medication for depression, anxiety, and mood swings (at pre-intervention and follow-ups; Tuck et al., 2012). Some participants reported prior mental health support: one engaged with therapy while participating in a retreat and four were seeing a counselor/therapist at the follow-up assessment (Tuck et al., 2012).

The majority of children and adolescents were exposed to violence prior to the incident, as well as during the intervention (Salloum, 2008; Salloum et al., 2001).

Psychological Models and Treatment Conditions

Overall, interventions comprised psychoeducational elements including trauma and grief components, as well as relaxation techniques. Nevertheless, studies all tested different interventions, except for two that explored Restorative Retelling (RR) models. Group (Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008; Salloum et al., 2001; Tuck et al., 2012) and individual (Asukai et al., 2011; van Denderen et al., 2018) interventions were delivered. Most of the interventions occurred on a weekly basis consisting of between 8 to 16 sessions (Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008; Salloum et al., 2001; van Denderen et al., 2018). Tuck, Baliko, Schubert, and Anderson (2012) developed an intensive retreat program that lasted for 2 days. All of the included studies reported having used manualized therapy interventions or interventions that were adapted from previous models.

Interventions for adults. Asukai, Tsuruta, and Saito (2011) delivered an intervention adapted from Shear's model of grief (Shear, Frank, Houck, & Reynolds, 2005) with modified techniques of prolonged exposure (PE) for PTSD (Foa, Hembree, & Rothbaum, 2007). Fifteen individual sessions were delivered (90 min weekly). The intervention combined grief-focused elements derived from cognitive behavior therapy (CBT) with

modified PE, including *in vivo* and imaginal exposure, coupled with conversations exploring memories and feelings about their loss. Pre- and postintervention measurements were conducted, as well as three follow-ups (at 3, 6, and 12 months following the intervention) to evaluate symptoms of PTSD, CG, and depression.

Rheingold et al. (2015) conducted a pre-/posttrial using an RR group intervention approach (Rynearson, Correa, Favell, Saindon, & Prigerson, 2006), which lasted for 10 sessions (2 hr per week). The intervention included psychoeducational elements, exposure, and imagery techniques (e.g., death, negative, and positive memories), as well as symptom management (relaxation training). The intervention targeted grief, PTSD, and depressive symptoms. Pre- and postmeasurements and a 12-month follow-up were conducted.

Saindon and colleagues (2014) delivered the same RR group intervention (Rynearson, 2001; Rynearson & Correa, 2008) performed by Rheingold et al. (2015). This uncontrolled trial aimed to target the individual's tolerance to the intervention and evaluate symptom recovery (i.e., depressive, CG, avoidance, and intrusion). Pre- and postintervention measurements were recorded.

Tuck et al. (2012) tested the feasibility and acceptability of a 2-day group retreat intervention—TOZI Healing Retreat®. It included psychoeducational elements on trauma, CG, and the judicial process. Additionally, guided imagery exercises were implemented. The retreat aimed to decrease distress (PTSD, depression) and increase general well-being and spirituality. This exploratory study included pre- and postintervention assessments (28-hr postintervention, at 6 weeks, 12 weeks, and 30 months postintervention).

van Denderen, de Keijser, Stewart, and Boelen (2018) conducted a randomized controlled trial to target CG and PTSD. Individual treatment was delivered (eight sessions). The intervention included psychoeducational elements about homicidal loss and sources of support. The eye movement desensitization and reprocessing (EMDR) sessions followed a standardized Dutch treatment protocol (De Jongh & Ten Broeke, 2003). The CBT followed previous evidence (Boelen, De Keijser, Van den Hout, & Van den Bout, 2007) and aimed to identify, challenge, and change potential negative cognitions related to the loss. Outcome measures were completed at pretreatment, posttreatment, and at a 6-month follow-up.

Interventions for children and adolescents. Salloum, Avery, and McClain (2001) and Salloum's (2008) studies included a school-based intervention (8–10 sessions) focusing on grief and trauma. This intervention was based on a previous framework developed by Salloum and Vincent (1999). Sessions explored areas such as family, safety, memories, spirituality, emotions, anger management, coping strategies, and PTSD using developmentally appropriate techniques (e.g., play, drama, discussion, drawing, storytelling, and writing). Pre- and postintervention assessments were conducted to measure the progression of PTSD.

Training, Supervision, and Independent Audits

Most of the authors explicitly provided some information regarding the training and supervision received by the practitioners (Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008; van Denderen et al., 2018). In two studies (Asukai et al., 2011; Tuck et al., 2012), the practitioners acted as therapists/psychologists and researchers simultaneously, which could bias the findings.

Outcome Measures

Varied outcome measures were used, as mentioned above (Table 1). Overall, studies targeted PTSD symptoms (Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008; Salloum et al., 2001; Tuck et al., 2012; van Denderen et al., 2018), CG (Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; van Denderen et al., 2018), and depression (Asukai et al., 2011; Rheingold et al., 2015; Saindon et al., 2014; Tuck et al., 2012). Authors provided different degrees of information regarding the participants' demographics and bereavement characteristics.

Outcome Variables

As previously stated, studies presented very dissimilar designs, methodologies, and psychological models of intervention, which has compromised the synthesis of the results. The main intervention outcomes⁴ (PTSD, CG, and depression) were described.

PTSD. All studies measured PTSD symptoms. Pre- and postintervention assessments (Asukai et al., 2001; Rheingold et al., 2015; Saindon et al., 2014; Salloum, 2008; Salloum et al., 2001; van Denderen et al., 2018) reported that individuals presented lower PTSD symptoms postintervention. These studies reported statistically significant differences with moderate to very high effect sizes. Intervention outcome at 12-month follow-up (Asukai et al., 2001; Rheingold et al., 2015) revealed sustained improvements (moderate to large effect sizes). van Denderen et al. (2018) reported that PTSD symptoms remained stable between postintervention and follow-up at 6 months. Tuck et al. (2012) described a decrease in PTSD mean scores postintervention (28 hr, 6 weeks, 12 weeks, and 30 months after the intervention).

CG. Mixed results were found. Asukai et al. (2001), Saindon et al. (2014), and van Denderen et al. (2018) reported a statistically significant decrease in grief responses from pre- to postintervention measurements (low to moderate effect sizes). Rheingold et al. (2015) described no differences. Testing at 6- and 12-month follow-up showed that improvements were not sustained (Asukai et al., 2001; Rheingold et al., 2015; van Denderen et al., 2018). van Denderen et al. (2018) reported that CG significantly increased between postintervention and 6-month follow-up. Tuck et al. (2012) reported overall greater

grief resolution postintervention (28 hr, 12 weeks, and 30 months after the intervention). Rheingold et al. (2015) described decreased death imagery symptoms postintervention (moderate effect size), but this was not maintained at 12-month follow-up.

Depression. Depression symptoms significantly decreased from pre- to posttreatment (Asukai et al., 2001; Rheingold et al., 2015; Saindon et al., 2014; small to large effect sizes), as well as at 12-month follow-up (Asukai et al., 2001; Rheingold et al., 2015; large effect sizes). Furthermore, depressive mean scores decreased after the retreat. Symptoms increased over time (from the 28-hr assessment to 6 weeks, 12 weeks, and 30 months after the intervention; Tuck et al., 2012).

Other Factors

Some studies hypothesized that internal and external factors could impact on the individuals' symptoms progression.

Gender. No differences were found regarding the sex of the participants and the progression of symptoms (Salloum, 2008; Salloum et al., 2001; van Denderen et al., 2018). However, Rheingold et al. (2015) noted a significant gender interaction concerning the display of CG symptoms over time (pre-posttreatment, $p = .004$). Follow-up pairwise comparisons revealed reduced CG symptoms for females ($p = .003$), suggesting that they benefited more from the intervention than males on this outcome.

Age. Only the studies that included children and adolescents controlled for age (Salloum, 2008). There were no statistically significant differences in the mean PTSD scores for younger versus older children ($p = .218$). However, older children scored slightly lower than younger children at postintervention. There was an interaction effect of gender and developmental status regarding PTSD scores ($p = .032$). Older girls reported greater adjustment postintervention ($p = .022$, $\eta^2 = .053$), indicating that they benefited more.

Relationship proximity and quality. Rheingold et al. (2015) identified that a more positive relationship with the deceased was associated with greater posttreatment symptom severity regarding CG ($p = .033$, 95% CI [0.09, 1.89]), PTSD ($p = .025$, 95% CI [0.21, 2.99]), and hyperarousal ($p = .018$, 95% CI [0.11, 1.12]). The quality of the relationship did not predict intrusive thoughts, avoidance, nor depression. Nevertheless, no time effects were found (pre- and postintervention) by type of relationship (child vs. adult child) for depression, CG, PTSD, and overall PTSD symptoms. Asukai et al. (2011) also reported that the relationship to the deceased did not impact treatment efficacy ($d = 1.72$). Mothers who had lost a child reported as much improvement as individuals who lost other relatives.

Table 1. Included Records.

Records	Intervention Models	Outcome Measures	Main Findings Measures
Adults			
Asukai et al. (2001)	Uncontrolled trial using a model of grief with modified techniques of prolonged exposure Individual intervention	PTSD CG Depression	Pre- to postintervention ($N = 13$) Symptoms reduction on the following symptoms: CG ($p < .001$); intrusions, avoidance, and hyperarousal ($p < .001$); depression ($p < .01$) Intervention outcome at 12-month follow-up ($N = 13$) Sustained improvements: CG ($d = 1.72$), intrusion ($d = 1.97$), avoidance ($d = 1.87$), hyperarousal ($d = 1.62$), depression ($d = 0.99$) No statistically significant main effect of time: CG
Rheingold et al. (2015)	Uncontrolled trial using a Restorative Retelling (RR) model Group intervention	PTSD CG Depression DI	Pre- to postintervention ($N = 73$) Symptoms reduction ^a on the following symptoms: PTSD ($p < .001$, $d = .46$), intrusions ($p < .001$, $d = .44$), avoidance ($p < .001$, $d = .33$), hyperarousal ($p < .001$, $d = .42$), DI ($p < .001$, $d = .31$) Intervention outcome at 12-month follow-up ($N = 11$) Sustained improvements: PTSD ($p < .001$, $d = 1.21$), CG ($p < .001$, $d = 1.21$), depression ($p = .006$, $d = .97$) No statistically significant main effect of time: CG
Saindon et al. (2014)	Uncontrolled trial using a RR model Group intervention	Avoidance Intrusion CG Depression	Pre- to postintervention ($N = 51$) Symptoms reduction ^b on the following symptoms: avoidance ($p < .05$, $\eta^2 = .04$), intrusions ($p < .05$, $\eta^2 = .022$), CG ($p < .05$; $\eta^2 = .35$), depression ($p < .05$, $\eta^2 = .23$)
Tuck, Baliko, Schubert, and Anderson (2012)	Uncontrolled TOZI Healing Retreat	PTSD CG Depression Well-being Religious coping Forgiveness	Pre-intervention to 30 months ^c ($N = 8$) Improvement on main domains: general and spiritual well-being, PTSD, grief, forgiveness, hopefulness, religious coping; exception of depression. General well-being: 56.75–67.21; <i>Spiritual Wellbeing</i> : 100.63–104.71; <i>Grief responses</i> : 59–64.43; <i>Motivation to forgive</i> : 37.13–33; <i>Religious positive coping</i> : increased over time and only returning to baseline at T5; <i>Religious negative coping</i> : decreased over time and remained below baseline score
van Denderen, de Keijser, Stewart, and Boelen (2018)	Randomized controlled trial using eye movement desensitization and reprocessing and cognitive behavior therapy models	PTSD CG	Pre- to postintervention ($N = 85$) Symptoms reduction on the following symptoms: CG ($p < .001$), PTSD ($p < .001$) Intervention outcome at 6-month follow-up ($N = 85$) Sustained improvements: PTSD ($p = .13$), CG ($p > .05$)
			PTSD on the Clinician-Administered, PTSD Scale for DSM-IV, Complicated Grief, Impact of Event Scale-Revised (IES-R), Center for Epidemiologic Studies Depression Scale
			Demographics/loss characteristics, relationship quality, Complicated grief—CGA-SR, Beck Depression Inventory, Impact of Events Scale-Revised, Death Imagery Scale
			Beck Depression Inventory, Impact of Events Scale, Inventory of Traumatic Grief, Demographics and loss characteristics
			General Well-Being Scale, Center for Epidemiological Studies Depression Scale, IES-R, PTSD Checklist—Civilian Version, The Texas Revised Inventory of Grief, Spiritual Well-Being Scale, Herth Hope Index, Trait Forgiveness Scale, Transgression-Related Interpersonal, Motivations Inventor, Single-Item Forgiveness Scale, Religious Coping Scale
			Inventory of Complicated Grief Impact of Event Scale

(continued)

Table 1. (continued)

Records	Intervention Models	Outcome Measures	Main Findings	Measures
Children and adolescents				
Salloum, Avery, and McClain (2001)	Uncontrolled trial grief and trauma-based model	PTSD	Pre- to postintervention ($N = 37$) Symptoms reduction on the following symptoms: clinical PTSD symptoms decreased (20 to 8 children, $p = .13$), reexperiencing ($p = .000$), avoidance ($p = .003$), arousal ($p = .114$)	Child Post-traumatic Stress Reaction Index
Salloum (2008)	Uncontrolled trial grief and trauma-based model	PTSD	Pre- to postintervention ($N = 89$) Symptoms reduction on the following symptoms: PTSD ($p < .001$, $d = .49$), clinical PTSD symptoms decreased from severe to moderate (from 56 to 37 children), Reexperiencing ($p < .001$; $d = .45$), avoidance ($p < .001$; $d = .38$), arousal ($p = .009$; $d = .34$)	Child Post-traumatic Stress Reaction Index

Note. CG = complicated grief; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders-IV; PTSD = post-traumatic stress disorder.

^aThere were significant interaction effects of baseline severity symptoms above versus below median by time (pre- vs. postintervention) for depression ($p = .002$), PTSD ($p = .021$), avoidance ($p < .001$), intrusions ($p = .040$), hyperarousal ($p = .003$), and DI ($p < .05$). ^bThere were significant interactions effects of baseline severity symptoms above versus below median by time (pre- vs. postintervention) for depression ($p < .001$; $\eta^2 = .25$), avoidance ($p = .008$, $\eta^2 = .17$), and CG ($p = .032$; $\eta^2 = .12$) and marginally interaction effects for intrusions ($p = .054$, $\eta^2 = .10$). ^cMean scores from the pre-intervention and follow-up at 30 months were presented. For more detail, see Tuck et al. (2012).

Time since loss. Studies did not find statistically significant differences between time since loss and response to intervention (Rheingold et al., 2015; Salloum, 2008; Salloum et al., 2001; van Denderen et al., 2018).

Type of death. Rheingold et al. (2015) found no significant time effects (pre- and postintervention) by type of death for any symptoms measured. However, statistically significant effects for type of death emerged across time: homicidally bereaved individuals reported higher PTSD symptoms ($p = .028$), avoidance ($p = .024$), and hyperarousal ($p = .016$) compared with those grieving following a loss by suicide or accident.

Witnesses versus nonwitnesses. Salloum (2008) reported that children who have witnessed the homicide or aftermath displayed greater overall PTSD symptoms. However, there were no statistically significant differences between witnesses and nonwitnesses on pre and postintervention symptoms ($p = .056$, $\eta^2 = .041$). However, statistically significant differences were found regarding PTSD scores over time for children who did not witness the homicide ($p = .001$, $d = .68$). Only children who have not been exposed to the homicide reported symptoms below the clinical range postintervention.

Recruitment strategy. No statistically significant differences were found regarding treatment efficacy and recruitment strategy (self-referred vs. individuals approached by researchers; van Denderen et al., 2018).

Discussion

To the best of our knowledge, this review is the first review describing the main psychological interventions following homicidal loss and reporting the efficacy of the evidence. Most notably, the lack of tailored evidence-based interventions and comparable methodological designs was apparent. Results should be interpreted with caution. Nevertheless, it is hoped this review will become a useful tool for research, practice, and policy (Table 2).

Accumulating evidence has demonstrated that individuals who have lost a loved one through homicide are at increased risk of developing serious mental health difficulties (Rheingold & Williams, 2015; van Denderen et al., 2015, 2016). A recent longitudinal qualitative study (Alves-Costa et al., 2018b) has reported that individuals present different psychological needs over time (i.e., in the aftermath of the homicide, months, years later). Thus, psychological interventions need to be empirically validated in order to ensure best practice, assist clinicians, and researchers, as well as inform the intervention decisions of those bereaved by homicide.

Regarding the model of intervention performed in the included studies, CBT or RR and EMDR were effective. However, it was not possible to identify which elements of the interventions performed were the most effective. Psychoeducational elements about symptoms and coping strategies seem to be advised. Indeed, all the studies have included this modality. This is in line with previous studies, demonstrating that this was a useful strategy, as it gives the individuals the opportunity to understand and see their psychological symptoms normalized (Alves-Costa et al., 2018a; Alves-Costa et al., 2018b).

Table 2. Implications for Research, Practice, and Policy.

Implications for Research	Implications for Practice and Policy
<ul style="list-style-type: none"> • Clearer terminology when defining the population in study. • Clinical interviews based on DSM-V (or equivalent instruments) to evaluate symptoms should be considered. • Research among non-treatment-seeking individuals might highlight potential differences regarding clinical and demographic factors, promoting greater consilience across stages of treatment and inform about barriers faced by individuals when searching or attending psychological interventions. • Consider including coping and resilience secondary measures to inform treatment efficacy. • Further research on potential mediators of intervention effectiveness: relationship with the victim and offender, all support received since the homicide (i.e., psychological and/or drug-based treatments), other traumatic events pre-homicide, time since loss, overall health pre-homicide. • Randomized mixed-methods approaches. 	<ul style="list-style-type: none"> • Making the academic/clinical knowledge available for the public domain might increase social awareness and empathy. • Providing specialized training for those who work with homicidally bereaved individuals. • Developing awareness among policy makers about the importance of offering (specific) psychological interventions for those individuals. • Generating expert consensus (professionals and people with personal experience) regarding what is most effective to those who experienced homicidal loss using a <i>Delphi technique</i> could bring some clarity to this relatively new field of knowledge.

Overall, PTSD, CG, and depression symptoms statistically significantly decreased from pre- to postintervention and follow-ups among those who engaged with group (most of the studies included) and individual sessions. This was true for adults, children, and adolescents. Effect sizes ranged from small to large.

Only three studies included follow-up measurements, which does not allow for the measurement of the interventions long-term effects. Mixed results were found, two studies reported sustained changes at the 12-month follow-up regarding PTSD symptoms (Asukai et al., 2001; Rheingold et al., 2015). However, results from the controlled trial suggested that individuals might require longer periods of intervention (van Denderen et al., 2018). Sustained improvements were reported for depression symptoms at the 12-month follow-up with large effect sizes (Asukai et al., 2001; Rheingold et al., 2015). Further research should consider exploring the comorbidity between symptoms (depression, anxiety, PTSD, grief responses), as this is a common pattern among this population (Maercker & Znoj, 2010; McDevitt-Murphy, Neimeyer, Burke, Williams, & Lawson, 2012).

Evidence found that CG symptoms did not improve (sustained improvements were not reported); therefore, individuals might require additional support. Thus, it might be case that other treatment modalities need to be explored in order to elicit long-term change. For example, research on meaning-making suggests that traumatic bereavements (not homicides exclusively) have an impact on the individual's ability to fully process their experience of loss, which is likely to lead to distress and maladjustment (e.g., Jordan & Neimeyer, 2003). Therefore, it might be important to identify the individuals' traumatic narratives (e.g., death imagery) and allow for meaning reconstruction in clinical settings (Ryneerson, 2001).

Other important factors can inform interventions. The gender of children and adolescents did not impact on the PTSD

symptoms progression (Salloum, 2008; Salloum et al., 2001); however, women reported a greater reduction of CG symptoms over time than men (Rheingold et al., 2015). Perhaps unsurprisingly, the proximity to the person who died (Asukai et al., 2011; Rheingold et al., 2015) indicated poorer adjustment. However, unclear results were found regarding the type of relationship (e.g., parent, partner) with the person who died and symptom progression. Time since loss does not appear to be a factor that impacts on how symptoms (low to severe) change over time (Rheingold et al., 2015; Salloum, 2008; Salloum et al., 2001; van Denderen et al., 2018). Previous research has demonstrated that time per se does not alleviate the issues associated with the maladaptive responses to the loss (e.g., Lichtenthal, Cruess, & Prigerson, 2004).

Finally, homicidally bereaved individuals (when compared with individuals who faced other traumatic bereavements) demonstrated greater PTSD symptoms (Rheingold et al., 2015). Witnessing the homicide or aftermath also negatively impacted on symptom progression (Salloum, 2008), which might highlight the potential need for prolonged support.

The differences in methodologies and the categorization of therapies in combination with the small sample sizes and limited statistical power mean that important questions remain unanswered and some limitations need to be reflected upon.

Six out of the seven included records performed uncontrolled clinical trials. These trials are unquestionably crucial to explore the relatively new study area of bereavement following homicidal loss. The included studies shed light on the clinical effect of some interventions, identified the suitability of the psychological models for this population, as well as highlighted the most common mental health difficulties reported by the participants. However, controlled clinical trials are recommended by most of the institutions that govern the ethics and the practice of clinical research and should be considered in the future, as they are likely to provide more generalized and accurate findings.

Table 3. Key Points of the Systematic Review.

- This review suggests that homicidal bereaved individuals benefit from psychological intervention post-homicide.
- The psychological intervention models used were cognitive behavior therapy, Restorative Retelling and EMDR. Psychoeducational elements were included in all the studies reviewed. This systematic review is underpowered to provide insights about what psychological models are likely to be “more effective.”
- Included studies differ in sample size, research designs, and intervention outcomes, not allowing for general and robust conclusions.
- Mixed samples (i.e., different causes of violent deaths) are not always clearly described across the literature.
- Important variables, such as experiences of support (past or at the time of the interventions), experiences of trauma/violence pre-loss, were not considered.

All of the studies used self-report measures rather than structured clinical interviews or other biomedical procedures to estimate psychological difficulties. Previous evidence has already shown that self-report measures can overestimate symptoms. Most of the included records performed different psychological modalities of intervention, study designs, and intervention conditions, which biases comparisons. Females were overrepresented in all samples. Biases could have emerged, as the studies did not consider other help-seeking behaviors (informal support, drug-based treatments), overall mental/physical health, as well as other traumatic experiences pre-homicide.

Strengths and Limitations of this Review

The number of included studies (seven) and the differences between them is a clear limitation of this study, as only limited generalizations can be made. Furthermore, the literature lacks clarity when defining the population in study (i.e., mixed samples of individuals bereaved by different types of traumatic deaths), which led to the exclusion of several studies. This review also excluded homicides committed in the context of collective homicides (e.g., terrorist attacks, wars). Other research (e.g., Layne, Kaplow, & Youngstrom, 2017; Neimeyer, Burke, Mackay, & van Dyke Stringer, 2010; Rock, 1998; Rynearson, 2006) was not included, as it did not meet the inclusion criteria, yet the work developed by those authors provides relevant findings. Finally, only studies from the United States, Japan, and the Netherlands written in English were included. Thus, findings can to a limited extent be generalized. Table 3 presents the key points of the current systematic review.

Future Research

Randomized clinical trials that include clear terminology and study designs should be developed in the future. Longitudinal

mixed-methods approaches are likely to generate rich and in-depth findings. Studies could consider adjustment indicators to measure coping resources and resilience patterns for instance, as this might offer relevant figures to consider in clinical settings. Finally, generating expert consensus (professionals and people with personal experience) regarding what is most effective to those who have experienced homicidal loss using a *Delphi technique* could bring some clarity to this relatively new field of knowledge.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Other terminologies exist (e.g., traumatic grief). Authors will refer to complicated grief for the sake of consistency.
2. Authors reported different degrees of detail about the participants' demographics and characteristics of bereavement.
3. Five (of 15) participants were receiving pharmacological treatment of selective serotonin reuptake inhibitors and five others reported having taken hypnotics.
4. Tuck et al. (2012) reported general and spiritual well-being, motivation to forgive, and religious coping mean scores. However, due to the small sample size ($N = 8$) and the fact that those variables could not be compared against the included studies, this was not considered in the current review.

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Author Biographies

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Catherine Hamilton-Giachritsis is a forensic and clinical psychologist with over twenty years' experience in child protection and family violence. Previously a Psychologist in Birmingham Social Services undertaking family risk assessments, Catherine is now Reader in Clinical Psychology at the University of Bath, UK. Catherine has an extensive body of research published in peer-reviewed journals. Her work focuses on child maltreatment, trauma and risk assessment, considering victims and offenders (e.g., harmful sexual behaviour; online grooming). She is co-editor of the Wiley book, *What Works in Child Maltreatment: An Evidence Based Approach to Assessment and Intervention in Child Protection* (2017).

Hope Christie is a third year PhD student in the Department of Psychology at the University of Bath. Her PhD research is investigating the impacts of posttraumatic stress disorder on parenting outcomes, and the family dynamic. She received her Bachelor's of Science degree in Psychology, and her Masters of Research degree, with distinction, at Queen Margaret University, Edinburgh, Scotland.

Mariëtte van Denderen obtained her PhD in Grief following homicidal loss in the Clinical Psychology Department at the University of Groningen in the Netherlands. She further worked as a security analyst for the police department and works as a researcher and project coordinator in a Forensic Psychiatric Centre in the Netherlands. She developed a guideline regarding contact between victims/bereaved individuals and mentally ill offenders. Currently, this guideline is implemented in several forensic mental health institutions in the Netherlands. Furthermore, she works as an instructor in the master's program in Clinical Forensic Psychology and Victimology at the University of Groningen.

Sarah Halligan is a professor in Clinical Psychology at the University of Bath. Her research has examined the development of psychological disorders, particularly posttraumatic stress disorder (PTSD) and depression, with a focus on young people. In the PTSD field Dr Halligan has examined the cognitive-behavioural, biological and social factors that contribute to disorder following trauma exposure; and has studied both national and international populations. Dr Halligan's research has been funded by UK funding bodies including the ESRC, MRC, British Academy, Nuffield Foundation, NIHR, Wellcome Trust, and the Royal Society.