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A META-ANALYSIS OF GRIEF-FOCUSED INTERVENTIONS FOR
BEREAVED CHILDREN AND ADOLESCENTS: EXAMINING THE STATE
OF THE LITERATURE AND MODERATORS OF TREATMENT EFFECT

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

to the faculty of the

DEPARTMENT OF PSYCHOLOGY

of

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at

ST. JOHN'S UNIVERSITY

New York

by

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ABSTRACT

A META-ANALYSIS OF GRIEF-FOCUSED INTERVENTIONS FOR BEREAVED CHILDREN AND ADOLESCENTS: EXAMINING THE STATE OF THE LITERATURE AND MODERATORS OF TREATMENT EFFECT

Emily C. Hockenberry

In the wake of the COVID-19 pandemic, children and adolescents face a greater need than ever for effective mental healthcare to address distressing and disabling emotional and behavioral reactions that can occur following the death of a significant person in their lives. However, current evaluations of grief-focused interventions for bereaved youth are limited by a lack of consensus regarding how to define and measure grief symptoms in children and adolescents, a lack of clarity regarding grief-specific effects compared with effects on other forms of psychopathology, and limited power to detect moderators of intervention effect. The present meta-analysis evaluated the pooled effects of grief-focused interventions for bereaved youth due to any cause on symptoms of grief, PTSD, depression, functional impairment, and behavior problems. Moderation effects for select study characteristics, measurement characteristics, intervention characteristics, and participant characteristics were also evaluated.

The meta-analysis included 32 studies with a total of 3,412 participants. Significant moderate pooled effect sizes were found for reductions in symptoms of grief, PTSD, depression, functional impairment, and behavior problems. Hypotheses regarding

moderator effects were partially supported, wherein studies employing a comparison group and those that implemented minimum symptom cutoffs demonstrating greater effect sizes than studies that did not. Amount of caregiver involvement and individual therapy modality were associated with significantly greater effect sizes for grief symptom reductions, but not for other forms of psychopathology. Implications regarding the uniformity of effect sizes across symptom domains and moderation effects are discussed, as are limitations of the current meta-analysis and the broader child and adolescent grief-focused literature base.

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF TABLES.....	x
LIST OF FIGURES.....	xii
INTRODUCTION	1
Review of child and adolescent grief symptoms and measurement.....	2
Review of interventions for bereaved youth	6
Proposed moderators of grief-focused intervention effectiveness.....	10
Study characteristics	10
Measurement characteristics.....	11
Intervention characteristics	13
Participant characteristics	16
The Present Study.....	17
METHOD.....	21
Study Selection.....	21
Identification of studies	21
Selection of studies.....	21
Data extraction	22
Coding.....	22
Quality and bias assessment	23
Data analysis	24
Effect size calculation.....	24
Pooling	26
Heterogeneity	26

Publication Bias.....	27
Moderator analyses.....	27
RESULTS	28
Description of Studies	28
Primary outcome analyses: Grief symptoms	31
Grief symptoms effect size.....	31
Moderator analyses: Grief symptoms	33
Study characteristics.....	34
Study design.....	34
Measurement characteristics	35
Symptom severity	35
Type of grief measurement	37
Intervention characteristics.....	39
Caregiver involvement.....	39
Intervention modality.....	40
Intervention setting	41
Participant characteristics.....	42
Secondary outcome analyses: PTSD symptoms.....	43
PTSD symptoms effect size	43
Moderator Analyses: PTSD symptoms	44
Study characteristics.....	44
Study design.....	44
Measurement characteristics	45
Symptom severity	45

Type of grief measurement	46
Length of time since bereavement	46
Intervention characteristics.....	46
Participant characteristics.....	47
Secondary outcome analyses: Depression symptoms.....	48
Depression symptoms effect size.....	48
Moderator analyses: Depression symptoms	49
Study characteristics.....	49
Study design.....	49
Measurement characteristics	50
Symptom severity	50
Type of grief measurement	51
Length of time since bereavement	51
Intervention characteristics.....	52
Participant characteristics.....	52
Secondary outcome analyses: Functional impairment.....	52
Functional impairment effect size	52
Moderator analyses: Functional impairment	53
Secondary outcome analyses: Behavior problems.....	54
Behavior problems effect size	54
Moderator analyses: Behavior problems	55
DISCUSSION	56
Moderator Analyses	57
Study characteristics.....	57

Measurement characteristics	59
Intervention characteristics.....	62
Participant characteristics.....	63
Limitations	64
Implications for future research and clinical practice	66
Conclusion	68
APPENDIX A.....	69
Table A1 Meta-analysis Coding Manual.....	69
APPENDIX B.....	79
Table B1 Characteristics of Included Studies ($k = 32$).....	79
APPENDIX C.....	93
Table C1 Quality Assessment of Included Studies ($k = 32$).....	93
APPENDIX D.....	95
Supplementary Tables and Figures.....	95
Primary Outcome: Grief Symptoms.....	95
Figure D1 Funnel Plot of Grief Symptom Standard Error by Effect Size ($k = 32$).....	95
Table D1 Grief Symptom Moderator Analysis: Year Published	95
Table D2 Grief Symptom Moderator Analysis: Modified JADAD Quality Rating.....	95
Table D3 Grief Symptom Moderator Analysis: Mean-centered Child Age.....	96
Table D4 Grief Symptom Moderator Analysis: Child Gender (Percentage of Sample Identified as Male)	96

Table D5 Grief Symptom Moderator Analysis: Child Race and Ethnicity (Percentage of Sample Identified as Black, White, and Latino).....	96
Secondary Outcome: PTSD Symptoms.....	97
Figure D2 Funnel Plot of PTSD Symptom Standard Error by Effect Size ($k = 16$).....	97
Table D6 PTSD Symptom Moderator Analysis: Year Published.....	97
Table D7 PTSD Symptom Moderator Analysis: Modified JADAD Quality Rating.....	97
Table D8 PTSD Symptom Moderator Analysis: Number of Caregiver Sessions	98
Table D9 PTSD Symptom Moderator Analysis: Intervention Modality.	98
Table D10 PTSD Symptom Moderator Analysis: Intervention Setting ...	98
Table D11 PTSD Symptom Moderator Analysis: Mean-centered Child Age.....	98
Table D12 PTSD Symptom Moderator Analysis: Child Gender (Percentage of Sample Identified as Male).....	98
Table D13 PTSD Symptom Moderator Analysis: Child Race and Ethnicity (Percentage of Sample Identified as White or Latino).....	99
Secondary Outcome: Depression Symptoms	99
Figure D3 Funnel Plot of Depression Symptom Standard Error by Effect Size ($k = 15$).....	99

Table D14 Depression Symptom Moderator Analysis: Year Published	99
Table D15 Depression Symptom Moderator Analysis: Modified JADAD Quality Rating	100
Table D16 Depression Symptom Moderator Analysis: Caregiver Involvement (Dichotomous)	100
Table D17 Depression Symptom Moderator Analysis: Number of Caregiver Sessions in Intervention	100
Table D18 Depression Symptom Moderator Analysis: Intervention Modality	100
Table D19 Depression Symptom Moderator Analysis: Intervention Setting.....	100
Table D20 Depression Symptom Moderator Analysis: Child Gender (Percentage of Sample Identified as Male).....	101
Table D21 Depression Symptom Moderator Analysis: Child Race and Ethnicity (Percentage of Sample Identified as Black, White, or Latino)	101
Secondary Outcome: Functional Impairment.....	101
Figure D4 Funnel Plot of Functional Impairment Standard Error by Effect Size ($k = 7$).....	101
Secondary Outcome: Behavior Problems	102
Figure D5 Funnel Plot of Behavior Problems Standard Error by Effect Size ($k = 13$).....	102
REFERENCES	103

LIST OF TABLES

Table 1 Pearson’s <i>r</i> Correlations Among Moderator Variables	34
Table 2 Grief Symptom Moderator Analysis: Study Design.....	35
Table 3 Grief Symptom Moderator Analysis: Type of Comparison Group	35
Table 4 Grief Symptom Moderator Analysis: Symptom Severity (Dichotomized)....	36
Table 5 Grief Symptom Moderator Analysis: Symptom Severity (Categorical).....	37
Table 6 Grief Symptom Moderator Analysis: Categorization of Grief Measurement by Zhang et al. (2023) and Ennis et al. (2022)	38
Table 7 Grief Symptom Moderator Analysis: Average Length of Time Since Bereavement	39
Table 8 Grief Symptom Moderator Analysis: Caregiver Involvement (Dichotomized)	40
Table 9 Grief Symptom Moderator Analysis: Number of Caregiver Sessions in Intervention	40
Table 10 Grief Symptom Moderator Analysis: Intervention Modality.....	41
Table 11 Grief Symptom Moderator Analysis: Intervention Setting.....	41
Table 12 PTSD Symptom Moderator Analysis: Study Design	45
Table 13 PTSD Symptom Moderator Analysis: Symptom Severity (Dichotomized). 46	46
Table 14 PTSD Symptom Moderator Analysis: Average Length of Time Since Bereavement	46
Table 15 PTSD Symptom Moderator Analysis: Percentage of Participants Identifying as Black.....	47
Table 16 Depression Symptom Moderator Analysis: Study Design	50

Table 17 Depression Symptom Moderator Analysis: Symptom Severity (Dichotomized)	51
Table 18 Depression Symptom Moderator Analysis: Average Length of Time Since Bereavement.....	51
Table 19 Depression Symptom Moderator Analysis: Child Age (Mean-centered)	52

LIST OF FIGURES

Figure 1 PRISMA Diagram of article selection	29
Figure 2 Forest plot of grief symptom effect sizes ($k = 32$)	33
Figure 3 Forest plot of PTSD symptom effect sizes ($k = 16$)	44
Figure 4 Forest plot of depression symptom effect sizes ($k = 15$)	49
Figure 5 Forest plot of functional impairment symptom effect sizes ($k = 7$)	53
Figure 6 Forest plot of behavior problem effect sizes ($k = 13$)	55

INTRODUCTION

Authors of a study analyzing the prevalence of childhood bereavement in the United States published in January 2020 estimated that 6.99% of youth have or will have experienced the death of a parent or sibling by the time they turn 18, with projected rates ranging from 4.93% to 11.87% depending on the child's geographic location (Burns et al., 2020). Researchers assessing the impact of COVID-19 have found a 17.5 - 20.2% increase in children bereaved by a parent above pre-pandemic rates (as of February 2021; Kidman et al., 2021) and have estimated that approximately 1 out of every 450 children had experienced the death of a parent or in-home caregiver due to COVID-19 as of December 2021 (Treglia et al., 2021). Rates of COVID-related death and childhood bereavement are disproportionately high among Black and Latino youth, reflecting broader systemic inequities in physical and mental health that have been further exacerbated by the pandemic (Alvis et al., 2021; Hillis et al., 2021). Similar increases in child and adolescent bereavement have been recorded around the world, leading to what many mental health researchers and policy makers have termed a 'shadow pandemic' of childhood grief and a pediatric mental health crisis (Liang et al., 2021; Unwin et al., 2022). However, the current literature on grief-focused interventions for bereaved youth is characterized by a lack of agreement on how to define and measure grief in children and adolescents, as well as highly varied conceptualizations regarding when and why bereaved youth merit clinical interventions.

There remains limited understanding of how existing interventions address

grief-specific symptoms compared with other forms of psychopathology, and previous meta-analyses have lacked statistical power to analyze a range of potentially impactful moderators of intervention effects across symptom domains. In light of these considerations, the current systematic review and meta-analysis sought to evaluate the direct effects, as well as moderation effects, of grief-focused interventions for reducing symptoms of grief and other forms of psychopathology in children and adolescents.

Review of child and adolescent grief symptoms and measurement

Bereavement refers to the experience of having a significant person die, whereas ‘grief’ refers to emotional and behavioral reactions to separation from the deceased and the circumstances of the death, as well as adapting to existential changes and secondary adversities brought about by the death (Revet et al., 2020; Stroebe et al., 2001). Childhood bereavement has been shown to elevate risk for a range of psychopathology in children and adolescents, including depression, anxiety, post-traumatic stress disorder (PTSD), behavior problems, and substance abuse, as well as increased functional impairment both in the immediate aftermath of the death and, to a lesser extent, over the lifespan (Cerel et al., 2006; Kaplow et al., 2010; Melhem et al., 2011). Though limited, extant literature examining the longitudinal course of emotional and behavioral symptoms in bereaved youth has shown that the majority appear to demonstrate resolution of acutely distressing symptoms and functional impairment within several months of the death (Kaplow et al., 2010; Melhem et al., 2011). For a small subset of bereaved youth, significantly distressing and impairing emotional and behavioral symptoms persist for many months or even years following the death and do not appear to resolve on

their own (Melhem et al., 2011; Kaplow et al., 2018).

Researchers have defined several constructs within this subset of persistent interfering and distressing grief reactions in children and adolescents, here referred to broadly as ‘maladaptive grief reactions.’ Childhood traumatic grief, or CTG, refers to reactions to bereavement by objectively or subjectively traumatic circumstances wherein post-traumatic stress reactions interfere with an individual’s ability to integrate and adapt to the death and absence of the deceased (Brown & Goodman, 2005; Cohen & Mannarino, 2004). Avoidance of grief reminders and emotions is thought to maintain CTG symptoms by removing opportunities to confront, restructure, and integrate feared memories and cognitions about the deceased or how they died (Boelen et al., 2006; Brown & Goodman, 2005; Cohen & Mannarino, 2004). CTG has been described as a combination of PTSD symptoms related to the cause of the death, depression symptoms related to the loss of the relationship with the deceased, and grief-related functional impairment (Brown et al., 2019). Layne and colleagues (2017) describe maladaptive grief reactions across the categories of separation distress, existential/identity distress, or circumstance- related distress, including persistent suicidal ideation, developmental regressions, hopelessness or nihilism, recklessness or abandonment of self-care, intense self-blame or shame, experiential avoidance or numbing, and pervasive avoidance of thoughts, memories, or reminders of the death or the deceased.

The text revision of the American Psychiatric Association (APA)’s Diagnostic and Statistical Manual, 5th edition (DSM-5-TR; APA, 2022), has included prolonged grief disorder (PGD) as the diagnostic category for clinically

significant grief symptoms in youth and adults. By these diagnostic criteria, clinically significant grief symptoms must include intense ongoing emotional or behavioral symptoms (sadness, anger, guilt, blame, inability to experience positive mood), identity confusion, difficulty accepting the death, numbness, difficulty engaging in social activities, avoidance of death reminders, or feeling that life is meaningless. Further, these symptoms must persist for a minimum of 6 months following the death, cause significant distress and impairment, and represent a clear departure from the person's sociocultural context.

Despite growing attention to maladaptive grief as a construct of clinical concern in children and youth, persistent challenges remain with distinguishing normative from maladaptive grief reactions. As noted, grief symptoms often co-occur with other psychopathology which may also merit clinical intervention. Further, the degree to which distressing and interfering symptoms are considered problematic over time can be highly culturally dependent (Brown & Goodman, 2005; Lopez, 2011). Additionally, though guidance on developmental understandings of all forms of grief in youth has increased (e.g., Alvis et al., 2023), many concepts regarding PGD initiated from adult-focused research that was then adapted to focus on children and adolescents (Unterhitzberger & Rosner, 2016).

Developmental factors are a key influence on the ability of children and adolescents to comprehend death, regulate their emotional and behavioral grief reactions, and navigate the secondary adversities and disruptions to daily life that often accompany bereavement (Chen & Panebianco, 2018; Kaplow et al., 2012). Normative and complicated grief symptoms alike differ based on child age and

developmental context, with some evidence that grief-related symptoms exhibited more commonly by younger children are more likely to be overlooked or misdiagnosed (Revet et al., 2020; Sood et al., 2006).

A lack of well-validated grief measures has impeded greater understanding of both normative and maladaptive grief reactions and risk factors in youth (Andriessen et al., 2021; Kentor & Kaplow, 2020). Despite recent advancement in clinical diagnosis of PGD, many measures of grief were created before the ICD-11 and DSM-5-TR added their symptom criteria, and measures vary significantly in their content and structure (de Lopez et al., 2017). Ennis and colleagues (2022) and Zhang and colleagues (2023) each conducted systematic reviews of validated grief measurements for children and adolescents to determine which measures assessed maladaptive, or pathological grief with aim of moving toward identification of a ‘gold standard’ measure. Zhang et al. (2023) and Ennis et al. (2022) argued that maladaptive grief, as opposed to normative grief, poses particular cause for therapeutic intervention, and thus identifying measures that capture maladaptive grief is of clinical relevance. Though Ennis et al. (2022) specified that their review concerned assessment tools for youth who experienced traumatic bereavement, they included studies whose participants reported a range of causes of death. Ennis and colleagues (2022) categorized 17 unique measures into three areas: 1) pathological grief symptoms, 2) grief-related constructs and sequelae, and 3) developed for specific causes of death. Zhang and colleagues (2023) categorized 24 instruments into three areas: 1) general-purpose grief scales, 2) instruments assessing maladaptive grief reactions, and 3) specialized grief scales. Neither set of

authors provided detailed information regarding their selection criteria for determining which category fit each measure best. Given that youth exhibiting more maladaptive grief symptoms may be more likely to benefit from interventions, the current meta-analysis examined measurement type as a moderator of symptom reduction.

Review of interventions for bereaved youth

For the current meta-analysis, grief-focused interventions were conceived as programs or treatments that broadly targeted grief-related distress in children or adolescents. According to recent reviews, most evidence-informed grief-focused interventions have a significant basis in cognitive behavioral therapy (CBT; Breen et al., 2022). Many interventions provide grief psychoeducation and coping skills to aid emotion regulation and cognitive processing and provide a safe and nurturing space for children and families to discuss their grief-related experiences and feelings and build social support and connection (Bergman et al., 2017; Haine et al., 2008; Journot-Reverbel et al., 2017). Many also incorporate space to discuss the death and the deceased, with some involving a full narrative exposure component, as well as components focused on making meaning of the bereavement, memorializing the deceased, reconceptualizing the relationship to the deceased through memory, and planning for the future (Kentor & Kaplow, 2020). Evidence-informed grief-focused interventions have been offered in a range of modalities (e.g., group, individual child, and family-focused treatments) and a variety of settings (e.g., clinics, schools, other community settings) (Chen & Panebianco, 2018; Hung & Rabin, 2009; Kentor & Kaplow, 2020).

To date, there are four published meta-analyses examining the efficacy of

grief-focused interventions for bereaved children and adolescents. Currier and colleagues (2007) assessed 13 randomized controlled trials (RCTs) comparing participants receiving grief-focused interventions with non-treatment controls. The authors averaged effect sizes across a range of outcome measures in the included studies and found a mean weighted effect size across papers of $d = .14$, which was not significant. They found non-significant associations between longer time since the death and smaller treatment effect as well as poorer outcomes for studies that did not include symptom-based selection criteria, or even excluded more symptomatic child and adolescent participants. Currier and colleagues concluded that the state of the current research was poor, arguing that there was a need for more well-validated grief-specific measures to better elucidate the treatment needs of bereaved youth.

In 2010, Rosner and colleagues published a meta-analysis of 27 studies evaluating interventions for bereaved children and adolescents, grouping them by RCTs (17) versus uncontrolled studies (12). The investigators built upon Currier et al. (2007)'s meta-analysis by including several new controlled studies and adding uncontrolled studies to their analyses. Rosner et al. (2010) reported an overall effect size by combining effect sizes for a range of outcome measures, as Currier and colleagues (2007) had done, though they also reported pooled effect sizes based on specific outcome areas within controlled and uncontrolled studies. Rosner et al. (2010) found a small positive effect of $g = .35$ across all outcome areas for controlled studies, and a moderate positive effect size of $g = .49$ across all outcome areas for uncontrolled studies (Rosner et al., 2010). Breaking down controlled

studies by specific outcome type, they found a moderate effect size for grief symptoms ($g = .59, k = 7$) and a small effect size for depression symptoms ($g = .22, k = 7$). Their reported effect size of $g = .05$ for PTSD symptoms was derived from only two studies, and thus presents limited interpretability. For uncontrolled studies, Rosner and colleagues (2010) reported effect sizes of $g = .89$ for grief symptoms, $g = .83$ for PTSD symptoms, and $g = .36$ for depression symptoms.

Rosner and colleagues (2010) additionally conducted moderator analyses for overall outcome effect sizes for uncontrolled studies and controlled studies. For uncontrolled studies, they found that studies in which participants were required to score above a particular symptom cutoff for inclusion, demonstrated greater overall outcome effect sizes than studies that did not specify symptom-level requirements. This association was echoed in controlled studies, though was not statistically significant. In contrast to Currier et al. (2007)'s findings, Rosner and colleagues (2010) found that, in uncontrolled studies, participants for whom a longer time period (12 months or more) had elapsed since bereavement showed greater effect sizes on overall outcomes. One reason behind this differential finding may be that Currier and colleagues (2007) evaluated time since bereavement as a continuous variable, whereas Rosner and colleagues (2010) categorized time since bereavement as zero to six months, six to 12 months, or 12 or more months. Rosner and colleagues (2010) also speculated that time since bereavement may have been correlated with symptom severity, as participants experiencing more significant symptoms persisting over a longer period of time may have been particularly motivated to join the studies in their sample.

Breen and colleagues (2023) published a meta-analysis evaluating the treatment components, contexts, and participant characteristics associated with greater effectiveness for grief-focused interventions targeting anxiety and depression symptoms in bereaved adolescents and young adults aged 14-24 years. In contrast to Currier et al. (2007), Breen and colleagues (2023) only evaluated within-subjects effect sizes for included studies, which they pooled according to intervention type (CBT, supportive therapy, or writing interventions) and outcome variable [grief, anxiety (including PTSD), and depression symptoms]. Within CBT treatments, they found large significant pooled effect sizes for grief and anxiety and a medium pooled effect size for depression. For supportive therapies, Breen et al. (2023) found moderate pooled effect sizes for grief and anxiety symptoms and small to moderate effects for depression symptoms, noting significant variance in the range of efficacy of included studies. For writing interventions, they found a small significant pooled effect size for grief symptoms, but no significant pooled effects for anxiety or depression symptoms. In follow-up moderation analyses, Breen et al. (2023) reported that studies of interventions with individual therapy modalities and that did not include caregiver involvement were both associated with greater effect sizes.

Most recently, Hanauer and colleagues published a meta-analysis examining 39 studies in 2024. Similar to Rosner et al. (2010), the authors grouped studies for effect size pooling based on whether they were controlled or uncontrolled and whether they had implemented minimum symptom thresholds for inclusion (“therapeutic”) or not (“preventive”). Overall, uncontrolled studies exhibited larger

effect sizes than controlled studies, and “therapeutic” intervention studies showed greater effect sizes than “preventive” intervention studies. As Rosner et al. (2010) and Currier et al. (2007) reported, Hanauer et al. (2024) concluded that grief-focused treatments yielded considerably smaller effects “when controlling for the natural course of bereavement (p. 170).” The proposed moderators reviewed here include study characteristics (study design), measurement characteristics (use of minimum symptom cutoffs, type of grief measurement used, and average length of time since bereavement), intervention characteristics (caregiver involvement, modality, and setting), and participant characteristics (child age).

Proposed moderators of grief-focused intervention effectiveness

Study characteristics. Controlled studies have consistently shown smaller, and, at times, non-significant effect sizes for a range of outcome variables in extant meta-analyses evaluating interventions for bereaved youth (Currier et al., 2007; Hanauer et al., 2024; Rosner et al., 2010). Comparing outcomes from grief-focused interventions with non-treatment controls or waitlist controls provides an opportunity to evaluate the effect of treatment above and beyond the natural process of symptom progression. Given that child and adolescent bereavement-related symptoms often resolve as time extends past the death, it is important to determine whether grief-focused interventions provide unique benefit to their participants regarding symptom reduction beyond the effects of time passing (Kaplow et al., 2010; Melhem et al., 2011). Further, evaluating grief-focused interventions against alternative active treatments may provide insight into whether treatments designed specifically for bereaved youth perform better than other forms of treatment, treatment as usual (e.g., supportive therapy or non-grief-

specific therapy), or other forms of support (e.g., grief-focused literature, as in Sandler et al. (2010). Though the current literature likely lacks sufficient active-treatment control studies to examine the impact of specific intervention content on symptom outcomes at this time, evaluating overall study design as a moderator provides a useful step in this direction.

Measurement characteristics. There is significant theoretical and empirical rationale to suggest that bereaved youth with maladaptive grief symptoms are most in need of, and likely to benefit from, grief-focused therapeutic interventions, as opposed to bereaved youth experiencing normative grief symptoms or no discernable emotional or behavioral distress. At the same time, there is significant variation in conceptualization and measurement of maladaptive grief, making it difficult to accurately gauge intervention effects based on the type of grief evaluated. We attempted to assess this question using three approaches. First, we examined whether the implementation of minimum symptom cutoffs was linked with higher effect sizes, as was shown in several previous meta-analyses (Currier et al., 2007; Hanauer et al., 2024; Rosner et al., 2010). Citing significant variability in how grief symptoms were measured (and whether they were measured at all), the authors for previous meta-analyses compared how effect sizes for treatment studies differed based on studies' inclusion and exclusion criteria, rather than symptom scale scores, which is the approach we have taken as well.

Second, we evaluated whether the type of grief measurement used in the study affected effect sizes for symptom outcomes. Use of measures of normative

grief symptoms or non-standardized questionnaires that have not been determined to measure maladaptive grief symptoms as they are currently conceptualized may impair the ability to make valid inferences regarding the effects of grief-focused treatment (Mason et al., 2020). A lack of treatment effect on a measure of normative grief may not indicate that the therapy was ineffective, as normative grief symptoms are thought to facilitate adaptive mourning practices and may not merit clinical intervention (Prigerson et al., 2021). We categorized grief measures as assessing maladaptive grief if they were categorized as measuring “maladaptive grief reactions” by Zhang and colleagues (2023) or “pathological grief symptoms” by Ennis and colleagues (2022).

Third, we considered length of time since bereavement as a potential indicator of maladaptive grief symptoms, as a commonly agreed-upon characteristic of maladaptive grief symptoms is their duration beyond the first several months following bereavement, during which time significant emotional and behavioral distress is considered normative (Nader & Layne, 2009). The DSM-5-TR designates that PGD symptoms must persist for at least six months following bereavement to meet criteria for the diagnosis (American Psychiatric Association, 2022). In keeping with Rosner and colleagues’ (2010) hypothesis that participants for whom a greater time had passed since bereavement may be more likely to self-select into study participation if their symptoms were higher, we hypothesized that participants with a greater time since bereavement may be more likely to experience maladaptive grief symptoms and thus demonstrate greater effect sizes than those with shorter time periods following bereavement. Of course, as Currier and colleagues (2007) found,

the opposite finding may be just as likely as participants for whom the bereavement occurred recently may be exhibiting heightened normative symptoms that resolve with time.

Intervention characteristics. Caregiver psychological functioning, positive parenting, and warm relationships with children have each been identified as significant protective factors for bereaved youth (Balk et al., 2011; Brown et al., 2008; Sasser et al., 2019; Wolchik et al., 2017). Caregivers often experience impacts on their own well-being when parenting a bereaved child, whether through their own bereavement by the deceased person (for example, their spouse, child, or parent), or through distress related to managing their child's grief symptoms (Finucane & Concannon, 2020; Hung & Rabin, 2009). Secondary adversities caused by the death can also place further strain on caregivers' cognitive, emotional, social, and economic resources (Griese et al., 2017). Taken together, these experiences and their sequelae can interfere with caregivers' ability to implement effective parenting strategies or model effective coping for their children, all of which may place strain on the parent-child relationship (Haine et al., 2008). Most theories on the origins and maintenance of complicated grief in youth propose caregiver functioning and parenting behavior (improvement of which are frequently cited as treatment targets) as potential mediators of symptom improvement in children (Ayers et al., 2014; Cohen & Mannarino, 2004; Spuij, van Londen-Huiberts & Boelen, 2013).

Several grief-focused treatments for caregivers and children have been associated with increased positive parenting, decreased caregiver mental health

symptoms, and self-reported improvement in the caregiver-child relationship (Boelen et al., 2021; Sandler et al., 2010). The literature base currently lacks studies in which these caregiver-specific variables and child grief symptoms have been evaluated conjointly as treatment outcomes. Sandler and colleagues (2003) found that participation in the Family Bereavement Program predicted improved parenting and caregiver mental health at post-test as well as reduced internalizing symptoms in girls at 11-month follow-up, though they could not establish a mediational relationship between the two variables. Breen and colleagues (2023) reported that interventions that involved caregivers in treatment generally showed larger effect sizes for grief, anxiety, and depression symptoms, though they lacked power to conduct a meta-regression on treatment moderators. The current study aims to extend Breen's work by comparing effect sizes for reductions in grief symptoms for treatments that did and did not incorporate caregivers into treatment. The *amount* of caregiver involvement in treatment was also assessed as a continuous or categorical variable, as recommended by Dorsey and colleagues (2017), to account for nuance between treatments that incorporate caregivers in every session and those that involve one parent meeting.

Providing psychological treatment in group and/or school- and community-based settings can expand access to much-needed evidence-based treatments, particularly for children and adolescents with fewer socio-economic resources (Griese et al., 2017). Delivering grief-focused treatment in the context of a familiar setting, with the support or active facilitation of trusted and comfortable social connections can enhance ecological validity, strengthen the therapeutic alliance

and participant buy-in, and promote a sense of safety, normalcy, and routine (Chen & Panebianco, 2018; Linder et al., 2022). Group interventions can also provide social support benefits by helping bereaved youth feel less alone, strengthen and practice socially mediated, grief-focused coping skills with peers, and have therapeutic concepts reinforced through peer buy-in and modeling (Balk et al., 2011). For bereaved youth, access to and engagement with peer and adult social support has been associated with improved outcomes, whereas social isolation has been associated with greater psychological distress and impairment (Stroebe et al., 2005; Wolchik et al., 2017).

Group- and school- or community-based therapies do also face potential limitations in comparison to individual, clinic-based treatments. It can be more challenging to maintain the same perception of privacy for participants in group and/or school- and community-based interventions, and the complicated intricacies of child and adolescent peer dynamics can complicate efforts to facilitate social connection and support (Balk et al., 2011). Further, the greater ratio of youth to treatment facilitators may reduce opportunities for more individualized attention (Breen et al., 2023). These potential downsides could be salient for youth experiencing maladaptive grief symptoms, who may be more reactive to reminders of the death and the deceased that can be triggered by peers in bereavement-focused group activities (Cohen & Mannarino, 2004).

Though grief-focused treatments in group formats and/or in school or community settings have been reportedly efficacious, there has been limited direct comparison of modality or setting in examining the effects of child and adolescent

grief therapies. To our knowledge, only one study has compared group versus individual grief-focused therapy in a randomized controlled trial, finding that treatment modality did not impact treatment response (Salloum & Overstreet, 2008). In a meta-analytic comparison of cognitive behavioral therapy studies, individual treatments were found to be more effective, with authors concluding that the individual format may allow for greater flexibility and customization of treatment to meet the child's specific needs (Breen et al., 2023). It will be an aim of the current study to evaluate whether treatment modality or treatment setting contributes meaningfully to grief-focused treatment effectiveness for children and adolescents.

Participant characteristics. Developmental factors are a key influence on the ability of children and adolescents to comprehend death, regulate their emotional and behavioral grief reactions, and navigate the secondary adversities and disruptions to daily life that often accompany bereavement (Chen & Panebianco, 2018; Kaplow et al., 2012). Developmentally mediated differences in neurobiology, social and familial context, and skill development, children and adolescents often exhibit the same grief symptom criteria with considerably variant presentations, and thus may respond differently to treatment components and modalities depending on their specific needs (Kaplow et al., 2010).

There is some evidence that older youth may benefit from grief-focused treatment more than younger children. In the extant meta-analytic literature on grief-focused treatment outcomes for children and adolescents, only Rosner and colleagues (2010) examined age as a moderator.

They found that treatment effect sizes were larger for children ages 12 and older than

for children younger than 12 in both controlled and uncontrolled studies, though these differences were not significant for either sample (Rosner et al., 2010). An aim of the current study will be to conduct moderation analyses with age as a continuous variable, rather than a categorical variable (as these authors reported was necessary to do, due to data constraints) to allow for greater sensitivity in detecting a potential effect. Among studies on the effects of grief-focused interventions on grief symptoms in children and adolescents, findings are more mixed, with two including findings that older children showed greater reduction in complicated grief symptoms at post-intervention (Boelen, Lenferink, & Spuij, 2021; Salloum & Overstreet, 2008) and several others reporting that age was not associated with differences in treatment response (O'Donnell et al., 2014; Salloum & Overstreet, 2012; Spuij et al., 2015).

The Present Study

With the current meta-analysis, we sought to replicate and extend the previous meta-analytic work by examining elements highlighted within the grief symptom and treatment literature as potential moderators of treatment effect within a meta-analytic design that allows for comparison between treatments with shared and distinct elements. In contrast to the previous meta-analyses, the present meta-analysis requires that studies include a measure of grief symptoms to more effectively compare participant outcomes across symptom types. We have pooled effect sizes for grief symptoms, PTSD symptoms, and depression symptoms, as well as for functional impairment (often identified as a bereavement-related sequelae for children and adolescents) and behavior problems (Alvis et al., 2021; Melhem et al., 2007). Additionally, the current meta-analysis employed an analytic approach that favored enhancing power to detect moderator effects by

pooling effect sizes across as many studies as possible, rather than starting from subgroup analyses based on study design, use of symptom cutoffs, or treatment type as each of the previous meta-analyses did.

The present study has the following aims and hypotheses:

1. To use meta-analytic techniques to evaluate the effects of grief-focused interventions for bereaved youth on child and adolescent grief symptoms, as a primary outcome, and youth PTSD symptoms, depression symptoms, functional impairment, and behavior problems as secondary outcomes.
 - a. We hypothesize that, overall, completion of grief-focused interventions for bereaved children and adolescents will be associated with significant reductions in symptoms of grief, PTSD, and depression, as well as functional impairment and behavior problems in bereaved youth.
2. To examine potential moderators of treatment effect size across four categories: 1) study characteristics, 2) measurement characteristics, 3) intervention characteristics, and 4) participant characteristics.
 - a. In the category of study characteristics, we hypothesize the following:
 - i. Study design will moderate treatment effect for primary and secondary outcomes, such that larger effect sizes will be derived from uncontrolled studies (those without a comparison group) than from controlled studies.
 - b. In the category of measurement characteristics, we hypothesize the following:

- i. Inclusion of minimum symptom cutoffs will moderate treatment effect for primary and secondary outcomes, such that studies in which participants were required to meet minimum symptom cutoffs for inclusion will demonstrate larger effect sizes than studies in which symptom cutoffs were not required.
 - ii. Use of grief measures categorized as assessing maladaptive grief by Zhang et al. (2023) or pathological grief by Ennis et al. (2022) will be associated with greater effect sizes for all primary and secondary outcomes.
 - iii. Greater length of time since bereavement will be associated with greater effect sizes for all primary and secondary outcomes.
- c. In the category of intervention characteristics, we hypothesize the following:
- i. Caregiver involvement in treatment will moderate treatment such that more caregiver involvement in treatment will be associated with greater treatment effect sizes for youth for all primary and secondary outcomes.
 - ii. Intervention modality will moderate treatment effect size for all primary and secondary outcome measures, such that participation in individual treatment will be associated with greater symptom reduction than participation in group-based treatment.

- iii. Intervention setting will moderate treatment effect due to its likely correlation with caregiver involvement in treatment (more likely in clinical settings) and treatment modality (more likely in individual treatment). Thus, we predict that studies in which interventions took place in clinical settings will show greater effect sizes across symptom outcomes than studies in which interventions were implemented in other settings, such as schools, camps, or community centers.
- d. In the category of participant characteristics, we hypothesize the following:
 - i. Child age will moderate treatment effect, such that older children will demonstrate greater symptom reductions across outcome measures than younger children.

METHOD

Study Selection

Identification of studies

The current meta-analysis focused on studies evaluating the effect of grief-focused interventions on grief symptoms in bereaved children and adolescents. A literature search to identify relevant published studies was conducted using Pubmed, PsychINFO, and Embase. Dissertations and theses were searched using ProQuest Theses and Dissertations Global. A snowballing approach was used to identify additional relevant studies from the reference lists of studies that met inclusion criteria, as well as from review papers and existing meta-analyses focused on child and adolescent grief interventions. Searches were conducted using all combinations and permutations of the following terms: (grief OR griev* OR bereave*) AND (child* OR adolescen* OR youth) AND (treat* OR therapy OR intervention).

Selection of studies

The current study's inclusion and exclusion criteria were selected to balance potential threats to both internal and external validity, with the aim to reflect the current field of grief-focused treatments as comprehensively as possible while preserving some ability to draw meaningful inferences across a set of studies that are heterogeneous with respect to methods, measures, and analyses. Studies that met inclusion criteria had a) study participants that included, but were not limited to, children and adolescents 18-years-old and younger, b) participants who were bereaved by the death of a live-born significant person due to any cause, c) evaluated interventions that included a focus on grief, with d) participants joining

the intervention after the death, and e) a quantitative measure of grief symptoms collected at baseline and post- intervention. Studies that exclusively evaluated adults, employed qualitative or case-study designs, or that did not include a quantitative measure of grief were excluded.

The search process was documented with a spreadsheet tracking date of search, database searched, search terms and search strings used, number of files retrieved, and name of the downloaded file containing the search results retrieved. All search results were downloaded and saved in labeled files. Results files were uploaded to a reference manager to remove duplicates. Titles and abstracts from the remaining studies were screened by two independent reviewers, with studies clearly not meeting inclusion criteria excluded at this phase. Full-text versions of the remaining studies were then downloaded and read to determine inclusion. Each reviewer's decisions regarding inclusion of studies were compared at each phase, with disagreements discussed to reach consensus and additional researchers knowledgeable on the topic consulted in the case of an impasse. Reasons for excluding full-text studies were documented and reported in the PRISMA Flowchart, along with details regarding the number of studies excluded at each phase of the selection process (see Figure 1).

Data extraction

Coding

Selected studies were coded according to the coding manual located in Appendix A. The coded variables were organized into four categories: study characteristics, participant characteristics, measurement characteristics, and intervention characteristics. Study characteristics included study design (controlled

or uncontrolled), type of comparison group used in controlled studies, year published, and study quality rating. Measurement characteristics included use of symptom cutoffs in study inclusion criteria, categorization of grief measurement used, the average length of time in months following the bereavement, and whether or not the grief measure used in the study was previously validated or designed ad-hoc. Intervention characteristics included caregiver participation and dose, modality (group versus individual), and setting (clinical or non-clinical). Participant characteristics centered on demographic variables, including mean age, gender, and race and ethnicity of youth participants.

Quality and bias assessment

Study quality was assessed using a version of the JADAD Rating Scale (Jadad et al., 1996) adapted by Hanauer and colleagues (2024) for their recent meta-analysis with minor modifications. Controlled studies were afforded up to two points each for randomization and blinding, with one point awarded for mentioning the domain and an additional point awarded if the method described was appropriate. If the method for randomization was deemed inappropriate, the study received a rating of zero. All studies were additionally afforded one point if they described participant flow, one point if primary outcomes were stated a priori, one point if a statistical power analysis was reported, one point if a symptom cutoff was implemented for study inclusion, and one point if a previously validated measure of maladaptive grief in children and adolescents. For the present meta-analysis, grief measures were categorized as maladaptive according to Zhang et al. (2023)'s ratings, as were used by Hanauer et al. (2024), as well as by ratings provided by Ennis et al.

(2022). Scores for controlled studies ranged from zero to nine and scores for uncontrolled studies ranged from zero to five.

Data analysis

Study data was analyzed using a meta-analysis with the effect sizes of grief symptom differences as the primary outcome measure, and separate meta-analyses for studies that also include effect sizes for PTSD, depression, functional impairment, and behavior problems as secondary outcome measures to compare differential effects on symptom type.

Effect size calculation

Outcome measure effect sizes from each study were calculated using Cohen's *d*. Effect sizes were calculated using means and standardized variations when reported, with *t*, *F*, or exact *p*-values accessed to calculate the effect size in the event that means and standardized deviations are not reported (Ray & Shadish, 1996). Effect sizes were calculated using post-intervention data from the intervention group and comparison group in controlled studies using the formula in Equation 1.

Equation 1. *Cohen's d formula for between-subjects effect sizes in controlled studies*

$$d = \frac{|m_1 - m_2|}{\sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}}$$

For uncontrolled studies (and to pool effect sizes across study designs), Cohen's *d* was calculated with the standard error adjusted to reflect the within-subjects correlation for pre-post analyses, as seen in Equation 2. If these correlations are not

reported in the original studies, the correlation was set at .7 (Cuipers, 2016).

Equation 2. *Cohen's d formula for within-subjects effect sizes in uncontrolled studies*

$$d = \frac{|m_1 - m_2|}{\sqrt{s_1^2 + s_2^2 - (2rs_1s_2)}}$$

Standard error was calculated for all effect sizes using the formula in Equation 3:

Equation 3. *Standard error calculation for Cohen's d effect size*

$$SE_d = \sqrt{\frac{n_{mTBI} + n_{ctrl}}{n_{mTBI} * n_{ctrl}} + \frac{d^2}{2(n_{mTBI} + n_{ctrl})}}$$

Effect sizes were extracted from total measure scores when reported. If more than one grief measure or subscale score was reported without a total score, measures categorized as maladaptive were selected over other measures and subscales assessing more maladaptive symptoms were selected over other subscales (e.g., the traumatic grief subscale of the EGI). Effect sizes were coded so that a negative effect size indicated an *increase* in symptoms from pre- to post-intervention for uncontrolled studies or higher symptoms at post-intervention for the treatment group than the comparison in controlled studies. This approach was taken to aid in interpretation that negative effect sizes indicated a result that ran counter to the study aims for reductions in grief symptoms, PTSD symptoms, depression symptoms, functional impairment, and behavior problems. The scoring and interpretation of all included measures was checked to confirm interpretation of individual study effects.

Pooling

Within-subjects effects sizes for grief measures were pooled across all studies to allow for equivalent comparisons between controlled and uncontrolled study designs. Effect sizes were weighted by sample size to reduce risk of bias from small sample sizes. Due to the current study's emphasis on including studies addressing as comprehensive a range of current grief interventions as possible, considerable heterogeneity was expected in the sample. Thus, effect sizes were pooled using Hedge's Random Effects Model, which accounts for within-study variance and does not assume uniform effect sizes or designs across studies (Hedges & Olkin, 1985). The number of studies, sample size per study, risk of bias per study, and variance between studies (Tau-square) were considered to determine whether there were sufficient studies for pooling effect sizes of each outcome variable.

Heterogeneity

Forest plots were created to visually compare the 95% confidence intervals for each study's effect sizes along with the 95% confidence interval for the pooled effect size for all primary and secondary outcomes. Studies whose 95% confidence intervals for effect size did not overlap with that of the pooled effect size were considered outliers. I^2 were calculated to demonstrate the total variance accounted for by heterogeneity (from 0-100%, with ratings for low, medium, and high suggested by Higgins, Thompson, Deeks, & Altman, 2003). Subgroup and meta-regression analyses were used to assess for heterogeneity due to study characteristics such as publication status and study design (controlled versus uncontrolled) (Cuipers, 2016).

Publication Bias

Publication bias was assessed through visual inspection of a funnel plot for each outcome. It is assumed that some publication bias exists and current methods of adjusting for publication bias are inherently flawed because they require that the factors that contribute to publication bias be known, but also assert that these factors can only be known after adjusting for the bias (Maier, Bartos, & Wagenmakers, 2022). We have commented on risk for publication bias for each meta-analytic outcome and frame interpretation of results with this consideration in mind.

Moderator analyses

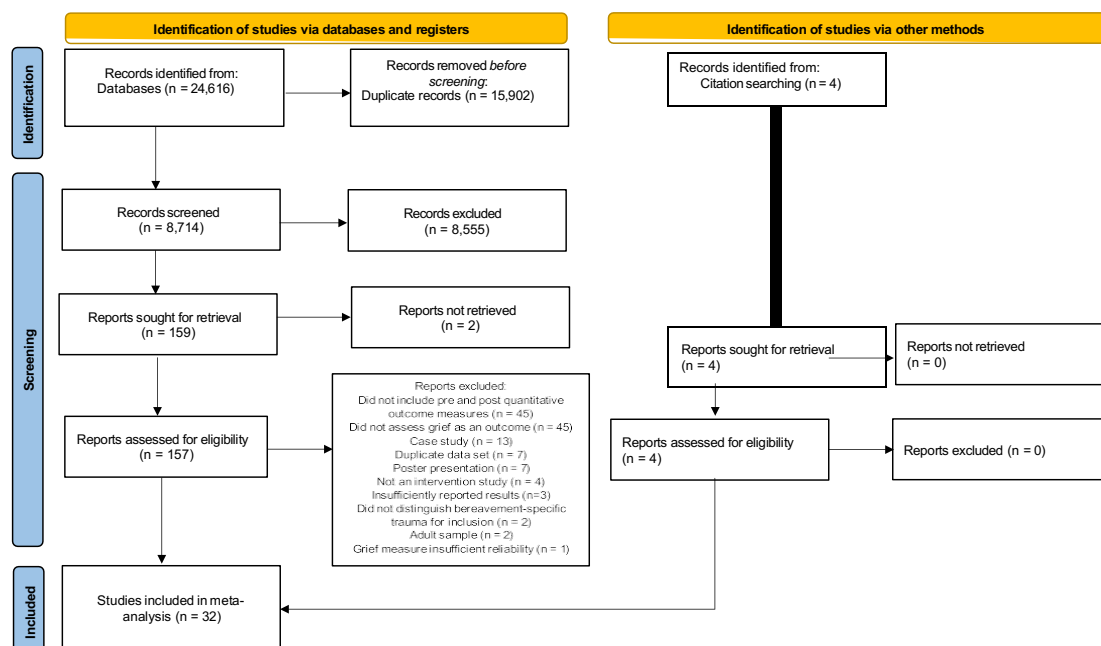
Predictors of heterogeneity and the pooled effect size were assessed using subgroup analyses and meta-regressions where power permitted in each of the primary and secondary outcome variables. The moderators of interest specified in the introduction were hypothesized to contribute to differences in effects between studies, and thus merited further analysis. Subgroup analyses were conducted for dichotomous and categorical moderator variables and meta-regressions were conducted for continuous moderator variables. Analyses were conducted using the Classical Meta-Analysis framework in JASP (JASP Team, 2024).

RESULTS

Description of Studies

A total of 32 studies with 3,412 participants were included in the current meta-analysis (see Figure 1 for a review of the study selection procedure and reasons for exclusion). The included studies were published between 1996 and 2023, with the majority published in the last 15 years ($k = 23$). Four were dissertations and the remaining 28 were published in peer-reviewed journals. Three studies included in the present meta-analysis (Clow et al., 2022; Salloum and Overstreet, 2008; Salloum and Overstreet, 2012) were not included in any of the previous meta-analyses on grief-focused interventions for bereaved youth. (Breen et al., 2023; Currier et al., 2011; Hanauer et al., 2024; Rosner et al., 2010). The included studies garnered an average quality rating of 4.18, with controlled studies ($k = 14$) averaging 5.71 out of 9 possible points, and uncontrolled studies ($k = 18$) averaging 3.06 out of 5 possible points.

Figure 1
PRISMA Diagram of article selection.



The included studies had a median sample size of 44 (range 6 - 650).

Participants had an average age of 12.47 (M_{age} range 8.00 – 17.05) and were, on average, 44% male (range 0 – 100%). Studies took place in 15 different countries across five continents, with 18 taking place in the United States and the remainder taking place in Australia, Bosnia & Herzegovina ($k = 2$), Botswana, Canada, China, Iran, Kenya, the Netherlands ($k = 3$), Rwanda, South Africa, and Tanzania ($k = 2$; Dorsey et al. (2020) took place in both Kenya and Tanzania). Most studies included participants bereaved by a range of different relationships and for a variety of causes. Among those that specified relationship to the deceased ($k = 11$), nine included participants bereaved by the death of a parent, one for those bereaved by a sibling, and one for those bereaved by a peer. Among those that specified the cause of death of the deceased ($k = 5$), three focused on participants bereaved by war or terrorism, one by AIDS, and one by cancer. Fourteen studies reported the average length of

time following bereavement for participants, with a median time of 12.67 months (range 4.5 – 157.6).

The included studies evaluated 18 different interventions, with CBT Grief Help (Spuij et al., 2013), CBT for Childhood Traumatic Grief (CBT-CTG; Cohen & Mannarino, 2004), Trauma and Grief Component Therapy for Adolescents (TGCTA; Saltzman et al., 2017), Project LAST (Salloum and Overstreet, 2008), and Trauma-Focused CBT (TF-CBT; Cohen et al., 2017) each administered within multiple studies. The majority of studies cited cognitive-behavioral approaches as the theoretical bases for the implemented interventions, which ranged in format and location between individual, dyadic and group, and clinics, schools, camps, and other community settings. A summary table of study characteristics is included in Table 24 located in Appendix B.

Following the procedures of Hanauer et al. (2024), studies that included participants with a range of trauma exposure, including, but not limited to, bereavement (Layne et al., 2001; Layne et al., 2008; Salloum & Overstreet, 2008; Salloum and Overstreet, 2012; Saltzman et al., 2001) only data collected within the bereaved subgroup of participants were extracted and analyzed (in most cases, only the grief-specific measure). One study (Hill et al., 2019) compared participants who had completed two phases of treatment with a subgroup who continued to complete a third phase of treatment. Due to insufficient reporting, only data from the first two phases were collected and the study was treated as uncontrolled. Similarly, Tonkins et al. (1996) provided insufficient reporting for separate experimental groups with a waitlist-control design, and thus data were

extracted from the initial and delayed treatment intervention groups and aggregated to create a pooled effect size; the study was categorized as uncontrolled. For studies that reported demographic or outcome variables by subgroup (e.g., by location or sex), mean scores were averaged and standard deviations were pooled to extract an overall score or effect size (Dorsey et al., 2020; Katisi et al., 2019; Lin et al., 2014).

The included studies employed designs with up to five timepoints; however, as 17 out of the 32 studies only assessed outcomes at pre- and post-intervention, data for the present meta-analysis were only extracted at pre and post. Pooled effect sizes were computed for the primary outcome of youth self-reported grief symptoms as well as for four secondary outcomes: youth self-report of PTSD symptoms ($k = 16$), depression symptoms ($k = 15$), and functional impairment ($k = 7$), as well as caregiver report of behavioral problems ($k = 13$).

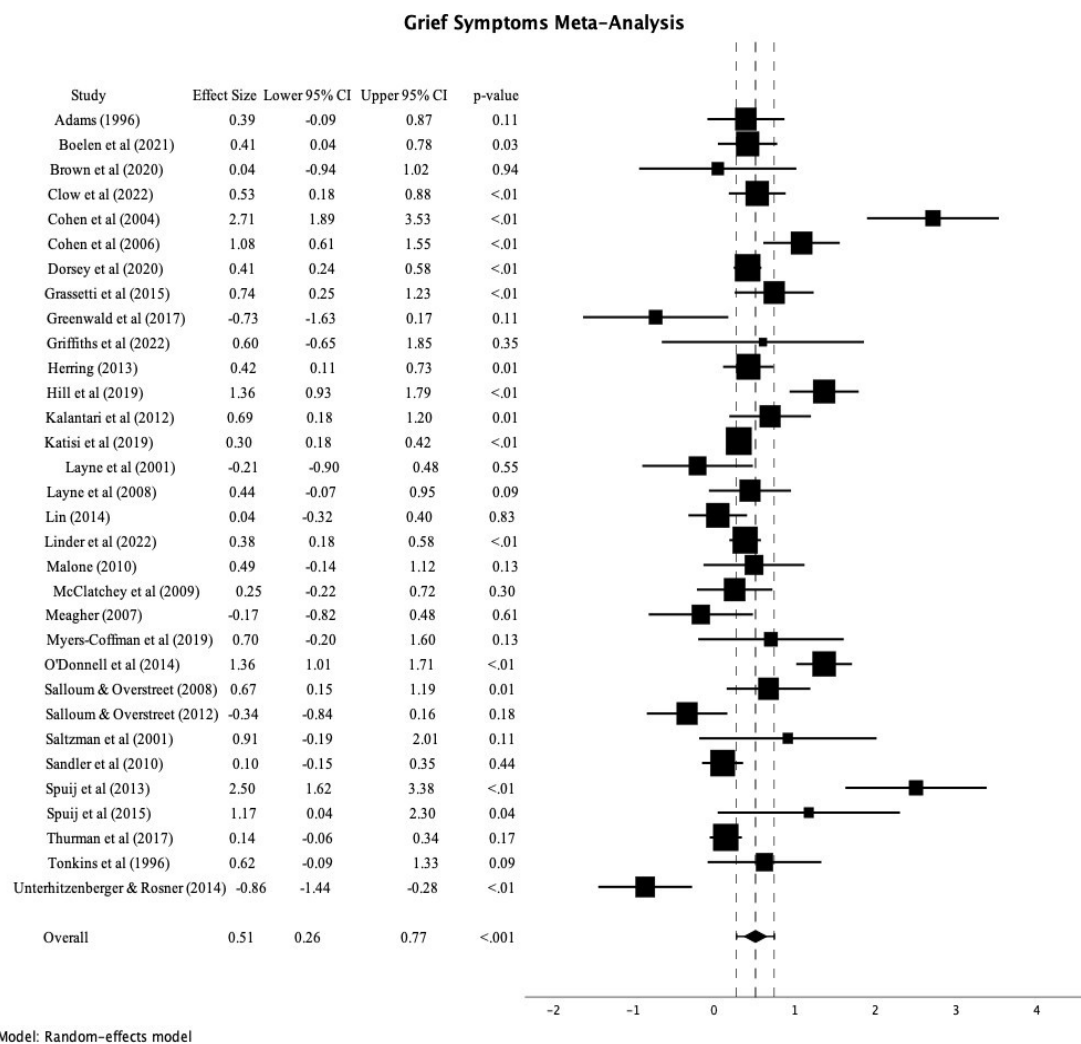
Primary outcome analyses: Grief symptoms

Grief symptoms effect size

Using Hedge's random effects model, the included studies showed a significant moderate pre-post pooled effect size for symptoms of grief (Cohen's $d = 0.51$, $p < .001$, 95% CI [0.26, 0.77]). Heterogeneity was high ($Q(1) = 15.42$, $p < .001$, $I^2 = 93.15$). Sensitivity analyses were conducted by identifying studies with grief symptom effect sizes whose 95% confidence intervals did not overlap with the confidence intervals of the overall pooled effect size. Seven such studies were identified as statistical outliers. With these studies excluded, the pooled effect size for grief symptoms decreased, though remained within the moderate range ($d = 0.37$, $p < .001$, CI [0.28, 0.47]), with considerably reduced heterogeneity ($Q(1) =$

57.20, $p < .001$, $I^2 = 35.98$). As the overall effect size remained within the same range even with outliers removed, it was determined that moderation analyses would be conducted with all included studies to preserve power. The potential undue impact of outliers was considered in interpretation of moderation analyses and outliers were removed from moderation analyses in select cases specified below. There was reasonable evidence that effect sizes were dispersed symmetrically as indicated by visual inspection of the funnel plot (see Figure 7, Appendix D), review of the rank correlation test (Kendall's $\tau = 0.13$, $p = 0.325$), and review of Egger's test for Funnel plot asymmetry ($z = 1.07$, $p = .284$).

Figure 2
Forest plot of grief symptom effect sizes (k = 32)



Moderator analyses: Grief symptoms

Moderation analyses were conducted for variables grouped as study characteristics, measurement characteristics, intervention characteristics, and participant characteristics.

Correlations among moderator variables are presented in Table 1.

Table 1
Pearson's r Correlations Among Moderator Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Study Design	--															
2. Year published	-.061	--														
3. JADAD Scale Quality Rating	.574**	.158	--													
4. Symptom cutoff	-.012	-.144	.334	--												
5. Measure Categorization	.093	.139	.275	.170	--											
6. Average time since bereavement	.368	.341	.283	.017	.279	--										
7. Grief measure validation	-.005	-.225	-.304	-.232	-.497**	-.354	--									
8. Caregiver involvement (dichotomous)	.064	-.017	.326	.313	.209	-.540*	-.258	--								
9. Number of caregiver sessions	.029	.073	.348	.243	.307	-.366	-.301	.720**	--							
10. Intervention modality	-.030	.219	.202	.331	.293	-.183	-.200	.478**	.477*	--						
11. Intervention setting	-.246	-.013	-.020	.049	.197	-.448	-.156	.387*	.504**	.632**	--					
12. Mean age	.089	.124	-.114	.037	-.028	.776**	-.230	-.387*	-.083	-.245	--					
13. Percentage White	.094	-.043	.100	-.029	.570	.529	-.025	.430	.547*	.480*	.698**	-.300	--			
14. Percentage Black	-.065	-.031	.276	.341	.540	-.264	-.361	.099	-.296	-.266	-.406	-.160	-.578**	--		
15. Percentage Latino/a	-.311	-.163	-.132	-.011	-.105	-.102	-.088	-.490*	-.315	-.255	-.338	.398	-.437	-.073	--	
16. Percentage Male	.078	.090	.054	.038	.184	.045	-.030	.174	.134	.037	.048	-.175	-.135	.276	-.380	--

Note. * $p < .05$, ** $p \leq .01$

Study characteristics

Study design. There was a significant moderation effect for study design ($Q(1) = 8.15, p = .004$; see Table 2). Studies yielding between-subjects effects derived from comparing the intervention group with a control group demonstrated smaller effect sizes than within-subjects effect sizes derived from comparing pre- and post-intervention outcomes from uncontrolled studies. When assessed based on the type of comparison group (see Table 3), effect sizes for participants receiving grief-specific interventions compared with active treatment ($k = 7, Q(1) = 4.81, p = .028$) or waitlist or no-treatment control ($k = 6, Q(1) = 4.21, p = .040$) comparison groups were significantly lower than effect sizes collected from

uncontrolled studies. There were not significant differences in effect sizes between studies employing active treatment controls versus no-treatment control or waitlist control designs ($Q(1) = 0.03, p = .871$). Meta-analyses were then conducted on controlled and uncontrolled studies independently to examine their pooled effect sizes. Uncontrolled studies ($k = 19$) yielded a significant, large pooled effect size of $d = 0.80$ ($Q(1) = 19.81, p < .001$), whereas controlled studies ($k = 13$) produced a small, non-significant pooled effect size of $d = 0.15$ ($Q(1) = 1.91, p = .167$).

Table 2

Grief Symptom Moderator Analysis: Study Design

Study Design Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Within-Subjects	19	0.80	0.53	1.05	<.001
Between Subjects	13	-0.67	-1.04	-0.26	.004

Table 3

Grief Symptom Moderator Analysis: Type of Comparison Group

Comparison Type Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
None	19	0.80	0.49	1.11	<.001
Waitlist or No-Treatment	6	-0.68	-1.28	-0.09	.025
Active Treatment	7	-0.66	-1.23	-0.09	.026

Year published and study quality rating were entered as continuous moderator variables in meta-regression analyses and did not demonstrate a statistically significant impact on effect size. See Tables 23 and 24 in Appendix D for further details on the analyses and Table 22 in Appendix C for complete reporting of quality ratings for each study.

Measurement characteristics

Symptom severity. Studies were coded dichotomously according to

whether they required participants to meet a certain symptom threshold for inclusion (yes or no for any symptom type). There was a significant moderation effect for inclusion criteria specifying any symptom cutoffs ($Q(1) = 8.74, p = .003$), with studies that required a symptom cutoff for inclusion reporting average higher effect sizes than studies that did not require a symptom cutoff (see Table 4). Studies were then placed into subgroups based on whether they included symptom cutoffs and entered into separate meta-analyses. Both subgroups yielded significant results, though the pooled effect size for studies with symptom cutoffs ($k = 17$) was in the high range ($d = 0.89, Q(1) = 17.01, p < .001$), whereas the pooled effect size for studies with no symptom cutoffs ($k = 15$) was in the low range ($d = 0.21, Q(1) = 4.72, p = .030$; see Table 4).

Table 4

Grief Symptom Moderator Analysis: Symptom Severity (Dichotomized)

Symptom Cutoff Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
No Symptom Cutoff	17	0.19	-0.11	0.05	.212
Any Type of Symptom Cutoff	15	0.68	0.23	1.12	.003

Among the 32 included studies, 17 did not require that participants meet symptom cutoffs of any kind, seven required grief symptom cutoffs (including one study, Cohen et al. (2004), that required participants exhibit both grief and PTSD symptoms above a certain threshold), five required grief symptoms or other symptoms above a cutoff, and three required a cutoff for PTSD symptoms but not for grief symptoms. Though there was not sufficient power to assess the moderation effects of each symptom category, significant effects were found for studies that included grief symptom cutoffs in any capacity ($Q(2) = 23.13, p <$

.001), including studies that required either grief symptom cutoffs or other symptom cutoffs and studies that required grief symptom cutoffs specifically (see Table 5). There was not a significant difference between studies in which grief symptom cutoffs were required and those where grief *or* other symptom thresholds had to be met for inclusion ($Q(1) = 0.09, p = .761$).

Table 5

Grief Symptom Moderator Analysis: Symptom Severity (Categorical)

Symptom Cutoff Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
No Grief Symptom Cutoff	20	0.18	-0.06	0.41	.136
Grief or Other Symptom Cutoff Required	5	0.58	0.07	1.09	.026
Grief Symptom Cutoff Required	7	1.12	0.65	1.60	<.001

Type of grief measurement. Several variables were examined to assess whether the type of grief symptomology (e.g., maladaptive versus normative) measured impacted the effect of treatment on grief symptoms. Studies were categorized as including measures of maladaptive or pathological grief symptoms according to reviews of grief measures for children and adolescents by Zhang and colleagues (2023) and Ennis and colleagues (2022). Studies that included measures categorized as “Measure of Maladaptive Grief Reactions” by Zhang et al. (2023) or “Measure of Pathological Grief Symptoms” by Ennis et al. (2022) were compared with studies including grief measures that were not given those ratings (e.g., either were rated as “General Purpose Grief Scale” by Zhang et al. (2023), “Measure of Grief-Related Constructs” by Ennis et al. (2022), or were not rated at all). Meta-regression analyses demonstrated a positive slope, indicating a non-significant trend toward larger effect sizes among studies that used measures of problematic

grief ($Q(1) = 1.36, p = .244$; see Table 6).

Table 6

Grief Symptom Moderator Analysis: Categorization of Grief Measurement by Zhang et al. (2023) and Ennis et al. (2022)

Categorization Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Not categorized or categorized as normative grief	9	0.28	-0.19	0.75	.245
Categorized as pathological or maladaptive grief	23	0.33	-0.23	0.89	.244

Average length of time since bereavement was also examined as a potential indicator of whether measures captured maladaptive rather than normative, grief, as diagnoses for Persistent Complex Bereavement Disorder and Prolonged Grief Disorder in children and adolescents have specified that symptoms lasting beyond six months post-bereavement prompt greater clinical concern. Average time in months since bereavement was extracted ($k = 14$) and median-centered to correct for a significant positive skew in the data (range 4.5 – 157.6 months). There was a non-significant negative relation between time since bereavement and effect size for grief symptoms ($Q(1) = 2.50, p = .114$), indicating a small decrease in effect size (-0.01) for each month beyond the median length of time since bereavement (See Table 7; Mdn= 12.67, or approximately one year). Notably, the effect size of $d = 0.90$ was statistically significant, indicating that participants who had experienced bereavement up to at least 12 months prior exhibited meaningful decrease in grief symptoms following intervention.

Table 7*Grief Symptom Moderator Analysis: Average Length of Time Since Bereavement*

Variable	B	95% LL	95% UL	p-value
Intercept	0.90	0.38	1.43	<.001
Average length of time since bereavement	-0.01	-0.02	0.00	.114

Note. $k = 14$.

Measures were additionally coded according to whether they had been previously validated or were developed ad-hoc for the present study. Five out of 32 included measures were categorized as ad-hoc and no significant differences were observed in effect size for grief symptoms based on whether studies incorporated previously validated measures ($Q = 0.09, p = .765$).

Intervention characteristics

Caregiver involvement. Caregiver involvement in treatment was coded dichotomously (yes, no) and continuously by number of caregiver sessions in the intervention as a proxy for dose of caregiver involvement. Meta-regression analyses showed a non-significant positive association between any amount of caregiver involvement in treatment (characterized as at least one caregiver session) and effect sizes for grief symptoms in participating youth ($Q(1) = 3.35, p = .067$; see Table 8). When considering the ‘dose’ of caregiver involvement, there was a small but significant moderation effect for number of caregiver sessions ($Q(1) = 3.95, p = .047$), indicating slight increases in effect sizes as the number of caregiver sessions in an intervention increased (see Table 9).

Table 8*Grief Symptom Moderator Analysis: Caregiver Involvement (Dichotomous)*

Caregiver Involvement Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
No caregiver involvement	16	0.29	-0.06	0.63	.100
Caregivers attended at least one session	16	0.46	-0.03	0.94	.067

Table 9*Grief Symptom Moderator Analysis: Number of Caregiver Sessions in Intervention*

Variable	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Intercept	16	0.31	<0.01	0.63	.048
Number of caregiver sessions	16	0.05	<0.001	0.11	.047

Intervention modality. Studies were coded according to whether the interventions evaluated were implemented in a group format or individual modality. In instances in which interventions included both group and individual approaches, studies were coded according to the modality employed the majority of the time. There was a significant moderation effect ($Q(1) = 4.58, p = .032$), indicating that participants receiving interventions in an individual modality demonstrated greater reductions in grief symptoms ($d = 0.85$) than participants in group-based interventions ($d = 0.32$). An even greater effect was found in initial analyses; however, it was surmised that these findings may have been unduly influenced by two outlying studies with individual modality interventions (Cohen et al., 2004 and Spuij et al., 2013). The data presented in Table 10 show the findings after these studies were removed from the analysis.

Table 10*Grief Symptom Moderator Analysis: Intervention Modality*

Modality Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Group	25	0.32	0.13	0.51	<.001
Individual	7	0.53	0.04	1.01	.032

Intervention setting. The included studies administered interventions in hospital or outpatient clinics ($k = 12$), schools ($k = 13$), camps ($k = 3$), orphanages ($k = 1$), community centers ($k = 1$), funeral homes ($k = 1$), and a secure juvenile justice facility ($k = 1$). Due to power constraints, it was determined that the factor of greatest interest centered on whether interventions were administered in a clinical setting or a setting outside of the clinic, including schools or camps. Table 11 shows the effects intervention setting dichotomized to reflect whether the intervention took place in a clinical setting or somewhere else. Moderation analyses indicate that there was a small, not statistically significant, increase in effect sizes for interventions that took place in clinical settings rather than other locations, such as schools, camps, or community settings ($Q(1) = 2.67, p = .102$).

Table 11*Grief Symptom Moderator Analysis: Intervention Setting*

Setting Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Other Setting	20	0.36	-0.09	0.96	.021
Clinic	12	0.44	0.05	0.67	.102

It should be noted that intervention characteristics were highly correlated, indicating that results pertaining to caregiver involvement, modality, and setting should be interpreted with particular caution (see Table 1). Caregivers were

significantly more likely to be involved in a greater number of sessions for interventions that took place in clinical settings ($r = .504, p \leq .01$) and significantly less likely to participate in group-based interventions ($r = -.477, p < .05$). Group-based interventions were also significantly less likely to take place in clinical settings in the included studies ($r = -.632, p \leq .01$). We entered number of caregiver sessions, modality type, and setting type as covariates into a series of meta-regressions to determine whether independent effects could be ascertained. When setting was evaluated in the context of modality, only modality remained significant as a moderator of effect size for grief symptoms ($B = 0.74, Q(2) 5.55, p = .024$). Thus, there was no unique effect of setting type on grief symptom outcomes after controlling for modality. Modality had some unique effect above and beyond setting, such that individual treatment was associated with larger effect sizes than group treatment, though this effect did not persist when controlling for caregiver involvement. Caregiver involvement had no unique effect after controlling for setting or modality.

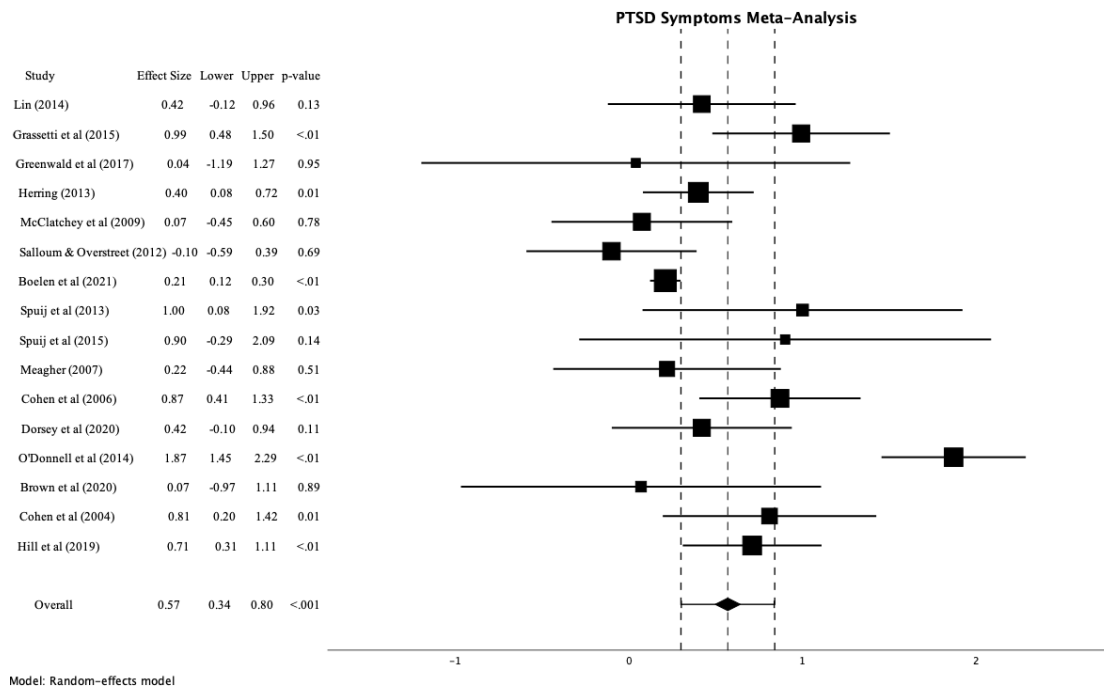
Participant characteristics

Several participant demographic characteristics were entered into moderation analyses, and none were found to significantly impact effect sizes for grief symptoms. Mean-centered child age, percentage of participants identifying as white, Black, and Latino, and percentage of participants identifying as male were each identified in separate analyses as continuous covariates. See Tables 25, 26, and 27 in Appendix D for further details.

Secondary outcome analyses: PTSD symptoms

PTSD symptoms effect size

Studies that measured PTSD symptoms were aggregated ($k = 16$) and showed a significant moderate pre-post pooled effect size ($d=0.57, p < .001, 95\%$ CI [0.34, 0.80]). Heterogeneity was high ($Q(1) = 23.49, p < .001, I^2 = 75.60$). Figure 3 shows a forest plot of effect sizes for all studies that included a measure of PTSD. Outlier studies were identified using sensitivity analyses. Excluding these studies resulted in a reduced, though still significant moderate effect size of $d = 0.37 (p < .001, 95\% \text{ CI } [0.28, 0.47])$. Heterogeneity was considerably lower ($Q(1) = 57.20, p < .001, I^2 = 35.98$). As with grief symptoms, it was determined that moderator analyses would be run with all studies that measured PTSD as the overall effect did not differ substantially. There was reasonable evidence that effect sizes were dispersed symmetrically as indicated by visual inspection of the funnel plot (see Figure 8, Appendix D), review of the rank correlation test (Kendall's $\tau = -0.12, p = .564$), and review of Egger's test for Funnel plot asymmetry ($z = -0.05, p = .963$).

Figure 3*Forest plot of PTSD symptom effect sizes (k = 16)***Moderator Analyses: PTSD symptoms*****Study characteristics***

Study design. There was a significant moderation effect for study design on PTSD symptoms ($Q(1) = 12.57, p < .001$; see Table 12). Studies that examined between-subjects effects derived from comparing the intervention group with a control group demonstrated smaller effect sizes ($d = 0.19$) than within-subjects effect sizes derived from uncontrolled studies ($d = 0.84$).

Meta-analyses conducted separately on studies grouped by design revealed that effect sizes remained significant for both groups, with the pooled effect size for controlled studies at $d = 0.21$ ($Q(1) = 23.99, p < .001$) and the pooled effect size for uncontrolled studies at $d = 0.83$ ($Q(1) = 32.86, p < .001$). There was not sufficient power to analyze potential moderating effects of the type of comparison group

(waitlist, no-treatment, or active treatment control) on PTSD symptom outcomes in the present meta-analysis. There were no significant moderating effects found for year published or study quality rating on effect sizes for symptoms of PTSD (see Tables 28 and 29 in Appendix D for further details).

Table 12

PTSD Symptom Moderator Analysis: Study Design

Study Design Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Within-Subjects	10	0.84	0.61	1.08	<.001
Between Subjects	6	-0.65	-1.01	-0.29	<.001

Measurement characteristics

Symptom severity. There was a significant moderation effect for inclusion criteria requiring symptom cutoffs for any symptom category (the majority of which included grief symptoms) on PTSD symptoms ($Q(1) = 4.90, p = .027$), with studies that required a symptom cutoff for inclusion reporting average higher effect sizes ($d = 0.71$) than studies that did not require a symptom cutoff ($d = 0.26$) (See Table 13). Studies were then placed into subgroups based on whether they included symptom cutoffs and entered into separate meta-analyses. Both subgroups yielded significant results, though the pooled effect size for studies with symptom cutoffs ($k = 10$) was in the high range ($d = .74, Q(1) = 21.31, p < .001$), whereas the pooled effect size for studies with no symptom cutoffs ($k = 10$) was in the low range ($d = .30, Q(1) = 7.19, p = .007$). There was not sufficient power to conduct subgroup analyses on the moderating effect of the type of symptom cutoff included in studies on PTSD symptoms.

Table 13*PTSD Symptom Moderator Analysis: Symptom Severity (Dichotomized)*

Symptom Cutoff Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
No Symptom Cutoff	6	0.26	-0.07	0.59	.122
Any Type of Symptom Cutoff	10	0.45	0.05	0.85	.027

Type of grief measurement. There was insufficient power to detect moderation effects for measurement categorization by Zhang et al. (2023) and Ennis et al. (2022) or measurement validation on PTSD symptoms.

Length of time since bereavement. As shown in Table 14, there was a non-significant negative relation between median-centered average time since bereavement and effect size for PTSD symptoms ($Q(1) = 1.55, p = .213$), indicating a small decrease in effect size (-.01) for each month beyond the median length of time since bereavement (Mdn= 12.67, or approximately one year). Notably, the effect size of $d = 0.59$ was statistically significant, indicating that participants who had experienced bereavement up to at least 12 months prior exhibited a meaningful decrease in PTSD symptoms following intervention.

Table 14*PTSD Symptom Moderator Analysis: Average Length of Time Since Bereavement*

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.59	0.33	0.85	<.001
Average length of time since bereavement	-0.01	-0.03	0.01	.213

Note. $k = 9$.

Intervention characteristics

There was insufficient power to detect a moderation effect for

dichotomously coded caregiver involvement. When caregiver involvement was assessed as a continuous variable accounting for the number of sessions involving caregivers in the intervention, there was a non-significant positive association between greater number of caregiver sessions and larger effect sizes for PTSD symptom reduction ($Q(1) = 3.03, p = .082$). Intervention modality and setting of intervention did not significantly moderate the effect size for PTSD symptoms. See Tables 30, 31, and 32 in Appendix D for intervention-related moderation analyses for PTSD symptoms.

Participant characteristics

Mean-centered child age, percentage of participants identifying as white or Latino, and percentage of participants identifying as male did not demonstrate significant moderation effects on PTSD symptoms in participating youth. However, there were small but significant moderation effects for percentage of participants who identified as Black ($Q(1) = 3.90, p = .048$), indicating that effect sizes for PTSD symptoms decreased as proportion of Black participants rose in the included studies ($k = 11$; see Table 15). This finding should be interpreted with caution, as the variable had a significant positive skew. See Tables 33, 34, and 35 in Appendix D for further details on non-significant findings for this section.

Table 15

PTSD Symptom Moderator Analysis: Percentage of Participants Identifying as Black

Variable	B	95% LL	95% UL	p-value
Intercept	0.75	0.44	1.06	<.001
Percentage of participants identified as Black	-0.01	-0.01	-0.00	.048

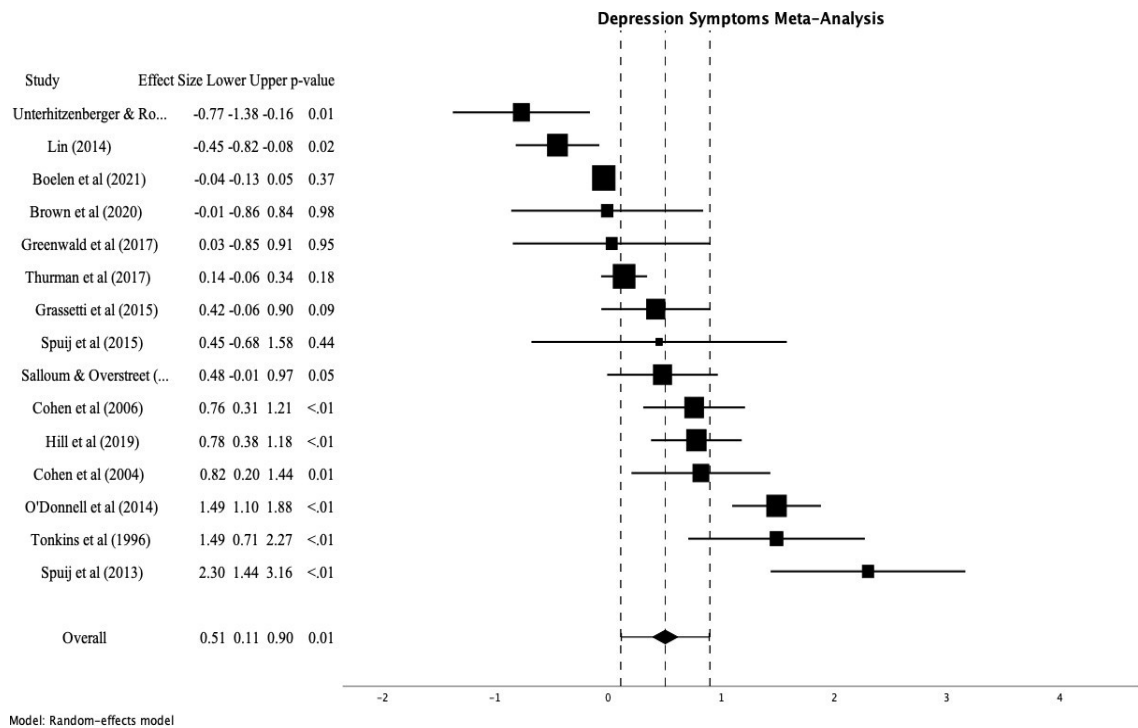
Note. $k = 11$.

Secondary outcome analyses: Depression symptoms

Depression symptoms effect size

Studies that measured depression symptoms were aggregated ($k = 15$) and entered into moderation analyses, which showed a significant moderate pre-post pooled effect size ($d=0.51, p = .013, 95\% \text{ CI } [0.11, 0.91]$). Heterogeneity was high ($Q(1) = 6.16, p = .013, I^2 = 94.12$). Figure 4 shows a forest plot of depression symptom effect sizes from all included studies in which they were collected. Five outlier studies were identified using sensitivity analyses. Excluding these studies resulted in slightly increased significant moderate effect size of $d = 0.53 (p < .001, 95\% \text{ CI } [.28, .79])$. Heterogeneity was lower, though still moderate ($Q(1) = 16.62, p < .001, I^2 = 57.41$). As with other symptom categories, it was determined that moderator analyses would be run with all studies that measured depression as the overall effect difference was minimal. There was reasonable evidence that depression effect sizes were dispersed symmetrically as indicated by visual inspection of the funnel plot (see Figure 9 in Appendix D), review of the rank correlation test (Kendall's $I'' = .12, p = .559$), and review of Egger's test for Funnel plot asymmetry ($z = 0.91, p = .362$).

Figure 4
Forest plot of depression symptom effect sizes ($k = 15$).



Moderator analyses: Depression symptoms

Study characteristics

Study design. There was a significant moderation effect for study design on depression symptoms ($Q(1) = 11.50, p < .001$; see Table 16). Studies that examined between-subjects effects derived from comparing the intervention group with a control group demonstrated significantly smaller effect sizes than within-subjects effect sizes derived from uncontrolled studies. Meta-analyses were then conducted on controlled and uncontrolled studies independently to examine their pooled effect sizes. Uncontrolled studies ($k = 9$) yielded a significant, large pooled effect size of $d = .95$ ($Q(1) = 17.45, p < .001$), whereas controlled studies ($k = 6$) produced a small, non-significant negative pooled effect size of $d = -0.09$ ($Q(1) = .26, p = .607$). These results indicate that within controlled studies, participants in

comparison groups reported lower depressive symptoms at post-treatment than participants in intervention groups. There was not sufficient power to analyze potential moderating effects of the type of comparison group (waitlist, no-treatment, or active treatment control) on depression symptom outcomes in the present meta-analysis. There were no significant moderating effects found for year published or study quality rating on effect sizes for symptoms of depression (see Tables 36 and 37 in Appendix D for further details).

Table 16

Depression Symptom Moderator Analysis: Study Design

Study Design Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Within-Subjects	9	0.95	0.55	1.35	<.001
Between Subjects	6	-1.05	-1.66	-0.44	<.001

Measurement characteristics

Symptom severity. There was a significant moderation effect for inclusion criteria requiring symptom cutoffs for any symptom category (the majority of which included grief symptoms) on depression symptoms ($Q(1) = 4.02, p = .045$), with studies that required a symptom cutoff for inclusion showing average higher effect sizes than studies that did not require a symptom cutoff (See Table 17). Studies were then placed into subgroups based on whether they included symptom cutoffs and entered into separate meta-analyses. Only the pooled effect size for studies with symptom cutoffs ($k = 9$) remained significant and in the high range ($d = 0.79, Q(1) = 12.35, p < .001$), whereas the pooled effect size for studies with no symptom cutoffs ($k = 6$) was in the low range and no longer significant ($d = 0.04, Q(1) = 0.02, p = .891$). There was not sufficient power to conduct subgroup

analyses on the moderating effect of the type of symptom cutoff included in studies on depression symptoms.

Table 17

Depression Symptom Moderator Analysis: Symptom Severity (Dichotomized)

Symptom Cutoff Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
No Symptom Cutoff	6	0.04	-0.54	0.62	.894
Any Type of Symptom Cutoff	9	0.76	0.02	1.50	.045

Type of grief measurement. There was insufficient power to detect moderation effects for measurement categorization by Zhang et al. (2023) and Ennis et al. (2022) or measurement validation on depression symptoms.

Length of time since bereavement. There was a small but significant negative relation between median-centered average time since bereavement and effect size for depression symptoms ($Q(1) = 4.46, p = .035$), indicating a small decrease in effect size (-0.01) for each month beyond the median length of time since bereavement (Mdn= 12.67, or approximately one year; see Table 18). Notably, the effect size of $d = 0.75$ was statistically significant, indicating that participants who had experienced bereavement up to at least 12 months prior exhibited a meaningful decrease in depression symptoms following intervention.

Table 18

Depression Symptom Moderator Analysis: Average Length of Time Since Bereavement

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.75	0.23	1.27	.005
Average length of time since bereavement	-0.01	-0.02	-0.00	.035

Note. $k = 10$.

Intervention characteristics

There was a non-significant positive association between caregiver involvement and effect sizes for reductions in depression symptoms when assessed both dichotomously ($Q(1) = 2.76, p = .097$) and continuously by number of caregiver sessions ($Q(1) = 1.43, p = .232$; see further details in Tables 38 and 39 in Appendix D). Intervention modality and setting of intervention did not significantly moderate the effect size for depression symptoms (see Tables 40 and 41 in Appendix D for further details).

Participant characteristics

There was a significant moderating effect of mean-centered youth age on depression symptoms ($Q(1) = 5.12, p = .024$), indicating smaller effect sizes as sample age increases (see Table 19). There were no significant moderating effects found for percentage of participants that identified as male or for any of the assessed race/ethnicity categories on effect sizes for symptoms of depression (see Tables 42 and 43 in Appendix D for further details).

Table 19

Depression Symptom Moderator Analysis: Child Age (Mean-centered)

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.42	0.04	0.80	.032
Child age	-0.21	-0.41	-0.03	.024

Note. $k = 14$.

Secondary outcome analyses: Functional impairment

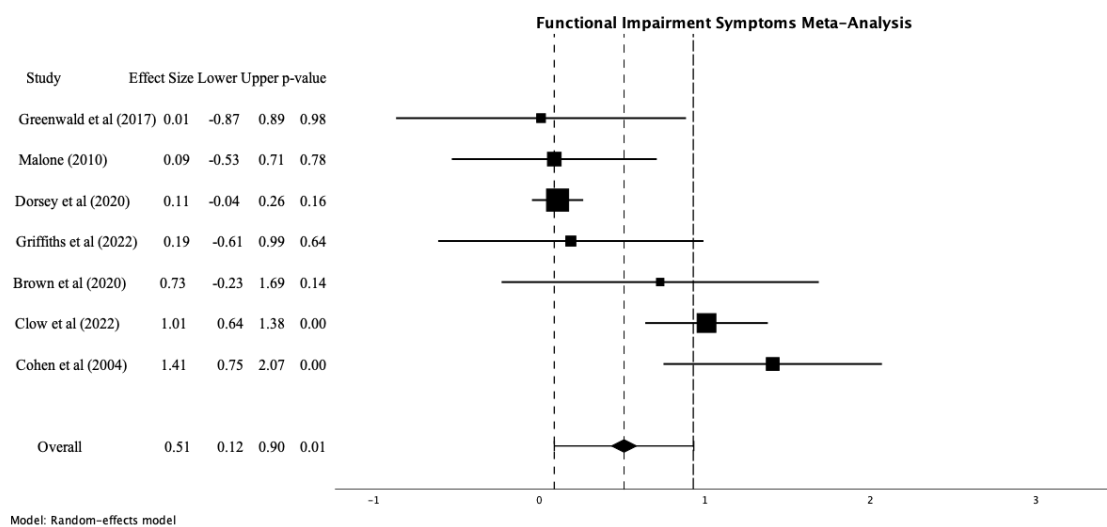
Functional impairment effect size

Studies that measured functional impairment symptoms were aggregated (k

= 7) and entered into moderation analyses, which showed a significant moderate pre-post pooled effect size ($d=0.51, p = .010, 95\% \text{ CI } [0.12, 0.90]$). Heterogeneity was high ($Q(1) = 6.58, p = .010, I^2 = 75.00$). Figure 5 shows a forest plot of effect sizes for all studies reporting measures of functional impairment. Sensitivity analyses were conducted and no outliers were identified. There was reasonable evidence that functional impairment effect sizes were dispersed symmetrically as indicated by visual inspection of the funnel plot (see Figure 10 in Appendix D), review of the rank correlation test (Kendall's $\tau = 0.14, p = .773$), and review of Egger's test for Funnel plot asymmetry ($z = 0.11, p = .911$).

Figure 5.

Forest plot of functional impairment symptom effect sizes ($k = 7$)



Moderator analyses: Functional impairment

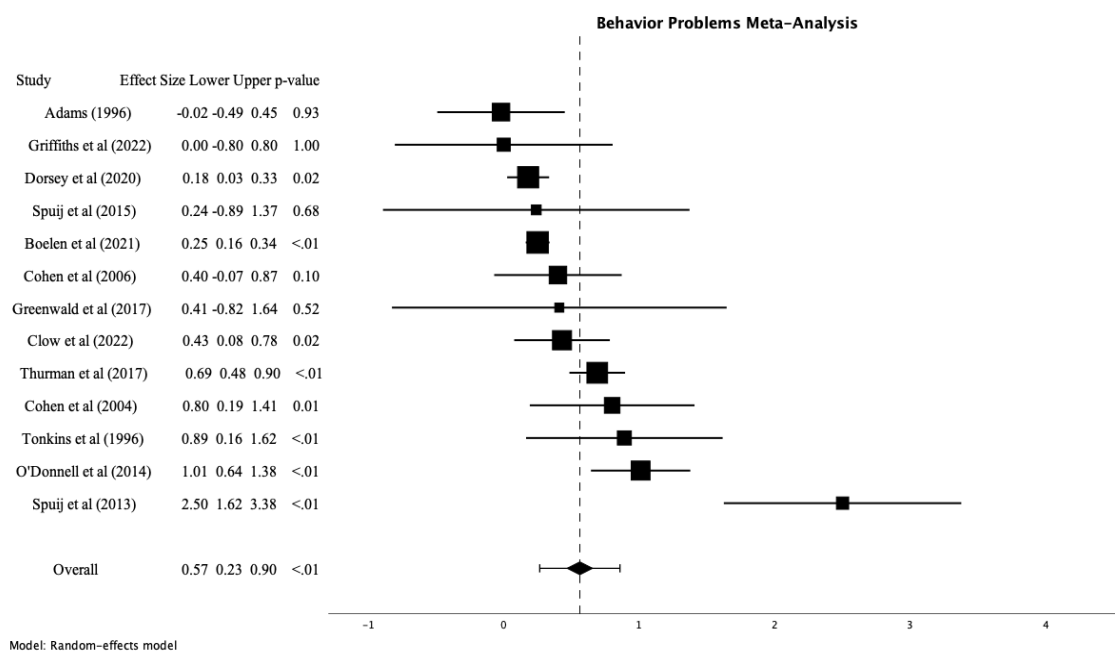
Due to the small number of studies that measured functional impairment, there was only sufficient power to conduct moderation analyses with continuous variables, none of which were significant.

Secondary outcome analyses: Behavior problems

Behavior problems effect size

Studies that included measures of parent-reported child behavioral problems were aggregated ($k = 13$) and entered into moderation analyses, which showed a significant moderate pre-post pooled effect size ($d=0.57, p = .001, 95\%$ CI [0.23, 0.92]). Heterogeneity was high ($Q(1) = 10.50, p = .001, I^2 = 93.54$). Figure 6 shows a forest plot of effect sizes for behavior problems in relevant studies. Sensitivity analyses were conducted, and one outlier was identified (Spuij et al., 2013). Excluding this study resulted in a decreased, though still moderate effect size of $d = 0.38 (p < .001, 95\%$ CI [0.28, 0.47]). Heterogeneity was substantially lower ($Q(1) = 59.69, p < .001, I^2 = 18.21$). As with other symptom categories, it was determined that moderator analyses would be run with all studies that measured behavioral problems as the overall effect difference was minimal. When all studies were pooled, there was reasonable evidence that behavior problem effect sizes were dispersed symmetrically as indicated by visual inspection of the funnel plot (see Figure 11 in Appendix D), review of the rank correlation test (Kendall's $\tau = 0.147, p = .427$), and review of Egger's test for Funnel plot asymmetry ($z = 0.77, p = .440$).

Figure 6
Forest plot of behavior problem effect sizes ($k = 13$)



Moderator analyses: Behavior problems

Of the variables for which there was sufficient power to run analyses, none moderated behavioral problems at a statistically significant level.

DISCUSSION

The first aim of the current meta-analysis was to evaluate the overall effect of grief-focused interventions for children and adolescents on a primary outcome of grief symptoms and secondary outcomes of PTSD symptoms, depression symptoms, functional impairment, and behavior problems. Consistent with our hypotheses, meta-analyses indicated significant reductions in all primary and secondary outcomes when effect sizes were pooled across all studies. Pooled effect sizes ranged from $d = 0.51$ to $d = 0.57$, indicating that bereaved youth reported moderate decreases in grief symptoms, PTSD symptoms, depression symptoms, functional impairment, and behavior problems when all available study effects were aggregated.

These findings are difficult to compare directly with those of previous meta-analyses due to differences in how outcome measures were pooled. None of the four previous meta-analyses presented pooled effect sizes across both controlled and uncontrolled studies, and thus comparisons are better made with moderator analyses presented below. Given consistent links in the literature between bereavement and a range of both acute and chronic emotional and behavioral symptoms, it is valuable to examine the effects of grief-focused interventions on multiple forms of psychopathology.

The relative uniformity of effect sizes across symptom domains in the present meta-analysis is open to several interpretations. First, the lack of consensus in how to define and measure grief-specific symptomology may manifest in grief measures that overlap with other measures of psychopathology to capture depression or PTSD symptoms that are also accounted for by those

measures, essentially double-counting certain symptoms. Second, these findings suggest that grief-focused interventions had more generalized effects, such that their treatment components did not specifically target grief symptoms but instead had transdiagnostic effects. Third, it is possible that the interventions could be targeting grief-specific sequelae that in turn serve as a mechanism for symptom improvement in other domains, as was proposed by Breen et al. (2023) in their rationale for their meta-analysis examining the effect of grief-focused treatments on depression and anxiety symptoms.

Moderator Analyses

Our second aim was to evaluate moderators of treatment effect for primary and secondary outcomes. Moderators were conceptualized according to four categories: study characteristics, measurement characteristics, intervention characteristics, and participant characteristics. As anticipated, meta-analysis calculations revealed significant heterogeneity across all outcome variables, suggesting the proposed moderation analyses were warranted to identify potential factors contributing to the wide range in findings.

Study characteristics. Consistent with our hypotheses and with previous meta-analyses on this topic, we found moderation effects for study design on all symptom outcomes for which there was sufficient power to conduct analyses. Participants in controlled studies (defined as those that implemented comparison groups) demonstrated significantly smaller effect sizes for reductions in grief symptoms, PTSD symptoms, and depression symptoms than participants in uncontrolled studies. That is, the degree of symptom change within individual participants from pre- to post-intervention was much larger than when participants

receiving the grief-focused intervention were compared with participants who had not received the treatment or were receiving an alternative treatment. This relationship remained the same regardless of whether the comparison group was an active treatment condition or a non-treatment condition (including waitlist control designs). When analyzed in separate meta-analyses based on study design subgroup, effect sizes for uncontrolled studies were large and significant for grief, PTSD, and depression symptoms (ranging from $d = 0.80$ for grief symptoms to $d = 0.95$ for depression symptoms). Effect sizes for controlled studies, on the other hand, were small for grief symptoms and PTSD symptoms ($d = 0.15$ and $d = 0.21$, respectively), and negative for depression symptoms ($d = -0.09$), indicating that participants in intervention conditions fared worse than those in comparison conditions for that outcome. In the case of grief and depression symptoms, pooled effect sizes for controlled studies were also no longer significant once assessed independently of controlled studies.

These findings echo results published by Rosner and colleagues (2010), who found a small effect for controlled studies and a moderate effect for uncontrolled studies in separate meta-analyses. The findings are also consistent with Hanauer et al. (2024)'s report of overall smaller effect sizes for controlled studies than for uncontrolled studies on measures of grief, PTSD, and depression (where power permitted analyses). Though Currier et al. (2007) only evaluated controlled studies, their finding of a non-significant, small pooled effect size for aggregated outcomes is consistent with the pattern of effect sizes found for controlled studies in the present meta-analysis. Taken with the extant literature, the

present findings indicate that grief-focused interventions do not consistently account for greater symptom reductions than other interventions or the natural resolution of bereavement-related symptoms.

Measurement characteristics. We hypothesized that participants in studies requiring endorsement of a certain minimum threshold of symptoms would demonstrate greater effect sizes than participants in studies that did not report symptom-level inclusion criteria. Our hypotheses were partially supported, with our findings showing that presence of minimum symptom cutoffs moderated grief, PTSD, and depression symptom effect sizes in the expected direction. Though there was a positive association between presence of any symptom cutoffs and effect sizes for behavior problem reductions, the finding was not statistically significant. When subgroup meta-analyses were conducted, pooled effect sizes were significant for studies with and without minimum symptom cutoffs for grief and PTSD outcomes. For depression, however, the pooled effect size for studies that did not incorporate minimum symptom cutoffs was very small ($d = 0.04$) and no longer significant. The type of symptom cutoff (e.g., whether participants were required to report a certain level of grief symptoms or could meet thresholds for other symptoms instead) did not significantly impact the moderation effect for grief symptoms. There was insufficient power to assess the type of symptom cutoff with other outcome variables.

These findings are consistent with those reported by Currier et al. (2007), Hanauer et al. (2024), and Rosner et al. (2010), each of whom found that significantly greater effect sizes were reported in studies requiring minimum

symptom cutoffs for inclusion than those that did not.

Requiring minimum symptom thresholds for certain measures at baseline may have allowed for greater variance within which to detect an effect from pre- to post-treatment. As Currier and colleagues (2007) proposed, in studies that did not include minimum symptom cutoffs, the effects of treatment on the subset of participants reporting more clinically significant symptoms at baseline may have been washed out by the relative lack of change found for participants who reported low symptomology at pre-treatment. From an interpretive standpoint, effect size based on symptom reduction is only meaningful as an indication of treatment benefit if participants report sufficiently interfering and distressing symptoms at baseline.

In an attempt to differentiate treatment approaches based on this understanding, Hanauer et al. (2024) and Rosner et al. (2010) labeled interventions in which cutoffs were employed as “therapy” and interventions without symptom cutoffs as “prevention.” As the authors acknowledged, retroactively labeling intervention studies based on inclusion of symptom cutoffs alone did not fully account for the range of intervention components and aims in studies grouped as “therapy” or “prevention,” leading to an eclectic set of studies in each category. Nonetheless, they highlight the need for greater clarity in grief-focused treatment aims and related measurement, particularly for interventions offered to children and adolescents regardless of their clinical presentations. Identifying the impact of interventions aimed at preventing future symptom onset and severity would also require long-term follow-up assessment with control groups.

In addition to considering participants' symptom severity, we also sought to elucidate and evaluate the type of grief symptoms exhibited by the youth included in the selected studies to the extent allowed by the limitations of the extant literature. We coded whether grief outcome measures were evaluating normative grief symptoms or maladaptive grief symptoms, using reviews categorizing grief measures by Zhang and colleagues (2023) and Ennis and colleagues (2022) as a guide. In contrast to our hypotheses, we did not find a statistically significant moderation effect for measures coded as assessing maladaptive grief by either Zhang et al. (2023) or Ennis et al. (2022). Neither set of authors reported their criteria for categorizing measures, so it is difficult to address whether specific components of their coding process could have impacted the present results. The majority of studies were coded as including measures of maladaptive grief by either Zhang et al. (2023) or Ennis et al. (2022), leaving relatively low variance within which to detect an effect. It is possible that the criteria employed in these reviews was too broad. Alternatively, these findings may reflect the ongoing lack of consensus regarding how to conceptualize and measure maladaptive grief.

Based on research indicating that one distinguishing factor in maladaptive grief was its relative duration beyond the first several months post-bereavement, we examined the average length of time since the death as a moderator of treatment effect. There was a non-significant negative association between number of months since bereavement and grief effect size, indicating that participants who had experienced bereavement more recently (within the past year) exhibited

slightly larger effect sizes. This finding did not support our hypotheses and contrasted with Rosner et al. (2010)'s non-significant finding of a positive association between length of time from bereavement and effect size. The finding does correspond, however, to Currier et al. (2007)'s report that participants for whom more time had passed since bereavement showed smaller reductions in symptoms. Our present findings are limited by a small sample size, as more than half of the included studies did not report the average time since bereavement, and even fewer included inclusion and exclusion criteria related to time since the death. Measuring time since bereavement may be an important component of enhancing understanding of distinctions between normative and maladaptive grief. Without accounting for this, current measures may not be able to differentiate between youth with normative grief symptoms that are likely to resolve over time versus youth for whom clinically significant symptoms have persisted for months or years.

Intervention characteristics. When assessed independently, caregiver involvement and intervention modality each significantly moderated grief symptom effect size, participants receiving interventions with more caregiver sessions and/or participants receiving interventions delivered in an individual therapy format demonstrated greater reductions in grief symptoms post-treatment. Intervention setting, dichotomized based on whether the intervention took place in a clinical or non-clinical setting, did not significantly moderate grief symptom effect sizes. Further, caregiver involvement did not moderate effect sizes for PTSD symptoms, depression symptoms, functional impairment, or behavior problems.

There was insufficient power to evaluate moderation effects of intervention modality and intervention setting on functional impairment or behavioral symptoms, though they did not significantly moderate effect sizes of PTSD or depression symptoms. However, these findings must be considered in context: each of the intervention characteristics measured were significantly correlated. When evaluated together, only modality maintained a significant unique effect when controlling for setting, though not when caregiver involvement was added.

These findings partially supported our hypotheses regarding intervention-related moderator effects on grief symptoms but not PTSD, depression, functional impairment, or behavior problems. The high degree of correlation between the proposed moderators made it difficult to tease apart unique effects and highlights the need for more controlled studies wherein caregiver involvement, modality, and setting can be experimentally manipulated and compared to determine whether certain elements more consistently or significantly impact treatment effect in a given context.

Participant characteristics. On the whole, our findings did not support our hypotheses regarding participant demographics. Child age only moderated effect sizes for depressive symptoms, and in the opposite direction than expected. In the present meta-analysis, younger age was associated with slightly larger effect sizes, which contrasts with Rosner et al.'s (2010) findings that youth ages 12 and older exhibited greater effect sizes in uncontrolled studies. It is possible that certain treatment components are more effective for children and adolescents at different places on the developmental

spectrum and would benefit from further analysis in the future.

Limitations

The current meta-analysis faced two main categories of limitations: limitations of the extant literature and limitations specific to the present study. The extant literature is limited by its size, considerable heterogeneity, range in quality and reporting, and underlying confusion regarding child and adolescent grief as a measurement construct. Despite increases in research on this topic, there is a relatively small number of grief-focused intervention outcomes studies and even fewer include measures of grief symptoms. The included studies vary significantly in their quality, design, inclusion and exclusion criteria, and intervention components. Though we attempted to explore influences on heterogeneity where possible, we had limited power to assess factors like the cause of death, relationship to the deceased, or requirement of a minimum time frame since bereavement. Though it may be considered a strength that the included studies took place in 15 different countries, the cultural specificity of grief and bereavement processes presents additional caution in interpreting our findings.

To preserve power for moderation analyses, we combined effect sizes for controlled and uncontrolled studies as there were not sufficient studies of either category to examine subgroup moderation analyses. As it is, we were not able to examine the potential moderating effects of different types of control groups from the included controlled studies. The minority of our included studies reported follow-up data, which limited our ability to evaluate treatment effects on the primary and secondary outcome measures over time. Limiting our analysis to pre- and post-intervention outcomes also precluded our ability to adequately account

for mid-treatment effects, such as those reported by Cohen et al. (2004) and (2006), who found that PTSD symptoms improved in the first, trauma-focused half of treatment, whereas grief symptoms continued to improve in the latter, grief-focused half of treatment. There was also significantly varied reporting for results, as well as for study and intervention procedures. ‘Reportorial negligence’ led to the necessity of excluding several otherwise eligible studies from the present meta-analysis and limited the sample size for a variety of coded variables.

As elaborated on previously, a major limitation for the present meta-analysis was its reliance on flawed measures of grief symptoms. The present findings should be interpreted with caution regarding the developmental sensitivity and clinical utility of the grief measures used. Deriving effect sizes from symptom reduction carries an assumption that grief-focused treatments are effective if they contribute to reduced emotional and behavioral distress in line with other typical therapeutic interventions. However, this approach does not account for the natural resolution of bereavement reactions over time, nor does it capture the important or beneficial aspects of grieving as a way to process death and adapt to changed circumstances. Due to limited measurement of positive constructs in the selected studies, we were unable to aggregate effect sizes for variables that could have accounted for the potentially adaptive elevations in certain constructs, such as social support or emotion expression. Further, measurement and data analysis limitations may have obscured potentially curvilinear effects for certain moderators or outcomes. For example, certain grief symptoms, such as sadness or anger, may

be interfering or distressing at high levels, but report of their complete absence following bereavement may also present cause for clinical concern.

The present meta-analysis also faces limitations solely of its own, including the risk that eligible studies were not included. Additionally, due to personnel changes, the included studies were selected by two independent raters, but coded by only one person, and thus the extracted data face a higher risk for bias and human error. The scope of the current meta-analysis precluded item-level analysis of extant grief measures that may have aided in greater clarity of interpretation for the primary outcome.

Implications for future research and clinical practice

The current findings indicate several recommendations for future grief-focused measurement, intervention outcomes research, and clinical practice with children and adolescents. Adequately assessing the effectiveness of grief-focused interventions depends on a comprehensive and cohesive understanding of how grief symptoms present in children and adolescents. This understanding may then guide determinations of whether and how different symptom presentations merit different levels of clinical intervention. The research base would greatly benefit from additional longitudinal studies designed to closely evaluate a range of emotional, behavioral, cognitive, and social reactions to bereavement in a sample of youth across the developmental spectrum and reflective of the broader racial, ethnic, economic, geographic, and cultural diversity of the country or region of focus. Longitudinal studies of this kind could contribute to a clearer understanding of the connections and distinctions between grief symptoms and other forms of psychopathology and aid in advancing consensus on criteria for maladaptive grief.

Relatedly, ongoing improvements to grief-focused measurement will fortify the ability to conduct meaningful intervention outcomes research. Continued validation of the psychometrics, including item and content analyses, for existing grief measures on large samples of both general population and clinically referred youth would aid in consolidating the number of measures currently in use and point toward a gold-standard for grief measurement. This process may be particularly supported by the recent addition of PGD in the DSM-5-TR. Evaluation of measures geared toward identifying maladaptive grief should also be accompanied by increased focus on developing measures of adaptive grief-related constructs, particularly for children and adolescents. Grief-focused interventions often include aims to aid in effectively processing the bereavement, a construct that is not currently well-defined or consistently measured. Evaluation of grief interventions, and particularly interventions with no minimum symptom cutoffs, would significantly benefit from improved and increased measurement of adaptive constructs.

Improved measurement may also be paired with dismantling studies in which researchers experimentally control variations in intervention components to identify “active” ingredients for treatment and to determine the degree to which different treatment elements differentially impact symptom presentations. For example, dismantling studies would be helpful for identifying whether caregiver involvement, intervention modality, or intervention setting has the greatest impact on treatment effect. More controlled studies are needed overall to enable more fine-tuned comparison between types of control groups and active treatment

alternatives, in addition to continuing to evaluate whether grief-focused interventions provide a greater effect than the natural course of bereavement.

Conclusion

The current meta-analysis found evidence supporting grief-focused interventions as moderately effective, overall, for bereaved children and adolescents. Moderator analyses showed that these effects were substantially reduced in controlled studies, whereas effects were higher in studies that incorporated minimum symptom cutoffs for inclusion. Though the present study aimed to evaluate measurement of maladaptive grief as a moderator of effect size, results were not significant. These results highlight the need for enhanced, developmentally informed research regarding grief-related symptoms and adaptive behaviors in children and adolescents, advancements in validation of both normative and maladaptive grief-focused measures, and more controlled studies to evaluate grief-focused treatment components and outcomes with greater nuance.

APPENDIX A

Table A1
Meta-analysis Coding Manual

Study Characteristics								
Variable	Label	Values						
study_auth	Authors of study							
year_pub	The year the study was published							
pub_type	The type of publication in which the study was published	<table> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Journal</td> </tr> <tr> <td>2</td> <td>Dissertation</td> </tr> </tbody> </table>	Value	Label	1	Journal	2	Dissertation
Value	Label							
1	Journal							
2	Dissertation							
sample_size	Total N	Number of participants who participated in intervention or comparison group						
int_grp_n	N for intervention group	Listed the same as overall sample size if no comparison group						
comp_grp_n	N for comparison group	Listed as 0 if no comparison group						
design	Research design used within the study	<table> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No comparison group</td> </tr> <tr> <td>1</td> <td>Comparison group</td> </tr> </tbody> </table>	Value	Label	0	No comparison group	1	Comparison group
Value	Label							
0	No comparison group							
1	Comparison group							
comp_act_ntc	Type of comparison group	<table> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No treatment or waitlist control</td> </tr> <tr> <td>1</td> <td>Active treatment control</td> </tr> </tbody> </table>	Value	Label	0	No treatment or waitlist control	1	Active treatment control
Value	Label							
0	No treatment or waitlist control							
1	Active treatment control							
num_time_pts	Number of timepoints							
study_quality	Study quality as rated with modified JADAD scale							

Sample Characteristics			
Variable	Label	Values	
age	Mean age of the sample	In instances where mean was not provided, median or midpoint of the range was entered instead	
age_sd	Standard deviation of the sample mean age		
age_range	Age range of the subjects		
country	Name of the country the study was conducted in		
country_cat	Country the study was conducted in	Value	Label
		1	United States
		2	Other Country
rel_deceased	Relationship of bereaved youth participants to the deceased	Value	Label
		1	Parent
		2	Sibling
		3	Varied
		4	Peer
cause_death	Cause of the deceased person's death (string)	Value	Label
		1	Varied
		2	Cancer
		3	AIDS
		4	Homicide
		5	Suicide
		6	War/Terrorism

min_death	Minimum time that has elapsed since the bereavement, if specified	
max_death	Maximum time that has elapsed since the bereavement, if specified	
avg_time_death	Average length of time since most recent bereavement as reported at baseline	
gender	Percentage of the overall sample self-reporting as male at baseline	
percent_white	Percentage of the overall sample identified as White/Caucasian race as reported at baseline	
percent_black	Percentage of the overall sample identified as Black/African American race as reported at baseline	
percent_asian	Percentage of the overall sample identified as Asian race as reported at	

	baseline	
percent_multirace	Percentage of the overall sample identified as	

	multiracial as reported at baseline	
percent_naam	Percentage of the overall sample identified as Native American/Alaska Native as reported at baseline	
percent_latino	Percentage of the overall sample identified as Latino as reported at baseline	
percent_otherrace	Percentage of the overall sample identified as reported at baseline	
attrition	Percentage of intervention sample that started but did not complete the intervention	
attr_comp	Percentage of comparison group sample that started but did not	

	complete	
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Measurement Characteristics								
Variable	Label	Values						
griefmeasurestr	Name of grief outcome measure							
sxs_cutoff_any	Were participants required to endorse symptoms of any kind above a certain threshold?	<table border="1"> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> </tr> <tr> <td>0</td> <td>No</td> </tr> </tbody> </table>	Value	Label	1	Yes	0	No
Value	Label							
1	Yes							
0	No							

sxs_cutoff_grief_any	Were participants required to endorse grief symptoms above certain threshold?	<table border="1"> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Yes</td> </tr> <tr> <td>0</td> <td>No</td> </tr> </tbody> </table>	Value	Label	1	Yes	0	No		
Value	Label									
1	Yes									
0	No									
grief_sxs_cut	Were participants required to endorse grief symptoms only, or were participants required to endorse grief symptoms <i>or</i> other symptoms?	<table border="1"> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>grief symptoms required</td> </tr> <tr> <td>0</td> <td>grief <i>or</i> other symptoms required</td> </tr> </tbody> </table>	Value	Label	1	grief symptoms required	0	grief <i>or</i> other symptoms required		
Value	Label									
1	grief symptoms required									
0	grief <i>or</i> other symptoms required									
cat_zhang	Measure categorization in Zhang et al (2023) review paper	<table border="1"> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Measure of Maladaptive Grief Reactions</td> </tr> <tr> <td>2</td> <td>General Purpose Grief Scale</td> </tr> <tr> <td>3</td> <td>Specialized Grief Scale</td> </tr> </tbody> </table>	Value	Label	1	Measure of Maladaptive Grief Reactions	2	General Purpose Grief Scale	3	Specialized Grief Scale
Value	Label									
1	Measure of Maladaptive Grief Reactions									
2	General Purpose Grief Scale									
3	Specialized Grief Scale									

cat_ennis	Measure categorization in Ennis et al (2022) review paper	Value	Label
		1	Measure of Pathological Grief Symptoms
		2	Measure of Grief-Related Constructs
		3	Measure Developed for Specific Type of Loss
cat_any	Was the measure categorized as for maladaptive grief by Zhang et al. (2023) or pathological grief Ennis et al. (2022)?	Value	Label
		1	Yes
		0	No
meas_type	Was the measure for grief validated previously or developed ad-hoc for the current study?	Value	Label
		1	Validated
		2	Ad-hoc
grief_es_combined	Effect sizes for within-subjects pre- post grief symptom changes for uncontrolled studies and between-subjects		

	comparison at post for controlled studies		
grief_se_combined	Standard error for grief effect sizes		
grief_es_type	Was the grief effect size computed within-subjects or between-	Value	Label
		1	Between-subjects
		0	Within-subjects

	subjects?		
ptsd_es_combined	Effect sizes for within-subjects pre- post PTSD symptom changes for uncontrolled studies and between-subjects comparison at post for controlled studies		
ptsd_se_combined	Standard error for PTSD effect sizes		
ptsd_es_type	Was the PTSD effect size computed within-subjects or between-subjects?	Value 1 0	Label Between-subjects Within-subjects
dep_es_combined	Effect sizes for within-subjects pre- post depression symptom changes for uncontrolled studies and between-subjects comparison at post for controlled studies		
dep_se_combined	Standard error for depression effect sizes		

dep_es_type	Was the depression effect size computed within-subjects or between-subjects?	Value 1 0	Label Between-subjects Within-subjects
fxn_es_combined	Effect sizes for within-subjects pre- post functional impairment symptom changes for uncontrolled studies and between-subjects comparison at post for controlled studies		
fxn_se_combined	Standard error for functional impairment effect sizes		
fxn_es_type	Was the functional impairment effect size computed within-subjects or between-subjects?	Value 1 0	Label Between-subjects Within-subjects
bx_es_combined	Effect sizes for within-subjects pre- post behavior problem changes for uncontrolled studies and between-subjects comparison at post for controlled studies		

bx_se_combined	Standard error for behavior problem effect sizes		
bx_es_type	Was the behavior problems effect size computed within- subjects or between- subjects?	Value 1 0	Label Between-subjects Within-subjects

Intervention Characteristics			
Variable	Label	Values	
modality	What was the modality of the intervention?	Value 1 0	Label Individual Group
setting	Where did the intervention take place?	Value 1 2 3 4 5	Label clinic school camp orphanage community center
setting_clinic	Did the study take place in a clinic or in a non-clinical setting?	Value 1 0	Label Clinic Non-clinical setting
cg_involve	Did a caregiver attend at least one session of treatment?	Value 1 0	Label Yes No

num_sessions	Total number of all types of sessions in the intervention	For interventions with a range, the mean is presented. For interventions with different types of sessions (e.g., child and caregiver, group and individual), the total number of sessions is presented
num_child_ses	Total number of child/adolescent sessions in the intervention	For studies with a range, the mean is presented
num_cg_ses	Total number of caregiver sessions in the intervention	For studies with a range, the mean is presented
int_prov	Job title of individuals	

	administering the intervention							
int_prov_cat	Categorized role of individuals administering the intervention	<table> <thead> <tr> <th>Value</th> <th>Label</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Mental health professional or graduate student</td> </tr> <tr> <td>0</td> <td>Trained layperson</td> </tr> </tbody> </table>	Value	Label	1	Mental health professional or graduate student	0	Trained layperson
Value	Label							
1	Mental health professional or graduate student							
0	Trained layperson							

Note. The Coding Manual displays coding approach for all variables relevant to final analyses. Cases where variable answer was inapplicable were coded as 888. Cases where variable answer was missing were coded as 999. Both 888 and 999 were entered as missing variables in SPSS and JASP.

APPENDIX B

Table B1

Characteristics of Included Studies (k = 32)

Paper information Authors (Year)	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
a) Publication type b) Previous meta-analyses	a) comparison group b) Outcome measures (PTSD; Depression; Functional Impairment) c) Symptom cutoff required for inclusion d) Non-bereaved children in study	a) Total N (Intervention N; Comparison group N) b) % male c) Mean age in years (SD); range d) Country	a) Minimum time since bereavement required in months b) Mean time since bereavement in months; range c) Relation to deceased d) Cause of death	a) Measure name (subscale) b) Classification by Zhang et al., 2023 c) Classification by Ennis et al., 2022 d) Measurement type	a) Intervention name b) Modality c) Setting d) Average number of child sessions e) Average number of caregiver sessions
Adams (1996) a) Dissertation b) Currier, Rosner	a) No treatment control b) None c) None d) None	a) 69 (35; 34) b) 50.72 c) 8 (NR); 5-11 d) United States	a) 1 b) 4.5; 1-11 c) Varied d) Varied	a) CIEGA b) Not reported (NR) c) NR d) Ad-hoc	a) Bereavement counseling groups b) Group c) School d) 8 e) 2
Boelen, Lenferink, & Spuij (2021) a) Peer-reviewed journal article b) Breen, Hanauer	a) Supportive counseling b) PTSD; Depression c) Grief (IPG-C Total Score > 40) d) None	a) 134 (74; 60) b) 47.80 c) 13.10 (2.84); 8-18 d) Netherlands	a) None b) 37.79; NR c) Varied d) Varied	a) IPG-C b) Maladaptive Grief c) Pathological Grief d) Validated	a) CBT-Grief Help b) Individual c) Clinic d) 9 e) 5

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement required in months	a) Measure name (subscale)	a) Intervention name
b) Previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Brown et al. (2020)	a) Supportive therapy	a) 40 (18; 22)	a) None	a) EGI (Traumatic Grief subscale)	a) TF-CBT
a) Peer-reviewed journal article	b) PTSD; Depression; Functional Impairment	b) 61.00	b) NR; measurement began 5 months after 9/11 (cause of bereavement)	b) Maladaptive Grief	b) Individual
b) Hanauer	c) None	c) 9.40 (4.00); 4-17	c) Parent	c) Pathological Grief	c) Clinic
	d) None	d) United States	d) War/Terrorism	d) Validated	d) 14
					e) 16
Clow et al. (2022)	a) None	a) 63 (N/A)	a) None	a) PCBD Checklist (Separation Distress subscale)	a) TGCT-A
a) Peer-reviewed journal article	b) Functional Impairment	b) 100.00	b) NR; NR	b) Maladaptive Grief	b) Group
b) None	c) None	c) 16.98 (1.08); 10-21	c) Varied	c) Pathological Grief	c) Juvenile justice residential facility
	d) None	d) United States	d) Varied	d) Validated	d) 10
					e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year) a) Publication type b) Inclusion in previous meta-analyses	a) comparison group b) Outcome measures (PTSD; Depression; Functional Impairment) c) Symptom cutoff required for inclusion d) Non-bereaved children in study	a) Total N (Intervention N; Comparison group N) b) % male c) Mean age in years (SD); range d) Country	a) Minimum time since bereavement required in months b) Mean time since bereavement in months; range c) Relation to deceased d) Cause of death	a) Measure name (subscale) b) Classification by Zhang et al., 2023 c) Classification by Ennis et al., 2022 d) Measurement type	a) Intervention name b) Modality c) Setting d) Average number of child sessions e) Average number of caregiver sessions
Cohen, Mannarino, & Knudsen (2004) a) Peer-reviewed b) Breen et al (2022), Hanauer et al (2024), Rosner et al (2010)	a) None b) PTSD; Depression c) Grief (CTG Scale of EGI \geq 30) and PTSD (CPSS \geq 12) d) None	a) 22 (N/A) b) 50.00 c) NR (NR); 6-17 d) United States	a) None b) 11.50; 1-38 c) Varied d) Varied	a) EGI (Traumatic Grief subscale) b) Maladaptive Grief c) Pathological Grief d) Validated	a) CBT-CTG b) Individual c) Clinic d) 14 e) 16
Cohen, Mannarino, & Staron (2006) a) Peer-reviewed b) Breen, Hanauer	a) None b) PTSD; Depression c) Grief (CTG Scale of EGI \geq 30) d) None	a) 39 (N/A) b) 30.80 c) NR (NR); 6-17 d) United States	a) None b) 10.34 (1-86) c) Varied d) Varied	a) EGI (Traumatic Grief subscale) b) Maladaptive Grief c) Pathological Grief d) Validated	a) CBT-CTG b) Individual c) Clinic d) 9 e) 12

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement required in months	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Dorsey et al. (2020)	a) Usual community center services	a) 640 (320; 320)	a) 6	a) ICG	a) TF-CBT
a) Peer-reviewed	b) PTSD	b) 50.00	b) NR; NR	b) Maladaptive Grief	b) Individual & Group
b) Hanauer	c) Grief (ICG ≥ 35) or PTSD (CPSS ≥ 18)	c) 10.58 (1.68); 7-13	c) Parent	c) Pathological Grief	c) Community centers, private homes
	d) None	d) Kenya and Tanzania	d) Varied	d) Validated	d) 15.5 (12 group, 3.5 individual)
Grasseti et al. (2015)	a) None	a) 33 (N/A)	a) None	a) PCBD Checklist prototype	a) TGCT-A
a) Peer-reviewed	b) PTSD; Depression	b) 27.00	b) NR; NR	b) NR	b) Group
b) Breen	c) Grief (at least one PCBD Checklist prototype maladaptive grief item ≥ 2) or PTSD (UCLA-R ≥ 30)	c) 13.31 (.68); 12-14	c) Varied	c) NR	c) School
		d) United States	d) Varied	d) Ad-hoc	d) 17
					e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement required in months	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures; (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Griffiths et al. (2022)	a) None	a) 12 (N/A)	a) 1	a) IPG-C	a) Lionheart Camp for Kids
a) Peer-reviewed	b) None	b) 33.33	b) NR; NR	b) Maladaptive Grief	b) Group
b) Hanauer	c) None	c) 8.25 (2.15); 5-12	c) Varied	c) Pathological Grief	c) Camp
	d) None	d) Australia	d) Varied	d) Validated	d) 2 days
					e) 2 days
Herring (2013)	a) None	a) 77 (N/A)	a) None	a) IGTS	a) When Children Grieve
a) Dissertation	b) PTSD	b) 23.00	b) NR; <1 - >24	b) Maladaptive Grief	b) Group
b) Breen, Hanauer	c) None	c) 12.79 (3.11); 5-18	c) Varied	c) Grief-Related Construct	c) School, Clinic
	d) None	d) United States	d) Varied	d) Validated	d) 12
					e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement required in months	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Hill et al. (2019)	a) None	a) 42 (N/A)	a) None	a) PCBD Checklist (Separation Distress)	a) Multidimensional Grief Therapy
a) Peer-reviewed	b) PTSD; Depression	b) 50.00	b) 16.88; 1-84	b) Maladaptive Grief	b) Individual
b) Breen, Hanauer	c) Grief (PCBD Checklist >2 on any grief item)	c) 11.62 (2.76); 6-17	c) Varied	c) Pathological Grief	c) Clinic
	d) None	d) United States	d) Varied	d) Validated	d) 8.31
					e) NR (caregiver involved but amount not reported)
Kalantari et al. (2012)	a) No treatment control	a) 64 (29; 32)	a) None	a) TGIC	a) Writing for Recovery
a) Peer-reviewed	b) None	b) 55.00	b) 129.24; 24-204	b) Maladaptive Grief	b) Group
b) Hanauer	c) Grief (higher TGIC scores)	c) 14.80 (1.78); 12-18	c) Varied	c) Pathological Grief	c) School
	d) None	d) Iran	d) War/Terrorism	d) Validated	d) 6
					e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year) a) Publication type b) Inclusion in previous meta-analyses	a) comparison group b) Outcome measures (PTSD; Depression; Functional Impairment) c) Symptom cutoff required for inclusion d) Non-bereaved children in study	a) Total N (Intervention N; Comparison group N) b) % male c) Mean age in years (SD); range d) Country	a) Minimum time since bereavement required in months b) Mean time since bereavement in months; range c) Relation to deceased d) Cause of death	a) Measure name (subscale) b) Classification by Zhang et al., 2023 c) Classification by Ennis et al., 2022 d) Measurement type	a) Intervention name b) Modality c) Setting d) Average number of child sessions e) Average number of caregiver sessions
Katisi et al. (2019) a) Peer-reviewed b) Hanauer	a) None b) None c) None d) None	a) 650 (N/A) b) 47.30 c) 13.42 (1.03); 11-17 d) Botswana	a) None b) NR; NR c) Parent d) Varied	a) ICG b) Maladaptive Grief c) Pathological Grief d) Validated	a) Balekane EARTH Program b) Individual c) Camp d) 14 days e) 0
Layne et al. (2001) a) Peer-reviewed b) Breen, Rosner	a) None b) PTSD; Depression; Functional Impairment c) PTSD (RI-R \geq 35) d) Other clinically-significant trauma	a) 37 (N/A) b) 27.00 c) 17.05 (1.17); 15-20 d) Bosnia & Herzegovina	a) None b) NR; NR c) Varied d) War/Terrorism	a) GSS (Complicated Grief subscale) b) Maladaptive Grief c) NR d) Validated	a) TGCT-A b) Group c) School d) 20 e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement of caregiver sessions	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Layne et al. (2008)	a) Classroom-based psychoeducation/skills	a) 127 (66; 61)	a) None	a) UCLA Grief Inventory	a) TGCT-A
a) Peer-reviewed	b) PTSD; Depression	b) 34.00	b) NR; NR	b) (Traumatic Grief subscale)	b) Group
b) Breen	c) Clinically significant RI, DSRS, or UCLA GI and functional impairment	c) 15.95 (1.12); 13-18	c) Varied	b) General Purpose Grief	c) School
	d) Other clinically significant trauma	d) Bosnia & Herzegovina	d) Varied	c) NR	d) 18.5
				d) Validated	
Lin et al. (2014)	a) No treatment control	a) 124 (64; 60)	a) None	a) GPDGA (Grief Avoidance subscale)	a) Grief Processing Intervention for Children Orphaned by AIDS
a) Peer-reviewed	b) PTSD; Depression	b) 61.29	b) 5.13; NR	b) NR	b) Group
b) Hanauer	c) None	c) 13.58 (1.40); 11-17	c) Parent AIDS	c) NR	c) Orphanage
	d) None	d) China	d) Ad-hoc	d) Ad-hoc	d) 6
					e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement of caregiver sessions	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Linder et al. (2022)	a) None	a) 191(N/A)	a) None	a) Grief Symptomology Screener	a) School-based grief group
a) Peer-reviewed	b) None	b) 32.00	b) NR; NR	b) NR	b) Group
b) None	c) None	c) NR (NR); 11-18	c) Varied	c) NR	c) School
	d) None	d) United States	d) Varied	d) Ad-hoc	d) 8
				e) 0	e) 0
Malone (2010)	a) None	a) 20 (N/A)	a) None	a) LRL (Emotional Grief Symptoms)	a) Adolescent Grief and Loss Group
a) Dissertation	b) None	b) 0.00	b) NR; NR	b) General Purpose Grief	b) Group
b) Hanauer	c) None	c) 16.8 (NR); 15-18	c) Peer	c) NR	c) School
	d) None	d) United States	d) Varied	d) Validated	d) 6
					e) 0

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement required in months	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures; (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
McClatchey et al. (2009)	a) Waitlist control	a) 99 (46; 53)	a) None	a) EGI (Traumatic Grief subscale)	a) Camp MAGIC
a) Peer-reviewed	b) PTSD	b) 49.20	b) 13.84; 1-48	b) Maladaptive Grief	b) Group
b) Hanauer	c) None	c) 11.30 (2.80); 6-18	c) Parent	c) Pathological Grief	c) Camp
	d) None	d) United States	d) Varied	d) Validated	d) 6
					e) 1
Meagher (2007)	a) None	a) 18 (N/A)	a) None	a) HIB (Grief Scale)	a) Dougy Center Model
a) Dissertation	b) PTSD	b) 40.00	b) NR; NR	b) General Purpose Grief	b) Group
b) Breen, Hanauer	c) None	c) 12.27 (2.76); 9-18	c) Parent	c) NR	c) Clinic
	d) None	d) United States	d) Varied	d) Validated	d) 8
					e) 8

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Myers-Coffman et al. (2019)	a) None	a) 10 (N/A)	a) None	a) TRIG (Present Feelings subscale)	a) The Resilience Songwriting Program
a) Peer-reviewed	b) None	b) 50.00	b) NR; <6 – 36	b) Maladaptive Grief	b) Group
b) Hanauer	c) None	c) 12.90 (1.6); 11-17	c) Varied	c) Pathological Grief	c) Clinic; School
	d) None	d) United States	d) Varied	d) Validated	d) 8
					e) 0
O'Donnell et al. (2014)	a) None	a) 64 (N/A)	a) 6	a) GSS	a) CBT-CTG
a) Peer-reviewed	b) PTSD; Depression	b) 50.00	b) NR; NR	b) Maladaptive Grief	b) Group and Individual
b) Hanauer	c) Grief (GSS ≥ 10) or PTSD (UCLA-PTSD-RI ≥ 15)	c) 10.70 (1.10); 7-13	c) Parent	c) NR	c) Community Center; Home
	d) None	d) Tanzania	d) Varied	d) Validated	d) 15 (12 group, 3 ind)
					e) 12

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement type	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Salloum & Overstreet (2008)	a) Group grief and trauma intervention	a) 30 (15; 15)	a) 1	a) UCLA Grief Inventory	a) Project LAST
a) Peer-reviewed	b) PTSD; Depression	b) 62.50	b) NR; NR	b) (Traumatic subscale)	b) Individual
b) None	c) PTSD (UCLA-PTSD-Index ≥ 25)	c) 9.5 (NR); 7-12	c) Varied	c) General Purpose Grief	c) School
	d) Hurricane Katrina-related trauma exposure	d) United States	d) Varied	c) NR	d) 11
				d) Validated	e) 1
Salloum & Overstreet (2012)	a) Grief and Trauma Intervention with coping skills only	a) 67 (35; 32)	a) None	a) EGI (Traumatic Grief subscale)	a) Project LAST
a) Peer-reviewed	b) PTSD; Depression	b) 55.70	b) NR; NR	b) Maladaptive Grief	b) Group
b) None	c) PTSD (UCLA-PTSD-Index ≥ 25)	c) 9.60 (1.52); 6-12	c) Varied	c) Pathological Grief	c) School; Home
	d) Other trauma	d) United States	d) Varied	d) Validated	d) 11 (10 group, 1 ind)
					e) 1

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year)					
a) Publication type	a) comparison group	a) Total N	a) Minimum time since bereavement required in months	a) Measure name (subscale)	a) Intervention name
b) Inclusion in previous meta-analyses	b) Outcome measures (PTSD; Depression; Functional Impairment)	(Intervention N; Comparison group N)	b) Mean time since bereavement in months; range	b) Classification by Zhang et al., 2023	b) Modality
	c) Symptom cutoff required for inclusion	b) % male	c) Relation to deceased	c) Classification by Ennis et al., 2022	c) Setting
	d) Non-bereaved children in study	c) Mean age in years (SD); range	d) Cause of death	d) Measurement of caregiver sessions	d) Average number of child sessions
		d) Country			e) Average number of caregiver sessions
Sandler et al. (2010)	a) Self-study	a) 244 (135; 109)	a) 4	a) IGTS	a) Family Bereavement Program
a) Peer-reviewed	b) None	b) 53.00	b) 9.80; 4-30	b) Maladaptive Grief	b) Group
b) Hanauer	c) None	c) 11.40 (2.40); 8-16	c) Parent	c) Grief-related Construct	c) Clinic
	d) None	d) United States	d) Varied	d) Validated	d) 14 (12 group, 2 ind)
					e) 12
Spuij et al. (2015)	a) None	a) 10 (N/A)	a) None	a) IPG-C	a) CBT GriefHelp
a) Peer-reviewed	b) PTSD; Depression	b) 40.00	b) 49.40; 6-181	b) Maladaptive Grief	b) Individual
b) Breen, Hanauer	c) Grief (symptoms of PGD primary concern)	c) 13.90 (2.90); 8-18	c) Varied	c) Pathological Grief	c) Clinic
	d) None	d) Netherlands	d) Varied	d) Validated	d) 9
	a) None	a) 6 (N/A)	a) 6	a) IPG-C	e) 5
Spuij et al. (2013)	b) PTSD; Depression	b) 33.33	b) 7.70; 6-12	b) Maladaptive Grief	a) CBT-GriefHelp
a) Peer-reviewed	c) Grief (symptoms of PGD primary concern)	c) 11.80 (2.90); 9-17	c) Varied	c) Pathological Grief	b) Individual
b) Hanauer	d) None	d) Netherlands	d) Varied	d) Validated	c) Clinic
					d) 9
					e) 5

Paper information	Study characteristics	Sample demographics	Bereavement characteristics	Grief measurement characteristics	Intervention characteristics
Authors (Year) a) Publication type b) Inclusion in previous meta-analyses	a) comparison group b) Outcome measures (PTSD; Depression; Functional Impairment) c) Symptom cutoff required for inclusion d) Non-bereaved children in study	a) Total N (Intervention N; Comparison group N) b) % male c) Mean age in years (SD); range d) Country	a) Minimum time since bereavement required in months b) Mean time since bereavement in months; range c) Relation to deceased d) Cause of death	a) Measure name (subscale) b) Classification by Zhang et al., 2023 c) Classification by Ennis et al., 2022 d) Measurement type	a) Intervention name b) Modality c) Setting d) Average number of child sessions e) Average number of caregiver sessions
Thurman et al. (2017) a) Peer-reviewed b) Breen, Hanauer	a) Waitlist control b) Depression c) None d) None	a) 382 (189; 193) b) 0.00 c) 14.40 (1.20 (13-17) d) South Africa	a) None b) 55.00; NR c) Varied d) Varied	a) ICG-RC b) Maladaptive Grief c) Pathological Grief d) Validated	a) Abangane b) Group c) School d) 8 e) 0
Tonkins et al. (1996) a) Peer-reviewed b) Currier, Hanauer, Rosner	a) Waitlist control b) Depression c) None d) None	a) 16 (10; 6) b) 43.70 c) 9.10 (NR); 7-11 d) United States	a) None b) 5.80; 1-12 c) Varied d) Varied	a) BP b) NR c) NR d) Ad-hoc	a) Bereavement group b) Group c) Clinic; Funeral home d) 8 e) 0
Unterhitzberger & Rosner (2014) a) Peer-reviewed b) Hanauer	a) No treatment control b) Depression c) None d) None	a) 46 (23; 23) b) 52.20 c) 16.30 (1.17); 14-18 d) Rwanda	a) None b) 157.60; NR c) Parent d) Varied	a) PQQ b) Maladaptive Grief c) Pathological Grief d) Validated	a) Emotional Writing b) Group c) School d) 3 e) 0

APPENDIX C

Table C1
Quality Assessment of Included Studies (k = 32)

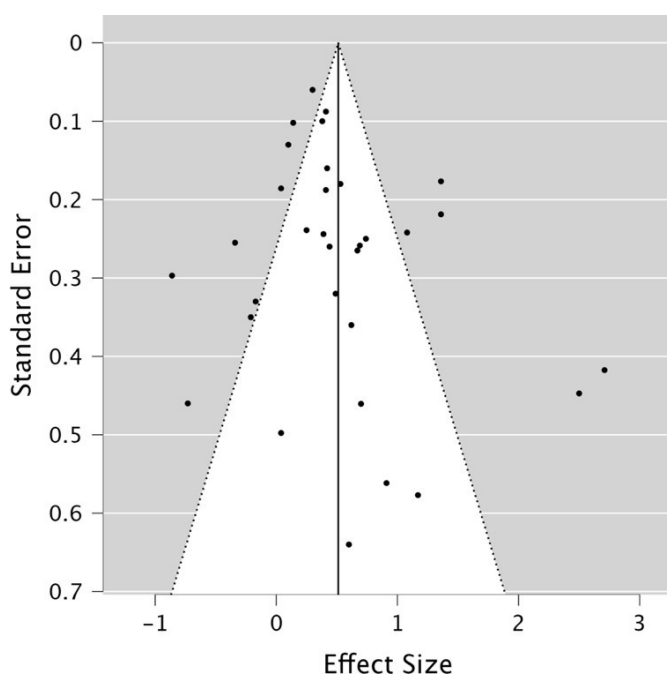
Study	Random-ization	Blinding	Participant Flow	A Priori Outcomes	Power Analysis	Symptom Cutoff	Validated Measure	Total score
Adams (1996)	2	0	0	1	0	0	0	3
Boelen et al. (2021)	2	0	1	1	1	1	1	7
Brown et al. (2020)	2	2	1	1	0	0	1	7
Clow et al. (2022)	N/A	N/A	1	1	0	0	1	3
Cohen et al. (2004)	N/A	N/A	0	1	0	1	1	3
Cohen et al. (2006)	N/A	N/A	1	1	0	1	1	4
Dorsey et al. (2020)	2	2	1	1	1	1	1	9
Grasseti et al. (2015)	N/A	N/A	1	1	0	1	1	4
Greenwald et al. (2017)	N/A	N/A	1	1	0	0	0	2
Griffiths et al. (2022)	N/A	N/A	1	1	0	0	1	3
Herring (2013)	N/A	N/A	0	1	0	1	0	2
Hill et al. (2019)	N/A	N/A	1	1	0	1	1	4
Kalantari et al. (2012)	1	0	1	1	0	1	1	5
Katani et al. (2019)	N/A	N/A	0	1	0	0	1	2
Layne et al. (2001)	0	0	0	1	0	1	1	3
Layne et al. (2008)	2	0	1	1	0	1	1	6
Lin et al. (2014)	0	0	1	1	0	0	0	2
Linder et al. (2022)	N/A	N/A	1	1	0	0	0	2
Malone (2010)	N/A	N/A	1	1	1	0	0	3
McClatchey et al.(2009)	0	0	1	1	1	0	1	4
Meagher (2007)	N/A	N/A	0	1	0	0	0	1
Myers-Coffman et al. (2019)	N/A	N/A	1	1	0	0	1	3
O'Donnell et al. (2014)	N/A	N/A	1	1	0	1	1	4
Salloum & Overstreet (2008)	2	0	1	1	1	1	1	7

Salloum & Overstreet (2012)	2	0	1	1	0	1	1	1	6
Saltzman et al. (2001)	N/A	N/A	1	1	0	1	1	1	4
Sandler et al. (2010)	2	2	1	1	1	0	1	1	8
Spuij et al. (2013)	N/A	N/A	1	1	0	1	1	1	4
Spuij et al. (2015)	N/A	N/A	1	1	0	1	1	1	4
Thurman et al. (2017)	2	2	1	1	1	0	1	1	8
Tonkins& Lambert (1996)	0	1	1	1	0	0	0	0	3
Unterhitzberger& Rosner (2014)	2	0	1	1	0	0	1	1	5

Note: Range for total score for controlled studies: 0-9; Range for total score for uncontrolled studies: 0-5. Total scores of 0-3 indicate low quality, 4-7 moderate quality and scores above 7 high quality.

APPENDIX D

Supplementary Tables and Figures

*Primary Outcome: Grief Symptoms***Figure D1***Funnel Plot of Grief Symptom Standard Error by Effect Size (k = 32)***Table D1***Grief Symptom Moderator Analysis: Year Published*

Variable	B	95% LL	95% UL	p-value
Intercept	0.51	0.26	0.77	<.001
Year Published	-0.01	-0.05	0.03	.622

*Note. k = 32***Table D2***Grief Symptom Moderator Analysis: Modified JADAD Quality Rating*

Variable	B	95% LL	95% UL	p-value
Intercept	0.63	0.03	1.22	.039
Study Quality	-0.03	-0.15	0.10	.679

Note. k = 32

Table D3*Grief Symptom Moderator Analysis: Mean-centered Child Age*

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.50	0.23	0.77	<.001
Child Age	-0.05	-0.16	0.06	.391

Note. *k* = 29**Table D4***Grief Symptom Moderator Analysis: Child Gender (Percentage of Sample Identified as Male)*

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.56	-0.09	1.21	.089
Percent Male	<-.01	-0.01	0.01	.957

Note. *k* = 30**Table D5***Grief Symptom Moderator Analysis: Child Race and Ethnicity (Percentage of Sample Identified as Black, White, and Latino)*

Variable	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Intercept		0.61	0.15	1.08	.010
Percent Identifying as Black	19	<-.01	-0.01	0.01	.798
Intercept		0.38	-0.15	0.90	.157
Percent Identifying as White	20	<.01	-0.01	0.01	.512
Intercept		0.55	0.18	0.93	.004
Percent Identifying as Latino	19	<.01	-0.02	0.02	.895

Secondary Outcome: PTSD Symptoms

Figure D2

Funnel Plot of PTSD Symptom Standard Error by Effect Size ($k = 16$)

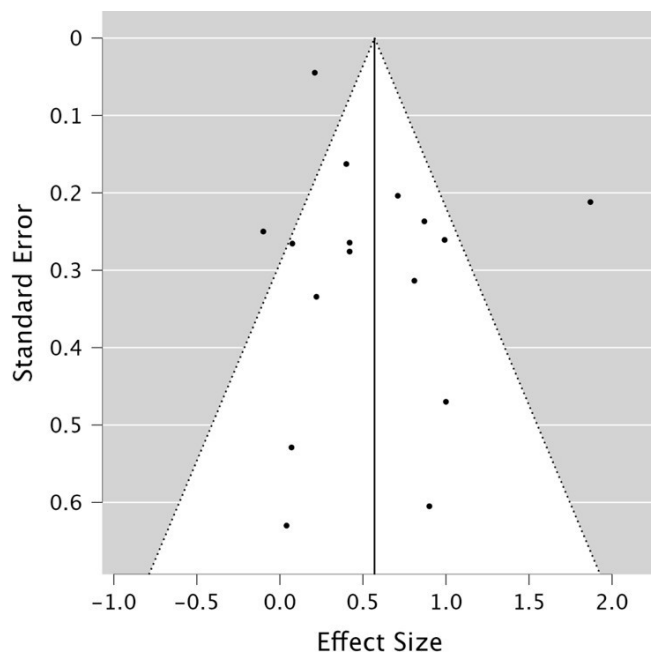


Table D6

PTSD Symptom Moderator Analysis: Year Published

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.58	0.34	0.83	<.001
Year Published	-0.01	-0.06	0.04	.647

Note. $k = 16$

Table D7

PTSD Symptom Moderator Analysis: Modified JADAD Quality Rating

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.75	0.21	1.29	.007
Study Quality	-0.04	-0.16	0.07	.476

Note. $k = 16$

Table D8*PTSD Symptom Moderator Analysis: Number of Caregiver Sessions*

Variable	B	95% LL	95% UL	p-value
Intercept	0.33	-0.03	0.68	.071
Number of Caregiver Sessions	0.04	-0.01	0.09	.082

*Note. k = 15***Table D9***PTSD Symptom Moderator Analysis: Intervention Modality*

Modality Subgroups	k	B	95% LL	95% UL	p-value
Group	5	0.53	0.20	0.86	.002
Individual	9	0.01	-0.56	0.58	.974

Table D10*PTSD Symptom Moderator Analysis: Intervention Setting*

Setting Subgroups	k	B	95% LL	95% UL	p-value
Other Setting	6	0.60	0.26	0.94	<.001
Clinic	9	-0.05	-0.53	0.43	.828

Table D11*PTSD Symptom Moderator Analysis: Mean-centered Child Age*

Variable	B	95% LL	95% UL	p-value
Intercept	0.57	0.29	0.84	<.001
Child Age	0.03	-0.17	0.22	.774

*Note. k = 15***Table D12***PTSD Symptom Moderator Analysis: Child Gender (Percentage of Sample Identified as Male)*

Study Design Subgroups	B	95% LL	95% UL	p-value
Intercept	1.02	0.07	1.97	.036
Percent Male	-0.01	-0.03	0.01	.358

Note. k = 15

Table D13

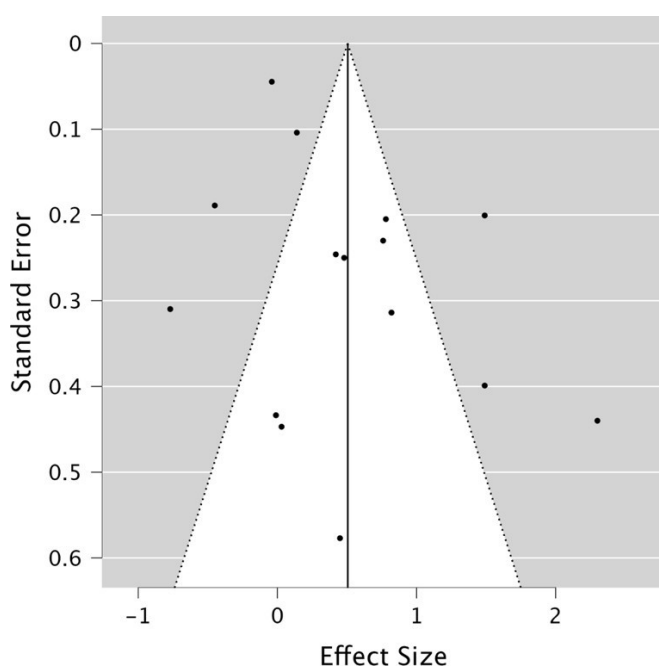
PTSD Symptom Moderator Analysis: Child Race and Ethnicity (Percentage of Sample Identified as White or Latino)

Study Design Subgroups	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Intercept		0.30	0.02	0.57	.037
Percent Identifying as White	12	0.01	<-0.01	0.01	.089
Intercept		0.44	0.16	0.72	.002
Percent Identifying as Latino	11	0.01	-0.02	0.03	.602

Secondary Outcome: Depression Symptoms

Figure D3

*Funnel Plot of Depression Symptom Standard Error by Effect Size (*k* = 15)*

**Table D14**

Depression Symptom Moderator Analysis: Year Published

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.55	0.18	0.93	.004
Year Published	-0.05	-0.11	0.01	.083

Note. *k* = 15

Table D15*Depression Symptom Moderator Analysis: Modified JADAD Quality Rating*

Variable	B	95% LL	95% UL	p-value
Intercept	0.94	-0.16	2.05	.095
Study Quality	-0.10	-0.32	0.13	.406

*Note. k = 15***Table D16***Depression Symptom Moderator Analysis: Caregiver Involvement (Dichotomous)*

Caregiver Involvement Subgroups	k	B	95% LL	95% UL	p-value
No caregiver involvement	6	0.12	-0.48	0.71	.704
Caregivers attended at least one session	9	0.65	-0.12	1.42	.097

Table D17*Depression Symptom Moderator Analysis: Number of Caregiver Sessions in Intervention*

Variable	B	95% LL	95% UL	p-value
Intercept	0.26	-0.30	0.82	.365
Number of caregiver sessions	0.05	-0.03	0.13	.130

*Note. k = 14***Table D18***Depression Symptom Moderator Analysis: Intervention Modality*

Modality Subgroups	k	B	95% LL	95% UL	p-value
Group	5	0.35	-0.13	0.82	.150
Individual	8	0.05	-0.72	0.82	.903

Table D19*Depression Symptom Moderator Analysis: Intervention Setting*

Setting Subgroups	k	B	95% LL	95% UL	p-value
Other Setting	6	0.23	-0.37	0.82	.450
Clinic	9	0.49	-0.30	1.27	.229

Table D20

Depression Symptom Moderator Analysis: Child Gender (Percentage of Sample Identified as Male)

Variable	B	95% LL	95% UL	<i>p</i> -value
Intercept	0.87	-0.35	2.09	.161
Percent Male	-0.01	-0.03	0.02	.566

Note. $k = 14$

Table D21

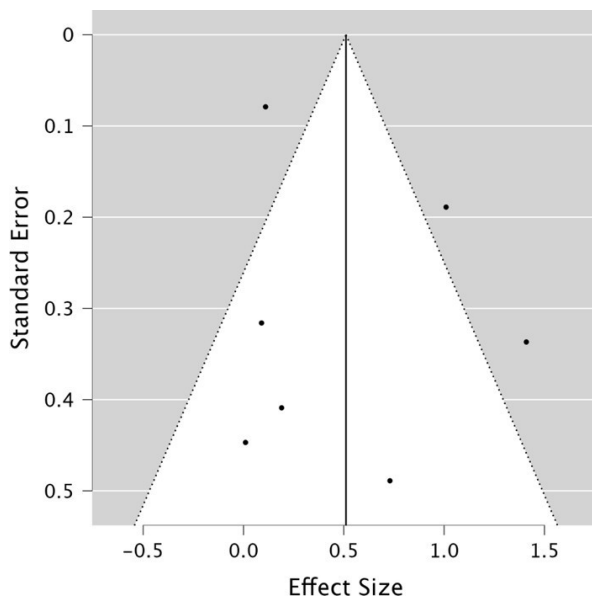
Depression Symptom Moderator Analysis: Child Race and Ethnicity (Percentage of Sample Identified as Black, White, and Latino)

Variable	<i>k</i>	B	95% LL	95% UL	<i>p</i> -value
Intercept		0.22	-0.18	0.61	.285
Percent Identifying as Black	8	0.01	<-0.01	0.02	.193
Intercept		0.15	0.31	0.60	.523
Percent Identifying as White	9	0.01	<-0.01	0.01	.219
Intercept		0.30	-0.03	0.63	.075
Percent Identifying as Latino	8	0.02	-0.01	0.05	.257

Secondary Outcome: Functional Impairment

Figure D4

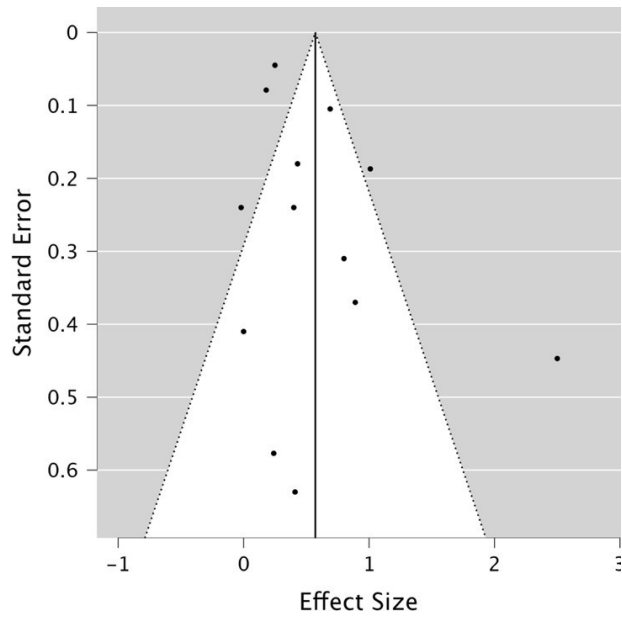
Funnel Plot of Functional Impairment Standard Error by Effect Size ($k = 7$)



Secondary Outcome: Behavior Problems

Figure D5

Funnel Plot of Behavior Problems Standard Error by Effect Size ($k = 13$)



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