

# Grief and Bereavement in Fathers After the Death of a Child: A Systematic Review

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abstract

**CONTEXT:** The death of a child is devastating, and complicated grief adversely impacts parental physical and psychosocial well-being. Most research currently is centered on bereaved mothers, and the experiences of fathers remains underexplored.

**OBJECTIVE:** We systematically reviewed the literature to characterize the grief and bereavement experiences of fathers after the death of a child.

**DATA SOURCES:** We searched Medline, PsycInfo, Embase, and Cumulative Index to Nursing and Allied Health Literature using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.

**STUDY SELECTION:** Inclusion criteria encompassed English language articles published between 2007 and 2019 that evaluated the grief and bereavement experiences of fathers after the death of their child. We excluded studies describing paternal bereavement after the death of a child aged older than 21 years, stillbirth, miscarriage, or studies that did not specify age of death.

**DATA EXTRACTION:** Extracted domains included study design, demographics, findings, and quality assessment.

**RESULTS:** We screened 1848 deduplicated titles and abstracts and 139 full articles, yielding 21 articles for inclusion in this analysis. Fathers often avoided discussing their grief with others, returned to work earlier, and used goal-oriented tasks as coping strategies. Intense grief reactions and posttraumatic psychological sequelae diminished over time in mothers yet persisted in fathers.

**LIMITATIONS:** Included studies were primarily descriptive in nature, without ability to ascertain causality. Limited paternal data exists in the literature compared with maternal data.

**CONCLUSIONS:** Despite evolving gender roles, many fathers navigate loss through stoicism, self-isolation, and hard work. For some fathers, these coping mechanisms may be inadequate for navigating grief.



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The death of a child is devastating and results in profound bereavement.<sup>1,2</sup> Parents grieve not only the death of their child but also the loss of their future hopes and plans for the child and family. Parental bereavement adversely impacts psychological and physical well-being, with respect to heightened risks of anxiety, depression, and psychiatric admissions,<sup>3-5</sup> diminished health-related quality of life,<sup>6</sup> and increased mortality compared with parents who have not experienced the death of a child.<sup>7</sup>

Historically, 75% of parents studied in pediatric palliative care research have been mothers,<sup>8</sup> and the specific grief and bereavement experience of fathers remains underinvestigated. Researchers in several studies have evaluated differences in grief and bereavement between mothers and fathers, finding evidence to suggest briefer or less-intense grief reactions in fathers.<sup>9-11</sup> Limited data suggest that fathers may repress or avoid discussion of their feelings and are less likely than mothers to reach out for social support.<sup>12</sup> Differences in grief expression, intensity, and coping mechanisms may be rooted in Western sociocultural expectations of masculinity, with men expected to solve problems, refrain from expressing emotions, and be action oriented in the context of grief.<sup>13</sup>

In recent years, sociocultural views on parental expectations and roles have shifted, with fathers increasingly involved in the care of their children.<sup>14,15</sup> Yet the existing whole body of research on paternal grief and bereavement has not been recently synthesized. To address this deficit in the literature, we conducted a systematic review to critically assess current knowledge around the grief and bereavement experience of fathers after the death of a child.

## METHODS

We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for reporting our results.<sup>16</sup> The driving question of our systematic review was: “What are the grief and bereavement experiences of fathers following the death of a child?” The Patient population, Intervention, Comparator, Outcome, Timing, Setting (PICOTS) and study eligibility criteria are presented in Table 1.<sup>17</sup> Briefly, the targeted population comprised fathers who experienced the death of a child, and study inclusion necessitated evaluation of the grief and bereavement of fathers; mothers who experienced the death of a child could serve as comparators, but included articles specifically assessed paternal experiences independent of maternal ones. In included studies, researchers used quantitative or qualitative outcomes related to grief intensity, physical or psychological health impacts, tools for grief, or

coping mechanisms. Articles were written in English and published between 2007 and 2019.

## Search Strategy

A medical librarian in collaboration with M.J.M. developed an advanced Boolean logic search strategy using controlled subject headings and text words, as described in Supplemental Table 3. The following concepts were integrated: “parent or family emotions” and “child death”; “end-of-life care” and “family” and “pediatrics,” in conjunction with the Medical Subject Heading (MeSH) terms: “grief,” “bereavement,” “parent,” and “father.” We searched the databases Medline; PsycInfo; Embase; and Cumulative Index to Nursing and Allied Health Literature (CINAHL). Additionally, we used a standard snowballing strategy of manually searching the references of relevant studies and review articles to identify other articles eligible for inclusion.<sup>18</sup>

**TABLE 1** PICOTS Question and Eligibility Criteria

PICOTS question: “What is the grief and bereavement experience of fathers following the death of a child?”
Population: fathers who have lost a child.
Intervention: evaluation of the bereavement and grief experience of fathers who have lost a child.
Comparator: mothers who have lost a child (although not essential for inclusion).
Outcome(s): quantitative or qualitative articles related to the grief experience of fathers, addressing the general grief experience or more-specific outcomes such as grief intensity, physical or psychological health impacts, tools for grief, or coping mechanisms.
Timing: 2007–2019.
Setting(s): any environment.
Inclusion criteria
Studies directly and specifically evaluating the bereavement and grief experience of fathers who have lost a child.
The researchers could study fathers alone or in comparison between genders, but the article must specifically assess the father’s experience.
Prospective or retrospective study design
Quantitative, qualitative, or mixed methodology.
Any outcomes related to the grief and bereavement experience of fathers.
Articles published in the English language.
Articles published between 2007 and 2019.
Exclusion criteria
Single case reports or case series.
Narrative, scoping, or systematic literature reviews.
Articles without presentation of original data (eg, perspective articles, commentary, letters, studies describing methodology sans data).
Abstracts, non-peer-reviewed publications or other “gray literature.”
Studies that do not describe the father’s experience.
Any study with children who died age >21, were stillbirth or miscarriage, or did not specify ages of the patient at time of death.

## Study Selection

EndNote was used as the reference database to retrieve and screen records. Duplicate records were removed, and 2 reviewers (M.J.M. and I.S.) independently screened deduplicated titles and abstracts before conducting comprehensive full-text assessment of the remaining articles. Discrepancies were adjudicated through group discussion between all authors.

## Data Collection and Extraction

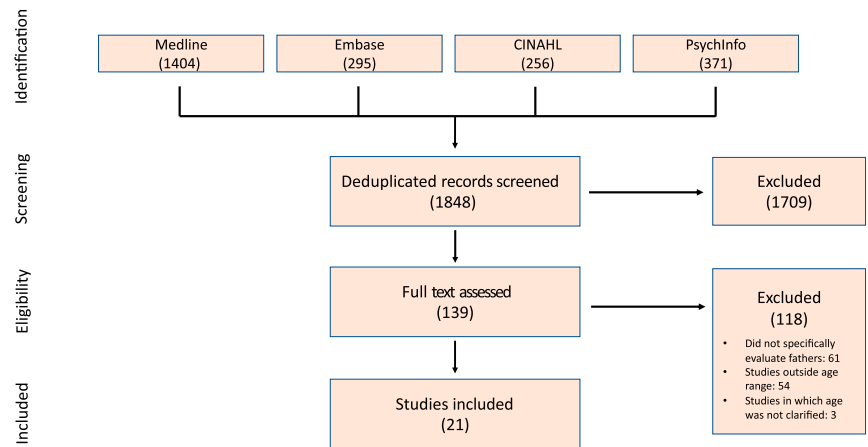
A standardized data abstraction tool was developed on the basis of a modified version of the Cochrane Review.<sup>16</sup> M.J.M. and I.S. extracted data using a template form, shown in Supplemental Table 4. In the context of dual data extraction across 334 database cells, a total of 17 discrepancies were identified, resulting in high interrater reliability at 0.95. Discrepancies were resolved through adjudication until consensus was achieved.

## Data Synthesis

Results from each identified study were synthesized narratively. Because of heterogeneity of content and interventions, lack of validated tools, and inconsistent use of comparisons, conducting a meta-analysis was not feasible.

## Quality Appraisal

The McGill Mixed Methods Appraisal Tool (MMAT; Version 2018)<sup>19</sup> was used to evaluate methodologic quality and study bias. The MMAT allows for critical assessment of different methodologic approaches including qualitative, quantitative, and mixed methods studies. The tool encompasses 7 criteria including clarity of research question, whether the data collected adequately answer the research question, and 5 items specific to study design. For each criterion, individual appraisers (M.J.M. and I.S.) assessed whether the article met each quality criterion



**FIGURE 1** PRISMA Flowchart. Presentation of PRISMA flowchart, including database sources, articles screened, full text assessment, rationale for excluded studies, and final studies included in this systematic review.

(“yes”), if it failed to meet the criterion (“no”), or if insufficient information was presented to adequately assess the specific criterion (“cannot tell”). Eleven discrepancies were identified out of 154 database cells, yielding high interrater reliability at 0.93; discrepancies were adjudicated by the research team to reach consensus. Studies with 0 to 1 MMAT deficits are considered to have good overall methodologic quality. The quality of studies with 2 to 3 deficits is considered medium-level, and the presence of  $\geq 4$  deficiencies is concerning for suboptimal methodologic quality.

## RESULTS

Our search methods identified 1848 deduplicated articles. After screening abstracts for inclusion and exclusion criteria, 139 articles were identified for full-text assessment, and 21 unique articles ultimately met inclusion criteria. Figure 1 presents the PRISMA flowchart. Data abstracted from each included article are summarized in Table 2.<sup>20–40</sup>

### Study Demographics

Of the 21 included studies, 14 (66.7%) were published after 2015. Six studies (28.6%) included

a majority multiracial population including bereaved Black and Hispanic parents.<sup>25,26,29–31,36</sup> No researchers evaluated the bereavement experience of fathers in low- and middle-income countries, although researchers in 1 study evaluated an indigenous population (Maori) in New Zealand.<sup>21</sup> Researchers in 5 studies evaluated grief and bereavement after the child died of cancer,<sup>23,27,28,32,39</sup> and those in 1 study targeted grief and bereavement after the death of a child from sudden infant death syndrome.<sup>21</sup> Researchers in 6 studies evaluated grief after a child died either in the PICU or NICU with mode of death described as brain death, unsuccessful cardiopulmonary resuscitation, or withdrawal of life sustaining measures.<sup>25,26,29–31,36</sup> Two studies were specific to children who died in the NICU.<sup>24,40</sup> In other studies, researchers included a variety of causes of death, such as malignancy, trauma, congenital heart defects, and infection.<sup>20,22,30,31,33,34</sup> Researchers in 1 study did not specify cause of death, simply differentiating between “natural” versus “unnatural” death.<sup>35</sup> A total of 427 fathers were studied, with a median of 24 fathers per study. Researchers in 3 articles (14.3%) studied only fathers (Table 2).<sup>20–22</sup> Of those studies that included both

**TABLE 2** Study Design, Analysis, Findings, and Limitations

Article, Year, Country	Study Design	Participants	Qualitative Data Analysis and Study Tools	Key Findings	MMAT Assessment/Study Limitations
<b>Fathers Only</b>					
<b>Qualitative</b>					
Aho et al <sup>20</sup> 2009 Finland	Open-ended questionnaire with interview	8 fathers whose children died of various conditions before age 3. 100% white	Inductive qualitative analysis	Support networks for fathers included either just the spouse or the spouse and other people. The fathers experienced social isolation but also deliberately isolated themselves.	MMAT assessment: good; deficiencies: none
Edwards et al <sup>21</sup> 2009 New Zealand	In-person open-ended interviews	9 fathers whose children died of SIDS. 100% Maori	Thematic discourse analysis	Strong perception by the fathers that they needed to be stoic for themselves and family. Unemployed fathers likely to use alcohol as a coping strategy.	MMAT assessment: good; deficiencies: none
Proulx et al <sup>22</sup> 2016 Canada	Individual, semistructured interviews	13 fathers whose children died of various conditions. 100% white	Interpretative phenomenological analysis	Fathers needed to push forward and “keep busy” with work and other activities. Fathers needed to keep the child present in everyday life. Fathers needed to find meaning in their experience of grief.	MMAT assessment: good; deficiencies: none
<b>Mothers and Fathers</b>					
<b>Qualitative</b>					
Alam et al <sup>23</sup> 2012 Canada	Individual, semistructured interviews	31 parents (18 mothers and 13 fathers) whose children died of cancer. 74% white	Conventional content analysis	Majority of fathers continued to work full-time after diagnosis and death. Mothers expressed more intense grief reactions that lessened over time. Mothers used more family-focused strategies, fathers used more task-focused and legacy building.	MMAT assessment: good; deficiencies: none
Armentrout et al <sup>24</sup> 2009 United States	Narrative interviews	15 parents (11 mothers and 4 fathers) whose children died in the NICU. 86.6% white, 6.7% Hispanic, 6.7% African American	Grounded theory	Emphasis on the outward expression versus inward expression. “Keeping busy.” Undertaking household projects and returning to work was described by fathers in the study as their “grief work.”	MMAT assessment: medium; deficient criteria: 1.4. Is the interpretation of results sufficiently substantiated by data? 1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?
Brooten et al <sup>25</sup> 2019 United States	Open-ended questionnaire	104 parents (81 mothers and 23 fathers) whose children died of various conditions in NICU or PICU. 32% white, 27% Hispanic, 43% African American	Conventional content analysis:	Caring for themselves was the main coping strategy for both mothers and fathers after the child’s death. Fathers seemed ready to move forward and return to work sooner than mothers who were heavily focused on remembering the child.	MMAT assessment: good; deficient criteria: 1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?
Caicedo et al <sup>26</sup> 2019 United States	Open-ended questionnaire	96 parents (70 mothers, 26 fathers) whose children died of	Conventional content analysis:	Fathers wished most to have spent more time with the child.	MMAT assessment: Good; Deficient criteria: 1.5. Is there coherence

**TABLE 2** Continued

Article, Year, Country	Study Design	Participants	Qualitative Data Analysis and Study Tools	Key Findings	MMAT Assessment/Study Limitations
		various conditions in NICU or PICU. 24% white, 33% Hispanic, 41% African American			between qualitative data sources, collection, analysis and interpretation?
Foster et al <sup>27</sup> 2011 United States and Canada	Semistructured interview	60 (36 mothers, 24 fathers) and 39 siblings whose children died of cancer. 83% of fathers were white	Conventional content analysis	Mothers communicated with the deceased, thought about the deceased, and did things that the deceased child would have liked more often than fathers.	MMAT assessment: good; deficiencies: None
Gilmer et al <sup>28</sup> 2012 United States and Canada	Semistructured interviews of both parents and siblings	60 parents (36 mothers, 24 fathers) and 39 siblings whose children died of cancer. 83% of fathers were white	Conventional content analysis	Mothers reported feeling more sadness while no fathers reported feeling sad. Mothers more likely to have a change in their work with some having an increase in work but most having a decrease. Similar changes in perspective and religious or spiritual beliefs.	MMAT assessment: good; deficiencies: none
<b>Quantitative</b>					
Brooten et al <sup>29</sup> 2018 United States	Longitudinal cohort	249 parents (176 mothers, 73 fathers) whose children died of various conditions in NICU or PICU. 26% white, 48% Hispanic, 26% African American.	Survey developed by study team	Fathers reported 104 acute illnesses (colds or flu and headaches) and 9 hospitalizations, less than that of mothers.	MMAT assessment: medium; deficiencies: 4.2. Is the sample representative of the target population? 4.4. Is the risk of nonresponse bias low?
Hawthorne et al <sup>30</sup> 2016 United States	Longitudinal cohort	165 parents (114 mothers, 51 fathers) whose children died of various conditions in the NICU or PICU. 22% white, 28% Hispanic, 40% African American	BDI HGRC SCS Impact of Events Scale	Fathers' use of spiritual activities was related to less-severe symptoms of depression at both 1 and 3 mo. Use of religious activities was related to less-severe symptoms of depression at 1 mo for fathers' after their infant or child's death.	MMAT assessment: medium; deficiencies: 4.2. Is the sample representative of the target population? 4.4. Is the risk of nonresponse bias low?
Hawthorne et al <sup>31</sup> 2017 United States	Longitudinal cohort	165 parents (114 mothers, 51 fathers) whose children died of various conditions in NICU or PICU. 22% white, 28% Hispanic, 40% African American	SCS	At time 1, mothers reported significantly greater use of religious, but not spiritual, coping practices than fathers. At time 2, mothers had significantly higher scores for religious and spiritual coping practices than fathers. Protestant fathers reported significantly greater use of spiritual coping practices than those in the "other" religion group at time 1.	MMAT assessment: medium; deficiencies: 4.2. Is the sample representative of the target population? 4.4. Is the risk of nonresponse bias low?
Ljungman et al <sup>32</sup> 2015 Sweden	Longitudinal cohort	37 bereaved parents (17 mothers and 20 fathers) whose children died of cancer. Race and	PTSD Checklist (PCL-30)	Bereavement was associated with a high level of PTSS and risk of PTSD. The prevalence of PTSD decreased among mothers	MMAT assessment: good; deficiencies: 4.4. Is the risk of nonresponse bias low?

**TABLE 2** Continued

Article, Year, Country	Study Design	Participants	Qualitative Data Analysis and Study Tools	Key Findings	MMAT Assessment/Study Limitations
Lykke et al <sup>55</sup> 2019 Denmark	Cross-sectional questionnaire	193 parents (136 mothers and 57 fathers) whose children died of various conditions. Race and ethnicity were not provided	CES-D VDS	over time but not among fathers. There were no statistically significant differences in anxiety between mothers and fathers. Furthermore, there was no significant difference between parent sex and depression.	MMAT assessment: good; deficiencies: 4.4. Is the risk of nonresponse bias low?
Morris et al <sup>54</sup> 2016 United States	Cross-sectional questionnaire	88 parents (60 mothers, 28 fathers) and 62 siblings whose children died of various conditions. 89.3% white, 3.6% Hispanic, 3.6% African American	PTSD Checklist (PCL-30) Prolonged Grief Disorder (PG-13)	Maternal, but not paternal, symptoms of PTSD and PGD were directly associated with sibling outcomes. Paternal symptoms were associated with sibling symptoms indirectly, through parenting behaviors (ie, via decreasing positive parenting).	MMAT assessment: medium; deficiencies: 4.3. Are the measurements appropriate? 4.4. Is the risk of nonresponse bias low? 4.5. Is the statistical analysis appropriate to answer the research question?
Werthmann et al <sup>55</sup> 2010 Denmark	Retrospective cohort	21 062 parents (11 221 mothers, 9841 fathers) whose children died of various conditions. Race and ethnicity were not provided	Retrospective assessment of civil registry data	Bereaved parents who had lost a child of the same sex had similar overall mortality as bereaved parents who had lost a child of the opposite sex.	MMAT assessment: good; deficiencies: none
Youngblut et al <sup>56</sup> 2017 United States	Longitudinal cohort	182 parents (130 mothers and 52 fathers) whose children died of various conditions in NICU or PICU. 23.1% white, 48.1% Hispanic, 28.8% African American	HGRC	Grief decreased from 3 to 13 mo for mothers and from 3 to 6 mo for fathers. For fathers, grief despair scores decreased significantly from 3 to 6 mo.	MMAT assessment: good; deficiencies: 4.4. Is the risk of nonresponse bias low?
Mixed methods Barrera et al <sup>57</sup> 2007 Canada	Cross-sectional Study	20 (13 mothers and 7 fathers) whose children died of various conditions. 90% white with 10% Asian Canadian and African Canadian	Qualitative: grounded theory. quantitative: BDI, Grief Measurement Scale	The majority of parents (65%) presented uncomplicated, integrated grief. 5 mothers were consumed by grief, but no fathers. Having surviving children, social support, and being active appeared to help to integrate grief into daily life.	MMAT assessment: good; deficiency: 5.2. Are the different components of the study effectively integrated to answer the research question?
Bergstraesser et al <sup>58</sup> 2015 Switzerland	Cross-sectional study	46 married parents (23 couples) whose children died of various conditions. Race and ethnicity were not provided.	Qualitative: reconstructive hermeneutical approach; conventional content analysis; quantitative: CES-D, TRIG-D	Mothers were more prone to share their feelings and thoughts with others. Fathers preferred not to talk about their feelings with others. Aspects of common dyadic coping, helped the parents work through their grief as a couple but also individually.	MMAT assessment: good; deficiencies: none

**TABLE 2** Continued

Article, Year, Country	Study Design	Participants	Qualitative Data Analysis and Study Tools	Key Findings	MMAT Assessment/Study Limitations
Donovan et al <sup>39</sup> 2019 Australia	Cross-sectional study	119 parents (91 mothers, 28 fathers) whose children had died of cancer. Race and ethnicity were not provided.	Qualitative: deductive thematic analysis; quantitative: survey developed by study team	Fathers appeared more likely than mothers to continue working throughout their child's sickness. Mothers described frustration that their partners avoided the reality of the situation by seeking refuge in work or exercise in the lead up to their child's death.	MMAT assessment: good; deficiency: 5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?
Keim et al <sup>40</sup> 2017 United States	Cross-sectional study	69 parents (42 mothers and 27 fathers) whose children died of various conditions in the NICU. 85% of fathers were white	Qualitative: conventional content analysis; quantitative: PG-13	Although not statistically significant, large effects were observed such that fathers who had additional children reported lower PTSS and prolonged grief scores.	MMAT assessment: suboptimal; deficiencies: 5.1. Is there an adequate rationale for using a mixed methods design to address the research question? 5.2. Are the different components of the study effectively integrated to answer the research question? 5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted? 5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed? 5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?

BDI, Beck Depression Inventory; BDI, Beck Depression Inventory; CES-D, Center for Epidemiologic Studies Depression scale; HGRC, Hogan Grief Reaction Checklist; PCL-30, PTSD Checklist; PG-13, Prolonged Grief Disorder; SCS, Spiritual coping Scale; SIDS, sudden infant death syndrome; TRIG-D, Texas Revised Grief Inventory; VDS, Visual Digital Scale.

mothers and fathers in their analysis, 31.1% of the parents were fathers (427 of 1374). Two studies (9.1%) had equal participation between fathers and mothers.<sup>32,38</sup>

**Study Objectives and Design**

Study methodologies comprised qualitative (*n* = 9), quantitative (*n* = 8), and mixed methodologic (*n* = 4) approaches. The primary study objective endorsed in all qualitative studies was a general evaluation of grief. Researchers in the 3 studies that exclusively evaluated fathers relied on qualitative methods.<sup>20-22</sup> (Table 2) Multiple strategies were used to collect qualitative data, ranging from in-depth interviews conducted via telephone, in the clinic,

or in the participant's home,<sup>20,21,23,24,27,28</sup> and open-ended questions on surveys.<sup>25,26</sup> Analytic methods also varied, with reported use of inductive qualitative content analysis,<sup>20</sup> conventional content analysis,<sup>23,25-28</sup> thematic discourse analysis,<sup>21</sup> interpretive phenomenological analysis,<sup>22</sup> and grounded theory study (Table 2).<sup>24</sup>

All included quantitative studies were descriptive in nature (Table 2). Quantitative objectives included a general assessment of the grief experience,<sup>36</sup> the physical health impacts of grief,<sup>29,35</sup> assessments on the psychological impact of grief,<sup>30,32,33</sup> religion or spirituality and its role in the grief

experience,<sup>30,31</sup> and parental grief and its impact on surviving siblings.<sup>34</sup> Most quantitative studies used self-reported questionnaires (7 of 8, 87.5%) incorporating a range of survey tools to assess posttraumatic stress symptoms (PTSS) and posttraumatic stress disorder (PTSD), depression, prolonged grief, and spiritual coping.<sup>30,32-36</sup> Different survey tools were used to assess features such as grief, depression, and PTSD, as summarized in Table 2.

Regarding formal study design, 5 of the 8 quantitative studies (66.7%) were longitudinal cohort studies following bereaved parents across time.<sup>29-32,36</sup> One study comprised a retrospective cohort study of civil

registry data.<sup>35</sup> Authors of 4 articles presented mixed method studies via cross-sectional designs (Table 2). Mixed method study objectives varied broadly in assessment of the general grief experience,<sup>37,39</sup> grief and its impact on siblings,<sup>40</sup> and dyadic coping.<sup>38</sup> Mixed methods studies often used a combination of quantitative self-reported questionnaires followed by either semistructured or open-ended interviews to supplement survey data.

### Synthesis of Findings

Several key topics and themes were identified as integral to the grief and bereavement of experience of fathers after the death of a child.

#### Grief in Isolation

Taken together, the fathers who participated in these studies tended to grieve more in isolation than in public. In several studies, authors described paternal isolation during the grief process but also stated that this may be a deliberate choice. Many fathers attempted to avoid discussing their feelings of grief, in contrast to more open communication by mothers.<sup>20-24,38</sup> Fathers also attempted to deflect attention from their suffering in an effort to prioritize support for their partners.<sup>39</sup> Nevertheless, fathers emphasized the importance of communication with their spouses and peers; although fathers were less likely to seek out conversation, they still described communication about their loss as important for processing their grief.<sup>20,38</sup>

#### Relationships With Partners and Children

Paternal grief was shown to have a significant impact on fathers' relationships with their partners and children. Differences in communication styles between mothers and fathers at times led to increased frustration between partners.<sup>20,22,38,39</sup> However, fathers also reported that their spouse was their primary source of support during

bereavement as well as an integral aspect of their recovery process after the death of a child.<sup>20,22,38</sup> Researchers in 1 study evaluated dyadic coping, showing no increased risk of divorce in bereaved couples after the death of their child.<sup>38</sup> Researchers in another study demonstrated that a mother's, but not a father's, symptoms of PTSD and prolonged grief were associated with surviving children's psychological outcomes, including PTSD, prolonged grief, and depression.<sup>34</sup>

#### Work

Fathers appeared more likely than mothers to work at their occupation and on projects in the home as a way to "keep busy," using goal-oriented tasks as a coping mechanism to manage grief.<sup>20-24,28,38,39</sup> Although most bereaved parents came from dual-income households, in all but 1 case, mothers served as the primary caregivers. At the time of their child's cancer diagnosis, the majority of fathers continued working full-time, whereas the majority of mothers either reduced their work schedule or took time off work to care for the child. After the death of their child, the majority of mothers focused on caring for their surviving children and deprioritized work obligations. The majority of fathers, comparatively, returned to work shortly after the death of their child.<sup>23,25,28</sup> Fathers who were unemployed reported increased psychological distress in the setting of inability to provide for their families or distract themselves with work, and several reported abusing substances as a negative coping mechanism.<sup>21</sup> However, in follow-up interviews, many fathers reported loss of fulfillment and satisfaction in their work and were actively seeking alternative meaningful activities to sustain their child's legacy.<sup>23</sup> The biggest regret reported by fathers after the death of a child was a wish that they had spent more time with the child.<sup>26</sup>

#### Rituals, Maintaining Bonds, and Legacy Building

Fathers also described the importance of rituals to maintain a relationship with their deceased child as an important aspect of their grief process. Rituals included visiting the gravesite, speaking or writing to their child, and keeping their room or toys and/or clothing as remembrances. These practices were followed by father individually as well as in conjunction with their partners and other family members.<sup>22-24,27,38</sup> In addition to rituals, fathers also relied on legacy building activities as a way to honor their child's life.<sup>22,23,27</sup> Such practices included creating a charity or fundraiser in their child's honor, building projects in the house or community, and participating in their child's favorite sporting events or other activities.

#### Religion and Spirituality

Religion and spirituality were also evaluated in the grief experience of fathers.<sup>22,24,30,31</sup> Researchers in 1 study suggested that fathers experienced personal growth at 1 and 3 months with increased use of spiritual and religious activities across time. Spiritual activities were defined as activities oriented toward the relationship with self, others, and the environment whereas religious activities were defined as activities oriented toward religion and belief in God. Increased participation in spiritual activities was associated with lower symptoms of grief and depression, but not posttraumatic stress in fathers. Engagement in organized religion activities was also related to decreased severity of depression at 1 month for fathers after the death of their child.<sup>30</sup>

#### Physical Health and Psychological Effects of Grief

With respect to physical morbidities, fathers experienced an increase in acute illnesses, medication changes, and hospitalizations in the first 6



months after the death of a child, which declined in months 7 to 12 but again increased at month 13.<sup>29</sup> Although rates of anxiety in fathers appear to decrease over time after the death of a child, self-reported depression in fathers remained constant even 3 to 5 years after a child's death.<sup>33</sup> Additionally, initial PTSS and PTSD scores in 1 study were higher in mothers than fathers after the death of a child, but over time the rates of PTSS and PTSD declined significantly in mothers but not in fathers.<sup>32</sup> Although not statistically significant, fathers with additional children also reported lower PTSS and prolonged grief scores as compared with fathers who with no additional children.<sup>40</sup>

### Grief Intensity

Several researchers investigated the intensity of grief experienced by bereaved parents. No one standardized metric was used to measure grief intensity. Authors in 1 article stratified grief intensity as integrated grief, minimal grief expression, or consumed by grief.<sup>37</sup> Within this construct, mothers and fathers demonstrated equivalent degrees of integrated or minimal expression, whereas only mothers were consumed by grief.<sup>37</sup> Another study also identified more intense grief in mothers compared with fathers, including panic, disorganization, and despair; however, these findings revealed that mothers' grief intensity diminished over time, whereas fathers' grief remained relatively constant after a child's death.<sup>36</sup>

### Quality Appraisal

The included studies were primarily descriptive in nature, without ability to ascertain causality. Fewer father participants compared with mother participants adversely impacted study capacity to compare and contrast parental grief and bereavement experiences. Small sample sizes affected study ability to

query statistical significance or generalize findings to other populations. Within longitudinal studies, attrition rates further reduced power. Participant cohorts with predominantly white parents and relatively higher socioeconomic statuses than the general population further precluded generalizability.<sup>25,26,29,31,36</sup> MMAT assessments and deficiencies are presented in Table 2.

## DISCUSSION

The relationship between a parent and their child is unique and powerful, making the death of a child particularly profound and devastating for a parent. In this review, we systematically synthesize the existing literature on the grief and bereavement experience of fathers after the death of a child, identifying key features of paternal grief and bereavement experience that warrant further exploration.

All of the identified articles included in this review were published within the last 11 years, representing a more-recent sociocultural era in which fathers play a more involved and engaged role in their children's lives compared with several decades ago.<sup>14</sup> Yet synthesis of the limited literature suggests ongoing gender-based differences between maternal and paternal grief and bereavement experiences. Cultural beliefs that fathers should be more stoic and not discuss their feelings persist,<sup>22,23,39</sup> along with self-isolating behaviors.<sup>12,41</sup> Notably, the described attitudes and behaviors are specific to predominantly Western contexts, and further research is needed to explore the impact of sociocultural expectations on paternal grief in multiracial, non-Western populations. Further investigation is also warranted to parse out perceived advantages and disadvantages of gender normative grief expectations. For example, some fathers perceived

self-distancing as beneficial; others described social isolation as harmful to their grief journeys.<sup>20,23,27,39</sup> Additional efforts are needed to explore how coping mechanisms are shaped and guided by external pressures. Given variability in the coping strategies of different fathers, high quality provision of bereavement care necessitates an individualized approach in synergy with listening, validating, and normalizing each parent's unique experiences and preferred coping styles.

Despite cultural shifts in dual-income households and parenting roles, mothers continue to perform the bulk of child-rearing responsibilities, including care of a child during progressive illness.<sup>23</sup> Although fathers have tripled the time spent with their children, they still spend half as much time in child-rearing activities as mothers.<sup>42</sup> Paternal reliance on continuing work, use of work as distraction, and returning to work after the death of a child as a coping mechanism for grief are notable and likely a manifestation of ongoing gender disparities. Fathers also use household projects such as yardwork, reorganization, or other goal-oriented tasks and physical labor as coping tools,<sup>22-24,27,38</sup> with equivocal findings to suggest whether "staying busy" and "distracting themselves" were healthy or harmful to their grief and bereavement journeys. We advocate for grief research programs to incorporate qualitative father-specific studies to gain a more-nuanced understanding of the ways that bereaved fathers seek and sustain resilience during bereavement.

Interestingly, although grief intensity was found to be higher in mothers immediately after the death of a child, intense grief reactions, PTSS, and PTSD diminished over time in mothers yet persisted in fathers.<sup>37</sup> We hypothesize that, for some fathers, gendered coping mechanisms (eg, isolation, stoicism, work ethic)

are insufficient strategies for processing grief across time; further research is needed to explore this hypothesis. Additionally, the definition of grief intensity remains poorly defined and variable between studies, with most features of grief intensity reported as outward expressions of grief. Given data to suggest that fathers self-isolate themselves and avoid visible features of grief, these metrics may underestimate the true grief intensity experienced by fathers, and new metrics may be needed to capture the depth of paternal grief.

The perinatal grief and bereavement experiences of fathers also represent a profound and understudied area of research deserving of further attention. Paternal perinatal stressors may exacerbate complicated bereavement and related mental health disorders. A systematic review of 144 studies found that stillbirth was associated with parental depression, anxiety disorder, social phobia, PTSD, and suicidal ideation.<sup>43</sup> Specifically, studies of fathers demonstrated grief suppression or avoidance, employment difficulties, financial debt, and increased substance use.<sup>43</sup> Another systematic review on stillbirth suggested that the prevalence of PTSD in grieving fathers may be underrepresented, because current PTSD measures may not fully capture paternal grief and fathers may not consistently vocalize grief.<sup>44</sup> Increased paternal participation in bereavement research is needed to better understand the unique grief experiences of fathers across different loss experiences. Deeper knowledge on paternal grief will enable the development of more-nuanced measures and interventions to assess for and mitigate complicated grief and other related mental health disorders, respectively.

Several limitations may influence this analysis. First, we excluded studies assessing the grief experience of

fathers after stillbirth or miscarriage; in the context of a growing literature on paternal perinatal mental health disorders,<sup>45-47</sup> we believe that these unique experiences warrant a separate and focused analysis. Second, we excluded studies of bereaved parents of young adults >21 years, opting to focus on the experiences of parents who lose a child; however, we acknowledge the value in future research to broaden our knowledge of the bereaved father experience in the context of the death of a young adult. Third, we excluded non-English articles, which may have resulted in missed data and a lack of cultural diversity, impacting our aggregated impressions. Fourth, fewer fathers participated in grief and bereavement research compared with mothers, limiting our ability to compare and contrast grief across genders and potentially skewing findings to focus on heightened maternal or paternal behavioral responses to grief.

Synthesis of available literature suggests that clinicians should recognize the unique grief experiences and needs of fathers and encourage open communication with partners and health professionals. Specifically, we recommend that clinicians provide individualized anticipatory guidance about regret and support opportunities for fathers to engage in meaningful experiences with their ailing child before death and with their partners and surviving siblings after death. In addition, we encourage longitudinal, relationship-based support throughout the illness trajectory and bereavement. The provision of financial and other social supports across the illness course and extending into bereavement also may enable fathers to spend more time with their children and family, mitigating decisional regret in the context of a lessened fiscal burden. Finally, we advocate for additional research to better understand the grief experience of fathers, using data

to inform the development and investigation of interventions to better support fathers after the death of a child. Successful research platforms will necessitate intentional recruitment of fathers to balance the typical maternal-heavy cohorts, as well as studies that include participants from racially and ethnically diverse populations as well as participants from outside of Western cultural contexts.

## CONCLUSIONS

The grief experience of fathers appears to be unique and is likely influenced by the cultural, societal, and religious contexts within their respective lived experiences. Despite evolving gender roles across the past several decades, many fathers remain anchored to the belief that men should deal with loss through stoicism, a “stiff upper lip,” self-isolation, and hard work. Yet the literature suggests that, for some fathers, these coping mechanisms may be inadequate for navigating their grief. Better understanding of paternal grief and bereavement has the potential to lead directly to clinical improvements in the care and support of fathers after the death of a child.

## ABBREVIATIONS

CINAHL:	Cumulative Index to Nursing and Allied Health Literature
MeSH:	Medical Subject Headings
MMAT:	McGill Mixed Methods Appraisal Tool
PICOTS:	Patient population, Intervention, Comparator, Outcome, Timing, Setting
PRISMA:	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PTSS:	posttraumatic stress symptoms
PTSD:	posttraumatic stress disorder

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## REFERENCES

1. Chambers HMC, Flenady V. Support for women/families after perinatal death. *Cochrane Database Syst Rev.* 2000;(2): CD000452
2. Sanders C. A comparison of adult bereavement in the death of a spouse, child and parent. *Omega (Westport).* 1979;10(4):303–322
3. Kreicbergs U, Valdimarsdóttir U, Onelöv E, Henter JI, Steineck G. Talking about death with children who have severe malignant disease. *N Engl J Med.* 2004; 351(12):1175–1186
4. Kreicbergs UC, Lannen P, Onelöv E, Wolfe J. Parental grief after losing a child to cancer: impact of professional and social support on long-term outcomes. *J Clin Oncol.* 2007;25(22):3307–3312
5. Li J, Laursen TM, Precht DH, Olsen J, Mortensen PB. Hospitalization for mental illness among parents after the death of a child. *N Engl J Med.* 2005; 352(12):1190–1196
6. Song J, Floyd FJ, Seltzer MM, Greenberg JS, Hong J. Long-term effects of child death on parents' health related quality of life: a dyadic analysis. *Fam Relat.* 2010;59(3):269–282
7. Li J, Precht DH, Mortensen PB, Olsen J. Mortality in parents after death of a child in Denmark: a nationwide follow-up study. *Lancet.* 2003;361(9355): 363–367
8. Macdonald ME, Chilibeck G, Affleck W, Cadell S. Gender imbalance in pediatric palliative care research samples. *Palliat Med.* 2010;24(4):435–444
9. Dyregrov A. Parental reactions to the loss of an infant child: a review. *Scand J Psychol.* 1990;31(4):266–280
10. Vance JC, Boyle FM, Najman JM, Thearle MJ. Gender differences in parental psychological distress following perinatal death or sudden infant death syndrome. *Br J Psychiatry.* 1995;167(6): 806–811
11. Moriarty HJ, Carroll R, Cotroneo M. Differences in bereavement reactions within couples following death of a child. *Res Nurs Health.* 1996;19(6): 461–469
12. Wood JD, Milo E. Fathers' grief when a disabled child dies. *Death Stud.* 2001; 25(8):635–661
13. Cook JA. DAD'S DOUBLE BINDS: rethinking fathers' bereavement from a men's studies perspective. *J Contemp Ethnogr.* 1988;17(3):285–308
14. Wolff J, Pak J, Meeske K, Worden JW, Katz E. Challenges and coping styles of fathers as primary medical caretakers: a multicultural qualitative study. *J Psychosoc Oncol.* 2010;28(2):202–217
15. Yogman M, Garfield CF; Committee on Psychosocial Aspects of Child and Family Health. Fathers' roles in the care and development of their children: the role of pediatricians. *Pediatrics.* 2016;138(1): e20161128
16. Moher D, Shamseer L, Clarke M, et al.; PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev.* 2015;4(1):1
17. Samson D, Schoelles KM. Chapter 2: medical tests guidance (2) developing the topic and structuring systematic reviews of medical tests: utility of PICOTS, analytic frameworks, decision trees, and other frameworks. *J Gen Intern Med.* 2012;27(suppl 1):S11–S19
18. Sayers A. Tips and tricks in performing a systematic review. *Br J Gen Pract.* 2007;57:759
19. Pluye P, Gagnon MP, Griffiths F, Johnson-Lafleur J. A scoring system for appraising mixed methods research, and concomitantly appraising qualitative, quantitative and mixed methods primary studies in Mixed Studies Reviews. *Int J Nurs Stud.* 2009; 46(4):529–546
20. Aho AL, Tarkka MT, Astedt-Kurki P, Kaunonen M. Fathers' experience of social support after the death of a child. *Am J Men Health.* 2009;3(2):93–103
21. Edwards S, McCreanor T, Ormsby M, Tuwhangai N, Tipene-Leach D. Maori men and the grief of SIDS. *Death Stud.* 2009; 33(2):130–152
22. Proulx M-C, Martinez A-M, Carnevale F, Legault A. Fathers' experience after the death of their child (aged 1-17 years). *Omega (Westport).* 2016;73(4):308–325
23. Alam R, Barrera M, D'Agostino N, Nicholas DB, Schneiderman G. Bereavement experiences of mothers and fathers over time after the death of a child due to cancer. *Death Stud.* 2012; 36(1):1–22
24. Armentrout D. Living with grief following removal of infant life support: parents' perspectives. *Crit Care Nurs Clin North Am.* 2009;21(2):253–265
25. Brooten D, Youngblut JM, Caicedo C, Dankanich J. Parents: wish I had done, wish I had not done, and coping after child NICU/PICU death. *J Am Assoc Nurse Pract.* 2019;31(3):175–183
26. Caicedo C, Brooten D, Youngblut JM, Dankanich J. Parents' wishes for what they had or had not done and their coping after their infant's or child's neonatal intensive care unit/pediatric intensive care unit/emergency department death. *J Hosp Palliat Nurs.* 2019;21(4):333–343
27. Foster TL, Gilmer MJ, Davies B, et al. Comparison of continuing bonds reported by parents and siblings after a child's death from cancer. *Death Stud.* 2011;35(5):420–440
28. Gilmer MJ, Foster TL, Vannatta K, et al. Changes in parents after the death of a child from cancer. *J Pain Symptom Manage.* 2012;44(4):572–582
29. Brooten D, Youngblut JM, Caicedo C, Del Moral T, Cantwell GP, Totapally B.

- Parents' acute illnesses, hospitalizations, and medication changes during the difficult first year after infant or child NICU/PICU death. *Am J Hosp Palliat Care*. 2018;35(1):75–82
30. Hawthorne DM, Youngblut JM, Brooten D. Parent spirituality, grief, and mental health at 1 and 3 months after their infant's/child's death in an intensive care unit. *J Pediatr Nurs*. 2016;31(1):73–80
  31. Hawthorne DM, Youngblut JM, Brooten D. Use of spiritual coping strategies by gender, race/ethnicity, and religion at 1 and 3 months after infant's/child's intensive care unit death. *J Am Assoc Nurse Pract*. 2017;29(10):591–599
  32. Ljungman L, Hovén E, Ljungman G, Cernvall M, von Essen L. Does time heal all wounds? A longitudinal study of the development of posttraumatic stress symptoms in parents of survivors of childhood cancer and bereaved parents. *Psychooncology*. 2015;24(12):1792–1798
  33. Lykke C, Ekholm O, Schmiegelow K, Olsen M, Sjøgren P. Anxiety and depression in bereaved parents after losing a child due to life-limiting diagnoses: a Danish nationwide questionnaire survey. *J Pain Symptom Manage*. 2019;58(4):596–604
  34. Morris AT, Gabert-Quillen C, Friebert S, Carst N, Delahanty DL. The indirect effect of positive parenting on the relationship between parent and sibling bereavement outcomes after the death of a child. *J Pain Symptom Manage*. 2016;51(1):60–70
  35. Werthmann J, Smits LJ, Li J. Parental mortality rates in a western country after the death of a child: assessment of the role of the child's sex. *Gen Med*. 2010;7(1):39–46
  36. Youngblut JM, Brooten D, Glaze J, Promise T, Yoo C. Parent grief 1-13 months after death in neonatal and pediatric intensive care units. *J Loss Trauma*. 2017;22(1):77–96
  37. Barrera M, D'Agostino NM, Schneiderman G, Tallett S, Spencer L, Jovcevska V. Patterns of parental bereavement following the loss of a child and related factors. *Omega (Westport)*. 2007;55(2):145–167
  38. Bergstraesser E, Inglin S, Hornung R, Landolt MA. Dyadic coping of parents after the death of a child. *Death Stud*. 2015;39(1–5):128–138
  39. Donovan LA, Wakefield CE, Russell V, et al. Variables associated with grief and personal growth following the death of a child from cancer: a mixed method analysis [published online ahead of print, October 26, 2019]. *Death Stud*. 2019;1–12
  40. Keim MC, Fortney CA, Shultz EL, Winning A, Gerhardt CA, Baughcum A. Parent distress and the decision to have another child after an infant's death in the NICU. *J Obstet Gynecol Neonatal Nurs*. 2017;46(3):446–455
  41. Kavanaugh K, Trier D, Korzec M. Social support following perinatal loss. *J Fam Nurs*. 2004;10(1):70–92
  42. Pew Research Center. How Mothers and Fathers Spend Their Time. In: *Modern Parenthood: Roles of Moms and Dads Coverage as They Balance Work and Family*. Washington, DC: Pew Research Center; 2013:27–31
  43. Burden C, Bradley S, Storey C, et al. From grief, guilt pain and stigma to hope and pride - a systematic review and meta-analysis of mixed-method research of the psychosocial impact of stillbirth. *BMC Pregnancy Childbirth*. 2016;16:9
  44. Christiansen DM. Posttraumatic stress disorder in parents following infant death: a systematic review. *Clin Psychol Rev*. 2017;51:60–74
  45. Philpott LFL-WP, Leahy-Warren P, Fitzgerald S, Savage E. Stress in fathers in the perinatal period: a systematic review. *Midwifery*. 2017;55:113–127
  46. Philpott LFSE, Savage E, Fitzgerald S, Leahy-Warren P. Anxiety in fathers in the perinatal period: a systematic review. *Midwifery*. 2019;76:54–101
  47. Jones K, Robb M, Murphy S, Davies A. New understandings of fathers' experiences of grief and loss following stillbirth and neonatal death: a scoping review. *Midwifery*. 2019;79:102531

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