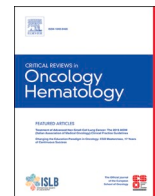


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# Psychosocial interventions targeting parenting distress among parents with cancer – A systematic review and narrative synthesis of available interventions

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## ABSTRACT

**Background:** Balancing having cancer and parenting a major stressor, and may result in parenting distress, negatively affecting the whole family. To provide adequate support, knowledge of existing psychosocial interventions are crucial to guide future interventions. This study aimed to describe available psychosocial interventions for parents with cancer and dependent children (<18 years).

**Method:** We conducted a systematic review, and four databases were searched from January 2000 to March 2023. **Results:** Thirty studies were included, reporting on 22 psychosocial interventions for parents with cancer. They aimed to improve different aspects of parenting distress, and included psychoeducation and communication strategies. Interventions were beneficial to and acceptable among parents, but only a few had been evaluated. The study quality was, overall, assessed as moderate.

**Conclusions:** The results of this review highlight the diversity of available psychosocial interventions for parents with cancer and the outcomes on parenting distress, as well as methodological challenges.

## 1. Introduction

With around 19 million new cases yearly, cancer is a major source of morbidity in all regions of the world regardless of the level of human development (Sung et al., 2021). A significant number of adult cancer patients are also parents with dependent children (<18 years) (Inhestern et al., 2021). Balancing cancer and parenting is challenging and has been identified as a major stressor throughout the cancer journey (Semple and McCance, 2010; Kuswanto et al., 2018; Inhestern et al., 2016a; Stafford et al., 2017). It is both physically and mentally stressful for parents with cancer to manage the cancer illness and meet caregiving demands. Hence, the demands of being a parent become greater than the resources available to meet them, (Chou, 2000; Rollè et al., 2017; Jones and Prinz, 2005) also known as parental- or parenting stress (Abidin, 2012; Deater-Deckard, 2004). In this review, the term 'parenting distress' is used to describe when parenting stress leads to negative consequences

for parents. Parenting distress can result in decreased parental well-being and negative consequences for the whole family (Rollè et al., 2017; Pehler et al., 2014). Parents with cancer, compared with those who are not parents, report worse psychological well-being, including increased depression, anxiety and guilt, and decreased quality of life (Park et al., 2016; Caparso et al., 2021; Johannsen et al., 2022).

The well-being of parents with cancer is also associated with children's well-being, (Semple and McCance, 2010; Stinesen-Kollberg et al., 2013; Bürger Lazar and Musek, 2020) and parents report imminent concerns about how their cancer has affected or will affect their children negatively (Moore et al., 2015). Several studies report that parents worry more about the well-being of their children than their own, and make decisions related to their cancer illness with their children's best interest in mind (Kuswanto et al., 2018; Stinesen-Kollberg et al., 2013).

Psychosocial aspects of the cancer journey, such as parenting concerns, are important to improve parent's well-being. Parents have

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expressed a need for these to be included in cancer care (Johannsen et al., 2022) as well as a need for support in how to handle their children and the parenting role (Turner et al., 2007). Nonetheless, parenting challenges and distress experienced by parents with cancer need to be further investigated to identify concerns, challenges and support needs (Semple and McCance, 2010) and develop effective interventions to decrease the morbidity of cancer (Sung et al., 2021).

Previous reviews of interventions on parental cancer have focused on parents with advanced cancer, (Caparso et al., 2021) families affected by parental cancer, (Inhestern et al., 2016b) or children living with, or bereaved by, parental cancer (Alexander et al., 2019; Ellis et al., 2017; Ing et al., 2019). Existing interventions for parents with cancer and their families show promising feasibility and estimated effectiveness to improve parenting well-being, (Inhestern et al., 2016b; Wuensch et al., 2022; Niemelä et al., 2010; Steiner et al., 2017) although few interventions have met methodological criteria (e.g. standardisation and randomisation) to be able to draw firm conclusions on effectiveness (Liénard et al., 2022). Challenges in implementation of interventions are illustrated in a recent review by Inhestern et al., where careful planning and collaboration were crucial elements that were highlighted (Inhestern et al., 2016b). More interventions have been developed since the previous reviews, and the development process of complex interventions often takes time (Skivington et al., 2021). Hence, previously developed interventions have been evaluated only recently (Phillips et al., 2022; Ehrbar et al., 2022). An updated review of the field of the available psychosocial interventions for parents with cancer is needed in order to provide an extensive overview of the field and guide future development, evaluation and implementation of psychosocial interventions for parents with cancer and their families.

### 1.1. Aim

The aim of this study was to describe the contents and effects of psychosocial interventions targeting the ill parent's mental health and parenting distress following cancer (any type of cancer) in parents of children under the age of 18.

## 2. Materials and methods

To conduct and report this review, we followed The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline (Page et al., 2021; Liberati et al., 2009). A review protocol is available in the International Prospective Register of Systematic Reviews (PROSPERO, registration number: CRD42022324928).

### 2.1. Eligibility criteria

Eligibility criteria were defined prior to the searches based on the research aim, using the PICO framework (see supplementary tables 1 and 2) (Methley et al., 2014). Publications with any study design were included if they described (a) psychosocial interventions that (b) targeted parents with cancer, direct or indirect, and (c) focused on psychological distress, parenting distress and family function in relation to parenting and family life. Indirect target groups could be, for example, healthcare professionals, but the connection to support and enhancing parent's well-being had to be clearly stated. Exclusion criteria were (a) parents with unborn children or children over 18 years, (b) psychosocial interventions involving only children, and (c) no explicit connection to parental mental health. Further, non-English publications and reviews were excluded.

### 2.2. Search strategy

A first search was conducted for studies of available interventions for parents with cancer published between January 2000 and December 2021. Included databases were PubMed, PsychINFO, CINAHL and Web

of Science. The search string combined terms including (*neoplasms OR cancer\**) AND (*parenting OR parent\**) AND (*counsel\* OR social support OR intervention\**). Full search terms are presented in the supplementary table 3. Reference lists of included studies were scanned for other relevant publications, known as snowball search, but no further studies met the inclusion criteria. We updated the search in May 2022 and March 2023.

### 2.3. Study selection

Four authors (MRS, LL, AW and EH) independently screened titles and abstracts with the Rayyan QCRI programme, (Ouzzani et al., 2016) and conflicts were discussed and resolved. The selected articles from the title and abstract screening were independently screened in full-text by two authors (MRS and LL) and discussed when differences arose until a consensus was reached on the included articles. Reference lists of the included articles were screened to identify snowball articles that the database search may have missed, and abstracts of potential articles were screened. The procedure described above was repeated in the updated searches.

### 2.4. Data extraction and data synthesis

A data extraction template (see supplementary table 4) was pre-defined by the authors following the TIDieR checklist to report the intervention studies (Hoffmann et al., 2014). The extraction template was piloted by two authors (MRS, LL), and extracted data were compared to ensure similar interpretations of the extraction template. One author (MRS) then extracted data from the included studies. Data extraction included details regarding the: author, publication year, country, study design, data collection, intervention stage, target group, participants, name of intervention, aim of intervention, theoretical components, intervention components, materials, procedure, deviations from procedure, provider, mode of delivery, tailoring, modifications, implementation, evaluation, outcomes for parents, and outcomes for others.

Due to the expected heterogeneity of the included studies, as seen in previous reviews, (Inhestern et al., 2016b; Alexander et al., 2019; Niemelä et al., 2010; Liénard et al., 2022) we chose a narrative analysis and synthesis for the studies in order to summarise the results. Intervention components, outcomes for parents and challenges in the development, and evaluation of the interventions were considered central; moreover, data regarding these were synthesised when possible.

### 2.5. Reporting bias assessment

To assess risk of bias in the included studies, the revised Mixed Methods Appraisal Tool (MMAT) was used (Hong et al., 2018, 2019). Risk of bias was assessed with five relevant criteria for different study designs, where each criterion was converted into a percentage for comparison (e.g. if the study fulfilled one criterion out of five, the quality of the study was 20%, i.e. a high risk of bias). The higher the percentage, the lower the risk of bias was present. The tool was pilot tested by three authors (MRS, AW, LL) to make sure that the assessments were in line with each other. Two authors (AW, MRS) reviewed half of the studies each, and assessed the risk of bias and discussed any ambiguities during the assessment. The risk of bias assessment did not affect inclusion of studies, and ratings are reported in Table 1.

## 3. Results

### 3.1. Study selection

The search (including the updated searches) resulted in 7881 identified records. Fig. 1 shows the selection process. After removing duplicates, 4682 records remained; thereafter, the titles and abstracts were

**Table 1**  
Summary of study characteristics and main findings for parental outcomes.

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
Bugge et al. (2009) Norway	1. Qualitative evaluation study	6 parents with incurable cancer and 12 children aged 6–16	1. The ‘Family Talks in Cancer Care’ programme 1. Helps parents to meet the challenges regarding their children and to support family resilience.	1. Libo and Griffith’s (1996) coping theory for children and the Allison et al.’s (2003) Family Resilience Theory 2. Psycho-educative and skill-building elements in 5 sessions over 6 weeks 3. Face-to-face with the family 4. Nurses, sociologist and art therapist	NA	The relationship between parents and children improved, conflicts were reduced and communication about cancer was facilitated.	80%
Davey et al. (2013) USA	1. RCT 2. Pre-/post intervention study	12 parents with various cancer types and 19 children aged 10–18 Intervention group: 7 families Control group: 5 families	1. A culturally adapted interactive family-focused programme 2. Give culturally sensitive psychosocial support to African-American families with parental cancer	1. Attachment theory. Clarke’s school-age child support group model and Beardslee’s preventive intervention model 2. Psycho-educative and discussion elements in 5 sessions over 10 weeks 3. Face-to face in groups 4. Therapist	Ten questions, based on the Circumplex Model	Communication was significantly better for parents who completed the intervention compared with parents receiving treatment as usual (Cohen’s $d = 1.50$ ). Parents also described that they had a better understanding of what their children were experiencing. Mothers described skills they learned, such as use of open-ended questions, as particularly helpful in enhancing the mother–child relationship. Fathers claimed that at-home assignments enriched the mother-child relationship and that the mother spent more time with the child. The educational effort of the programme was empowering for the mothers.	60%
Davis Kirsch et al. (2003) USA	1. Qualitative evaluation study	4 married couples (4 mothers with breast cancer and 4 fathers)	1. None 2. Enhance the interaction between mother and child during the cancer treatment	1. A developmental–contextual model of parenting, coping theory, and social cognitive theory 2. Psycho-educative elements and homework assignments 4. Face-to-face with the family 5. No information	NA	None, study protocol.	100%
Denzinger et al. (2019) Switzerland	1. RCT	34 parents with various cancer types and 29 children aged 3–18	1. FAMOCA (Family online counselling for families with parental cancer) 2. Improvement of child and parental adjustment and family functioning	1. Cognitive-behavioural theory 2. Psycho-educative elements in 4 modules (4 weeks each) 3. Online individually 4. Psychologist	The Family Adaptability and Cohesion Evaluation Scale (FACES IV)	None, only provides baseline data.	60%
Dohmen et al. (2021) Germany	1. Study protocol mixed-methods quasi-experiment study	Planned: 560 families with parental cancer	1. Family-SCOUT 2. Provide support for families with minors suffering from parental cancer	1. The COSIP (Children of Somatically Ill Parents) manual 2. Counselling session, support guidance, coordination of care and discussion elements over the entire course of disease 3. Face-to-face and via telephone with the family 4. Social workers and nurses	NA	None, study protocol.	NA
Eklund et al. (2022) Sweden	1. Pre-/post intervention study	7 families (7 parents with cancer, 8 partners and 16 children)	1. The Family Talk Intervention (FTI) 2. Improve family communications about the parent’s illness	1. Psycho-education, narrative theory and dialogical theory 2. Psycho-educative, reflective and counselling elements in 6 sessions. 3. Face-to-face individually and with the family 4. Deacon and hospital social worker with education in FTI	NA	FTI was perceived as a help to prepare for and talk about what was to come, which mainly focused on promoting open communication. The parents especially emphasised the importance of	80%

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
Erhbar et al. (2022) Switzerland	1. RCT 2. Pre-/post intervention study	10 families (9 mothers with breast cancer, 8 partners and 12 children of unknown age)	1. A short-term counselling intervention 2. Enhance adjustment in children and parents affected by parental cancer by fostering open communication, family cohesion, affective involvement, and adaptive coping.	1. The COSIP (Children of Somatically Ill Parents) manual 2. Evaluation of the family situation, psycho-education, emotion regulation and assignments in six sessions over six weeks 3. No information 4. No information	Family Adaption and Cohesion Evaluation Scale (FACES) Hospital Anxiety and Depression Scale (HADS) Quality of Relationship	communicating with the children (e.g. by helping them talk about their worries). Mothers showed an increase from pre to post intervention regarding communication and satisfaction. Mother's anxiety and depression showed no significant differences from pre to post intervention. Quality of relationship with partner had no difference pre to post intervention.	80%
Fife et al. (2017) USA	1. Pre-/post intervention study	60 families with a parent with cancer undergoing bone marrow transplant (BMT) and children aged 10–18 Intervention: 31 families Control: 29 families	1. A brief, cost-effective family-focused intervention 2. Reduce emotional distress, facilitate supportive functioning within the family and promote adaptive coping	1. None 2. Psychoeducation and counselling. In two sessions for the patient and caregiver and one session for the caregiver over the time period from before hospitalisation through 4 months post discharge 3. Face-to-face and via telephone individually 4. No information	The Positive and Negative Affect Schedule (PANAS) Ways of Coping Checklist Avoidance Subscale Lazarus and Folkman 14 Response to Stress Questionnaire (RSQ) Family Environment Scale (FES) The Dyadic Adjustment Scale (DAS)	At 4 months, within-group analyses, the intervention group experienced an increased sense of family cohesion, decreased emotional distress at 1 month (Cohen's $d = 0.30$ ) and 4 months (Cohen's $d = 0.47$ ), and for the control group at 4 months ( $d = 0.27$ ). There was less avoidance coping in the intervention group at 1 month (Cohen's $d = 0.33$ ). Summarising between-group results at 1 and 4 months, small effect sizes were seen favouring the intervention group for family cohesion at 4 months ( $d = 0.38$ ), emotional distress at 1 month ( $d = 0.21$ ) and 4 months ( $d = 0.22$ ) and avoidance coping at 1 month ( $d = 0.40$ ).	60%
Grant et al. (2016) UK	1. Qualitative evaluation study	31 Healthcare professionals	1. Cancer and the Family: Assessment, Communication and Brief Interventions 2. Address the gap in education and support for HCPs meeting parents with cancer	1. Attachment theory, Piaget's model of cognitive development, and family systems theory 2. Discussion, reflective and skill-building elements and assignments in 3 programme days over 3 weeks 3. Face-to-face in group 4. Senior clinical psychologist	NA	None, only indirect results where HCPs gained a more comprehensive understanding of how parental illness impacts families and how to engage with parents with cancer and their families.	40%
Hasson-Ohayon and Braun (2011) Israel	1. Qualitative evaluation study	20 (13 parents with various cancer types, 6 spouses and 1 relative)	1. Being a Parent and Coping with Cancer (PCWC) 2. Empower the patients and spouses in their parenting role, and to help the parents help their	1. None 2. Psycho-educative and discussion elements in 4 modules. 3. Face-to-face in groups 4. No information	NA	All participants reported benefiting from the intervention including increased perceived parental role and function, enhanced	40%

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
			children to adjust and cope			understanding of their children's reactions, and improved relationship with their children.	
Inhestern et al. (2019) Germany	1. Study protocol RCT	Planned: 108 healthcare professionals	1. A training programme for HCPs 2. Increase the competencies to approach family-related topics during the course of cancer.	1. None 2. Skill-building with psycho-educative elements and exercises in 3 modules 3. Face-to-face or online in group 4. Trainers with expertise in the field	NA	None, study protocol.	NA
John et al. (2013) Germany	1. Pre-/post intervention study	116 women with breast cancer and one of their children aged 3–14	1. 'getting well together' 2. Prevent at-risk children from developing serious emotional and behavioural problems	1. Resource-oriented positive psychology, stress and coping research, systemic solution focused therapy, and the COSIP (Children of Somatically Ill Parents) manual 2. Psycho-educative, resource oriented discussion and counselling elements in 11 sessions over 3 weeks 3. Face-to-face in group 4. No information	The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30)	Differences in parental outcome achieved during the programme (intervention period, Pre2–Post) exceeded the differences achieved prior to participation (waiting period, Pre1–Pre2) for mothers' Emotional Functioning. Mother's health-related quality of life improved more during the intervention than during the time period before the intervention.	60%
Kobayashi et al. (2017) Japan	1. Pre-/post intervention study	24 parents (23 mothers and 1 father) diagnosed with various cancer types and 38 children aged 6–12	1. CLIMB Programme 2. Reduce parents' anxiety and distress related to their child's stress, and improve communications between parents and children.	1. Principles of mental health promotion 2. Psycho-educative and discussion elements and assignments in 6 sessions over 6 weeks. 3. Face-to-face in groups 4. Psychosocial oncology professionals: social worker, psychologist and child-life specialist	Functional Assessment of Chronic Illness Therapy Spiritual Well-Being (FACIT–Sp). The Hospital Anxiety and Depression Scale (HADS). The Impact of Event Scale – Revised (IES – R)	Parental quality of life improved after the group intervention with respect to social/family well-being; emotional well-being; functional well-being; and spiritual well-being. No significant changes were identified on physical well-being, nor pre- and posttest anxiety and depression scores (total: $t = 20.40$ , $p = 0.690$ ). No significant changes were found in posttraumatic stress symptoms.	60%
Lewis et al. (2006) USA	1. Pre-/post intervention study	13 mothers with breast cancer and 13 children aged 8–12	1. The Enhancing Connections Programme (EC) 2. Respond to the documented experiences and sources of distress in both mothers and children impacted by maternal breast cancer.	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura's social cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Face-to-face with mother and child 4. Patient educator	The Center for Epidemiological Studies-Depression Scale (CES-D) The state anxiety subscale of Spielberger's STAI-Y Scale The Cancer Self-Efficacy Scale (CASE) The togetherness subscale of the Family Peer-Relationship Scale (FPRQ)	Pre-post-test differences showed improvements in the mother's depressed mood; state anxiety; and self-efficacy. There was no significant improvement in the quality of the mother-child relationship. Mothers claimed they gained ways to: (1) manage their	60%

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
Lewis et al. (2015) USA	1. RCT	176 mothers with breast cancer and 176 children aged 8–12 Intervention group: 90 mother-child dyad Control group: 86 mother-child dyad	1. The Enhancing Connections Programme (EC) 2. Decrease maternal depressed mood and anxiety, improve parenting behaviour (parenting quality, skills and self-efficacy), and improve children's behavioural-emotional adjustment to their mother's breast cancer	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura's social cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Intervention group: Face-to-face with mother and child. Control group: Telephone with mother 4. Patient educator	The Center for Epidemiologic Studies-Depression scale (CES-D) The state component of the Spielberger State-Trait Anxiety Inventory (STAI) Three subscales of the self-reported Cancer Self-Efficacy Scale (CASE): Help Child, Deal and Manage, and Stay Calm The Family-Peer Relationship Scale (FPRQ) A Parenting Skills Checklist that was developed for the current study	emotions in the moment when interacting with their child; (2) add to their self-care; (3) listen to their child better; and (4) better understand their child's behaviour. All significant changes occurred at 2 months, but improvements were not significant at 12 months. Compared with the control group, mothers in the intervention group had fewer depressive symptoms (Cohen's $d = .29$ ), improved parenting skills (Cohen's $d = .32$ ), and lower anxiety (Cohen's $d = .26$ ). Mothers in the intervention group tended to have greater confidence than controls on the Help Child subscale (Cohen's $d = .25$ ) and tended to score higher on parenting quality on Disclosure of Negative Feelings (Cohen's $d = .30$ ). Maternal depressed mood did not significantly change but showed a tendency for improvement. However, maternal anxiety improved between baseline and post-intervention. Parenting competencies improved on both parenting skills and parenting self-efficacy. Parenting skills improved significantly as well as mothers' self-efficacy. Parenting quality did not significantly change but remained stable between the pre- and post-test scores. Mothers said their greatest gains were in acquiring and practising new ways to communicate with their child.	20%
Lewis et al. (2017) USA	1. Pre-/post intervention study	32 mothers with breast cancer and 32 children aged 8–12	1. The Enhancing Connections-Telephone (EC-T) Programme 2. Decrease maternal depressed mood and anxiety, improve parenting behaviour (parenting quality, skills and self-efficacy), and improve children's behavioural-emotional adjustment to their mother's breast cancer.	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura's social cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Telephone with mother and child 4. Patient educator	The Center for Epidemiological Studies-Depression Scale (CES-D) The Spielberger State-Trait Anxiety Inventory (STAI) Three subscales of the self-reported Cancer Self-Efficacy Scale (CASE): Help Child, Deal and Manage, and Stay Calm The Family-Peer Relationship Scale (FPRQ) The Parenting Skills Checklist developed for the study	Maternal depressed mood did not significantly change but showed a tendency for improvement. However, maternal anxiety improved between baseline and post-intervention. Parenting competencies improved on both parenting skills and parenting self-efficacy. Parenting skills improved significantly as well as mothers' self-efficacy. Parenting quality did not significantly change but remained stable between the pre- and post-test scores. Mothers said their greatest gains were in acquiring and practising new ways to communicate with their child.	80%
Lewis et al. (2020) USA	1. Pre-/post intervention study	26 parents with various cancer types and 26	1. The Enhancing Connections-Palliative Care (EC-PC) parenting	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura's social	The Center for Epidemiological Studies-Depression Scale (CES-D)	Results showed improvements in parents' child self-efficacy (Cohen's $d =$	80%

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
		children age 5–17	program 2. Decrease maternal depressed mood and anxiety, improve parenting behaviour (parenting quality, skills and self-efficacy), and improve children’s behavioural-emotional adjustment to their mother’s breast cancer	cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Telephone with mother and child 4. No information	The Spielberger State-Trait Anxiety Inventory (STAI) The Cancer Self-Efficacy Scale (CASE) The Family-Peer Relationship Scale (FPRQ) The Parenting Skills Checklist The Condensed Memorial Symptom Assessment Scale	0.85); in parents’ skills in eliciting their child’s cancer-related concerns (Cohen’s <i>d</i> = 0.59); and in parents’ skills in connecting with and helping their child cope with the parent’s cancer (Cohen’s <i>d</i> = 0.68). Even when differences between the baseline and post-intervention scores were not statistically significant, all scores improved.	
Lewis et al. (2021) USA	1. Pre-/post intervention study	15 mothers with various cancer types and 1 spouse	1. Enhancing Connections-Group (EC-G) 2. Decrease maternal depressed mood and anxiety, improve parenting behaviour (parenting quality, skills and self-efficacy), and improve children’s behavioural-emotional adjustment to their mother’s breast cancer	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura’s social cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 2. Face-to-face in groups 3. Group facilitator	The Center for Epidemiological Studies-Depression Scale (CES-D) The Spielberger State-Trait Anxiety Inventory (STAI) The Cancer Self-Efficacy Scale (CASE) The Family-Peer Relationship Scale (FPRQ) The Parenting Skills Checklist	Parents’ scores on depressed mood and anxiety decreased between baseline and post-intervention assessments and parents’ anxiety changed but the change was not significant for parents’ depressed mood. Parenting self-efficacy improved between baseline and post-intervention. Parents’ scores on parenting quality and parenting skills improved.	80%
Melchioris et al. (2022) Germany	1. Qualitative evaluation study	9 Parents (patients with various cancer types and partners) and 5 experts	1. Information booklet 2. Address a lack of information on age-specific communication and developmental aspects of children and an overview of local support offers for affected families	1. None 2. Psycho-education 3. Text-based: booklet 4. NA	NA	None, the study only studied acceptability and usability of the booklet. Parents and experts expressed a high level of acceptance and good usability of the booklet.	80%
Niemelä et al. (2012) Finland	1. RCT 2. Pre-/post intervention study	19 families (19 parents with various cancer types, 15 spouses and 32 children aged 8–17)	1. Let’s Talk about the Children intervention (LT) and The Family Talk Intervention 2. No information	1. FTI: Psycho-education, narrative theory and dialogical theory 2. LT: Psycho-education and counselling in 2 sessions. FTI: Psycho-educative, reflective and counselling elements in 6–8 sessions. 3. No information 4. No information	The Symptoms Checklist 90 for adults (SCL-90)	A decrease was found in overall psychiatric symptoms at 4-months follow-up among patients, and specifically for symptoms of anxiety and hostility.	40%
Palacios et al. (2023) USA	1. Pre-/post intervention study	18 mothers with non-metastatic cancer and 18 children	1. Conexiones 2. To culturally adapt Enhancing connections (EC) and decrease maternal depressed mood and anxiety, improve parenting behaviour (parenting quality, skills and self-efficacy), and improve children’s	1. Collins’ developmental-contextual model of parenting and Bandura’s Social Cognitive Theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Telephone with mother and	The Center for Epidemiological Studies-Depression Scale (CES-D) The Spielberger State-Trait Anxiety Inventory (STAI) Three subscales of the self-reported Cancer Self-Efficacy Scale (CASE): Help Child, Deal and Manage, and	Mothers’ scores on depressed mood decreased significantly between baseline and post-intervention Scores on anxiety decreased between baseline and post-intervention, but the change was not	60%

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
			behavioural-emotional adjustment to their mother's breast cancer	child 4. Patient educator	Stay Calm The Family-Peer Relationship Scale (FPRQ) The Parenting Skills Checklist The Brief Acculturation Scale for Hispanics (BASH)	statistically significant. Scores on parenting self-efficacy significantly improved. Scores on parenting quality improved.	
Park et al. (2022) USA	1. Pre-/post intervention study	46 parents with various types of cancer	1. Families Addressing Cancer Together (FACT) 2. To address the communication needs of parents with cancer	1. The Health Disclosure Decision-Making Model and Social Cognitive Theory 2. Psycho-education and skill-building elements in 5 modules. 3. Online individually 4. NA	The Communication Self-Efficacy Scale (CSES) The Parental Cancer Communication Questionnaire (PCCQ) The Hospital Anxiety and Depression Scale (HADS) The Functional Assessment of Cancer Therapy-General (FACT-G) The McMaster Family Assessment Device-General Functioning Scale (GFS)	Two-weeks post intervention, parents reported stable-to-improved scores on confidence for talking about their illness in an age appropriate way; coming up with a plan for how to tell their child and handling their child's emotional response. There were no significant changes in HADS, FACT-G, or GFS scores from pre- to 2- or 12-weeks post-intervention. Parents felt that the intervention helped them feel more comfortable and prepared to talk with their children about their illness.	60%
Phillips et al. (2022) USA	1. RCT	50 families with various types of parental cancer Intervention group: 28 families Control group: 22 families	1. Wonders & Worries Advanced Cancer (WW-AC) 2. Improve parenting quality and self-efficacy and increase family communication about illness.	1. The resiliency model of family stress, adjustment and adaptation 2. Psycho-educative, reflective and skill-building elements in 9 sessions. 3. Face-to-face in the family 4. A child life specialists (CCLS)	The Parenting Concerns Questionnaire (PCQ) The Cancer Self-Efficacy scale (CASE) The Center for Epidemiologic Studies Short Depression scale (CES-D-R) The Spielberger State-Trait Anxiety Inventory for Adults (STAI)	Parenting concerns were significantly lower at 6 weeks (Cohen's d = 0.95), and at 10 weeks (Cohen's d = 0.70) in the intervention group compared with the control group. Parents in the intervention group at 6 weeks were significantly more confident in their ability to help the child deal with cancer-related concerns (Cohen's d = 1.0), better able to deal and manage the demands of having cancer (Cohen's d = 0.94), and able to stay calm to a greater extent while interacting with the child about cancer (Cohen's d = 0.59). Parents in the intervention group reported higher emotional well-being at 6 weeks compared with the parents in the control group (Cohen's d = 0.89). There were no	80%

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
<p>Semple and McCaughan (2019) UK</p>	<p>1. Qualitative methodology study</p>	<p>37 healthcare professionals</p>	<p>1. An e-learning intervention 2. Enhance HCPs self-efficacy when supporting parents with cancer to improve communication with their children</p>	<p>1. Social, cognitive and modelling theory 2. Skill-building elements 3. Online in group 4. No information</p>	<p>NA</p>	<p>significant differences between the intervention and control groups on the Parent Depressed Mood &amp; Anxiety or on the FAD communication subscale at either six or 10 weeks. None, only methodological results are presented.</p>	<p>100%</p>
<p>Stafford et al. (2017) Australia</p>	<p>1. Study protocol pre-/post intervention study</p>	<p>Planned: Parents with cancer who have children aged 3–12</p>	<p>1. Enhancing Parenting in Cancer (EPIC) 2. Improve parenting efficacy and promote family communication, thereby decreasing parental stress and psychological morbidity</p>	<p>1. Attachment and social cognitive theory 2. Psycho-educative and reflective elements 3. No information 4. No information</p>	<p>NA</p>	<p>None, study protocol.</p>	<p>NA</p>
<p>Stafford et al. (2021) Australia</p>	<p>1. Pre-/post intervention study</p>	<p>17 parents with various types of cancer</p>	<p>1. Enhancing Parenting in Cancer (EPIC) 1. Improve parenting efficacy and promote family communication, thereby decreasing parental stress and psychological morbidity</p>	<p>1. Attachment and social cognitive theory 2. Psycho-educative and reflective elements 3. Online individually 4. No information</p>	<p>The Depression Anxiety and Stress Scale Short Form (DASS-21) The Functional Assessment of Cancer Therapy-General (FACT-G) The Parental Sense of Competence Scale (PSOCS) The Cancer-Related Parenting Self-Efficacy scale (CaPSE) The Family Assessment Device (FAD) The Strengths and Difficulties Questionnaire (SDQ) The Parenting Concerns Questionnaire (PCQ) The Revised Parenting Stress Index Short Form (PSI-R SF)</p>	<p>Overall, most parents and co-parents agreed EPIC improved their confidence in communicating with their children about cancer and supporting their child emotionally. Many found that participation reassured them about their parenting.</p>	<p>40%</p>
<p>Thastum et al. (2006) Denmark</p>	<p>1. Pre-/post intervention study</p>	<p>40 parents with various types of cancer, 30 spouses and 55 children aged 8–15 Intervention: 27 families Control: 16 families</p>	<p>1. The counselling project 2. Enhance parenting competence, support the parents in age-appropriate communication and support the parents' use of possible network.</p>	<p>1. No information 2. Psycho-educative, reflective and counselling elements in 5–6 sessions 3. Face-to-face with the family 4. Psychotherapists</p>	<p>Beck's Depression Inventory (2nd ed.) (BDI-II) The McMaster Family Assessment Device (FAD)</p>	<p>For the parents in the counselling group, depressive symptoms decreased, communication increased, as did family functioning, specifically affective responsiveness and general functioning following the intervention. Parents described that the counselling gave them confirmation of being a 'good-enough' parent, a</p>	<p>60%</p>

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Table 1 (continued)

Author (year) Origin	1. Planned study design 2. Conducted study design <sup>a</sup>	Participants	1. Name of intervention 2. Aim of intervention	1. Theoretical approach 2. Intervention components 3. Mode of delivery 4. Provider	Outcome measures	Main findings for parental outcomes	Quality criteria met <sup>b</sup>
Turner et al. (2007) Australia	1. Qualitative development study	8 mothers with advanced breast cancer	1. A brochure 2. Encourage parents to feel more confident talking about cancer with their children, give suggestions about coping strategies, and to give guidance about available resources	1. No information 2. Information on how to talk to children in the format of questions and answers 3. Text-based: brochure 4. None	NA	better understanding of other family members' reactions, increased cohesion within the family, and normalisation of own feelings. None, only describes development.	60%
Walker et al. (2018) USA	1. Qualitative evaluation study	31 mothers with various types of cancer and 31 children aged 5–12	1. Enhancing Connections Telephone Programme (EC-T) 2. Decrease maternal depressed mood and anxiety, improve parenting behaviour (parenting quality, skills and self-efficacy), and improve children's behavioural-emotional adjustment to their mother's breast cancer.	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura's social cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Telephone with mother and child 4. Patient educator	NA	Mothers described that they understood the children's perspective, learnt how to handle their children in a better way, their communication with the children about cancer improved and they were more emotionally available to their children.	40%
Zahlis et al. (2020) USA	1. Qualitative evaluation study	26 parents with various types of advanced cancer	1. Enhancing Connections Palliative Care Programme 2. Add to the parent's interactional skills, competencies, and confidence in ongoing communication with their child about the parent's incurable cancer	1. A developmental-contextual model of parenting, the transtheoretical model of coping, and Bandura's social cognitive theory 2. Psycho-educative, reflective and skill- and efficacy-building elements in 5 sessions over 10 weeks and home assignments as well as support by the patient educator in between. 3. Telephone with mother and child 4. Patient educator	NA	Parents described that their communication with their children about cancer improved, they understood their children's needs better, and they became more aware of their own reactions and emotions and how to regulate these in front of the children. Parents also said that they felt better about themselves as parents after the programme, especially regarding helping their children cope with the cancer.	100%

<sup>a</sup> If the planned research design was adapted or changed during the study, for example, due to the small sample size.

<sup>b</sup> Based on assessment of the risk of bias using the Mixed Methods Appraisal Tool (MMAT), version 2018.

screened. Following screening, 4635 records were removed and 47 remaining records were selected for full-text review. Full texts from four records could not be retrieved; hence, 43 records were read in full-text. Based on the full-text screening, 13 records were excluded. Reasons for exclusion were: no connection to parental mental health (n = 7), no intervention (n = 2) or duplicate reporting (the same study with the same sample was reported in different publications) (n = 4). After exclusion, 30 studies were included in the review.

### 3.2. Study characteristics

In the 30 included studies, 22 unique interventions were described. Interventions that were described and evaluated in multiple studies were: The Enhancing Connections Programme (EC) (n = 7), (Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020) Family online counselling for families with parental cancer (FAMOCA) (n = 2), (Denzinger et al., 2019; Ehrbar et al., 2022) and The Family Talk Intervention (FTI) (n = 2). (Eklund et al., 2022; Niemelä

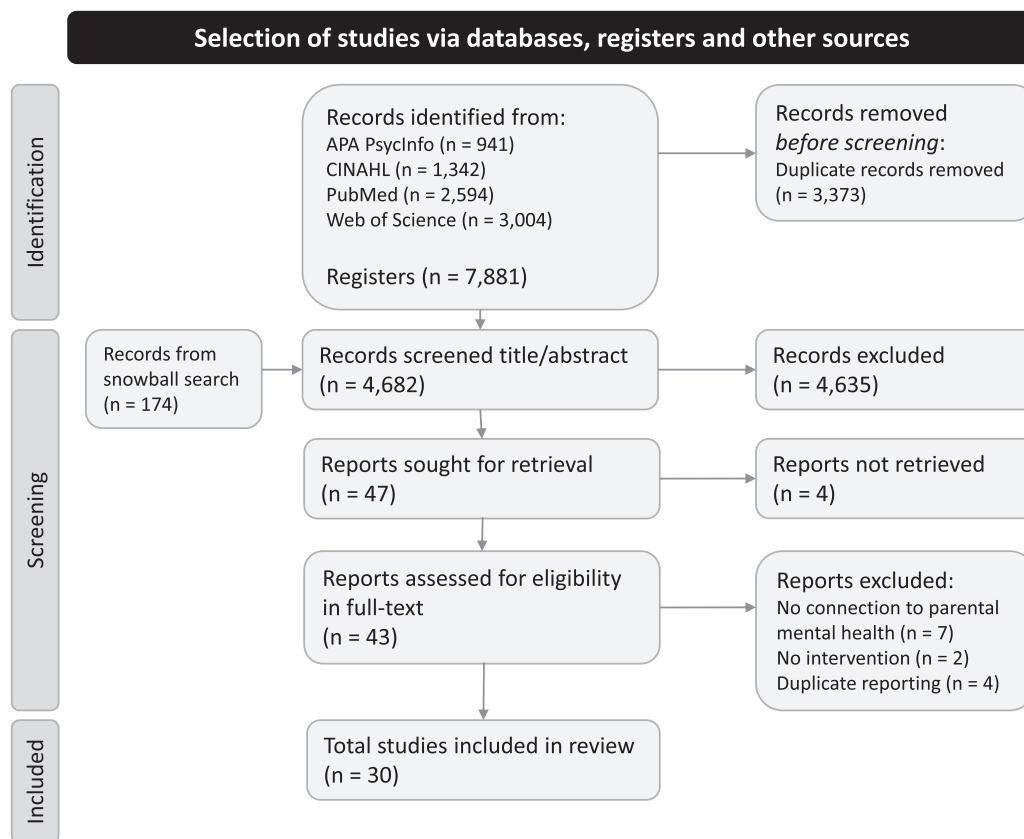


Fig. 1. PRISMA flow chart of the study selection process.

et al., 2012) A summary of the studies is shown in Table 1. Studies were published between 2003 and 2023 and were conducted in the United States (n = 13), (Phillips et al., 2022; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zalis et al., 2020; Davey et al., 2013; Davis Kirsch et al., 2003; Fife et al., 2017; Palacios et al., 2023; Park et al., 2022) Germany (n = 4), (Dohmen et al., 2021; Inhestern et al., 2019; John et al., 2013; Melchior et al., 2022) Australia (n = 3), (Stafford et al., 2017; Turner et al., 2007; Stafford et al., 2021) Switzerland (n = 2), (Ehrbar et al., 2022; Denzinger et al., 2019) UK (n = 2), (Grant et al., 2016; Semple and McCaughan, 2019) Denmark (n = 1), (Thastum et al., 2006) Finland (n = 1), (Niemelä et al., 2012) Israel (n = 1), (Hasson-Ohayon and Braun, 2011) Japan (n = 1), (Kobayashi et al., 2017) Norway (n = 1), (Bugge et al., 2009) and Sweden (n = 1) (Eklund et al., 2022). Research designs were heterogeneous and included six studies planned and described as randomised controlled trials (RCTs) (Phillips et al., 2022; Ehrbar et al., 2022; Lewis et al., 2015; Davey et al., 2013; Denzinger et al., 2019; Niemelä et al., 2012). However, three of these were conducted as non-randomised pre/post intervention studies (Ehrbar et al., 2022; Davey et al., 2013; Niemelä et al., 2012). Additionally, 13 planned and conducted pre/post intervention studies were included, (Lewis et al., 2020, 2021, 2017, 2006; Fife et al., 2017; Palacios et al., 2023; Park et al., 2022; John et al., 2013; Stafford et al., 2021; Grant et al., 2016; Thastum et al., 2006; Kobayashi et al., 2017; Eklund et al., 2022) as were eight qualitative studies (Turner et al., 2007; Walker et al., 2018; Zalis et al., 2020; Davis Kirsch et al., 2003; Melchior et al., 2022; Semple and McCaughan, 2019; Hasson-Ohayon and Braun, 2011; Bugge et al., 2009) and three study protocols (Stafford et al., 2017; Dohmen et al., 2021; Inhestern et al., 2019).

### 3.3. Risk of bias

Overall, the risk of bias was moderate, where studies generally

fulfilled two to three out of five quality criteria (i.e. 40–60% quality criteria met). Each study's risk of bias is presented as percentages in Table 1. The risk of bias in the RCTs was mainly due to no randomisation being performed despite being planned in some studies, and that the intervention group and control group were analysed as one due to low participation rates. Several of the pre-post studies had a small study sample, often due to difficulties in recruiting participants and high drop-out rates in post assessments. Another source of bias was lack of accounting for confounders. In the qualitative studies, low quality was often related to a lack of reporting on the coherence between data sources, collection, analysis and interpretation.

### 3.4. Aim and participants

The aim of the interventions often addressed multiple problems, for example, distress among parents with cancer, (Phillips et al., 2022; Dohmen et al., 2021) lack of resources in the family to cope with the cancer, (Hasson-Ohayon and Braun, 2011) and insufficient support from healthcare services (Grant et al., 2016). The interventions aimed to improve psychosocial adjustment to the cancer illness for the parent and/or family, (Stafford et al., 2017; Ehrbar et al., 2022; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Fife et al., 2017; Palacios et al., 2023; Stafford et al., 2021; Denzinger et al., 2019; Hasson-Ohayon and Braun, 2011; Kobayashi et al., 2017) increase psychological well-being for the parent and/or the family, (Stafford et al., 2017; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Fife et al., 2017; Stafford et al., 2021; Kobayashi et al., 2017) improve the parent-child relationship, (Davis Kirsch et al., 2003; Denzinger et al., 2019) support parenting (e.g. promote parent self-efficacy and/or enhance parents' ability to meet children's needs), (Stafford et al., 2017; Phillips et al., 2022; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Dohmen et al., 2021; John et al., 2013; Stafford et al., 2021; Thastum et al., 2006; Hasson-Ohayon and Braun,

2011; Bugge et al., 2009) facilitate communication about cancer, (Stafford et al., 2017; Turner et al., 2007; Phillips et al., 2022; Zahlis et al., 2020; Park et al., 2022; Inhestern et al., 2019; Stafford et al., 2021; Thastum et al., 2006; Kobayashi et al., 2017; Bugge et al., 2009; Eklund et al., 2022) provide culturally sensitive psychosocial support, (Davey et al., 2013; Palacios et al., 2023) and/or educate HCPs to provide support for parents with cancer (indirectly targeting parents with cancer) (Grant et al., 2016; Semple and McCaughan, 2019).

The primary target groups of the studies were: parents with cancer and their child/ren ( $n = 16$ ), (Stafford et al., 2017; Turner et al., 2007; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Davis Kirsch et al., 2003; Palacios et al., 2023; Park et al., 2022; John et al., 2013; Melchioris et al., 2022; Stafford et al., 2021; Hasson-Ohayon and Braun, 2011) the whole family ( $n = 9$ ), (Ehrbar et al., 2022; Davey et al., 2013; Fife et al., 2017; Dohmen et al., 2021; Denzinger et al., 2019; Thastum et al., 2006; Niemelä et al., 2012; Bugge et al., 2009; Eklund et al., 2022) HCPs ( $n = 3$ ) (Inhestern et al., 2019; Grant et al., 2016; Semple and McCaughan, 2019) and children of parents with cancer ( $n = 2$ ) (Phillips et al., 2022; Kobayashi et al., 2017). In 50% ( $n = 8$ ) of the studies with parents, or parents with their child, only mothers were included (Turner et al., 2007; Lewis et al., 2015, 2017, 2006; Walker et al., 2018; Davis Kirsch et al., 2003; Palacios et al., 2023; John et al., 2013). The interventions included different ages of the children, ranging from 3 to 17 years.

The total number of participants in the interventions was 1646 (including 41% children,  $n = 683$ %, and 13% spouses or other relatives,  $n = 207$ ). Additionally, in one study, it was reported that 50 families participated; however, no information was presented on the number of individuals (Phillips et al., 2022). The smallest RCT included 29 participants (Ehrbar et al., 2022) and the largest 352 participants (Lewis et al., 2015). In the qualitative studies, the smallest study had eight participants (Turner et al., 2007; Davis Kirsch et al., 2003) and the largest 37 (Semple and McCaughan, 2019).

### 3.5. Intervention components

The theoretical approaches of the interventions were based on attachment theory, (Stafford et al., 2017; Davey et al., 2013; Stafford et al., 2021; Grant et al., 2016) cognitive behavioural therapy, (Denzinger et al., 2019) coping theories, (John et al., 2013) social cognitive theory, (Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Davis Kirsch et al., 2003; Palacios et al., 2023; Park et al., 2022; Semple and McCaughan, 2019) and/or other parenting and family-based theories (Phillips et al., 2022; Bugge et al., 2009). The development of the interventions was often also based on reviews of the current literature, interviews or consultation with stakeholders and previous research experiences.

The content of the interventions varied; however, most included psycho-educational material in some form (Stafford et al., 2017; Phillips et al., 2022; Ehrbar et al., 2022; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Davey et al., 2013; Davis Kirsch et al., 2003; Fife et al., 2017; Palacios et al., 2023; Park et al., 2022; Inhestern et al., 2019; John et al., 2013; Melchioris et al., 2022; Stafford et al., 2021; Denzinger et al., 2019; Thastum et al., 2006; Niemelä et al., 2012; Hasson-Ohayon and Braun, 2011; Kobayashi et al., 2017; Bugge et al., 2009; Eklund et al., 2022). Additional content areas were skill- and efficacy building, (Phillips et al., 2022; Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Palacios et al., 2023; Park et al., 2022; Inhestern et al., 2019; Grant et al., 2016; Semple and McCaughan, 2019; Bugge et al., 2009) discussions within the family and/or other parents, (Davey et al., 2013; Dohmen et al., 2021; John et al., 2013; Grant et al., 2016; Hasson-Ohayon and Braun, 2011; Kobayashi et al., 2017; Eklund et al., 2022) counselling sessions, (Fife et al., 2017; Dohmen et al., 2021; John et al., 2013; Thastum et al., 2006; Niemelä et al., 2012; Eklund et al., 2022) and availability of support from clinical psychologists or other support professionals (Lewis

et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Dohmen et al., 2021). Interventions often included several sessions with different topics and homework (e.g. booklets to read) for the parents and children. Topics included, for example, how to deal with emotions during information giving, (Ehrbar et al., 2022) anchoring yourself to help your child, (Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Palacios et al., 2023) building on parents' listening skills, (Lewis et al., 2020, 2021, 2015, 2017, 2006) adaptive coping with parental cancer, (Davey et al., 2013) and how to maintain family functioning (Denzinger et al., 2019).

### 3.6. Procedure and providers

Interventions were offered individually, (Fife et al., 2017; Park et al., 2022; Stafford et al., 2021; Denzinger et al., 2019) to the family, (Phillips et al., 2022; Lewis et al., 2020, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Davis Kirsch et al., 2003; Palacios et al., 2023; Dohmen et al., 2021; Thastum et al., 2006; Bugge et al., 2009; Eklund et al., 2022) in groups, (Lewis et al., 2021; Davey et al., 2013; Inhestern et al., 2019; John et al., 2013; Grant et al., 2016; Semple and McCaughan, 2019; Hasson-Ohayon and Braun, 2011; Kobayashi et al., 2017) or as a combination of these. The interventions were delivered in different settings: face-to-face, (Phillips et al., 2022; Lewis et al., 2021, 2015, 2006; Davey et al., 2013; Davis Kirsch et al., 2003; Fife et al., 2017; Dohmen et al., 2021; Inhestern et al., 2019; John et al., 2013; Grant et al., 2016; Thastum et al., 2006; Hasson-Ohayon and Braun, 2011; Kobayashi et al., 2017; Bugge et al., 2009; Eklund et al., 2022) online, (Park et al., 2022; Stafford et al., 2021; Denzinger et al., 2019; Semple and McCaughan, 2019) via telephone, (Lewis et al., 2020, 2017; Walker et al., 2018; Zahlis et al., 2020; Palacios et al., 2023) text material, (Turner et al., 2007; Melchioris et al., 2022) or a combination. Physical settings also varied where some were offered in the hospital, (Lewis et al., 2021; Fife et al., 2017; John et al., 2013; Hasson-Ohayon and Braun, 2011; Kobayashi et al., 2017; Bugge et al., 2009) the parent's homes, (Phillips et al., 2022; Lewis et al., 2020; Walker et al., 2018; Zahlis et al., 2020; Davis Kirsch et al., 2003) or a combination (Lewis et al., 2020, 2015, 2006; Dohmen et al., 2021).

Intervention providers were therapists, (Davey et al., 2013; Thastum et al., 2006) patient educators, (Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020; Palacios et al., 2023) psychologists, (Grant et al., 2016) healthcare professionals (Phillips et al., 2022; Denzinger et al., 2019; Bugge et al., 2009) or other professionals with relevant experiences (e.g. social workers or deacons) (Dohmen et al., 2021; Inhestern et al., 2019; Eklund et al., 2022).

### 3.7. Outcomes for parenting distress in quantitative evaluations

Due to the low number of studies using the same outcome measurements, no meta-analysis or summative statistics could be conducted. In the two included studies conducted as RCTs and reported post intervention assessments, parents showed improvements in the intervention group after receiving the intervention (Phillips et al., 2022; Lewis et al., 2015). These studies evaluated the Enhancing Connections (EC) and Wonders & Worries (W&W) interventions. Parenting concerns decreased in both interventions, more specifically concerns about the practical impact of the illness on the child and the emotional impact on the child (Phillips et al., 2022; Lewis et al., 2015). Parenting self-efficacy improved, as well as parenting skills, and parents were more confident in their ability to help their child deal with cancer-related concerns, better manage the demands of having cancer and were able to stay calm while interacting with their child about cancer (Phillips et al., 2022; Lewis et al., 2015). Depressed mood and anxiety improved after parents completed the EC (Lewis et al., 2015). However, in the evaluation of the W&W, no significant differences were shown between the intervention and control group regarding parents' depressed mood and anxiety (Phillips et al., 2022).

In the pre- /post intervention studies that reported quantitative outcomes on parenting, parenting concerns often decreased, and parenting self-efficacy and parenting quality improved after participation in the intervention (Lewis et al., 2020, 2021, 2017, 2006; Fife et al., 2017; Palacios et al., 2023; Stafford et al., 2021; Thastum et al., 2006). Further, coping with the cancer within the family improved, and cohesion within the family increased in some studies (Fife et al., 2017; Thastum et al., 2006). Parents also reported significantly better understanding of, and communication with, their children, and had gained a better ability to listen and discuss the illness with their children (Ehrbar et al., 2022; Lewis et al., 2017, 2006; Davey et al., 2013; Park et al., 2022; Stafford et al., 2021; Thastum et al., 2006; Eklund et al., 2022).

Depressed mood and/or anxiety among parents improved in some pre- /post intervention studies, (Lewis et al., 2021, 2017, 2006; Palacios et al., 2023; Thastum et al., 2006; Niemelä et al., 2012) as well as emotional well-being and quality of life (John et al., 2013; Kobayashi et al., 2017). However, no differences were found in parents' depressed mood and/or anxiety in others (Ehrbar et al., 2022; Park et al., 2022; Kobayashi et al., 2017).

### 3.8. Outcomes for parenting distress in qualitative evaluations

In the qualitative studies that evaluated parents' experiences of the interventions, parents reported benefiting from the interventions. For example, the intervention improved their ability to cope and support their children, and made them feel good about their parenting role (Walker et al., 2018; Zahlis et al., 2020; Hasson-Ohayon and Braun, 2011). Parents felt that their relationship with their children improved after the interventions, with there being fewer conflicts (Bugge et al., 2009). They also expressed that they understood their children's perspectives and reactions better (Walker et al., 2018; Zahlis et al., 2020). Communication within the family was also promoted (Walker et al., 2018; Zahlis et al., 2020; Davis Kirsch et al., 2003; Bugge et al., 2009).

### 3.9. Indirect outcomes for parents with cancer

The intervention targeting healthcare professionals (HCPs) that had been evaluated did not affect parenting distress in a direct way; rather, it improved HCPs' understanding of families with cancer and how to meet their needs in the role of the HCP (Grant et al., 2016). HCPs reported that the intervention provided them with valuable knowledge about how parental illness impacts children and families, made them more confident to approach patients regarding family matters, and motivated them to provide family-centred care for families with parental cancer (Grant et al., 2016).

## 4. Discussion

This systematic review included 30 studies that mapped and described 23 unique psychosocial interventions targeting the ill parent's mental health and parenting distress following any type of cancer in parents of children under the age of 18, as well as intervention outcomes for the ill parent. This review builds and adds to previous reviews of psychosocial interventions for parents with cancer and their families, (Inhestern et al., 2016a; Alexander et al., 2019; Niemelä et al., 2010; Liénard et al., 2022) with a focus on psychosocial interventions aiming to improve the ill parent's mental health and reduce parenting distress.

Research designs varied and included randomised control studies, pre-/post intervention studies, qualitative development/methodological/evaluation studies, and study protocols. Existing interventions were heterogeneous regarding many aspects, including intervention aim, target group, components, procedure and outcomes. Interventions were aimed at decreasing parenting distress in a variety of ways and often included a constellation of the sick parent and/or children and partners. Psychoeducational material was present in almost all studies and was often used to increase knowledge about common reactions among

family members, communication within the family, and coping strategies to adjust to the cancer diagnosis.

The interventions were delivered using different modalities, including audio, video, booklets, online discussion forums, e-mail correspondence, and face-to-face communication. Comparing the results from the Enhancing Connections intervention, which is the intervention that has been evaluated the most using different modalities (individually or in groups, in person or via telephone, and with parents with different stages of cancer), the results were comparable, with the intervention being feasible in all settings. Palliative patients participating in the interview via telephone managed to participate despite limited energy and end stage cancer. This indicates that a telephone-delivered intervention can be a good way to reach patients that are not well enough to participate in person or experience greater psychological distress, hindering them from participating in person due to, for example, anxiety. Additionally, parents with a less advanced cancer stage (i.e. 0–III) also reported that they would not have participated if the intervention was delivered in person. Hence, telephone-based delivery was both acceptable and preferred. Still, it was important for the parents to build a relationship with the provider, which may require a bigger effort when not delivering the intervention in person.

Some interventions were fully manualised (i.e. delivered according to specific guidelines), and interventions had different concepts, for example, minimal contact where parents worked autonomously with the material and had contact with the provider once a month. There were also some interventions where a psychotherapist closely followed the families throughout the intervention. A manualised intervention opens up for different professions to deliver the intervention and was shown to have the same effects regardless of who delivered it as long as the person received education about the programme (Lewis et al., 2020, 2021, 2015, 2017, 2006; Walker et al., 2018; Zahlis et al., 2020).

In studies evaluating interventions, different aspects of parents' well-being often improved as parenting distress decreased. For example, parents experienced better psychosocial coping with the cancer disease, communication skills and decreased parenting concerns. Interventions were also described as helpful by the parents receiving them. Many studies that evaluated interventions faced methodological problems. Difficulties in recruiting participants resulted in small study samples, and planned RCTs were forced to change their research design along the research process, often times merging the intervention and control group in order to analyse the data. Hence, the results from these studies are preliminary findings that need to be evaluated further to estimate the effect sizes of the outcomes of the interventions. However, they give a good indication of the advantages of the developed interventions and their effects on parental well-being, and the well-being of the whole family.

There is a great need for psychosocial support among parents with cancer, (Johannsen et al., 2022; Turner et al., 2007) but the number of available interventions for parents with cancer to meet those needs is limited. Many interventions were still at the development stage. This includes designing, planning and evaluating an intervention prior to implementation (Skivington et al., 2021). To be able to implement interventions, it is crucial to optimise the development stage and successfully evaluate interventions (Bleijenberg et al., 2018). Evaluations can be done with different study designs depending on the research question (Skivington et al., 2021). In the studies included in this review, effectiveness was often the aim of the evaluation, making pre- /post intervention studies and RCTs favourable research designs. Still, despite feasibility studies reporting that the interventions were acceptable and feasible, interventions proceeding to full-scale evaluation were limited. This acknowledges the difficulties in developing complex interventions (Skivington et al., 2021; Bleijenberg et al., 2018). Methodological challenges hindered interventions from being evaluated on a full scale, where recruitment and drop-out rates were the biggest challenges. This may reflect on the intervention's and/or evaluation studies' inability to adapt to parents' and their family's capacity to participate, in line with



what Inhestern et al (Inhestern et al., 2016a). describe as practical difficulties as a barrier to implementation. Lewis et al (Lewis et al., 2015). and Phillips et al., (Phillips et al., 2022) reporting on the two full scale RCT evaluations of the EC and W&W intervention, recruited participants from multiple recruitment sites at different locations where an established relationship often existed (e.g. community cancer centres, private medical practices, self-referral, non-profit organisations). This indicates that researchers need to invest time in building relationships with recruitment sites and use multiple locations in order to recruit the desired sample of parents. In many studies, the samples were often homogenous: highly educated, white, middle-class, mothers in partnered relationships, which is another problem related to recruitment and tailoring of interventions to all parents with cancer. Two studies with culturally diverse groups (Hispanic or African-American) showed improved results on depressed mood, communication, parenting self-efficacy and parenting quality (Davey et al., 2013; Palacios et al., 2023).

Cancer patients wish for support to be integrated into routine cancer care, but implementation of available psychosocial interventions faces many challenges and needs to be carefully considered and planned from the start of the development process (Inhestern et al., 2016a; Skivington et al., 2021). One barrier to implementing interventions into routine cancer care is lack of collaboration with institutions (Inhestern et al., 2016a). The challenges may be overcome (to some extent) by collaborative work, in an iterative process, with different stakeholders (e.g. parents and their families, patient organisations and healthcare providers). Building these networks takes time, but they are crucial for successful implementation. The intervention may, in effective collaboration with relevant stakeholders, be developed and tailored to decrease the barriers (e.g. practical difficulties and impeding emotional aspects) and include facilitators (e.g. support offers from clinicians, and favourable intervention characteristics) of implementation, as described by Inhestern et al (Inhestern et al., 2016a).

#### 4.1. Strengths and limitations

A strength of this systematic review was the wide scope of interventions described, giving a good overview of the field up to this date. To do so, we used broad inclusion criteria and four different databases covering multiple disciplines. We updated the search at two time points during the research process, which gave us an opportunity to include newly published studies eligible for inclusion. The wide scope of this review is, however, also a limitation, since the broad inclusion criteria captured studies with all types of research designs and measurements, hindering comparison between interventions and their effects. All studies were also limited to studies on cancer patients only and not studies with a mixed sample of illness in the family, which might have been relevant. To include interventions targeting children and relative might also have given a broader spectrum of interventions, since parents' and children's well-being are reciprocal and could be considered as indirect support. Moreover, all studies had to be in English, thus excluding studies described in another language.

Another strength was the involvement of several authors in the research process, from the development of the study to the reporting of the results. To ensure reliability of the results, at least two authors independently screened the records at all stages of the screening process. In addition, the inclusion- and exclusion criteria, the data extraction template and the quality assessment tool were thoroughly tested and discussed with all authors until a consensus was reached, before use. The PRISMA-guidelines were closely followed through the entire research process to ensure that this systematic review was conducted in the best possible way. Although following these steps, the heterogeneity of the included studies was problematic in extracting data and describing the interventions, since not all records contained the same type of information and sometimes lacked information, making it hard to report them fully. To clarify things that were unclear, the authors contacted the

researchers of some of the studies to make sure that interventions were described correctly.

## 5. Conclusion

The results of this review highlight the diversity of available psychosocial interventions for parents with cancer and the outcomes on parenting distress, as well as methodological challenges in evaluating these interventions. Interventions have been developed and show promising results on improving parental well-being, but only a few are implemented into cancer care to meet the needs of parents with cancer and their families.

A brief intervention with an apparent value for the parents, delivered in a convenient way (e.g. telephone) that still builds a relationship with the provider, seems to be important elements to deliver a successful intervention. The knowledge produced by this review can be valuable in the development and implementation of psychosocial interventions for parents with cancer, including how the interventions should be evaluated.

### CRedit authorship contribution statement

**Maria Romare Strandh:** Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft preparation, Writing – review & editing. **Emma Hovén.:** Conceptualization, Methodology, Investigation, Validation, Writing – review & editing. **Renita Sörensdotter:** Methodology, Writing – review & editing. **Karin Stålbjerg:** Supervision, Writing – review & editing. **Lisa Ljungman:** Conceptualization, Methodology, Investigation, Formal analysis, Validation, Writing – review & editing. **Anna Wikman:** Conceptualization, Methodology, Investigation, Validation, Writing – review & editing, Funding acquisition, Supervision, Project administration.

### Declaration of Competing Interest

The authors report no conflict of interest. This study was a part of the CONNECTED-project, supported by the Swedish Research Council (grant number 2020-02080), the Swedish Cancer Society (grant number 20 0824 Pj) and Centre of Women's Mental Health during the Reproductive Lifespan (WOMHER) at Uppsala University.

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### Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.critrevonc.2023.104119](https://doi.org/10.1016/j.critrevonc.2023.104119).

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