Worldviews on Evidence-Based Nursing

WORLDVIEWS ON EVIDENCE-BASED NURSING

REVIEW ARTICLE

Psychosocial Support Interventions After Perinatal Loss: A Network Meta-Analysis of RCTs Indicates What Works Best for Women's Mental Health?

Wenshan Huang | Wei Zhao | Yitong Han | Ziqi Wang | Yujie Han | Wei Zhang

School of Nursing, Jilin University, Changchun, Jilin, China

Correspondence: Wei Zhang (zhangw99@jlu.edu.cn)

Received: 4 February 2025 | **Revised:** 19 September 2025 | **Accepted:** 4 October 2025

Funding: The authors received no specific funding for this work.

Keywords: anxiety | depression | network meta-analysis | perinatal loss | psychosocial intervention

ABSTRACT

Background: Psychosocial interventions are recognized as effective nonpharmacological treatments that can enhance the mental well-being of women dealing with perinatal loss. However, as these interventions vary widely, there is currently no review that systematically evaluates and ranks their effects on the mental health of women affected by perinatal loss.

Objective: The aim of this study is to integrate the existing evidence, assess and compare the effects of psychosocial interventions on negative emotions among women experiencing perinatal loss, rank the effect sizes of various interventions, and identify the most effective intervention on the basis of different outcome measures.

Methods: Seven English-language databases were systematically searched for randomized controlled trials (RCTs) focusing on women experiencing perinatal loss, with publications up to August 20, 2024. Traditional pairwise meta-analyses were performed using Review Manager 5.4.1, while Stata 18.0 was employed for network meta-analysis and evidence synthesis. The surface under the cumulative ranking curve (SUCRA) was used to assess the efficacy of the interventions. The protocol was registered with PROSPERO under number CRD42024530312.

Results: A total of 30 RCTs encompassing 6181 participants were included in the analysis. On the basis of the SUCRA rankings, problem-solving therapy was identified as an effective treatment for alleviating depression and anxiety among women experiencing perinatal loss (depression: SUCRA = 82.55%, SMD = −1.34, 95% CI [−2.41, −0.27]; anxiety: SUCRA = 97.7%, SMD = −2.83, 95% CI [−4.26, −1.40]). Additionally, bereavement intervention emerged as the most effective approach for improving grief symptoms (SUCRA = 81.60%, SMD = −1.11, 95% CI [−2.14, −0.09]).

Linking Evidence to Action: Compared with traditional treatment, psychosocial intervention can improve the psychological state of women with perinatal loss, and the differences in the effects of face-to-face and technology-assisted interventions should be further explored. Moreover, problem-solving therapy has proven to be effective and appears to be the most effective method for alleviating depressive and anxiety symptoms among women experiencing perinatal loss, while bereavement support is the most effective method for grief due to perinatal loss. Nursing and health policymakers can develop various intervention strategies according to the varied psychological states of women experiencing perinatal loss.

1 | Introduction

1.1 | Scope and Impact of Perinatal Loss

Perinatal loss is defined as any infant who dies as a result of unexpected or involuntary loss of pregnancy, including miscarriage (loss of a fetus before 20 to 28 weeks of gestation), stillbirth (loss after 20–28 weeks), neonatal death (death within 28 days of birth), termination of pregnancy due to fetal abnormalities, and recurrent perinatal loss (Fenstermacher and Hupcey 2013; Herbert et al. 2022). Approximately 5.5 million women worldwide experience perinatal loss each year. It occurs in a quarter of all pregnancies: approximately 23 million miscarriages, equivalent to 44 abortions every minute; 2.4 million neonatal deaths; and 2.6 million stillbirths occur globally every year (WHO 2024; Xie et al. 2024; Lawn et al. 2014). Although the global stillbirth rate decreased significantly from 2000 to 2019, developing countries have seen little improvement in their rates of stillbirths (Wang et al. 2022; Quenby et al. 2021). It is estimated that 3 to 7 terminations of pregnancy per 1000 live births globally are attributed to fetal abnormalities (Zhang, Wang, et al. 2024).

Perinatal losses such as stillbirths and miscarriages are devastating tragedies for any family, especially for first-time pregnant mothers, and such losses often cause deep and lasting negative psychological effects (Hug et al. 2024; Alvarez-Calle and Chaves 2023). This loss also includes the loss of parental rights, the experience of raising a child and even the loss of hope and security (Cacciatore et al. 2008). Studies have shown that more than half of the women who experienced a perinatal loss reported symptoms of depression, anxiety, and grief, with 60% suffering from either short-term or long-term posttraumatic stress disorder (PTSD) (Chung and Reed 2017; Kersting and Wagner 2012). However, in reality, grief, anxiety, and depression associated with perinatal loss exhibit distinct manifestations. Specifically, grief is characterized by a longing for the fetus or newborn, a sense of loss arising from the unfulfilled expectation of becoming a parent, and self-blame for the cause of the loss (Flach et al. 2025; Gozuyesil et al. 2022; Kishimoto et al. 2021); anxiety, however, manifests as concerns about one's own health and difficulties with respect to future childbearing possibilities; and depression is characterized by a persistent low mood, loss of interest in daily activities, disturbances in sleep and appetite, and a sense of powerlessness in being unable to care for oneself or one's family (Armstrong et al. 2009; Mecdi Kaydirak and Aslan 2021a; Westby et al. 2021). All of these feelings, symptoms and behaviors require high priority and attention. According to a large registry-based study in Norway in 2021, miscarriage increased the risk of a variety of psychological, social and emotional outcomes, such as eating disorders and attention disorders, which may lead to increased health care costs for society (Magnus et al. 2021). This global, complex, multifaceted phenomenon requires the focus of medical professionals worldwide.

1.2 | Global Attention to Perinatal Loss

The Lancet called for attention to stillbirth care in 2016 (a follow-up to the 2011 call to action) and added attention to miscarriage follow-up care in 2021 (Heazell et al. 2016; Quenby et al. 2021). The World Health Organization and the United Nations Children's Fund strongly called for fair treatment with respectful and supportive care for women who experience perinatal loss (Furtado-Eraso et al. 2021). Psychosocial care is also recommended for women experiencing perinatal loss (Organization 2022). In fact, the US has created the "Fetal Demise Task Force (FDTF)," the UK is running the "INSIGHT" project on stillbirth, and New Zealand and Australia's perinatal societies have published the "IMPROVE" guidelines for perinatal mortality. These initiatives all focus on interventions for women facing perinatal loss, emphasizing the importance of health care workers during this process (Gardiner et al. 2016; Siassakos et al. 2018; Smart and Smith 2013). Although specialized support for women from different cultures is crucial after perinatal loss, there is no global standard for bereavement care (Gold et al. 2016).

1.3 | Psychosocial Interventions for Perinatal Loss

While interventions for perinatal loss often include medications or psychosocial interventions, research has indicated a gap in pharmacological approaches for managing grief after perinatal loss (Riddle et al. 2023). Furthermore, families grieving the loss of a child are often apprehensive about the side effects of medications, particularly those that could endanger the mother's health or cause birth defects in future pregnancies (Neugebauer et al. 2006). Thus, psychosocial interventions may be more acceptable. A qualitative study (Thomson et al. 2024) aimed at exploring women who had experienced perinatal loss revealed that psychosocial interventions focusing on personal needs, active listening, and fostering positive relationships can assist in overcoming painful experiences and stress the significance of psychosocial support in cases of perinatal loss. As psychosocial interventions fall under the category of nonpharmacological treatments, they focus on the individual rather than focusing solely on their symptoms, and accordingly, they aim to address psychological, interpersonal, social, and occupational issues related to mental disorders (Walker 2014). Psychosocial treatments for perinatal loss include cognitive-behavioral therapy (CBT), mindfulness meditation, mind–body exercises, problem-solving therapy (PST), bereavement support, psychoeducational activities, etc. (Mackrill and Sørensen 2020; Shaohua and Shorey 2021). CBT, for example, helps individuals develop the skills to identify and change destructive thought patterns that adversely affect their emotions and behaviors (Dolan et al. 2022). Mindfulness meditation, by concentrating on the present moment, aids in the development of awareness and an accepting attitude and may induce neuroplastic changes in the structure and function of the brain (Tang et al. 2015). Mind–body exercises tend to focus on the interaction between mental and physical states, with an emphasis on the overall improvement and balance of both (Brown et al. 2017; Wang et al. 2024). While PST is a form of CBT, it emphasizes the training of attitudes and skills for adaptive problem-solving (Bell and D'Zurilla 2009). Bereavement interventions include holding memorial services, watching videos, creating baby handprints and footprints, taking photos, and making keepsakes (Bakhbakhi et al. 2023). The psychoeducational content includes topics such as the definition of perinatal loss, its causes, treatment

methods, common psychological reactions and needs of mothers, postpartum care, and strategies for managing abnormal symptoms, techniques for physical and emotional recovery postpartum, and eugenics, along with practical training techniques (Donker et al. 2009). Specifically, psychoeducation focuses on the delivery of professional knowledge related to perinatal loss and the development of coping skills, which are implemented through knowledge explanation and skills training, with its core goal being to enhance the long-term adaptability of research participants by means of knowledge and skills (Kotsi et al. 2025; Nournorouzi et al. 2022). In contrast, psychosocial supportive interventions for women after perinatal loss include information, emotional help and social support to increase coping skills and resilience. This is oriented toward alleviating the immediate emotional distress caused by perinatal loss and meeting emotional needs, which is carried out through active listening, emotional empathy, and other approaches. Accordingly, the core focus lies in providing short-term emotional care and regulating the current emotional state of the grieving mother (Li et al. 2024).

1.4 | Gaps in Existing Literature

Although there are several interventions for psychological disorders after perinatal loss, their effectiveness remains unclear, and no therapy is universally recommended. A review of six RCTs with 1001 women who experienced perinatal loss revealed that interventions such as professional counseling did not effectively reduce depression, anxiety, or grief symptoms (Murphy et al. 2012). Nevertheless, two recent meta-analyses reported opposite findings. In 2021, Liu et al. reported that psychosocial interventions are effective at improving depression, anxiety, and grief among parents coping with perinatal loss and recommended enhanced training for practitioners (Shaohua and Shorey 2021). However, the 15 RCTs analyzed in their meta-analysis were generally of poor quality, making the findings less reliable, a finding supported by Li and colleagues who revealed the same result (Li et al. 2024). Conversely, an integrative review revealed that midwives' leadership in psychosocial interventions may lessen the symptoms of grief, anxiety, depression, and PTSD and also improve other psychosocial outcomes among parents dealing with perinatal loss (Xie et al. 2024). Although interventions may improve women's mental health after perinatal loss, no study has compared their effectiveness. Hence, further research is needed.

1.5 | Purpose of the Present Study

This network meta-analysis compared psychosocial interventions for perinatal loss to identify the most effective treatments for depression, anxiety, and grief.

2 | Methods

The study adhered to the PRISMA guidelines (Moher et al. 2009) and the network meta-analysis extension for systematic reviews and meta-analyses (Hutton et al. 2015).

2.1 | Protocol Registration

The protocol is registered in PROSPERO. Considering that all data used in this study are sources, ethical approval and informed consent were unnecessary.

2.2 | Study Eligibility and Exclusion Criteria

2.2.1 | Eligibility Criteria

The inclusion criteria followed the PICOS principle:

- P (Population): The subjects were adult women (≥ 18 years) who had experienced perinatal loss and were not restricted by the type, stage, or nationality of loss.
- I (Intervention): All structured psychosocial interventions (e.g., psychological support, PST, psychoeducational, CBT, counseling, behavioral interventions, mindfulness meditation, mind–body exercises or bereavement rituals) are included, without limitations on the intervention medium (online, in person, or a combination of both).
- C (Comparison): Control groups were assigned to standard or usual care or conventional treatment or were placed on a waitlist.
- O (Outcomes): Outcomes related to psychosocial aspects were incorporated into this study. The primary outcomes included depression, anxiety, and grief. Secondary outcomes included posttraumatic stress disorder (PTSD), stress, mental health, social support, and sleep quality. Sleep quality is closely and complexly associated with psychosocial factors, such as emotional states, social support systems, and psychological stressors (Pakpour et al. 2020; Zaidel et al. 2021). Therefore, this study treats sleep quality as one of the outcome indicators.
- S (Studies): This was a randomized controlled trial (RCT).

The exclusion criteria were as follows: (1) literature with relevant information or data gaps; (2) documents that could not be accessed or fully disclosed; (3) the first published article published repeatedly; (4) literature on drug intervention; and (5) articles not published in English to avoid significant discrepancies in reporting formats and content.

2.3 | Search Strategy

Eligible studies from seven electronic databases, namely, the CINAHL, PsycINFO, EMBASE, PubMed, Scopus, and Web of Science, were screened from the inception of the database to August 20, 2024. The retrieval strategy consisted of subject words and free words. To illustrate, when “Fetal Death” was retrieved, the subject words “Fetal Death” combined with the free words “Death, Fetal,” “Deaths, Fetal,” “Fetal Deaths,” and so forth, were used. Additionally, the reference lists of the included studies were reviewed to identify other relevant literature. The complete search methodology is presented in Appendix S1.

2.4 | Data Extraction and Management

After removing duplicate studies, two reviewers independently screened the titles and abstracts of all identified studies. For those deemed potentially eligible, full texts were retrieved for further assessment. Only studies that met the prespecified inclusion criteria were included in this analysis. Two reviewers independently extracted the data in accordance with a predesigned form. Discrepancies were first resolved by a third reviewer, and persistent disputes were addressed via team discussions. All members of our research team completed systematic training in a systematic review and network meta-analysis course and have relevant research experience in this field. The extracted data included basic information (first author, publication year, country of origin), characteristics of the trial participants (mean age, sample size, proportion of female participants), intervention details (number of treatment sessions, treatment cycle, implementer), outcome indicators and results of each group (measurement method, measurement time point), as well as the intervention measures of the control group. For studies that reported multiple posttreatment outcome scores (such as scores at the mid-treatment stage or during follow-up), the differences between the baseline data before the intervention and the data of the last measurement were extracted. When the mean values and standard deviations were not directly reported in the studies, the formulas proposed by (Wan et al. 2014) were used for calculation. If the data reported in the studies were insufficient or unclear, the corresponding authors were contacted via email to obtain more detailed information.

2.5 | Risk of Bias Assessment

We utilized version 2 of the Cochrane risk-of-bias tool for randomized trials (RoB-2) to evaluate the quality of the included studies (Sterne, Savović, Page, Elbers, et al. 2019). Two assessors independently evaluated six domains of bias: randomization process, deviations from intended interventions, missing outcome data, outcome measurement, reported result selection, and overall bias. Studies were categorized as low risk (all domains low risk), some concerns (concerns in at least one domain but not high risk), or high risk (high risk in at least one domain). Disagreements were resolved through discussion and consensus.

2.6 | Statistical Analyses

The traditional pairwise meta-analyses for direct comparisons were conducted with Review Manager 5.4.1, and network meta-analysis was illustrated and analyzed by Stata 18.0. All outcome variables are presented as standard mean differences (SMDs) with 95% confidence intervals (CIs). For studies reporting measurement data before and after the intervention, we applied the approach described in the Cochrane Handbook to determine the mean change and its corresponding SD (Furukawa et al. 2006). Missing information, including unavailable standard deviations or cases with only P values reported, was estimated using the relevant calculation methods for SMDs and their CIs, and according to Cohen's guidelines, values of 0.2, 0.5, and 0.8 were considered small, moderate, and large effect sizes, respectively. Heterogeneity between studies was assessed using the I^2 statistic, and heterogeneity was categorized into low, medium, and high levels on the basis of I^2 values of 25%, 50%, and 75%, respectively (Sterne, Savović, Page, et al. 2019). When $I^2 > 50\%$, a random effects model was used. Otherwise, a fixed effects model was used. When there were > 10 articles, publication bias was evaluated by visual inspection of funnel plots and Egger's test. To evaluate the reliability and consistency of the merged results, the leave-one-out approach was used for sensitivity analysis.

On the basis of a frequentist framework, NMA statistical analysis was conducted using Stata 18.0 along with its network and mvmeta packages, and a network diagram was used to visualize direct comparisons, where node size represents sample size and line thickness indicates the number of studies in each pairwise comparison. When a closed loop is formed between treatments, overall inconsistency is assessed using the inconsistency factor (IF) and the 95% confidence interval. If the 95% CI includes 0, no significant inconsistency is considered; if the 95% CI of the IF does not include 0 and if the p value is < 0.05, a significant inconsistency is indicated. Given the potential differences in data sources across nodes, local inconsistency is typically tested using node splitting methods. A p value < 0.05 suggests local inconsistency, whereas a p value > 0.05 indicates no significant inconsistency between direct and indirect comparisons. In network meta-analysis, the surface under the cumulative ranking curve (SUCRA) is a core evaluation indicator for ranking intervention effects. It quantifies the probability of each intervention being the "optimal intervention" by calculating the area under the cumulative ranking curve, with values ranging from 0% to 100%. SUCRA values are positively correlated with the probability that an intervention demonstrates superior effects compared with other interventions under comparison. The closer the value is to 100%, the higher the probability of the intervention performing better in the comprehensive effect ranking (Rücker and Schwarzer 2015).

2.7 | Assessment of Evidence Quality

Using the Cochrane Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology, two reviewers independently assessed the evidence quality for the data included in this review's meta-analyses using GRADEpro-GDT software (Guyatt et al. 2008). After evaluating domains such as study limitations, consistency of effect, imprecision, indirectness, and publication bias, the evidence quality was categorized as "very low," "low," "moderate," or "high."

3 | Results

3.1 | Study Selection

A total of 2615 studies were retrieved, of which 2598 were obtained from 7 electronic databases and 17 were identified through reference list tracing. After 752 duplicate studies were removed through both automatic and manual processes, 1687 irrelevant articles were further excluded via initial screening

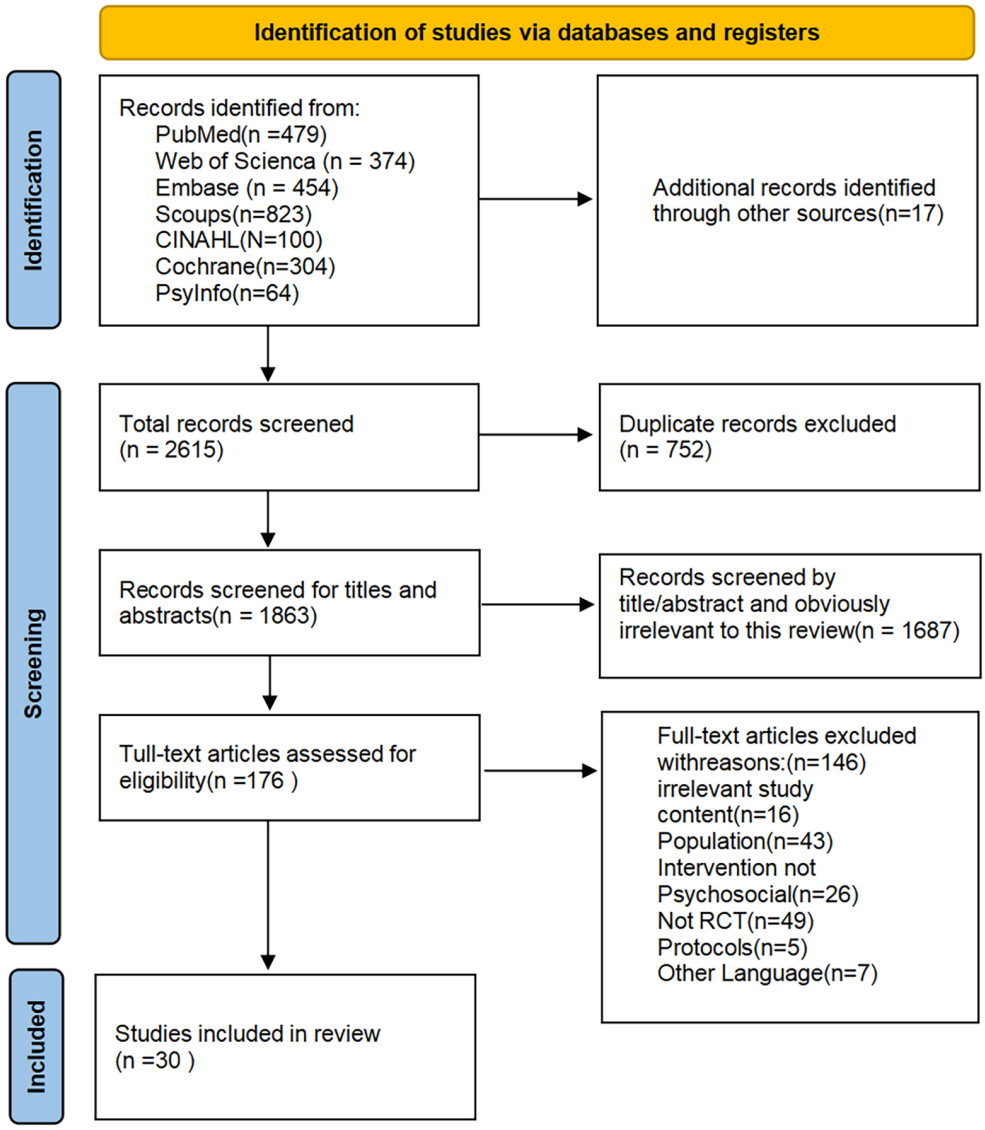

FIGURE 1 | PRISMA flow diagram.

of titles and abstracts. A full-text evaluation was subsequently conducted on the remaining 176 studies. Following full-text review and screening in accordance with the PICOS criteria, a total of 146 ineligible studies were excluded for the following specific reasons: 16 due to irrelevant study content, 26 for not belonging to the category of psychosocial interventions, 49 for lacking a RCT methodology, 43 for failing to meet the study population requirements, 5 for lacking detailed research protocols, and 7 for being published in languages other than English. Finally, 30 RCTs met the inclusion criteria of this review and were included in the study (Adolfsson et al. 2006; Bagheri et al. 2023; Barat et al. 2020; Basirat et al. 2022; Bokaie et al. 2024; Chang et al. 2021; Duman et al. 2022; Elsharkawy et al. 2021; Haghighi et al. 2022; Hasani et al. 2021; Huberty et al. 2020; Hung et al. 2023; Jensen et al. 2021; Johnson et al. 2016; Kersting et al. 2013, 2011; Kong et al. 2014; Mecdi Kaydirak and Aslan 2021a; Nasrollahi et al. 2022; Nazaralivand et al. 2021; Neugebauer et al. 2006; Okyay and Uçar 2023; Raphi et al. 2021; Rocha et al. 2018; Rosenbaum et al. 2015; Shahamabadi et al. 2022; Simpson et al. 2015; Sun et al. 2018; Tektaş and Çam 2017; Zhang, Wang, et al. 2024) (Figure 1).

3.2 | Characteristics of Included Studies

Thirty English-language studies were fully included that involved a total of 6181 women who had experienced perinatal loss and received psychosocial interventions. These interventions included CBT, mind–body exercise, supportive intervention, psychoeducation, PST, bereavement intervention, mindfulness meditation, and bereavement combined with DVD rituals. The characteristics of the included studies are presented in Table 1. The average age of the participants in the intervention group ranged from 19.2 to 34.8 years, whereas that of the control group ranged from 19.2 to 34.6 years. Different types of perinatal loss in the included studies are detailed in Appendix S2 and include miscarriage ($n = 13$), stillbirth or infant death within 28 days of birth ($n = 3$), forced pregnancy termination due to fetal abnormalities ($n = 4$), and unspecified loss types ($n = 10$). Eighteen studies were conducted in the Asia-Pacific region (China, Iran, Turkey, and India), and twelve studies were conducted in non-Asia-Pacific regions (Germany, Egypt, the USA, Denmark, and Portugal). In addition to two studies with a three-arm design (Okyay and Uçar 2023; Basirat et al. 2022), the remaining studies

TABLE 1 | Characteristics of the study.

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Rocha et al. (2018)	Portugal	33.3 (6.66)	32.3 (5.97)	20/50	Cognitive narrative therapy and Ottawa Decision Framework	18.5 (3.35)/20.2 (2.32)	Termination of pregnancy when serious disease is detected during pregnancy or tests show a high risk of disease (TOP).	The intervention in this study is based on cognitive narrative therapy and the Ottawa Decision Framework, and is implemented by professionals trained and supervised in cognitive narrative methods. It consists of four weekly sessions, each lasting 60 min, as follows: The first consultation uses the Ottawa Decision framework to update fetal information and assess the meaning of the detected issue from the perspectives of the woman and the couple, including their attitudes toward abortion. The second consultation focuses on describing the experience of pregnancy termination, exploring emotional and cognitive content, and constructing the narrative around physical sensations and emotional triggers. The third consultation aims to identify a metaphor that condenses the emotional and cognitive experience, while the final consultation involves generating alternative metaphors and exploring different possible actions the patient might take. Each consultation begins with a summary and ends with a review of the patient's reactions. The objectification sensory phase is omitted.	Supportive intervention	Usual care	Depression, anxiety, perinatal grief	BDI, Zung, PGS/ The baseline assessment was 15 days after TOP; Follow-up assessments were performed 6 months after TOP

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/ comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Neugebauer et al. (2006)	United States	29 (7.6) (The ages of the two groups were not measured separately.)		10/9	Swanson's Caring Theory and Meaning of Miscarriage Model	12 (5.8) (two groups were not measured separately.)	Women who experienced perinatal loss within 18 weeks	One to six IPC teleconference sessions were conducted per week, which included any lay counseling that the women actively sought: The first IPC session lasted about 1 h, with subsequent sessions lasting 30 min each. In the first session, the counselor collected the patient's history, focusing on the miscarriage and related depressive symptoms. Each session included a review of depressive symptoms, exploration of interpersonal issues, psychoeducation about depression's interpersonal context, and problem-solving techniques. Reproductive history and prior losses were addressed to strengthen rapport. Women could end treatment at any time, with no counselor interference. Three female therapists, including one experienced psychiatric social worker, provided counseling.	Supportive intervention	Usual care	Depression	HAM-D-17/ Baseline, postintervention
Basirat et al. (2022)	Iran	32.7 (6.8)	32.2 (5.8)	20/20	CBT enhanced with Functional Analytic therapy (FACBT).	NA	More than two consecutive abortions	Ten group sessions (90 min each) were conducted over 10 weeks. Each group consisted of 10 participants. Psychotherapy is based on the FACBT as well as five domains of specific infertility stress.	CBT	Usual care	Depression Anxiety	BDI-II; State–Trait Anxiety Inventory Form Y (STAI-Y)/ At baseline, 10 weeks posttrial, and 3 months of follow-up
Huberty et al. (2020)	United States	NA	NA	30/30	Mindfulness Therapy	30 (6.99)	Stillbirth experienced within the past 6 weeks to 24 months	The prescription included 12 stillbirth-specific videos and 48 selected from Udaya's library of over 600 yoga videos, suitable for women up to 20 weeks gestation. Udaya, an online platform, offers Hatha yoga videos taught by experienced instructors, blending physical practice with mindfulness and self-awareness. Both LD and MD groups followed the same poses and sequences, with prescribed video order and preparatory instructions to ensure comfort and safety.	Mind–body exercise	Stretching exercises	PTSD; Anxiety;depression; Grief; Sleep quality	IES-R; STAI; PHQ-9; PGS; Pittsburgh sleep quality index/Baseline, postintervention (12 weeks)

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Shahamabadi et al. (2022)	Iran	27.55 (5.30)	27.00 (6.86)	20/20	Metacognitive therapy	NA	Miscarriage	The education sessions were conducted via WhatsApp, including video clips, PPT presentations, and text chats, once a week for 90 min each, totaling 8 sessions.	Psychoeducation	Face-to-face Counseling	Anxiety	Beck Anxiety Inventory/ Follow-up visits were conducted at baseline (before the intervention), at the end of the intervention (week 8), and 12 weeks after the intervention
Jensen et al. (2021)	Denmark	33.9 (6.0)	33.5 (4.5)	31/36	Mindfulness Therapy	NA	Three or more consecutive miscarriage	A 7-week (total 11 h) meditation and mindfulness program tailored to patients with RPL, where each participant had access to a daily audio guide to meditation and mindfulness practice. Home practice time is recommended for 10–20 min per day, and participants are encouraged to keep a journal to improve gratitude, positive attention, and mindfulness in their daily lives.	Mindfulness and meditation	Supportive counseling	Stress Depression	PSS, MDI/Before the baseline intervention, 7 weeks after baseline (when the intervention was completed), and 12 months after baseline
Johnson et al. (2016)	United States	31.8 (7.3)	28.8 (5.6)	25/25	Social learning theory	NA	Include early and late fetal death, live-born newborn death within the first 28 days, and termination of pregnancy for medical indications	It included 14 group sessions of 2h each, once a week. The sessions involved discussing stories of loss, exploring causes and meanings of loss, bringing supporters to groups, understanding differences in people's grief, communicating loss with others, remembering the baby, and reengaging in other life roles. IPT also included couple communication exercises to discuss each partner's emotional needs related to loss and, as a group, to discuss ways they had learned from each other to be supportive.	Supportive intervention	Counseling based on cognitive behavioral therapy	Depression Grief Society support	HAM-D-17, BDI, MSPSS, PBGS/ Baseline, weeks 4 and 8 of treatment, after treatment, and 3 and 6 months after the end of treatment

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Inter-vention	Com-parator					Intervention	Intervention type	Comparator		
Haghighi et al. (2022)	Iran	29.46 (5.32)	28.42 (6.32)	45/45	Worden's principles of grief	NA	Loss experienced between 8 weeks of gestational age and 28 days after delivery	Four separate counseling sessions on different topics (weekly sessions, 1 h duration): Acceptance of the loss: ① Help the bereberated mother to accept the loss of pregnancy and understand that it is an unchangeable reality. (2) Experiencing the pain of grief: bereavement mothers were encouraged to express and experience the emotional pain caused by pregnancy loss, including sadness, anger, and guilt. (3) Adjustment to the postloss world: assisting the bereasted mother to adjust to life without pregnancy and to redefine her identity, role, and place in family and society. ④ Finding meaning in loss: Help bereaused mothers find personal meaning in pregnancy loss and find a way forward by reassessing their own life goals and values	Supportive intervention	Usual care	Anxiety Stress Depression	DASS-42/Baseline and postintervention
Kong et al. (2014)	China	31.9 (6.1)	35.1 (6.6)	96/99	Problem-Solving therapy	NA	Miscarriage	The individual counseling program consisted of two sessions: the first, lasting about 60 min, was held while the woman was still in the hospital, and the second, lasting about 30 min, took place 2 weeks postmiscarriage. The second session, conducted via phone, aimed to reinforce previous information, address feelings and concerns, and identify potential stressors.	Problem-Solving therapy	Usual care	Psychological distress Depression	GHQ-12, BDI/ Baseline, 6 weeks, 3 months, and 6 months
Rosenbaum et al. (2015)	United States	23 (67.6)	27 (69.2)	39/34	NA	Newborns who died within 28 days of birth	Neonatal death	A neonatal bereavement support DVD was delivered to parents of babies who died in the neonatal intensive care unit (NICU). Instead of a one-on-one intervention, the study randomized parents to receive standard bereavement care SBC or SBC plus DVD and focused on comparisons between DVD viewing and no DVD viewing and between control groups. It did not involve a specific one-on-one intervention.	Bereavement support	Bereavement support + watch DVD	Grief Depression Society support	PGS, CES-D, SPS/ Baseline at 3 and 12 months
Mecdi Kaydirak and Aslan (2021a)	Türkiye	30.10 (4.98)	31.23 (6.32)	30/30	Roy adaptation model	All of them were older than 20 weeks	Termination of pregnancy was performed for fetal reasons	Five interviews with study subjects conducted by nurses at designated locations based on Roy adaptation model. Each session lasts about 60 min	S upportive intervention	Usual care	Grief Anxiety	STAI-2, PGS/ baseline After the intervention

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Kersting et al. (2011)	Germany	34.1 (5.34)	34.5 (5.42)	30/26	Cognitive behavioral Therapy	NA	Any type of perinatal loss	Patients enrolled in the program completed 45-min writing tasks (10 articles in total) twice a week over a period of 5 weeks. The intervention implemented in our study consisted of three treatment phases: (a) self-confrontation, (b) cognitive reassessment and (c) social sharing. In the self-confrontation phase, participants were asked to write 4 articles about the miscarriage situation. They were asked to describe in as much detail as possible how they felt about the loss of their child.	CBT	Usual care	PTSD；Grief; Depression Anxiety Mental health	IESR, ICG, the Brief Symptom Inventory/Baseline after the intervention
Tektaş and Çam (2017)	Türkiye	NA	NA	68/60	Watson's theory of caring	NA	Miscarriage	In this study, the intervention group adopted nursing measures based on Watson's theory of human care, as follows: 1. The process of making and implementing the nursing plan: Based on the ten healing processes in Watson's theory, a semi-structured care protocol was developed as a guide. The protocol consisted of five sessions, each session was arranged according to the healing processes selected from the theory, and the interview was planned to be synchronized with the outpatient monitoring plan for pregnant women—the first interview was conducted at 10 or 12 weeks of pregnancy. Follow-up interviews were conducted at weeks 16, 20, 24, and 28 and were 30 min long each. Setting up a nursing healing environment at the first interview to treat the pregnant woman sincerely and relevant from the internal environment; In terms of the external healing environment, the interview environment was suitable in terms of lighting, sound, comfort, security, and privacy. Build interpersonal care by sharing the feelings, expectations, and experiences of the pregnant woman and indicate a "help her, understand her" attitude. The nursing healing process was then used according to the needs of the pregnant woman, using interpersonal care healing methods such as touch, relaxation exercises, and listening to music.	Mind–body exercise	Usual care	Anxiety Depression	Beck Anxiety Scale, Beck Depression Scale/Baseline, After the intervention

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Zhang, Wang, et al. (2024)	China	32.85 (4.61)	33.88 (4.45)	41/41	Cognitive behavioral Therapy	22.33 (5.59)	Confirm in utero or at birth death of the fetus, termination of pregnancy due to confirmation that a major fetal malformation is inevitable, or death of the infant	For 5 weeks after discharge, women in the intervention group attended a weekly expressive writing session, where they were asked to write at least three 15—to 20-min essays online one-on-one on a given topic: The researchers sent the writing theme to the study subjects and encouraged them to finish writing within 20 min. One week later, they sent the letter to the researchers via wechat to read carefully, and gave affirmation and encouragement to the letter written in accordance with the theme standard	CBT	Usual care	Grief	PGS/Baseline, immediately postintervention, and 1 month postintervention
Sun et al. (2018)	China	30.15 (4.49)	31.24 (5.02)	62/62	Social exchange theory social exchange theory	24.56 (5.88)/26.41 (6.28)	Termination of pregnancy due to fetal malformation	The intervention included five measures: (1) an information support package on fetal abnormalities, labor induction, and postpartum recovery to alleviate pregnant women's fears; (2) family support education to equip family members with caregiving skills; (3) timely feedback and guidance for family support planning; (4) multimode support combining medical and family care based on psychological and social exchange theories; (5) flexible support tailored to individual needs and local culture. Additionally, a WeChat nursing group allowed real-time communication with nurses, and follow-up was conducted 2 weeks postpartum to ensure active family involvement.	Psychoeducation	The corresponding psychological support was given according to the psychological status classification	Depression PTSD	The Edinburgh Postnatal Depression Scale, IESR/Baseline, After the intervention
Nazaralivand et al. (2021)	Iran	27.95 (3.92)	28.04 (3.78)	23/23	Problem-Solving Therapy	24.56 (5.88)/26.41 (6.28)	Spontaneous abortion occurring between 4 weeks and 6 months	Based on the problem-solving therapy, the patients received weekly face-to-face, group based 90 min psychological counseling for 8 weeks. The patients were followed up for 1 month	PST	Usual care	Anxiety Depression Mental health	The Goldberg Mental Health Questionnaire (GHQ-28)/Before the intervention, after the intervention (at the end of the course), and 1 month later

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Nasrollahi et al. (2022)	Iran	28.93 (5.62)	29.30 (6.32)	53/53	Mindfulness-Based Stress Reduction, MBSR	NA	Perinatal loss of any type	The intervention included weekly 2-h sessions for 8 weeks, with daily at-home exercise sessions lasting 40 min. The program provided an overview of miscarriage, including its definition, causes, and treatment: (1) basic information on miscarriage, symptom assessment, emotional disturbances, and distinguishing between normal and problematic anxiety; (2) an introduction to metacognitive therapy (MCT) logic and improving normal states; (3) evaluation and identification of positive and negative metacognitive beliefs about miscarriage, teaching metacognitive techniques; (4) identifying metacognitive control strategies to replace worry with more effective methods; (5) overcoming overestimation of threats, challenging negative beliefs about miscarriage risks; (6) addressing anxiety and rumination as ineffective coping strategies, promoting positive metacognitive beliefs; (7) recognizing cognitive attention signals in the persistence of psychological disorders, and managing these signals.	Mind–body exercise	Usual care	Anxiety Depression Stress	DASS-21/Before the intervention, after the intervention
Hung et al. (2023)	China	34.38 (5.32)	34.61 (4.91)	29/28	Mindfulness	NA	Two or more consecutive miscarriages within 24 weeks of gestation	Six-element PPT presentation: (1) Health education on recurrent miscarriage (RM) and psychological adjustment; (2) Disease knowledge and coping skills, covering the roles of vitamins in embryo development, thrombosis in RM, ovarian insufficiency in RM, sperm quality, chronic infections in RM, positive attitudes toward miscarriage, sleep improvement strategies, and stress in miscarriage; (3) Audio-visual lecture featuring a woman and a couple sharing their RM experiences; (4) A 30-min yoga video to reduce stress and improve sleep quality; (5) Links to external websites, such as community mental health services, for further information; (6) An interactive online forum for participants to share messages and interact.	Mind–body exercise	Usual care	Stress Depression Sleep quality Society support	PSS, EDS, PSQI, ISEL/Before the intervention, after the intervention

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/ comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Inter-vention	Com-parator					Intervention	Intervention type	Comparator		
Chang et al. (2021)	China	34.80 (4.33)	34.61 (4.90)	30/28	Empathy and caring theory	NA	at least two consecutive pregnancy losses	The nursing counseling intervention, delivered by a trained instructor, included face-to-face sessions at 1, 5, and 12 weeks after enrollment in the gynecology clinic. The experimental group received three counseling sessions along with regular care, while the control group received only regular care. Based on empathy and caring, the intervention aimed to address stressful events, foster a safe and positive emotional environment, promote self-awareness, reduce self-blame, clarify doubts, listen to concerns, encourage positive thinking, and support life planning.	S upportive intervention	Usual care	Depression Sleep quality Society support	EPDS, PISQ, ISEL/ Baseline (pretest) and 12 weeks after completion of the intervention (posttest)
Duman et al. (2022)	Türkiye	27 (46.36)	27.9 (7.6)	31/33	Mindfulness	19.77 (1.86)/19.72 (2.13)	At least one spontaneous perinatal loss had been experienced in the past	Relaxation exercise CD was used as the intervention material; The study participants were taught relaxation methods in 45 min through a mixed method of direct instruction, demonstration, question and answer, and discussion. The study participants were asked to practice PMR every night before going to bed according to the instructions and music on the CD for 12 weeks. An interview schedule was developed based on the clinical observation plan of the pregnant women. On interview days, investigators repeated PMR training in the pregnancy training hall; The first part of the CD consists of three sections, the first of which is a 10-min recording with an explanation of the specific procedure. In the second part, which lasted 30 min, relaxation exercises were explained along with the sound of the river and verbal instructions. The third section also lasted 30 min and included a relaxation music session without any prompts.	Mind–body exercise	Usual care	Anxiety	The Pregnancy-Related Anxiety Questionnaire-R2/ Before intervention (baseline) and after intervention (8th week) and 12th week

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Bokaie et al. (2024)	Iran	29.04 (5.0)	29.82 (5.31)	35/35	Problem-Solving Therapy	Before 24 weeks of gestation	At least two clinically confirmed pregnancy losses before 24 weeks of gestation	Participants in the intervention group were placed in social networking groups for information, advice, and counseling. Divided into two groups of 17 and 18, they received weekly 90-min online consultations for eight sessions, using a problem-solving approach. Each session included proposing solutions, assigning tasks, and answering questions in the last 15 min. Participants could ask questions between sessions and access missed content. Missing more than two sessions or completing less than 30% of assignments was considered noncompliance.	PST	An educational manual on sexual issues was sent to each member of the control group via a social networking site and read biweekly.	Anxiety	Sexual Anxiety Questionnaire/ Before the intervention, after the intervention, and after 1 month of follow-up
Raphi et al. (2021)	Iran	30.30 (5.7)	32.1 (7.4)	26/26	Hope therapy	Less than 20 weeks	Miscarriage	The intervention group received hope therapy counseling, conducted by the researcher (first author) in a quiet, private environment at the health center. Participants were discharged 12–24 h after miscarriage and began the intervention 1 week postdischarge. The counseling consisted of 8 sessions, each lasting 60–90 min, held twice a week in groups of 5–7 women. Sessions focused on providing necessary information through counselor-woman interactions. The therapy followed Snyder et al.'s (2000) treatment plan, which includes two main stages: building hope and enhancing hope, with all sessions conducted in a space that ensured social distancing, proper ventilation, and Covid-19 hygiene protocols.	S upportive intervention	Usual care	Mental ealth	Psychological well-being questionnaire/ Before, immediately and 4 weeks after the intervention

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Elsharkawy et al. (2021)	Egypt	32.7 (4.46)	32.00 (4.49)	30/30	NA	25.55 (6.77)/27.4 (6.0)	≥3 previous consecutive miscarriages	There were 2 phases (evaluation and plan implementation): evaluation phase (2 meetings). Participants introduced each other and learned about the methodology and structure of the meeting. Participants described their expectations for the training program and completed the questionnaire. 2. Implementation phase (8 meetings). About 1 h each time; At the end of each session, review the content for 5 to 10 min; Feedback was also obtained from the patient at this time. The content of the meeting focused on teaching knowledge about abortion and related skills to relieve bad emotions.	Psychoeducation	Usual care	Stress Depression Anxiety	DASS-21/Before and 1 month after the intervention
Okyay and Uçar (2023)	Türkiye	29.07 (8.96)	27.56 (9.45)	53/53	Mindfulness	17.66 (24.58)/17.66 (21.54)	Any type of perinatal loss	Pregnant women undergoing EFT were guided through a structured process: adopting a heart chakra healing posture, identifying personal emotional issues, creating a brief emotional reminder phrase, assessing emotional intensity using the SUE scale, performing tapping sequences with reminders (negative, release, and positive affirmations), and concluding with reassessment after deep breaths and hydration to evaluate emotional change.	S upportive intervention	Usual care	Anxiety	The Subjective Disorder Unit Scale (SUDS)/Before and 1 month after the intervention
Hasani et al. (2021)	Iran	29.2 (6.1)	30.1 (6.1)	34/34	Awareness model of health promotion	NA	Termination of pregnancy due to ectopic pregnancy	Four sessions of face-to-face group counseling based on health promotion awareness were conducted, each session lasted 45–60 min, and the last 20 min of each session were asked by the patients and answered by the counselors. The four counseling sessions consisted of (1) providing medical information about EP and its physical and psychological complications; (2) explain grief symptoms after miscarriage; (3) postabortion mental health status and improvement methods; (4) Self-esteem after miscarriage and how to improve it	S upportive intervention	Usual care	Anxiety Depression	GHQ-28/Before the baseline intervention and 2 weeks after the end of the intervention

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Intervention	Comparator					Intervention	Intervention type	Comparator		
Barat et al. (2020)	Iran	19.4 (8.1)	17.2 (9.6)	39/40	Winston's supportive psycho therapy	19.4 (8.1)/17.2 (9.6)	Any type of perinatal loss	Pregnant women undergoing EFT were guided through a structured process: adopting a heart chakra healing posture, identifying personal emotional issues, creating a brief emotional reminder phrase, assessing emotional intensity using the SUE scale, performing tapping sequences with reminders (negative, release, and positive affirmations), and concluding with reassessment after deep breaths and hydration to evaluate emotional change.	S upportive intervention	Usual care	Anxiety Depression Grief	Hospital Anxiety and Depression Scale, PGS/Baseline, immediately after the intervention, and 4 months later
Simpson et al. (2015)	India	26.87 (4.01)	27.19 (4.54)	45/45	Roy adaptation model	32.83 (6.33)/29.04 (5.13)	Suffer fetal or neonatal death in the third trimester	The experimental group was offered three separate bereavement counseling sessions of approximately 30 to 45 min each. After expert content validity, the researcher counseled the women individually; A second consultation was provided at discharge and a third consultation was provided 4–6 weeks after discharge during follow-up at the obstetrics and gynecology outpatient department. Both groups were assessed 4–6 weeks postdischarge by a second assessor	Bereavement intervention	Usual care	Anxiety Depression Grief	PGS, HAM-D-17/ Baseline and preintervention assessment were performed within 12 to 24 h after delivery in both groups. A second assessor assessed both groups at 4–6 weeks postdischarge
Adolfsson et al. (2006)	Sweden	30.9 (5)	31.8 (5.25)	43/45	Swanson's Caring Theory	NA	Miscarriage	A midwife (AA) conducted 60-min structured conversations focused on women's experiences with miscarriage, addressing their emotions, coping strategies, and reminders of loss. Guided by Swanson's theory, the midwife provided emotional support, respect, clarity, and encouragement to enhance women's well-being while prioritizing the woman's perspective, even when accompanied by their husbands.	S upportive intervention	The midwife asked the woman about her general health and any complications after the abortion and provided educational answers. During this visit, the midwife did not ask the woman about her feelings and emotions, and the conversation continued only when the woman volunteered to ask further questions	Grief	PGS/Baseline, immediately after the intervention

(Continues)

TABLE 1 | (Continued)

Author(s) (year)	Country	Mean age (years) (SD)		Sample size (*n*)	Theoretical frameworks	Gestational age (week) (intervention/ comparator)	Type of loss	Format			Outcome(s)	Outcome measures/Time points assessed
		Inter-vention	Com-parator					Intervention	Intervention type	Comparator		
Bagheri et al. (2023)	Iran	28.75 (4.76)	28.53 (5.5)	74/80	Cognitive Behavioral Therapy	12–20 weeks	Miscarriage	6 sessions (30–40 min) per week. These sessions took the form of group discussions and included cognitive assessment and agreement on therapeutic purposes, providing information about grief, its processes and components, and normalizing the emotional and behavioral consequences of the grieving process	CBT	Usual care	Grief	Postabortion grief scale/At the beginning of the intervention, immediately after the intervention, and 3 months after the end of the intervention.
Kersting et al. (2013)	Germany	33.77 (5.22)	34.61 (5.07)	115/113	Cognitive behavioral therapy	NA	Any type of perinatal loss	Participants completed 45-min online writing tasks twice weekly for 5 weeks, covering three phases: self-confrontation (writing about their miscarriage and emotions), cognitive reassessment, and social sharing.	CBT	Usual care	PTSD Grief Anxiety Depression	IESR, the Inventory of Complicated Grief, the Brief Symptom Inventory/ Pretreatment (baseline), posttreatment (end), and follow-up visits at 3 and 12 months after the end of treatment

Abbreviations: BDI, Beck Depression Inventory, second edition; BSI, brief symptom inventory; DASS-21, The 21 item-Depression, Anxiety, and Stress Scales; Family APGAR, Family Adaptation Partnership Growth Affection and Resolve Index; GHQ-28, The Goldberg Mental Health Questionnaire; HADS, Hospital Anxiety and Depression Scale; HAMD-17, Hamilton Rating Scale for Depression—17-item; IESR, Impact of Event Scale; IGG, the Inventory of Complicated Grief; MAAS, mindful attention awareness scale; MBS, mindfulness-Based stress reduction; MDI, the Major Depressin Inventory; PGS, Perinatal Gerif Scale; PSQI, Pittsburgh sleep quality index; PSS, Perceived Stress Scale; Zung, the Zung Anxiety Scale.

adopted a two-group design. All studies were published between 2006 and 2024, with sample sizes ranging from 19 to 228 participants. In the included studies, the theoretical models used were diverse. Specifically, 5 studies adopted mindfulness-related theories; 2 studies used the Roy adaptation model; and 1 study each employed hope theory, metacognitive therapy, Worden's grief theory, health promotion awareness-based theory, empathy and caring theory, Winston's supportive psychotherapy, literature-cited psychological stress theory and social exchange theory, combined cognitive narrative therapy and the Ottawa decision framework, social learning theory, combined Swanson's caring theory and the meaning of the miscarriage model, and Watson's caring theory. Only outcome measures from three or more studies were quantitatively analyzed. Among the 30 studies included in the systematic review, 20 reported outcomes for depression, 11 for grief, 16 for anxiety, 6 for stress, 5 for mental health, 4 for sleep quality, and 3 for social support. The Depression Anxiety Stress Scale and Brief Symptom Inventory were used to measure anxiety. For depression measurement, the following scales were used: Depression Anxiety Stress Scale, Brief Symptom Inventory, Beck Depression Inventory, Edinburgh Postnatal Depression Scale, Hamilton Depression Scale, and Patient Health Questionnaire. The Inventory of Complicated Grief and Perinatal Grief Scale were used to measure grief. Stress was assessed using the Depression Anxiety Stress Scale, Perceived Stress Scale, and 12-Item General Health Questionnaire. The Impact of Event Scale-Revised was used to evaluate PTSD symptoms, and the Pittsburgh Sleep Quality Index was used to measure sleep quality. All studies analyzed data from baseline (first measurement) and postintervention (last measurement) assessments.

3.3 | Characteristics of the Interventions

Interventions were classified by content, as shown in Appendix S2. The studies focused on psychosocial supportive interventions ($n=11$), CBT ($n=5$), mind–body exercise interventions ($n=5$), psychoeducation ($n=3$), PST ($n=3$), bereavement interventions ($n=2$), and mindfulness meditation techniques ($n=1$). Ten studies utilized online interventions, 3 studies combined online and offline methods, and 17 studies relied on face-to-face interventions. The duration of these interventions varied between 1 and 12 weeks. Most interventions were carried out by trained professional nurses and researchers, with the exception of the study by Basirat et al., which was conducted by psychiatrists (Basirat et al. 2022).

3.4 | Risk of Bias and Quality Assessment

As all studies used the randomization process, the risk in the randomization domain was low. Four studies were rated as having a high risk of implementation bias because of the lack of blinding for participants and implementers. However, owing to the nature of psychosocial interventions, fully blinding participants and assessors was difficult. Eight studies reported some degree of deviation from the planned interventions and were rated as having some risk. One study was rated as having a minor issue in the data missing domain because it did not report the sample attrition rate. Five studies were assessed as raising "some concerns" because they did not report Supporting Information, including clinical trial registration and original study protocols. Overall, 2 studies were rated as "high risk of bias," 12 studies were rated as "some concerns" regarding bias, and the remaining 16 studies were rated as "low risk of bias." Further details can be found in Appendix S3.

3.5 | Paired Meta-Analysis

All forest plots from the traditional meta-analyses are summarized in Appendices S3 and S4.

3.6 | Depression

Our summary results of this study show that compared with the control group, the negative SMD clearly demonstrated that psychosocial interventions significantly reduced depressive symptoms among women who experienced perinatal loss ($n=20$, SMD = −0.78, 95% CI [−1.01, −0.55]). Owing to the substantial heterogeneity observed ($I^2=80\%$, $p<0.001$), a random-effects model was employed for the analysis. A subgroup analysis was conducted on different types of interventions with findings indicating that supportive intervention ($n=7$, SMD = −0.63, 95% CI [−0.93, −0.34]), CBT ($n=3$, SMD = −0.96, 95% CI [−1.34, −0.58]), mind–body intervention ($n=3$, SMD = −0.78, 95% CI [−1.22, −0.35]), psychoeducation ($n=2$, SMD = −0.55, 95% CI [−0.84, −0.25]) and PST ($n=2$, SMD = −1.76, 95% CI [−3.44, −0.08]) significantly improved depressive symptoms among women with perinatal loss. However, no significant improvement in depression symptoms was observed with respect to the bereavement intervention group ($n=2$, SMD = −0.72, 95% CI [−1.50, 0.06]).

3.7 | Anxiety

A negative SMD clearly indicated that psychosocial interventions significantly reduced anxiety symptoms among women who experienced perinatal loss ($n=16$, SMD = −1.16, 95% CI [−1.52, −0.80]). Owing to the high heterogeneity ($I^2=88\%$, $p<0.0001$), a random-effects model was adopted for analysis. With respect to the subgroups of different intervention types, the results revealed that supportive intervention ($n=4$, SMD = −1.22, 95% CI [−2.16, −0.29]), mind–body intervention ($n=4$, SMD = −1.11, 95% CI [−1.77, −0.45]), psychoeducation ($n=2$, SMD = −0.78, 95% CI [−1.18, −0.37]), PST ($n=2$, SMD = −2.09, 95% CI [−4.09, −0.10]), and bereavement intervention ($n=1$, SMD = −1.08, 95% CI [−1.52, −0.63]) significantly improved anxiety symptoms among women with perinatal loss. CBT ($n=3$, SMD = −0.93, 95% CI [−1.87, 0.01]) was found not to significantly improve anxiety symptoms.

3.8 | Grief

A negative SMD indicated that psychosocial interventions significantly reduced grief symptoms among women who experienced perinatal loss compared with the control group ($n=11$, SMD = −0.63; 95% CI [−0.85, −0.41]). Given that there was

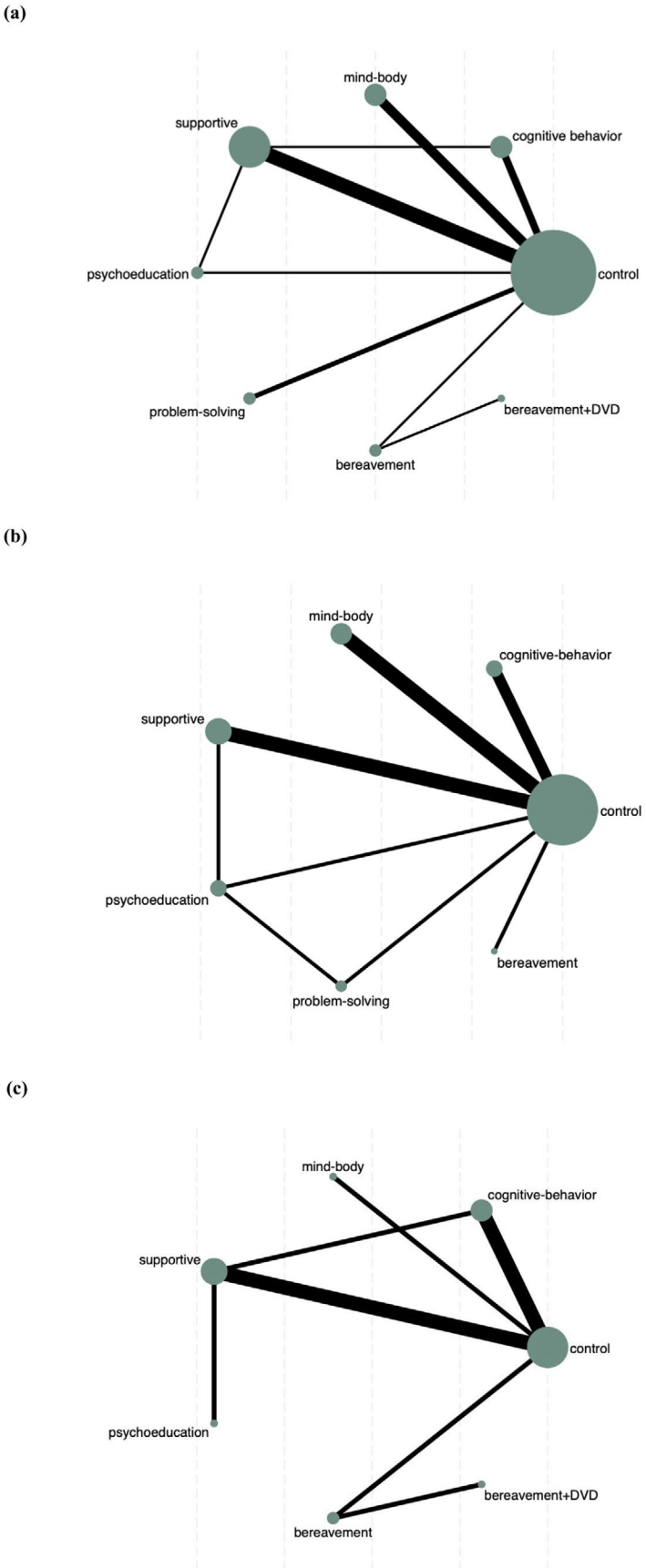

FIGURE 2 | Network plots of various psychosocial interventions for different outcomes. (a) The network diagram of depression. (b) The network diagram of anxiety. (c) The network diagram of grief.

(a)

problem-solving						
-0.46 (-1.97,1.06)	**psychoeducation**					
-0.55 (-1.86,0.75)	-0.10 (-1.40,1.20)	**mind-body**				
-0.61 (-1.82,0.60)	-0.16 (-1.23,0.91)	-0.06 (-0.98,0.87)	**supportive**			
-0.63 (-1.95,0.68)	-0.18 (-1.46,1.11)	-0.08 (-1.13,0.97)	-0.02 (-0.88,0.83)	**cognitive-behvior**		
-0.70 (-2.51,1.11)	-0.24 (-2.05,1.57)	-0.14 (-1.78,1.49)	-0.09 (-1.65,1.48)	-0.06 (-1.71,1.58)	**bereavement**	
-0.97 (-3.30,1.36)	-0.52 (-2.85,1.81)	-0.42 (-2.62,1.78)	-0.36 (-2.51,1.78)	-0.34 (-2.54,1.87)	-0.28 (-1.74,1.19)	**bereavement+DVD**
-1.34 (-2.41,-0.27)	-0.89 (-1.96,-0.19)	-0.79 (-1.52,-0.05)	-0.73 (-1.29,-0.17)	-0.71 (-1.46,0.05)	-0.64 (-2.10,0.82)	-0.37 (-2.44,1.70) **control**

(b)

problem-solving					
-1.37 (-2.76,0.02)	**psychoeducation**				
-1.72 (-3.39,-0.04)	-0.35 (-1.81,1.11)	**mind-body**			
-1.72 (-3.28,-0.16)	-0.35 (-1.58,0.88)	0.00 (-1.19,1.20)	**supportive**		
-1.75 (-4.00,0.49)	-0.38 (-2.47,1.71)	-0.04 (-1.97,1.90)	-0.04 (-1.95,1.88)	**bereavement**	
-1.89 (-3.65,-0.13)	-0.52 (-2.07,1.03)	-0.17 (-1.51,1.17)	-0.17 (-1.48,1.13)	-0.14 (-2.15,1.87)	**cognitive-behavior**
-2.83 (-4.26,-1.40)	-1.46 (-2.63,-0.29)	-1.11 (-1.98,-0.24)	-1.11 (-1.93,-0.30)	-1.08 (-2.81,0.65)	-0.94 (-1.96,0.08) **control**

(c)

bereavement						
-0.18 (-1.21,0.85)	**bereavement+DVD**					
-0.44 (-1.60,0.72)	-0.26 (-1.81,1.29)	**supportive**				
-0.47 (-1.62,0.68)	-0.29 (-1.83,1.26)	-0.03 (-0.67,0.62)	**cognitive-behvior**			
-0.65 (-2.12,0.82)	-0.47 (-2.27,1.33)	-0.21 (-1.40,0.98)	-0.18 (-1.36,1.00)	**mind-body**		
-1.21 (-2.75,0.34)	-1.03 (-2.89,0.83)	-0.77 (-1.79,0.25)	-0.74 (-1.95,0.47)	-0.56 (-2.12,1.01)	**Psychoeducation**	
-1.11 (-2.14,-0.09)	-0.94 (-2.39,0.52)	-0.68 (-1.21,-0.14)	-0.65 (-1.17,-0.13)	-0.47 (-1.52,0.59)	0.09 (-1.06,1.25)	**control**

FIGURE 3 | The league tables for different outcomes. (a) The league table for the effect of psychological intervention on depression. (b) The league table for the effect of psychological intervention on anxiety. (c) The league table for the effect of psychological intervention on grief.

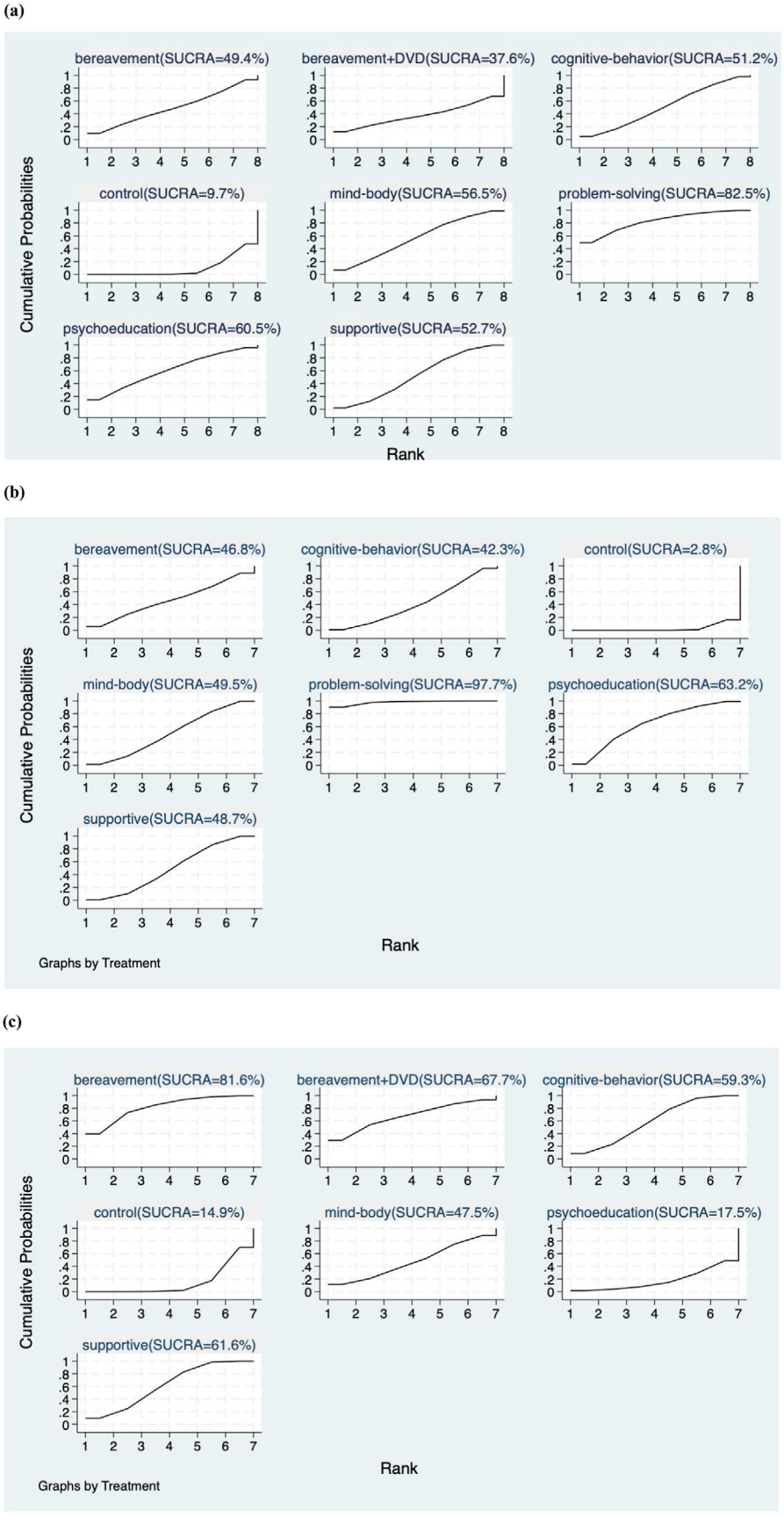

FIGURE 4 | The surface under the cumulative ranking curve (SUCRA). (a) The surface under the cumulative ranking curve (SUCRA) for depression. (b) The surface under the cumulative ranking curve (SUCRA) for anxiety. (c) The surface under the cumulative ranking curve (SUCRA) for grief.

TABLE 2 | The overall results.

(a) Paired meta-analysis

Outcomes	Number of studies	Statistic outcomes SMD, 95% CI
Depression	20	−0.78 (−1.01, −0.55)
Anxiety	16	−1.16 (−1.52, −0.80)
Grief	11	−0.63 (−0.85, −0.41)
PTSD	6	−0.46 (−0.72, −0.20)
Stress	6	−1.10 (−1.95, −0.24)
Mental health	5	−1.34 (−2.10, −0.58)
Sleep quality	4	0.07 (−1.94, 2.08)
Social support	3	0.08 (−0.21, 0.37)

(b) Network meta-analysis

	Depression				Anxiety				Grief			
Intervention	Number of studies	SUCRA (%)	Mean Rank	PrBest (%)	Number of studies	SUCRA (%)	Mean Rank	PrBest (%)	Number of studies	SUCRA (%)	Mean Rank	PrBest (%)
PST	2	82.5	2.2	49.5	2	97.9	1.1	90.1	—	—	—	—
Psychoeducation	2	60.5	3.8	14.8	2	63.2	3.2	1.7	1	17.5	5.9	1.6
Mind–body exercise	3	56.5	4.0	6.9	4	49.5	4.0	1.2	1	47.5	4.2	11.4
Supportive intervention	7	52.7	4.3	2.3	4	48.7	4.1	0.7	4	61.6	3.3	9.5
CBT	3	51.2	4.4	4.8	3	41.3	6.8		4	59.3	3.4	8.6
Bereavement intervention	3	49.4	4.5	9.5	1	46.8	4.2	5.5	2	81.6	2.1	39.5
Control group	—	9.7%	7.3	0.0	—	2.8	6.8	0.0	—	14.9	6.1	0.0

moderate heterogeneity ($I^2 = 66\%$, $p < 0.05$), the random-effects model was used for analysis. On the basis of the subgroups classified by different intervention types, the results revealed that supportive intervention ($n = 5$, SMD = −0.84, 95% CI [−1.38, −0.30]), bereavement intervention ($n = 3$, SMD = −0.64, 95% CI [−1.16, −0.12]) and CBT ($n = 3$, SMD = −0.46, 95% CI [−0.72, −0.20]) significantly improved the grief symptoms of women with perinatal loss.

3.9 | Paired Meta-Analysis of Other Secondary Psychological Outcomes

A negative SMD from the traditional meta-analysis clearly indicated that psychosocial interventions significantly improved PTSD symptoms ($n = 6$, SMD = −0.59, 95% CI [−0.79, −0.39], $I^2 = 37\%$), reduced stress ($n = 6$, SMD = −1.10, 95% CI [−1.95, −0.24], $I^2 = 94\%$), and enhanced overall mental health ($n = 5$, SMD = −1.34, 95% CI [−2.10, −0.58], $I^2 = 94\%$) among the target population. However, these interventions did not exhibit a significant impact on sleep quality ($n = 4$, MD = 0.07, 95% CI [−1.94, 2.08], $I^2 = 84\%$) or social support ($n = 3$, SMD = 0.08, 95% CI [−0.21, 0.37], $I^2 = 0\%$).

3.10 | Network Meta-Analysis

Figure 2 presents network plots of various psychosocial interventions for different outcomes, Figure 3 presents the league tables for different outcomes, and Figure 4 presents the SUCRA for different outcomes. The overall results are compiled in Table 2.

3.11 | Network Map

In the diagram, each node represents a psychosocial intervention, and the lines depict direct comparisons between them. The line thickness reflects the number of studies comparing the interventions. Local consistency was assessed using the node-splitting method, with all node-splitting test p values > 0.05, indicating no significant evidence of inconsistency between direct and indirect evidence. Consequently, a consistency model was adopted for the results analysis, as no significant inconsistency was detected. Additional details are presented in Appendix S5.

3.12 | Network Meta-Analysis of Depression, Anxiety, and Grief

3.12.1 | Depression

A network map comparing different psychosocial interventions for depression is illustrated in Figure 2. Twenty studies were included in the network meta-analysis, including a supportive intervention ($n = 7$, 436 participants), CBT ($n = 3$, 327 participants), mind–body intervention ($n = 4$, 351 participants), PST ($n = 2$, 241 participants), psychoeducation ($n = 2$, 184 participants), bereavement intervention ($n = 3$, 163 participants) and a control group ($n = 20$, 854 participants). Figure 3 reveals that compared with the control group, the PST group had significantly improved depression symptoms, with a moderate to large effect size (SMD = −1.34, 95% CI [−2.41, −0.27]). This was followed by psychoeducation (SMD = −0.89, 95% CI [−1.96, −0.19]), mind–body intervention (SMD = −0.79, 95% CI [−1.52, −0.05]) and supportive intervention (SMD = −0.73, 95% CI [−1.29, −0.17]). Additionally, statistical analysis revealed no significant differences between the other interventions and the control or intervention groups. The SUCRA values for depression among women who experienced perinatal loss for each intervention are presented in Figure 4. The analysis revealed that PST (SUCRA = 82.5%, mean ranking = 2.2) outperformed all other interventions in terms of efficacy. The next most effective treatments were psychoeducation (SUCRA = 60.5%, mean ranking = 3.8), mind–body exercise (SUCRA = 56.5%, mean ranking = 4.0), supportive intervention (SUCRA = 52.7%, mean ranking = 4.3), CBT (SUCRA = 51.2%, mean ranking = 4.4), and bereavement intervention (SUCRA = 49.4%, mean ranking = 4.5) compared to the control group.

3.12.2 | Anxiety

A total of 16 studies were included in the network meta-analysis for anxiety outcomes, including 5 different psychosocial interventions: supportive intervention ($n = 4$, 307 participants), CBT ($n = 3$, 327 participants), mind–body intervention ($n = 4$, 358 participants), PST ($n = 2$, 116 participants) and psychoeducation ($n = 2$, 100 participants). As shown in Figure 3, compared with the control group, PST (SMD = −2.83, 95% CI [−4.26, −1.40]) significantly improved anxiety and demonstrated the greatest effect size, followed by psychoeducation (SMD = −1.46, 95% CI [−2.63, −0.29]), mind–body intervention (SMD = −1.11, 95% CI [−1.98, −0.24]) and supportive intervention (SMD = −1.11, 95% CI [−1.98, −0.24]). Furthermore, the comparisons between PST and mind–body intervention (SMD = −1.72, 95% CI [−3.39, −0.04]), supportive intervention (SMD = −1.72, 95% CI [−3.28, −0.16]) and bereavement intervention (SMD = −1.89, 95% CI [−3.65, −0.13]) were statistically significant, with moderate to large effect sizes. Statistical analysis revealed no significant differences between the other interventions and the control or intervention groups. The SUCRA for anxiety among women experiencing perinatal loss across each intervention revealed that PST was the most effective intervention for reducing anxiety (SUCRA = 97.7%, mean ranking = 1.1). When the control group was excluded, CBT ranked last in effectiveness (SUCRA = 41.3%, mean ranking = 6.8).

3.12.3 | Grief

A total of 11 studies were included in the network meta-analysis for grief outcomes, including 6 different psychosocial interventions: supportive intervention ($n = 4$, 326 participants), CBT ($n = 4$, 524 participants), mind–body intervention ($n = 1$, 64 participants), psychoeducation ($n = 1$, 88 participants), bereavement intervention ($n = 2$, 163 participants) and control group (504 participants). Bereavement intervention (SMD = −1.11, 95% CI [−2.14, −0.09]), supportive intervention (SMD = −0.68, 95% CI [−1.21, −0.14]) and CBT (SMD = −0.65, 95% CI [−1.17, −0.13]) were statistically significant, with moderate to large effect sizes. Statistical analysis revealed no significant differences between the other interventions and the control or intervention

groups. The SUCRA for grief among women who experienced perinatal loss for each intervention showed that bereavement intervention exhibited the highest ranking (SUCRA = 81.6%, mean ranking = 2.1), and psychoeducation had the lowest ranking (SUCRA = 17.5%, mean ranking = 5.9), excluding the control group.

3.13 | Publication Bias

As a general methodological approach, visual funnel plots and Egger's test were employed to evaluate the potential risk of publication bias in meta-analyses that included data from ten or more studies. Egger's test indicated that the *p* values for depression, anxiety, and grief were 0.123, 0.056, and 0.154, respectively. The *p* value for anxiety approaches the level of significance, suggesting the potential presence of slight small-study effects, but it does not reach statistical significance. Others suggest a low risk of publication bias. The detailed results of the funnel plots and Egger's test are presented in Appendix S6.

3.14 | Sensitivity Analysis

Sensitivity analysis was performed by sequentially excluding one study at a time from the aggregated data analyzed. The results suggested that except for the heterogeneity of grief, which decreased after excluding the study by Kaydirak et al. ($I^2 = 34\%$, $p < 0.0001$) (Mecdi Kaydirak and Aslan 2021a), with respect to all other outcome indicators, after any single study was deleted, the change in the I^2 value was small, and the effect size remained unchanged, indicating that most of the results of the meta-analysis were stable.

3.15 | Quality of Evidence

Owing to the high risk of bias, small sample size, and substantial heterogeneity, the certainty of evidence for mental health was rated as "very low," while that for sleep quality was rated as "low", and that for the certainty of evidence for other outcomes was rated as "moderate." Detailed information is presented in Appendix S7.

4 | Discussion

A variety of psychosocial interventions have been developed for perinatal loss, each with unique advantages and limitations. This network meta-analysis systematically evaluated the effectiveness of various psychosocial interventions in improving different negative psychological outcomes among women experiencing perinatal loss and ranked the efficacy of these interventions on the basis of effect sizes.

4.1 | Basic Interpretation of Pairwise Meta-Analysis Results

Our findings suggest that psychosocial interventions effectively improved depression, anxiety, grief, PTSD, stress, and mental well-being among women who had experienced perinatal loss but showed no statistical significance in perceived social support or sleep quality. These findings are in line with recent research (Li et al. 2024; Shaohua and Shorey 2021; Donegan et al. 2023). However, the results regarding perceived social support are contrary to those of Li et al. (2024). Furthermore, it is determined that women who have experienced perinatal loss struggle with loneliness, shame, and guilt, and thus, lasting safety is vital for their support (Fernández-Basanta et al. 2023). The included studies (Hung et al. 2023; Chang et al. 2021; Rosenbaum et al. 2015), however, did not involve continuous follow-up nor was there any arrangement for partner, family, or peer support despite the findings that the woman yearns for both informational and emotional support from peers who share similar experiences. This may engender profound feelings of misapprehension and isolation among women. Sharing sentiments and feelings is difficult when they receive individual psychosocial interventions, which may affect intervention outcomes. Accordingly, future studies may consider using social media to introduce group peer support and promote a sense of solidarity, explore the support types that perinatal loss women need, and evaluate patients' demands for peer or family support to strengthen their perceived sense of social support (Tseng et al. 2017; Murphy et al. 2012).

4.2 | Basic Interpretation of the Network Meta-Analysis Results

Our results revealed that, mind–body exercise, supportive interventions and psychoeducation are more successful than standard care for improving depression and anxiety symptoms among women with perinatal loss. In terms of treatment effectiveness, PST performed best (depression, SUCRA = 82.8%; anxiety, SUCRA = 97.7%), while for women struggling with grief during perinatal loss, bereavement, supportive intervention, and CBT intervention exhibited significant effects compared to the control group, with bereavement having the most significant effect (SUCR = 81.6%).

4.3 | PST: The Most Effective Intervention for Relieving Depression and Anxiety

To our knowledge, among psychosocial interventions, PST has the greatest effect on relieving depression and anxiety symptoms. It emphasizes reshaping cognition and enhancing problem-solving skills, empowering individuals to actively confront challenges rather than passively tolerate them by systematically identifying, evaluating, and solving current major problems, thereby reducing negative thinking, catastrophizing, and helplessness (Bell and D'Zurilla 2009). Previous studies have shown that, compared with individuals without depression, people with depression tend to struggle more and are less effective at finding solutions to problems (Thoma et al. 2015). Through its effects on the prefrontal cortex, cognitive regulation, emotional balance and neuroplasticity, PST establishes a positive cognitive framework in which problems can be solved as it directly targets the common problem-solving deficits in patients with depression, exerting beneficial effects (Goldstein-Piekarski et al. 2021). PST also helps individuals better control emotions and adjust their health behaviors, thus lowering the risk of anxiety and

depression (Frauenknecht and Black 2003). Experiences of perinatal bereavement often leave mothers with numerous uncertainties, such as the cause of the loss, the risk of recurrence, and ways to cope with grief (Zhang, Chen, et al. 2024). In the process of guiding mothers to clarify goals and apply problem-solving skills to alleviate negative emotions and address practical issues, PST can activate emotion-regulating regions in the brain, reduce anxiety- and depression-related activity in the amygdala and hippocampus, and significantly lower the levels of stress hormones (e.g., cortisol) while increasing dopamine levels at the neurophysiological level. Compared with most other interventions that fail to act directly on these neural pathways, PST has more targeted and effective outcomes (Goldstein-Piekarski et al. 2021; Clark and Beck 2010).

Perinatal women face multiple stresses, including drastic hormonal fluctuations, social role transitions (e.g., frustration over the expected "motherhood identity"), and changes in family support systems. PST not only addresses superficial emotional issues but also helps them rebuild parenting plans and cope with real-world challenges such as medical decisions (e.g., risk assessment for subsequent pregnancy), thus tailoring their decisions to their multidimensional needs (Chung et al. 2020). Among all the included studies that performed PST interventions in women who had experienced miscarriage, two studies (Bokaie et al. 2024; Nazaralivand et al. 2021) adopted the same intervention strategies in terms of measurement time points, intervention types, implementers, and frequency. Both studies provided weekly group counseling, which lasted for 8 weeks, for women who experienced spontaneous miscarriages. Each session included homework assignments and encouraged participants to practice independently at home. To amplify the effect, reminders were sent via text messages and phone calls to help participants regularly revisit problem-solving skills and shift their negative perceptions of perinatal loss, ultimately enabling them to cope better with difficult emotions. The results demonstrated that, compared with the control group, the intervention group experienced significant reductions in anxiety and depression, with effects lasting up to 1 month, which is in line with previous studies (Michelson et al. 2022; Fatin et al. 2017; Sampson et al. 2016). Another study (Kong et al. 2014) implemented a combination of in-person and telephone conferences for intervention, which was well received by participants. This approach offered initial face-to-face meetings, providing patients with a sense of reality, and then extended the connection built during in-person interactions to telephone conferences. This method not only helped overcome time and space limitations for participants but also did not interfere with the participants' professional or everyday lives and proved to be more cost-effective and operationally feasible (Shahamabadi et al. 2022).

However, it is important to note that only a small number of PST studies were included, the sample size was limited, and standardized procedures, such as consistent intervention steps, timing, and modes across the studies, were lacking. Future research should investigate critical aspects of intervention implementation, such as frequency, mode, follow-up, and the role of the implementer, and conduct RCTs with larger sample sizes to assess its efficacy. Furthermore, nurses are often the ones who have the most contact with patients. More specifically, midwives and nurses in obstetric services are usually not only the first medical persons with whom the patients have contact, but they also provide ongoing support during the pregnancy and during the subsequent puerperium (Qian et al. 2022; Xie et al. 2024). In this respect, nurses, as clinical first-line workers, require special skills and knowledge (Rubio-Alvarez et al. 2024). First, they not only provide information support and PST care to women who have experienced perinatal loss in the hospital, but they also must activate the electronic technology for regular remote follow-up to remind patients to practice (Qian et al. 2022) and offer online continuing education to grieving women and their families to improve both caregiving and self-care (McCreight 2005). With respect to group intervention versus individual intervention, group intervention is not only cheaper, but it allows patients to share experiences and feelings while providing peer support to each other, which increases intervention effectiveness. Previous research has shown that for women with perinatal loss, group co-intervention offers a supportive space, strengthening their sense of belonging and easing loneliness (Côté-Arsenault and Freije 2004). By utilizing obstetric or perinatal hospice units, nurses can bring women together who have experienced loss, thereby enabling them to provide mutual peer support (Garcia-Catena et al. 2023). However, nurses whose bereavement care training was insufficient lack the skills, confidence, and sense of security required to manage perinatal loss, preventing them from providing systematic interventions (Hernandez Garre et al. 2017; Laing et al. 2020). Training nurses in PST for perinatal loss will help health care departments improve their skills in managing women's emotions through the period of loss.

Additionally, mind–body intervention, supportive intervention and psychoeducation significantly alleviate depression and anxiety among women with perinatal loss. During the 2022 pandemic, Günebakan et al. conducted a remote mind–body exercise intervention with 32 healthy premenopausal women aged 18 to 45 (Günebakan and Acar 2023); compared with the control group, the intervention group, which received a 6-week, biweekly online yoga program via Zoom, experienced significantly less depression and anxiety. These results aligned with those of Huberty et al. (2019, 2020), who reported that online yoga effectively alleviated depression but did not significantly improve anxiety outcomes among women who had experienced stillbirth (Huberty et al. 2020, 2019). Given that women who experience perinatal loss often have an urgent need for information support regarding the causes of the event and intervention mechanisms, simple mind–body exercise (such as yoga) cannot fully meet this need. These findings suggest that future research could combine mind–body exercises with interventions focused on providing essential information and skills to maximize therapeutic benefits (Shaohua and Shorey 2021). Yoga is a widely practiced mind–body exercise that combines meditation, breathing techniques, and physical postures aimed at lowering cortisol levels in the bloodstream, promoting relaxation, and alleviating symptoms of anxiety and depression in women (Nolan 2016; Martínez-Calderon et al. 2023). Moreover, previous studies have highlighted that, in addition to the limited accessibility of services caused by objective factors such as time–space arrangements and economic costs that restrict traditional intervention models, some women also develop resistance to face-to-face interventions (such as offline courses) because of psychological burdens such as self-stigma and guilt (Cacciola and Psouni 2020). This may further weaken the intervention

effect of mind–body exercises. Furthermore, compared with in-person women, perinatal women who practice internet-based yoga show greater improvements in stress, depression, and anxiety and benefit from flexible scheduling, reduced travel, more frequent practices, fewer missed appointments, and higher levels of satisfaction (Ganjekar et al. 2024; Kruse et al. 2017). In such cases, remote interventions seem to offer a more flexible, practical, and efficient approach to support these women (Shaohua and Shorey 2021).

Importantly, all psychoeducation in this study was conducted online (Elsharkawy et al. 2021; Shahamabadi et al. 2022; Sun et al. 2018), and supplementary reminders via SMS and calls encouraged patients to review content. The results revealed a significant reduction in depression and anxiety symptoms among women with perinatal loss (Sun et al. 2018; Shahamabadi et al. 2022). Moreover, psychoeducation helps reduce fear and stress in patients with depression and anxiety by providing them with knowledge about their illness (Hajnasiri et al. 2016), which alleviates anxiety by providing them with useful information and helping them demonstrate coping skills in real situations (Mohamed et al. 2023). Thus, providing women and their families with detailed knowledge and skills through the internet to address perinatal loss is worth exploring. However, it may not fully address complex emotions such as shame and guilt in women and tends to remain more at the level of improvement, with its core being "knowledge transmission." In contrast, problem-solving therapy places greater emphasis on guiding individuals to actively analyze problems, develop solutions, and implement practices, thus achieving better results (Siddhpuria et al. 2022; Kartika and Krianto 2023).

Supportive interventions refer to any form of interpersonal counseling and interaction designed to improve the negative emotions of women following perinatal loss through measures such as soothing, comforting, encouragement, and/or guidance (Wong et al. 2021), with a focus on providing emotional, social, or psychological support to individuals or groups (DeBackere et al. 2008). All supportive interventions provide emotional, social, or psychological support on the basis of theoretical frameworks. Previous reviews have also indirectly confirmed that theory-based supportive interventions significantly improve the relevant indicators of the target group and achieve intervention objectives (Prestwich et al. 2014). Women who are grieving the loss of a child may have a greater need for professional support to cope with their emotional turmoil rather than seeking solace through remembrance rituals or ceremonies (Fernández-Férez et al. 2021). This implies that, when intervening with women who have experienced perinatal loss, providing timely support is important. Nevertheless, whereas the studies reviewed address primarily the women themselves and tend to overlook potential support from partners, families, or peers, the women reported that social support was the most important form of help for them after they experienced perinatal loss. Furthermore, the psychological stress theory also suggested that social support could effectively buffer stressful events (Hutti 2005). That is, support from medical staff, family or peers can effectively relieve patients' grief, anxiety and depression (Gold et al. 2016; Chen et al. 2007). Accordingly, future research should explore the inclusion of greater social support or interventions aimed at dyadic couples.

It was further determined that bereavement intervention did not ease depression or anxiety among women with perinatal loss. For example, Musters et al. (2013) reported that more than 50% of respondents chose medical or psychological support (Musters et al. 2013) over bereavement intervention. This might be attributed to the cultural and racial differences, where different traditions, policies, social norms, and beliefs influence the perceptions and needs due to bereavement. Furthermore, the absence of a standardized approach to bereavement intervention in the research could explain the lack of positive results (Chow 2010). The bereavement intervention trials included in this study (Rosenbaum et al. 2015; Simpson et al. 2015) were conducted separately in India and the United States, two countries that have significant cultural differences. Moreover, owing to the small number of trials, there is a lack of sufficient representativeness. In fact, bereavement support is crucial, and future research should develop reasonable bereavement support plans on the basis of different cultural and religious beliefs. According to certain studies, the culture surrounding stillbirth and bereavement in some countries is stigmatizing, often resulting in feelings of shame, isolation, and hesitancy to seek support (Ayebare et al. 2021; Roberts et al. 2012; Kiguli et al. 2015). Therefore, providing health care providers with systematic and culturally sensitive bereavement education and training is crucial as this enables them to offer personalized support to women who experience perinatal bereavement across diverse cultural contexts, thereby effectively alleviating the psychological trauma they endure (Shorey et al. 2017; Meredith et al. 2017).

Thus, mind–body interventions must be combined with information delivery and emotional care to compensate for their shortcomings in terms of knowledge provision and emotional regulation; psychoeducation must overcome the boundaries of traditional cognitive interventions and strengthen the guidance for deep-seated emotional issues; supportive interventions should emphasize the synergistic role of partners, families, and social networks to optimize the adaptability of theoretical models; and bereavement interventions must fully consider cultural differences and construct standardized and personalized intervention programs. On this basis, future research should focus on the integrated innovation of multidimensional intervention strategies and formulate precise intervention plans according to individual characteristics to effectively enhance the comprehensiveness and effectiveness of psychological support.

4.4 | Bereavement Intervention: The Most Effective Intervention for Relieving Grief

Bereavement intervention helps women cope with perinatal grief, which peaks at 6 months and fades over a year (Hall 2014). Grief after a miscarriage or infant death is often overlooked or unrecognized because only the parent may actually perceive the baby, whether by feeling the fetal movement or seeing the baby on an ultrasound image. Although parents have not yet formed a significant bond with their unborn child, women often experience prolonged and intense grief after losing their baby (Hildingsson et al. 2024; Capitulo 2005). Therefore, bereavement intervention is tailored to perinatal loss grief. Unlike general psychosocial interventions, it addresses unique complex emotions such as guilt, anger, and profound grief associated

with the loss of a baby during pregnancy, childbirth or soon after childbirth, offering a safe space for women to express these intense feelings and applying methods such as public mourning ceremonies and memento-keeping to help them share grief, fears, and hopes; process trauma; and come to terms with loss (Johnson and Langford 2015; Fernández-Férez et al. 2021). The central goal of bereavement interventions is to promote recovery by helping families understand and accept their loss. Rituals and spiritual support can offer meaning and comfort to those who are grieving (Capitulo 2005). One intervention included in this study implemented a bereavement intervention based on Roy's adaptation model, which included counseling and contact with the deceased infant for 90 women who experienced late-term miscarriage and results showed that the intervention group had significantly greater improvement in grief symptoms compared to the control group (Simpson et al. 2015), which is consistent with previous studies' Clauss findings (Clauss 2009). Another study aimed at providing an additional DVD tool as bereavement support for parents who had experienced the death of a newborn (Rosenbaum et al. 2015). Results indicated that while parents who viewed the DVD had more grief at 3 months, they exhibited much less grief at 12 months. This suggests that perinatal loss parents may experience intense short-term grief, but long-term bereavement interventions help them cope with and ease grief. Additionally, couple-focused interventions improved outcomes somewhat by allowing partners to support each other (Kersting and Wagner 2012).

Despite the conflicting experiences and perceptions of some parents, the combined findings suggest that bereavement intervention is a positive experience and may be an effective tool in the hospital setting to help parents cope with loss, bond with their infants, and manage grief (Oxlad et al. 2023). This implies that future studies should tailor bereavement intervention strategies according to the type of intervention and the duration of follow-up to increase their specificity. Perinatal bereavement differs by being sudden, less memorable, culturally ambiguous, and lacking traditional grieving rituals (Inati et al. 2018). As evidence suggests that women who have experienced perinatal loss are generally grateful for and content with the bereavement interventions they receive (Radford and Hughes 2015; Adolfsson et al. 2004), implementing bereavement support interventions is essential. Moreover, cultural and religious factors should be considered in interventions for mothers experiencing perinatal loss. In Western contexts, it is a common bereavement support practice to encourage family members to hold their deceased infants and keep relevant statements. However, in many regions across East Asia and Africa, such practices are largely regarded as taboo. Instead, these local communities place greater emphasis on addressing loss through collective family decision-making and the expression of grief via spiritual rituals (Markin and Zilcha-Mano 2018; Roberts et al. 2024; Kain 2021). Therefore, nurses are required to gain in-depth insight into the cultural beliefs of families, integrate professional psychosocial support with local religious customs and kinship support networks, and assist in the design of symbolic farewell methods that align with the families' cultural contexts. By doing so, the bereavement needs and cultural differences of families from diverse cultural backgrounds can be fully respected. Accordingly, future research should focus on developing culturally tailored support and understanding how beliefs affect grief and recovery (Zhang et al. 2025; Dolan et al. 2022). In addition, midwifery educators have a responsibility to provide students with education on perinatal loss in the classroom and to encourage them to exercise this knowledge and competency in practical clinical settings (Shen et al. 2022; Simpson et al. 2015). In this vein, bereavement interventions for perinatal loss should be more scientific and systematic. Furthermore, given the benefits of supportive interventions and CBT for reducing perinatal loss grief, future approaches could combine grief counseling, CBT and group or online support for negative emotions in women facing perinatal loss.

4.5 | Strengths and Limitations

Considering the significant impact of perinatal loss on the health and emotional well-being of the entire family, our network meta-analysis is the first to provide an overview of existing evidence on interventions for various psychological disorders in women experiencing perinatal loss. One of the study's main strengths is the comprehensive inclusion of all available trials related to perinatal loss interventions, making it possible to prioritize the most promising interventions for implementation, where resources allow. In addition, our analysis emphasizes the essential role of midwives and nurses in managing postnatal loss and highlights the use of internet-based technologies as valuable tools for overcoming geographical and temporal constraints. Finally, our study advocates for future research that evaluates the long-term effects, cost-effectiveness, and mechanisms of psychosocial interventions.

When interpreting the findings, several limitations must be considered. First, this study includes only 30 RCTs with an uneven distribution of interventions, for example, 11 focus on supportive interventions and only one on mindfulness meditation. Thus, further research with larger sample sizes and a broader scope is needed, especially with respect to the impact of mindfulness meditation on women experiencing perinatal loss. Second, the inability to directly compare some interventions may limit the strength and comprehensiveness of the indirect analyses. Third, most studies performed well in terms of bias assessment, with a low risk of bias. However, a few studies (Tektaş and Çam 2017; Nazaralivand et al. 2021) showed a high risk of bias in multiple areas, and 11 studies included in the analysis did not use blinding, which could affect the overall reliability of the conclusions. In the future, more studies with rigorous designs and scientific methodologies are necessary to reduce the risk of bias and provide more reliable evidence to support relevant conclusions. Fourth, the exclusion of non-English language studies may not only limit the generalizability of the results across different cultural contexts but may also lead to the omission of relevant high-quality evidence published in other languages and may also increase the potential risk of selection bias in the study. Fifth, the stratification of studies by intervention type, ethnicity, culture, infant loss type and delivery mode (online vs. in-person, individual vs. group) introduces heterogeneity, which must be considered when interpreting the results. Finally, the reliance on SUCRA scores disregards differences in study quality, as it solely uses relative rankings to assess the interventions. Therefore, careful consideration is necessary when interpreting the results of this network meta-analysis.

4.6 | Linking Evidence to Action

- Integrating problem-solving therapy (PST) with bereavement support while considering women's varying degrees of psychological trauma and cultural differences is recommended. Priority should be given to multidimensional interventions as well as those interventions that involve couples or entire families.
- Intervention providers should receive structured bereavement care training to implement standardized, evidence-based protocols for perinatal loss care and subsequent pregnancy care.
- Electronic technologies such as video consultations can be used as supplementary services to provide remote peer support, thereby expanding access to support.
- Interventions must meet the needs of individuals and families, reduce social stigma, and ensure high-quality and low-cost services. For future research, it is necessary to clarify women's needs on the basis of the type and stage of perinatal loss while considering multiple factors and identify effective intervention characteristics to develop personalized programs.

Acknowledgments

The authors express their sincere thanks to all the members who contributed to the writing, revision and other related work with respect to this article.

Ethics Statement

This systematic review is not subject to ethical review.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Research data is not shared.

References

Adolfsson, A., C. Berterö, and P.-G. Larsson. 2006. "Effect of a Structured Follow-Up Visit to a Midwife on Women With Early Miscarriage: A Randomized Study." *Acta Obstetricia et Gynecologica Scandinavica* 85: 330–335.

Adolfsson, A., P. G. Larsson, B. Wijma, and C. Bertero. 2004. "Guilt and Emptiness: Women's Experiences of Miscarriage." *Health Care for Women International* 25: 543–560.

Alvarez-Calle, M., and C. Chaves. 2023. "Posttraumatic Growth After Perinatal Loss: A Systematic Review." *Midwifery* 121: 103651.

Armstrong, D. S., M. H. Hutti, and J. Myers. 2009. "The Influence of Prior Perinatal Loss on Parents' Psychological Distress After the Birth of a Subsequent Healthy Infant." *Journal of Obstetric, Gynecologic, and Neonatal Nursing* 38: 654–666.

Ayebare, E., T. Lavender, J. Mweteise, et al. 2021. "The Impact of Cultural Beliefs and Practices on Parents' Experiences of Bereavement Following Stillbirth: A Qualitative Study in Uganda and Kenya." *BMC Pregnancy and Childbirth* 21: 443.

Bagheri, L., R. Chaman, A. Ghiasi, and Z. Motaghi. 2023. "Cognitive Behavioral Counselling in Post Abortion Grief: A Randomized Controlled Trial." *Journal of Education Health Promotion* 12: 120.

Bakhbakhi, D., D. Siassakos, A. Davies, et al. 2023. "Interventions, Outcomes and Outcome Measurement Instruments in Stillbirth Care Research: A Systematic Review to Inform the Development of a Core Outcome Set." *BJOG: An International Journal of Obstetrics & Gynaecology* 130: 560–576.

Barat, S., S. Yazdani, M. Faramarzi, et al. 2020. "The Effect of Brief Supportive Psychotherapy on Prevention of Psychiatric Morbidity in Women With Miscarriage: A Randomized Controlled Trial About the First 24-Hours of Hospitalization." *Oman Medical Journal* 35: e130.

Basirat, Z., F. Kheirkhah, M. Faramarzi, S. Esmaelzadeh, S. Khafri, and Z. Tajali. 2022. "Pharmacotherapy or Psychotherapy? Selective Treatment Depression in the Infertile Women With Recurrent Pregnancy Loss: A Triple-Arm Randomized Controlled Trial." *International Journal of Fertility & Sterility* 16: 211.

Bell, A. C., and T. J. D'Zurilla. 2009. "Problem-Solving Therapy for Depression: A Meta-Analysis." *Clinical Psychology Review* 29: 348–353.

Bokaie, M., S. Mohammadkhani, N. Ghasemi, and T. M. Sorkhani. 2024. "Effect of Online Problem Solving Counseling on the Sexual Anxiety and Intimacy of Women With Recurrent Pregnancy Loss: A Clinical Trial." *International Journal of Reproductive BioMedicine (IJRM)* 22: 717–726.

Brown, M. L., E. Rojas, and S. Gouda. 2017. "A Mind–Body Approach to Pediatric Pain Management." *Children* 4: 50.

Cacciatore, J., J. DeFrain, and K. L. Jones. 2008. "When a Baby Dies: Ambiguity and Stillbirth." *Marriage & Family Review* 44: 439–454.

Cacciola, E., and E. Psouni. 2020. "Insecure Attachment and Other Help-Seeking Barriers Among Women Depressed Postpartum." *International Journal of Environmental Research and Public Health* 17: 3887.

Capitulo, K. L. 2005. "Evidence for Healing Interventions With Perinatal Bereavement." *MCN: American Journal of Maternal Child Nursing* 30: 389–396.

Chang, S.-C., P.-L. Kuo, and C.-H. Chen. 2021. "Effectiveness of Empathic Caring on Stress and Depression for Women With Recurrent Miscarriage: A Randomized Controlled Trial." *Complementary Therapies in Clinical Practice* 43: 101367.

Chen, C. M., S. F. Kuo, Y. H. Chou, and H. C. Chen. 2007. "Postpartum Taiwanese Women: Their Postpartum Depression, Social Support and Health-Promoting Lifestyle Profiles." *Journal of Clinical Nursing* 16: 1550–1560.

Chow, A. Y. 2010. "The Role of Hope in Bereavement for Chinese People in Hong Kong." *Death Studies* 34: 330–350.

Chung, K., H. Y. Cho, Y. R. Kim, K. Jhung, H. S. Koo, and J. Y. Park. 2020. "Medical Help-Seeking Strategies for Perinatal Women With Obstetric and Mental Health Problems and Changes in Medical Decision Making Based on Online Health Information: Path Analysis." *Journal of Medical Internet Research* 22: e14095.

Chung, M. C., and J. Reed. 2017. "Posttraumatic Stress Disorder Following Stillbirth: Trauma Characteristics, Locus of Control, Posttraumatic Cognitions." *Psychiatric Quarterly* 88: 307–321.

Clark, D. A., and A. T. Beck. 2010. "Cognitive Theory and Therapy of Anxiety and Depression: Convergence With Neurobiological Findings." *Trends in Cognitive Sciences* 14: 418–424.

Clauss, D. K. 2009. *Psychological Distress Following Miscarriage and Stillbirth: An Examination of Grief, Depression and Anxiety in Relation to Gestational Length, Women's Attributions, Perception of Care and Provision of Information*. Drexel University.

Côté-Arsenault, D., and M. M. Freije. 2004. "Support Groups Helping Women Through Pregnancies After Loss." *Western Journal of Nursing Research* 26: 650–670.

DeBackere, K. J., P. D. Hill, and K. L. Kavanaugh. 2008. "The Parental Experience of Pregnancy After Perinatal Loss." *Journal of Obstetric, Gynecologic & Neonatal Nursing* 37: 525–537.

Dolan, N., A. Grealish, T. Tuohy, and A.-M. Bright. 2022. "Are Mindfulness-Based Interventions as Effective as Cognitive Behavioral Therapy in Reducing Symptoms of Complicated Perinatal Grief? A Systematic Review." *Journal of Midwifery & Womens Health* 67: 209–225.

Donegan, G., M. Noonan, and C. Bradshaw. 2023. "Parents Experiences of Pregnancy Following Perinatal Loss: An Integrative Review." *Midwifery* 121: 103673.

Donker, T., K. M. Griffiths, P. Cuijpers, and H. Christensen. 2009. "Psychoeducation for Depression, Anxiety and Psychological Distress: A Meta-Analysis." *BMC Medicine* 7: 1–9.

Duman, M., Y. D. Ozan, Y. A. Derya, and S. T. Taşhan. 2022. "The Effect of Relaxation Exercises Training on Pregnancy-Related Anxiety After Perinatal Loss: A Pilot Randomized Control Trial☆." *Explorer* 18: 44–50.

Elsharkawy, N. B., S. M. Mohamed, M. H. Awad, and M. M. A. Ouda. 2021. "Effect of Happiness Counseling on Depression, Anxiety, and Stress in Women With Recurrent Miscarriage." *International Journal of Women's Health* 13: 287–295.

Fatin, S., S. Hosseinian, A. A. Asgharnejad Farid, and K. Abolmaal. 2017. "Evaluating Social Problem Solving and Psychological Capital Model on Academic Burnout Through Mediating Help Seeking From Peers and Academic Consciousness." *Positive Psychology Research* 3: 75–90.

Fenstermacher, K., and J. E. Hupcey. 2013. "Perinatal Bereavement: A Principle-Based Concept Analysis." *Journal of Advanced Nursing* 69: 2389–2400.

Fernández-Basanta, S., C. Dahl-Cortizo, C. Coronado, and M.-J. Movilla-Fernández. 2023. "Pregnancy After Perinatal Loss: A Meta-Ethnography From a Women's Perspective." *Midwifery* 124: 103762.

Fernández-Férez, A., M. I. Ventura-Miranda, M. Camacho-Ávila, et al. 2021. "Nursing Interventions to Facilitate the Grieving Process After Perinatal Death: A Systematic Review." *International Journal of Environmental Research and Public Health* 18: 5587.

Flach, K., W. L. Machado, and D. Centenaro Levandowski. 2025. "Maternal Mental Health, Marital Adjustment, and Family Support in the Grieving Process After a Pregnancy Loss." *Death Studies* 49: 1090–1100.

Frauenknecht, M., and D. R. Black. 2003. *The Social Problem-Solving Inventory for Adolescents (SPSI-A): A Manual for Application, Interpretation, and Psychometric Evaluation*. PNG Publications.

Furtado-Eraso, S., P. Escalada-Hernández, and B. Marín-Fernández. 2021. "Integrative Review of Emotional Care Following Perinatal Loss." *Western Journal of Nursing Research* 43: 489–504.

Furukawa, T. A., C. Barbui, A. Cipriani, P. Brambilla, and N. Watanabe. 2006. "Imputing Missing Standard Deviations in Meta-Analyses Can Provide Accurate Results." *Journal of Clinical Epidemiology* 59: 7–10.

Ganjekar, S., V. S. Harve, H. Bhargav, et al. 2024. "The Pregnancy Tele-Yoga Module to Combat Stress, Anxiety, and Depression Associated With Pregnancy: An Exploratory Open-Label Multicentric Study." *International Journal of Yoga* 17: 46–52.

Garcia-Catena, C., P. Ruiz-Palomino, S. Saavedra, and J. D. Gonzalez-Sanz. 2023. "Nurses' and Midwives' Perceptions and Strategies to Cope With Perinatal Death Situations: A Systematic Literature Review." *Journal of Advanced Nursing* 79: 910–921.

Gardiner, P. A., A. L. Kent, V. Rodriguez, et al. 2016. "Evaluation of an International Educational Programme for Health Care Professionals on Best Practice in the Management of a Perinatal Death: IMproving Perinatal Mortality Review and Outcomes via Education (IMPROVE)." *BMC Pregnancy and Childbirth* 16: 1–11.

Gold, K. J., I. Leon, M. E. Boggs, and A. Sen. 2016. "Depression and Posttraumatic Stress Symptoms After Perinatal Loss in a Population-Based Sample." *Journal of Women's Health* 25: 263–269.

Goldstein-Piekarski, A. N., J. Wielgosz, L. Xiao, et al. 2021. "Early Changes in Neural Circuit Function Engaged by Negative Emotion and Modified by Behavioural Intervention Are Associated With Depression and Problem-Solving Outcomes: A Report From the ENGAGE Randomized Controlled Trial." *eBioMedicine* 67: 103387.

Gozuyesil, E., A. I. Manav, S. B. Yesilot, and M. Sucu. 2022. "Grief and Ruminative Thought After Perinatal Loss Among Turkish Women: One-Year Cohort Study." *São Paulo Medical Journal* 140: 188–198.

Günebakan, Ö., and M. Acar. 2023. "The Effect of Tele-Yoga Training in Healthy Women on Menstrual Symptoms, Quality of Life, Anxiety-Depression Level, Body Awareness, and Self-Esteem During COVID-19 Pandemic." *Irish Journal of Medical Science (1971 -)* 192: 467–479.

Guyatt, G. H., A. D. Oxman, G. E. Vist, et al. 2008. "GRADE: An Emerging Consensus on Rating Quality of Evidence and Strength of Recommendations." *BMJ (Clinical Research Ed.)* 336: 924–926.

Haghighi, M., K. Oladbaniadam, H. Mohaddesi, and J. Rasuli. 2022. "Individual Counseling in Mothers Bereaved by Pregnancy Loss: A Randomized Clinical Trial." *Journal of Education Health Promotion* 11: 209.

Hajnasiri, H., Z. Behbodimoghddam, S. Ghasemzadeh, F. Ranjkesh, and M. Geranmayeh. 2016. "The Study of the Consultation Effect on Depression and Anxiety After Legal Abortion." *Iranian Journal of Psychiatric Nursing* 4: 64–72.

Hall, C. 2014. "Bereavement Theory: Recent Developments in Our Understanding of Grief and Bereavement." *Bereavement Care* 33: 7–12.

Hasani, S., M. Mirghafourvand, K. Esmaeilpour, and F. Sehhatie Shafaie. 2021. "The Effect of Counseling Based on Health Promotion Awareness on Mental Health and Self-Esteem in Women With Ectopic Pregnancy: A Randomized Controlled Clinical Trial." *Journal of Maternal-Fetal & Neonatal Medicine* 34: 1687–1694.

Heazell, A. E., D. Siassakos, H. Blencowe, et al. 2016. "Stillbirths: Economic and Psychosocial Consequences." *Lancet* 387: 604–616.

Herbert, D., K. Young, M. Pietrusińska, and A. MacBeth. 2022. "The Mental Health Impact of Perinatal Loss: A Systematic Review and Meta-Analysis." *Journal of Affective Disorders* 297: 118–129.

Hernandez Garre, J. M., F. C. Sanchez Sanchez, and P. E. Perez. 2017. "Giving Birth to Death. Life Professionals Managing the Bereavement." *Revista Internacional de Sociología* 75: 910–921.

Hildingsson, I., C. Berterö, M. Hultcrantz, et al. 2024. "Support Interventions to Reduce Psychological Distress in Families Experiencing Stillbirth in High Income Countries: A Systematic Review." *Women and Birth* 37: 296–302.

Huberty, J., J. Green, K. J. Gold, J. Leiferman, and J. Cacciatore. 2019. "An Iterative Design Process to Develop a Randomized Feasibility Study and Inform Recruitment of Minority Women After Stillbirth." *Pilot and Feasibility Studies* 5: 140.

Huberty, J., M. Sullivan, J. Green, et al. 2020. "Online Yoga to Reduce Post Traumatic Stress in Women Who Have Experienced Stillbirth: A Randomized Control Feasibility Trial." *BMC Complementary Medicine and Therapies* 20, no. 1: 173.

Hug, L., D. You, H. Blencowe, et al. 2024. "Global, Regional, and National Estimates and Trends in Stillbirths From 2000 to 2019: A Systematic Assessment." *Lancet* 398: 772–785.

Hung, H.-M., P.-L. Kuo, C. S. Lee, and C.-H. Chen. 2023. "Effectiveness of Mental Health Website Intervention on Stress and Depression for Women With Recurrent Miscarriage: A Randomized Controlled Trial." *Health Care for Women International* 44: 496–508.

Hutti, M. H. 2005. "Social and Professional Support Needs of Families After Perinatal Loss." *Journal of Obstetric, Gynecologic & Neonatal Nursing* 34: 630–638.

Hutton, B., G. Salanti, D. M. Caldwell, et al. 2015. "The PRISMA Extension Statement for Reporting of Systematic Reviews Incorporating Network Meta-Analyses of Health Care Interventions: Checklist and Explanations." *Annals of Internal Medicine* 162: 777–784.

Inati, V., M. Matic, C. Phillips, N. Maconachie, F. Vanderhook, and A. L. Kent. 2018. "A Survey of the Experiences of Families With Bereavement Support Services Following a Perinatal Loss." *Australian and New Zealand Journal of Obstetrics and Gynaecology* 58: 54–63.

Jensen, K. H. K., M. C. Krog, E. Koert, et al. 2021. "Meditation and Mindfulness Reduce Perceived Stress in Women With Recurrent Pregnancy Loss: A Randomized Controlled Trial." *Reproductive Biomedicine Online* 43: 246–256.

Johnson, J. E., A. B. Price, J. C. Kao, et al. 2016. "Interpersonal Psychotherapy (IPT) for Major Depression Following Perinatal Loss: A Pilot Randomized Controlled Trial." *Archives of Women's Mental Health* 19: 845–859.

Johnson, O. P., and R. W. Langford. 2015. "A Randomized Trial of a Bereavement Intervention for Pregnancy Loss." *Journal of Obstetric, Gynecologic & Neonatal Nursing* 44: 492–499.

Kain, V. J. 2021. "Perinatal Palliative Care: Cultural, Spiritual, and Religious Considerations for Parents-What Clinicians Need to Know." *Frontiers in Pediatrics* 9: 597519.

Kartika, S. A., and T. Krianto. 2023. "Effectiveness of Psycho Education Treatment for Reduction of Postpartum Depression: A Systematic Review." *International Conference on Public Health Proceeding* 4: 200–207.

Kersting, A., R. Dölemeyer, J. Steinig, et al. 2013. "Brief Internet-Based Intervention Reduces Posttraumatic Stress and Prolonged Grief in Parents After the Loss of a Child During Pregnancy: A Randomized Controlled Trial." *Psychotherapy and Psychosomatics* 82: 372–381.

Kersting, A., K. Kroker, S. Schlicht, K. Baust, and B. Wagner. 2011. "Efficacy of Cognitive Behavioral Internet-Based Therapy in Parents After the Loss of a Child During Pregnancy: Pilot Data From a Randomized Controlled Trial." *Archives of Women's Mental Health* 14: 465–477.

Kersting, A., and B. Wagner. 2012. "Complicated Grief After Perinatal Loss." *Dialogues in Clinical Neuroscience* 14: 187–194.

Kiguli, J., S. Namusoko, K. Kerber, S. Peterson, and P. Waiswa. 2015. "Weeping in Silence: Community Experiences of Stillbirths in Rural Eastern Uganda." *Global Health Action* 8: 24011.

Kishimoto, M., A. Yamaguchi, M. Niimura, et al. 2021. "Factors Affecting the Grieving Process After Perinatal Loss." *BMC Womens Health* 21: 313.

Kong, G., T. Chung, and I. Lok. 2014. "The Impact of Supportive Counselling on Women's Psychological Wellbeing After Miscarriage–a Randomised Controlled Trial." *BJOG: An International Journal of Obstetrics & Gynaecology* 121: 1253–1262.

Kotsi, A., D. D. Vlastos, and P. Theofilou. 2025. "Exploring the Impact of Perinatal Loss on a Mental, Emotional and Social Level. A Qualitative Study Focusing on the Management of Perinatal Grief." *Current Psychiatry Research and Reviews* 21: 1–15.

Kruse, C. S., N. Krowski, B. Rodriguez, L. Tran, J. Vela, and M. Brooks. 2017. "Telehealth and Patient Satisfaction: A Systematic Review and Narrative Analysis." *BMJ Open* 7: e016242.

Laing, R. E., C. M. Fetherston, and P. Morrison. 2020. "Responding to Catastrophe: A Case Study of Learning From Perinatal Death in Midwifery Practice." *Women and Birth* 33: 556–565.

Lawn, J. E., H. Blencowe, S. Oza, et al. 2014. "Every Newborn: Progress, Priorities, and Potential Beyond Survival." *Lancet* 384: 189–205.

Li, S. N., L. Yang, Q. Y. Wang, S. Pan, M. H. Xiao, and J. Xie. 2024. "Effectiveness of Nonpharmacological Interventions for Improving the Mental Health and Other Psychosocial Outcomes of Parents With Perinatal Loss: A Systematic Review and Meta-Analysis." *Depression and Anxiety* 2024: 2181544.

Mackrill, T., and K. M. Sørensen. 2020. "Implementing Routine Outcome Measurement in Psychosocial Interventions—A Systematic Review." *European Journal of Social Work* 23: 790–808.

Magnus, M. C., A. Havdahl, N.-H. Morken, K.-A. Wensaas, A. J. Wilcox, and S. E. Håberg. 2021. "Risk of Miscarriage in Women With Psychiatric Disorders." *British Journal of Psychiatry* 219: 501–506.

Markin, R. D., and S. Zilcha-Mano. 2018. "Cultural Processes in Psychotherapy for Perinatal Loss: Breaking the Cultural Taboo Against Perinatal Grief." *Psychotherapy (Chicago, Ill.)* 55: 20–26.

Martínez-Calderon, J., M. J. Casuso-Holgado, M. J. Muñoz-Fernandez, C. Garcia-Muñoz, and A. M. Heredia-Rizo. 2023. "Yoga-Based Interventions May Reduce Anxiety Symptoms in Anxiety Disorders and Depression Symptoms in Depressive Disorders: A Systematic Review With Meta-Analysis and Meta-Regression." *British Journal of Sports Medicine* 57: 1442–1449.

McCreight, B. S. 2005. "Perinatal Grief and Emotional Labour: A Study of Nurses' Experiences in Gynae Wards." *International Journal of Nursing Studies* 42: 439–448.

Mecdi Kaydirak, M., and E. Aslan. 2021a. "Efficacy of Nursing Support in the Pre- and Postmedical Termination of Pregnancy Phases: A Randomized Study." *Omega (Westport)* 84: 51–68.

Meredith, P., T. Wilson, G. Branjerdporn, J. Strong, and L. Desha. 2017. "'Not Just a Normal Mum': A Qualitative Investigation of a Support Service for Women Who Are Pregnant Subsequent to Perinatal Loss." *BMC Pregnancy and Childbirth* 17: 1–12.

Michelson, D., E. Hodgson, A. Bernstein, B. F. Chorpita, and V. Patel. 2022. "Problem Solving as an Active Ingredient in Indicated Prevention and Treatment of Youth Depression and Anxiety: An Integrative Review." *Journal of Adolescent Health* 71: 390–405.

Mohamed, S., H. Ewise, and S. Ali. 2023. "Effect of Psychoeducational Training Program on Coping Skills, Spiritual Well-Being, and Levels of Anxiety Among Patients With Generalized Anxiety Disorder." *Evidence-Based Nursing Research* 5: 1–10.

Moher, D., A. Liberati, J. Tetzlaff, and D. Altman. 2009. "Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoSMed. 6 (7): e1000097." *Open Medicine* 3: e120–e130.

Murphy, F. A., A. Lipp, and D. L. Powles. 2012. "Follow-Up for Improving Psychological Well Being for Women After a Miscarriage." *Cochrane Database of Systematic Reviews* 2012: CD008679.

Musters, A. M., Y. E. Koot, N. M. van den Boogaard, et al. 2013. "Supportive Care for Women With Recurrent Miscarriage: A Survey to Quantify Women's Preferences." *Human Reproduction* 28: 398–405.

Nasrollahi, M., M. Ghazanfar Pour, A. Ahmadi, M. Mirzaee, and K. Alidousti. 2022. "Effectiveness of Mindfulness-Based Stress Reduction on Depression, Anxiety, and Stress of Women With the Early Loss of Pregnancy in Southeast Iran: A Randomized Control Trial." *Reproductive Health* 19: 233.

Nazaralivand, R., M. T. Najafabadi, N. Behroozi, and M. Zadeh. 2021. "The Effectiveness of Problem-Solving Group Counseling on Women's Mental Health After Spontaneous Abortion." *Journal of Babol University of Medical Sciences* 23: 142–149.

Neugebauer, R., J. Kline, J. C. Markowitz, et al. 2006. "Pilot Randomized Controlled Trial of Interpersonal Counseling for Subsyndromal Depression Following Miscarriage." *Journal of Clinical Psychiatry* 67: 1299–1304.

Nolan, C. R. 2016. "Bending Without Breaking: A Narrative Review of Trauma-Sensitive Yoga for Women With PTSD." *Complementary Therapies in Clinical Practice* 24: 32–40.

Nournorouzi, L., R. Nourizadeh, S. Hakimi, K. Esmaeilpour, and L. Najmi. 2022. "The Effect of a Coping Program on Mothers' Grief Following Perinatal Deaths." *Journal of Education Health Promotion* 11: 248.

Okyay, E. K., and T. Uçar. 2023. "The Effect of Emotional Freedom Technique and Music Applied to Pregnant Women Who Experienced Prenatal Loss on Psychological Growth, Well-Being, and Cortisol Level: A Randomized Controlled Trial." *Archives of Psychiatric Nursing* 45: 101–112.

Oxlad, M. J., E. F. Franke, C. Due, and L. H. Jaensch. 2023. "Capturing Parents' and Health Professionals' Experiences of Stillbirth Bereavement Photography: A Systematic Review and Meta-Synthesis." *Women and Birth* 36: 421–428.

Pakpour, A. H., M. D. Griffiths, M. M. Ohayon, A. Broström, and C. Y. Lin. 2020. "Editorial: A Good Sleep: The Role of Factors in Psychosocial Health." *Frontiers in Neuroscience* 14: 520.

Prestwich, A., F. F. Sniehotta, C. Whittington, S. U. Dombrowski, L. Rogers, and S. Michie. 2014. "Does Theory Influence the Effectiveness of Health Behavior Interventions? Meta-Analysis." *Health Psychology* 33: 465–474.

Qian, J., W. Wang, S. Sun, et al. 2022. "Exploring Interactions Between Women Who Have Experienced Pregnancy Loss and Obstetric Nursing Staff: A Descriptive Qualitative Study in China." *BMC Pregnancy and Childbirth* 22: 450.

Quenby, S., I. D. Gallos, R. K. Dhillon-Smith, et al. 2021. "Miscarriage Matters: The Epidemiological, Physical, Psychological, and Economic Costs of Early Pregnancy Loss." *Lancet* 397: 1658–1667.

Radford, E. J., and M. Hughes. 2015. "Women's Experiences of Early Miscarriage: Implications for Nursing Care." *Journal of Clinical Nursing* 24: 1457–1465.

Raphi, F., S. Bani, M. Farvareshi, S. Hasanpour, and M. Mirghafourvand. 2021. "Effect of Hope Therapy on Psychological Well-Being of Women After Abortion: A Randomized Controlled Trial." *BMC Psychiatry* 21: 1–10.

Riddle, J. N., T. Hopkins, A. Yeaton-Massey, and S. Hellberg. 2023. "No Baby to Bring Home: Perinatal Loss, Infertility, and Mental Illness—Overview and Recommendations for Care." *Current Psychiatry Reports* 25: 747–757.

Roberts, L. R., S. Montgomery, J. W. Lee, and B. A. Anderson. 2012. "Social and Cultural Factors Associated With Perinatal Grief in Chhattisgarh, India." *Journal of Community Health* 37: 572–582.

Roberts, L. R., J. M. Nick, N. L. Sarpy, J. Peters, and S. Tamares. 2024. "Bereavement Care Guidelines Used in Health Care Facilities Immediately Following Perinatal Loss: A Scoping Review." *JBI Evidence Synthesis* 22: 2003–2089.

Rocha, J., C. Nunes, A. Leonardo, et al. 2018. "Women Generating Narratives After an Unwanted Prenatal Diagnosis Result: Randomized Controlled Trial." *Archives of Women's Mental Health* 21: 453–459.

Rosenbaum, J. L., J. R. Smith, Y. Yan, N. Abram, and D. B. Jeffe. 2015. "Impact of a Neonatal-Bereavement-Support DVD on Parental Grief: A Randomized Controlled Trial." *Death Studies* 39: 191–200.

Rubio-Alvarez, A., C. Jiménez-Ramos, C. Bravo-Vaquero, B. Pulgarín-Pulgarín, J. Rodríguez-Almagro, and A. Hernández-Martínez. 2024. "Professional Approach to the Care of Women Who Have Suffered a Perinatal Loss." *Nursing & Health Sciences* 26: e13116.

Rücker, G., and G. Schwarzer. 2015. "Ranking Treatments in Frequentist Network Meta-Analysis Works Without Resampling Methods." *BMC Medical Research Methodology* 15: 58.

Sampson, M., Y. Villarreal, and A. Rubin. 2016. "A Problem-Solving Therapy Intervention for Low-Income, Pregnant Women at Risk for Postpartum Depression." *Research on Social Work Practice* 26: 236–242.

Shahamabadi, M. G., T. Farajkhoda, and H. Z. Mahmoodabadi. 2022. "Online Versus Face-To-Face Metacognitive Educational Counseling Program on Anxiety and Meta-Worry in Women With a History of Miscarriage: A Randomized Clinical Trial." *Journal of Education Health Promotion* 11: 264.

Shaohua, L., and S. Shorey. 2021. "Psychosocial Interventions on Psychological Outcomes of Parents With Perinatal Loss: A Systematic Review and Meta-Analysis." *International Journal of Nursing Studies* 117: 103871.

Shen, Q., J. Liang, and Y. Gao. 2022. "Experience of Undergraduate Midwifery Students Faced With Perinatal Death in Clinical Practice: A Qualitative Study." *Nurse Education Today* 108: 105159.

Shorey, S., B. André, and V. Lopez. 2017. "The Experiences and Needs of Healthcare Professionals Facing Perinatal Death: A Scoping Review." *International Journal of Nursing Studies* 68: 25–39.

Siassakos, D., S. Jackson, K. Gleeson, et al. 2018. "All Bereaved Parents Are Entitled to Good Care After Stillbirth: A Mixed-Methods Multicentre Study (INSIGHT)." *BJOG: An International Journal of Obstetrics & Gynaecology* 125: 160–170.

Siddhpuria, S., G. Breau, M. E. Lackie, et al. 2022. "Women's Preferences and Design Recommendations for a Postpartum Depression Psychoeducation Intervention: User Involvement Study." *JMIR Formative Research* 6: e33411.

Simpson, C., P. Lee, and J. Lionel. 2015. "The Effect of Bereavement Counseling on Women With Psychological Problems Associated With Late Pregnancy Loss." *Journal of Asian Midwives (JAM)* 2: 5–20.

Smart, C., and B. L. Smith. 2013. "A Transdisciplinary Team Approach to Perinatal Loss." *MCN: American Journal of Maternal Child Nursing* 38: 110–114.

Sterne, J. A., J. Savović, M. J. Page, et al. 2019. "RoB 2: A Revised Tool for Assessing Risk of Bias in Randomised Trials." *BMJ (Clinical Research Ed.)* 366: 4898.

Sterne, J. A. C., J. Savović, M. J. Page, et al. 2019. "RoB 2: A Revised Tool for Assessing Risk of Bias in Randomised Trials." *BMJ* 366: 4898.

Sun, S., J. Li, Y. Ma, H. Bu, Q. Luo, and X. Yu. 2018. "Effects of a Family-Support Programme for Pregnant Women With Foetal Abnormalities Requiring Pregnancy Termination: A Randomized Controlled Trial in China." *International Journal of Nursing Practice* 24: e12614.

Tang, Y.-Y., B. K. Hölzel, and M. I. Posner. 2015. "The Neuroscience of Mindfulness Meditation." *Nature Reviews Neuroscience* 16: 213–225.

Tektaş, P., and O. Çam. 2017. "The Effects of Nursing Care Based on Watson's Theory of Human Caring on the Mental Health of Pregnant Women After a Pregnancy Loss." *Archives of Psychiatric Nursing* 31: 440–446.

Thoma, P., T. Schmidt, G. Juckel, C. Norra, and B. Suchan. 2015. "Nice or Effective? Social Problem Solving Strategies in Patients With Major Depressive Disorder." *Psychiatry Research* 228: 835–842.

Thomson, G., L. McNally, and R. Nowland. 2024. "Experiences and Impacts of Psychological Support Following Adverse Neonatal Experiences or Perinatal Loss: A Qualitative Analysis." *BMC Pregnancy and Childbirth* 24: 569.

Tseng, Y. F., H. R. Cheng, Y. P. Chen, S. F. Yang, and P. T. Cheng. 2017. "Grief Reactions of Couples to Perinatal Loss: A One-Year Prospective Follow-Up." *Journal of Clinical Nursing* 26: 5133–5142.

Walker, S. 2014. *Psychosocial Interventions in Mental Health Nursing*. Sage.

Wan, X., W. Wang, J. Liu, and T. Tong. 2014. "Estimating the Sample Mean and Standard Deviation from the Sample Size, Median, Range and/or Interquartile Range." *BMC Medical Research Methodology* 14: 135.

Wang, R., J. Lu, and K. M. Chow. 2024. "Effectiveness of Mind–Body Interventions in Labour Pain Management During Normal Delivery: A Systematic Review and Meta-Analysis." *International Journal of Nursing Studies* 158: 104858.

Wang, Z., M. J. Fix, L. Hug, et al. 2022. "Estimating the Stillbirth Rate for 195 Countries Using a Bayesian Sparse Regression Model With Temporal Smoothing." *Annals of Applied Statistics* 16: 2101–2121.

Westby, C. L., A. R. Erlandsen, S. A. Nilsen, E. Visted, and J. C. Thimm. 2021. "Depression, Anxiety, PTSD, and OCD After Stillbirth: A Systematic Review." *BMC Pregnancy and Childbirth* 21: 782.

WHO. 2024. *Newborn Mortality*. World Health Organization.

Wong, M. S., H. Mou, and W. T. Chien. 2021. "Effectiveness of Educational and Supportive Intervention for Primiparous Women on Breastfeeding Related Outcomes and Breastfeeding Self-Efficacy: A Systematic Review and Meta-Analysis." *International Journal of Nursing Studies* 117: 103874.

World Health Organization. 2022. *Guide for Integration of Perinatal Mental Health in Maternal and Child Health Services*. World Health Organization.

Xie, J., A. Hunter, L. Biesty, and A. Grealish. 2024. "The Impact of Midwife/Nurse-Led Psychosocial Interventions on Parents Experiencing Perinatal Bereavement: An Integrative Review." *International Journal of Nursing Studies* 157: 104814.

Zaidel, C., S. Musich, J. Karl, S. Kraemer, and C. S. Yeh. 2021. "Psychosocial Factors Associated With Sleep Quality and Duration Among Older Adults With Chronic Pain." *Population Health Management* 24: 101–109.

Zhang, F., J. Wang, L. Wu, W. Li, Y. Xie, and Y. Li. 2024. "Effects of Expressive Writing Intervention for Women Undergoing Fetal Loss in China: A Randomized Controlled Study." *Journal of Contemporary Psychotherapy* 55: 1–10.

Zhang, F., J. Wang, L. Wu, W. Li, Y. Xie, and Y. Li. 2025. "Effects of Expressive Writing Intervention for Women Undergoing Fetal Loss in China: A Randomized Controlled Study." *Journal of Contemporary Psychotherapy* 55: 11–20.

Zhang, X., Y. Chen, M. Zhao, M. Yuan, T. Zeng, and M. Wu. 2024. "Complicated Grief Following the Perinatal Loss: A Systematic Review." *BMC Pregnancy and Childbirth* 24: 772.

Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Appendix S1:** Literature search strategy. **Appendix S2:** Different types of perinatal loss interventions classified by content. **Appendix S3:** The risk of bias assessment details. **Appendix S4:** Forest plots from the traditional meta-analyses. **Appendix S5:** Consistency model analysis. **Appendix S6:** Publication bias. **Appendix S7:** Certainty of evidence assessments.