Effectiveness of psychotherapeutic interventions on psychological distress in women who have experienced perinatal loss: a systematic review protocol

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Abstract

Background: Perinatal loss is a traumatic and complex experience that contributes to negative maternal psychological states and adverse outcomes impacting fetal development, maternal-fetal/infant bonding, marital/partner relationships, and child cognitive, emotional, and behavioral development. These outcomes present preventable disease burden and financial liability to individuals, families, and the healthcare system. Psychological interventions have the potential to improve outcomes for women and their families after perinatal loss. A few studies have explored the effectiveness of individual psychotherapeutic interventions in reducing maternal psychological distress after perinatal loss; however, a systematic review to compare these interventions has not been conducted. The primary objective of this systematic review is to determine the effectiveness of psychotherapeutic intervention on psychological distress and perception, coping, and adjustment in women who have experienced perinatal loss. The secondary objective of this review is to examine the content and delivery methods of effective psychotherapeutic interventions.

Methods: We endeavor to search electronic databases (PsycINFO, MEDLINE, Embase, Cochrane Central Register of Controlled Trials (CENTRAL), Scopus, CINAHL, Social Work Abstracts, Family and Society Studies Worldwide, Family Studies Abstracts, Academic Search Premier), gray literature databases (Proquest Dissertation and Theses Global, Web of Science Conference Proceedings Citation Index, OAIster, Open-Grey, Canadian Electronic Library, Canadian Research Index), and relevant organizational websites and conduct forward and backward citation searches of included studies. Inclusion criteria will consider studies that (1) are randomized controlled trials (RCTs), quasi-experimental (e.g., before-after design), and observational (prospective cohort); (2) include women affected by perinatal loss accessing psychotherapeutic intervention or support; and (3) evaluate a mental health or related outcome. Two authors will independently screen all citations, full-text articles, and abstract data. The study methodological quality (or bias) will be appraised using an appropriate tool. The primary outcome(s) will be measurements on the severity of depressive, anxiety, grief, and post-traumatic stress symptoms. Secondary (Continued on next page)
Background
Perinatal loss (PL) can be experienced as a devastating and psychologically distressing occurrence which studies have shown negatively impacts mental, emotional, and physical health across the lifespan [1–5]. Perinatal loss (PL), which includes prenatal loss (miscarriage or stillbirth) or neonatal death, may occur at any time between the point of conception to 28 days after the date of delivery [6–9]. Canadian guidelines define miscarriage as the loss of a pregnancy before 20 weeks’ gestation, stillbirth as death after 20 weeks’ gestation with the fetus weighing over 500 g, and neonatal death as loss of an infant within 28 days after birth [6–9]. Definitions of miscarriage, stillbirth, and neonatal death may vary worldwide because of the lack of standardization.

Across Canada, the USA, and the UK, it is estimated that between 15 and 20% of clinically identified pregnancies result in miscarriage [2, 4, 10–24]. This estimate is higher for those who have previously lost a pregnancy [25], increasing to 75% for women 45 years of age and over [21]. One study suggested that the actual prevalence of miscarriage, including missed or undocumented miscarriages, represents 30 to 40% of all pregnancies each year [26]. These prevalence rates suggest there are many women who have experienced a unique type of loss that is surrounded by various forms of ambiguity [27–29], rendering it particularly traumatizing and difficult to process [28]. Further, perinatal bereavement is considered a complex, emotional and distressed response that has shown to last an indeterminate length of time [30]. Studies have found that perinatal loss (PL) has substantial association with expressions of psychological distress such as depression, anxiety, post-traumatic stress (PTS), eating disturbance, preoccupation with the lost fetus/infant, and sleeping disorders [6, 31, 32]. Despite this association, there is insufficient evidence in the literature that describes and compares psychotherapeutic interventions effective in reducing psychological distress in women after perinatal loss (PL) [33]. Limitations such as these may reinforce women’s reticence in seeking resources to care for their mental and emotional health [34, 35] and health care professional’s enduring exclusion of mental and emotional health assessment from standard perinatal care [36]. However, there are some individual studies that have found psychotherapeutic interventions helpful with reducing psychological distress symptoms in women after perinatal loss (PL) [37–39]. This is especially true for women who are finding recovery from the PL experience excessively challenging [11, 40–42]. It is possible then that some psychotherapeutic interventions are more effective with improving psychological distress in women after PL, than others.

Psychotherapeutic interventions
While little is known about interventions that are effective with improving psychological distress in women affected by perinatal loss (PL) [33], when asked, most women indicated that they would prefer to be under the care of a therapist to help them cope [43]. As such, a specialized program or licensed therapist or registered psychologist knowledgeable in promoting mental health after PL would have the expertise to assist women in discussing their loss, help them to understand, and regulate their emotions while offering non-judgmental support and resources [34, 44].

In the literature, there are a few intervention studies that provide data on the effectiveness of cognitive behavioral therapy (CBT) [11, 15–17, 23, 40, 45, 46], interpersonal psychotherapy (IPT) [37, 42, 47], bereavement counseling [38, 48], grief therapy [49], and other psychological and supportive interventions or programs [19, 50, 51]. Despite this, a comprehensive comparison of these intervention studies does not exist. This systematic review will identify the psychotherapeutic intervention(s) with the strongest evidence to suggest superior efficacy in reducing psychological distress in women after PL and examine their content and method of delivery. With the knowledge generated, it is intended that the quality of
psychotherapeutic services made available and accessible to women after PL will improve.

**Methods**

**Objectives**
The primary objective of this systematic review is to determine the effectiveness of psychotherapeutic intervention on psychological distress (depressive, anxiety, grief, posttraumatic stress symptoms) and perception, coping, and adjustment in women who have experienced perinatal loss (PL). The secondary objective of this review is to examine the content (structure, objectives, goals) and delivery methods (in-person, telephone, online, distance) of effective psychotherapeutic interventions.

**Review questions**
To address the objectives of this systematic review, the following questions will be answered:

1. What is the effectiveness of psychotherapeutic intervention on psychological distress in women who have experienced PL in comparison with women who do not receive psychotherapeutic intervention?
2. What is the effectiveness of psychotherapeutic intervention on difficulties with perception, coping, and adjustment in women affected by PL in comparison with women who do not receive psychotherapeutic intervention?
3. What is the content and delivery method of the psychotherapeutic intervention that is associated with reducing psychological distress and improving perception, coping, and adjustment in women who have experienced PL?

**Protocol and registration**
This protocol is being reported in accordance with the reporting guidance provided in the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocol (PRISMA-P) statement (Additional file 1) [52]. This review has been registered in the International Prospective Register of Systematic Reviews (PROSPERO) with registration number CRD42019126456. The proposed systematic review and meta-analysis will be reported in accordance with the reporting guidance provided in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement [53].

**Eligibility criteria**
Criteria identifying studies that are eligible are outlined in PICOSSS format (participants, interventions, comparators, outcomes, study designs, and setting) as described below [54].

**Participants**
Studies will be included if their participants are female, over 18 years of age, and have experienced any type of perinatal loss as a single or recurrent event. Perinatal loss (PL), which includes prenatal loss (miscarriage or stillbirth) or neonatal death, may occur at any time between the point of conception to 28 days after the date of delivery. Miscarriage is defined as the loss of a pregnancy before 20 weeks’ gestation, stillbirth as death after 20 weeks’ gestation with the fetus weighing over 500 g, and neonatal death as loss of an infant within 28 days after birth [6–9]. A recurrent perinatal loss will be defined as two or more losses occurring consecutively [55]. Studies with participants who are visiting health centers or specialized programs for their perinatal loss or receiving prenatal care for a pregnancy subsequent to a previous perinatal loss will be included. Studies with participants who have experienced an ectopic pregnancy or termination of pregnancy will be excluded.

**Measurement**
Primary and secondary outcomes may be evaluated using a validated and reliable psychometric measurement tool or a validated questionnaire. However, studies that do not use at least one validated psychometric measurement tool will be excluded.

**Intervention**
The intervention received may be a psychotherapeutic intervention that was facilitated through a specialized program, or by a registered psychologist, licensed therapist, or other trained and licensed professional credentialed to provide specific counseling. The intervention may include psychological counseling, psychotherapy, psychological support, and psychoeducation in sessions structured to specific objectives or goals (content), conducted individually or in groups, and facilitated in person, on the telephone, online, or via distance delivery (method of delivery).

**Comparators**
Studies with any type of comparator group will be included. The comparators may represent the group receiving usual care, standard care, routine care, or intervention, another psychological or other non-specific intervention or a group that has been waitlisted.

**Outcomes**
The primary outcomes of interest include measurements on the severity of depressive, anxiety, grief, and posttraumatic stress symptoms that will have been evaluated using validated psychometric measurement tools according to their own clinical cutoff points. High symptom severity identified on psychometric measurement tools
may suggest clinical caseness but does not determine a diagnosis. The secondary outcomes of interest include measurements on difficulties in perception, coping, social, or dyadic adjustment. Difficulties in perception, coping, social, and dyadic adjustment are defined within the parameters of the psychometric measurement tool that is being used to evaluate each dimension.

**Study design**

Based on a preliminary scoping search, experimental and quasi-experimental studies are primarily expected, findings from which will be incorporated to address the review questions. Research focused on providing data related to the primary and secondary outcomes of this systematic review may include randomized controlled trials (including pilot randomized controlled trials), quasi-experimental studies (e.g., non/equivalent control group design, single group, pre-test/post-test, or before-after design) and observational prospective cohort studies.

**Setting**

Eligible literature will not be limited by specific setting or geographical location.

**Search strategy**

A search strategy was developed and revised by a university-based health librarian (KAH) and the primary author (EMC). The search was developed in PsycINFO and piloted to ensure that all seed studies were retrieved. The PsycINFO search was then translated for each identified database, with subject headings responsive to the database vocabulary, and keywords constant. The databases that were searched from their inception onwards within disciplinary databases included PsycINFO, MEDLINE, Embase, Cochrane Central Register of Controlled Trials (CENTRAL), CINAHL, Social Work Abstracts, Family and Society Studies Worldwide, and Family Studies Abstracts and within interdisciplinary databases including Scopus and Academic Search Premier (Additional file 2). Database searches will be updated prior to submission of the final publication to ensure all new studies are captured. Gray literature will be searched by the primary author within databases including ProQuest Dissertation and Theses Global, Web of Science Conference Proceedings Citation Index, OAIster, Open-Grey, Canadian Electronic Library, and Canadian Research Index. Further, eligible studies will be searched on organizational websites such as International MARCE Society for Perinatal Mental Health, Pregnancy and Infant Loss Network (PAIL), Pregnancy After Loss Support (PALS), WHO Partnership for Maternal, Newborn and Child Health, Pregnancy Loss and Infant Death Alliance (PLIDA), International Stillbirth Alliance (ISA), and Canadian Association of Perinatal and Women’s Health Nurses (CAPWHN).

The search strategy will include literature that is not limited by language, publication year, publication status, or methodological quality. Articles retrieved through the search strategy that are not in English will be excluded during the study selection process. Qualitative studies will be excluded, as will other publication types such as books, book chapters, discussion papers, editorials, commentaries, letters, abstracts, posters, reviews, guidelines, and case studies.

From the included full-text articles, backward and forward citation searches will be conducted to create a final list of articles that meet the criteria.

**Data collection**

**Data management**

EndNote X8 will be utilized to manage articles by removing duplicates, categorizing studies, and retrieving and storing full-text sources.

**Study selection**

The Microsoft Excel spreadsheet application will be used to facilitate organization of information throughout the study selection process. There will be three reviewers involved in the process, the author will be the primary reviewer (EMC), a fellow PhD candidate will be the secondary reviewer (KSB), and the supervisor of the first two reviewers will be the third reviewer (DEK). Initially, a training and calibration exercise to pilot the screening tool using the inclusion and exclusion criteria on approximately 30 titles and abstracts will be conducted with revisions made to the tool, as necessary. The titles and abstracts of the list of articles (level 1) will be screened independently by the primary and secondary reviewers with discrepancies resolved by the third reviewer. The titles and abstracts of the list of articles (level 1) will be screened independently by the primary and secondary reviewers with discrepancies resolved by the third reviewer. The PRISMA flow diagram will be used to document the study selection process.

**Data extraction**

Data will be extracted from full-text articles using a data extraction template developed for the randomized controlled trial (RCT) study design and the non-randomized study design using Microsoft Excel. These templates will be customized to capture additional data specific to the intent of the review questions. A calibration exercise will be conducted to pilot the customized templates with five percent of included studies, and revisions will be made as necessary. The process of data extraction will begin with the primary reviewer (EMC) extracting and the
secondary reviewer (KSB) verifying the accuracy of the data extracted. Discrepancies will be discussed, and if there is no consensus between the first two reviewers, consultation with the third reviewer (DEK) will provide resolution. To ensure comprehensive data is attained during data extraction, intervention protocols will be accessed. Table 1 outlines the data items that will be extracted from full-text articles.

Assessment of methodological quality and risk of bias
Methodological quality and risk of bias will be assessed for each study individually by the primary (EMC) and secondary (KSB) reviewers with discrepancies resolved by the third reviewer (DEK). For the randomized studies included, the Cochrane Risk of Bias assessment tools for RCTs (RoB2) will be used to assess for bias created from the process of randomization, assignment and adherence to intended interventions, missing outcome data, outcome measurement, and selection of reported results [56]. The RoB2 ratings within each domain will be classified as low risk, high risk, and some concerns [56]. For the non-randomized studies included, the Risk of Bias in Non-Randomised Studies of Interventions (ROBINS-1) will be used to assess bias due to confounding, selection of participants, classification of interventions, deviations from intended interventions, missing data, measurement of outcomes, selection of the reported result, and overall bias [57]. The ROBINS-1 ratings within each domain will be classified as low risk, moderate risk, serious risk, critical risk, and no information [57]. Further, an assessment of intervention fidelity will be added to the RoB2 for RCT’s “other” category [56] and to the ROBINS-I’s “deviations from intended interventions” category [57].

Data synthesis and analysis
Synthesis of the extracted data will be conducted in accordance with the York’s Centre for Reviews and Dissemination (CRD) guidelines [58]. A narrative synthesis will be used to aggregate studies by the validated measurement tool used and/or intervention type received to compare relationships within the data. The narrative synthesis process is intended to synthesize findings from the included studies, describe patterns within the studies, explore relationships within the results, examine factors impacting intervention effectiveness and effects, and assess robustness and generalizability [59].

Missing data
In the event there is missing data, an attempt to contact authors of the studies will be made. In addition, the attrition rates for each included study will be noted or calculated. If missing data is not obtained or if a study’s attrition rates are high, imputation of missing values will be performed. A sensitivity analysis will then be conducted by removing studies individually to determine the impact that each included study has on the overall intervention effect.

Assessment of heterogeneity
Since clinical and epidemiological heterogeneity is expected a priori, meta-analyses will be conducted using the random effects model where appropriate. The random effects model assumes the treatment effects follow a normal distribution, considering both within-study and between-study variation [60]. Forest plots will be used to visualize pooled estimates and the extent of heterogeneity among studies. We will quantify statistical heterogeneity by estimating the variance between studies using the $I^2$ statistic. The $I^2$ statistic is the proportion of variation in prevalence estimates that is due to genuine variation in prevalence rather than sampling (random) error [60]. The $I^2$ statistic ranges between 0 and 100% (with values of 0–25% and 75–100% taken to indicate low and considerable heterogeneity, respectively) [61]. We will also report Tau2 and Cochran Q test with a $P$ value of < 0.05 considered statistically significant

| Table 1 | Data items to be extracted from included studies |
| Category | Data to be extracted |
| Study characteristics | First author, year, country, study objective, and study design |
| Recruitment | Recruitment strategy, sample size, group assignment: unit (individual, group, community), method (non/randomization), and bias minimization |
| Participant details | Eligibility criteria, demographics, mental illness history/diagnosis, perinatal loss (definition, type, time since loss, previous/ repeated loss), pregnancy status, participation, and attrition |
| Measurement | Tool used, timing and frequency of assessments, method and setting of data collection, data collectors (who, training), confounders, and reliability/validity estimate for measurement tool |
| Intervention characteristics | Type, unit (individual, group), content of psychotherapeutic intervention (structure, objectives, goals), facilitator and credentials, delivery method (in-person, phone, online, distance), setting, timing of intervention initiation, number, frequency, length and duration of intervention, adherence (activities to enhance adherence, assessment of adherence or fidelity), materials (physical or information), tailoring, modifications (unplanned), and comparison group intervention |
| Outcomes | Duration and severity of depressive, anxiety, grief, and posttraumatic stress symptoms, changes in perception of support and care, coping, and adjustment |
(heterogeneity). Further, if a small number of studies limit the information available to adequately apply the random effects model, a fixed effect model or a Bayesian approach will be appropriate.

Assessment of meta-bias
If there are ten or more appropriate studies in the meta-analysis, meta-bias (reporting or publication) will be assessed by visualizing the funnel plot for each outcome which will be created from each study’s effect estimate and its study size [62]. Conducting Egger’s test of the intercept will quantify the funnel plot’s asymmetry [62].

Analysis of subgroups
With enough information from the included studies, a subgroup analysis will be conducted. The subgroup analysis will consider details related to intervention (type, content, facilitator, delivery method, setting, timing, frequency, length, duration), perinatal loss (type, previous losses), participant (present and past psychiatric condition, pregnancy status), and study design (RCT, quasi-experimental).

Confidence in cumulative evidence
The Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach [63], as recommended in the Cochrane Handbook for Systematic Reviews of Interventions [60], will be used to assess the quality of the evidence for each outcome related to psychological distress, perception, coping, and adjustment. The intention in using GRADE is to increase confidence in the review’s cumulative findings which may be used to guide research in the future. The GRADE includes assessments on study design and quality, and consistency and directness and may be rated as high, moderate, low, and very low [63]. The factors that may downgrade the quality of the evidence include study quality limitations, study design, risk of bias, inconsistency, indirectness (not generalizable), imprecision (sparse data), and publication bias [63]. The factors that may upgrade the quality of the evidence include large magnitude of effects, dose-response effect, and effect of all plausible factors [63, 64].

Discussion
This protocol outlines the strategy that will be used to complete a systematic review and meta-analysis on the effectiveness of psychotherapeutic intervention on psychological distress, perception, coping, and adjustment in women who have experienced PL. The content and delivery method associated with effective psychotherapeutic interventions will be identified as well.

While there are a few individual studies that provide data related to the effectiveness of specific psychotherapeutic interventions on women affected by PL [37–39], there is no evidence in the literature of a comprehensive comparison of these intervention studies. The knowledge generated from this review will enhance existing evidence and may be used to develop new psychological intervention programs or to refine existing psychotherapy in effort to improve the quality of the services accessible to women after PL. This knowledge is especially important for women residing in medium- and low-resource settings, where access to treatment is likely to be significantly lower than in high-resource settings. With an improvement in relevant services, women will experience improved opportunity to recover after PL, reduced psychological distress, and enhanced resilience. To the best of the author’s knowledge, this will be the first systematic review that overtly and fully intends to generate evidence that can inform researchers and policy makers in expanding on related research and developing tailored interventions or programs that will improve outcomes for women affected by PL and their families.

Supplementary information
Supplementary information accompanies this paper at https://doi.org/10.1186/s13643-020-01387-6.

Additional file 1. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P) Checklist: Completed PRISMA-P checklist specific to this protocol.

Additional file 2. Search Strategy. Completed search strategy corresponding with this protocol.

Abbreviations
CENTRAL: Cochrane Central Register of Controlled Trials; RCT: Randomized controlled trial; PROSPERO: International Prospective Register of Systematic Reviews; PL: Perinatal loss; PTS: Post-traumatic stress; CBT: Cognitive behavioral therapy; IPT: Interpersonal psychotherapy; PRISMA-P: Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses; PICOS: Participants, interventions, comparators, outcomes, study designs, setting; PAIL: Pregnancy and Infant Loss Network; PAL5: Pregnancy After Loss Support; WHO: World Health Organization; PUIDA: Pregnancy Loss and Infant Death Alliance; ISA: International Stillbirth Alliance; CAPWHN: Canadian Association of Perinatal and Women’s Health Nurses; RoB2: Cochrane Risk of Bias assessment for RCTs; ROBINS-1: Risk of Bias in Non-Randomized Studies of Interventions; CRD: York’s Centre for Reviews and Dissemination; GRADE: The Grading of Recommendations, Assessment, Development and Evaluation.

Acknowledgements
Moving forward, EMC, KSB, and DEK will be involved in screening and data extraction.

Amendments
Should amendments between the protocol and the systematic review be required, a concise explanation in the methods sections of the final review will be provided and a revision in PROSPERO will be completed.

Authors’ contributions
EMC and DEK conceived and designed the study. EMC, DEK, and KAH developed the study methods and identified the inclusion/exclusion criteria.
EMC and KAH created and finalized the search terms. KAH completed the searches in all databases, combined the results, removed the duplicates, exported the results to EndNote X8, and inserted preliminary data in the PRISMA flow diagram. EMC and KSB will pilot all forms; review all titles, abstracts, and full-text articles; select studies to include; and evaluate their methodological quality. EMC will extract data with a review for accuracy conducted by KSB. EMC drafted this protocol manuscript. All authors reviewed, provided recommendations, and approved the final protocol manuscript.

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Availability of data and materials
All results acquired within this review will be available by request through the corresponding author. Results may include database searches, search results, quality appraisal, and data extraction results from included studies.

Ethics approval and consent to participate
This study will be established on data from published studies which declares no requirement for ethics approval.

Consent for publication
Not applicable

Competing interests
The authors declare that they have no competing interests.

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References
1. Beydoun H, Saftlas AF. Physical and mental health outcomes of prenatal maternal stress in human and animal studies: a review of recent evidence. Paediatr Perinat Epidemiol. 2008;22:438–66.
2. Campillo I, Meaney S, McNamara K, O’Donoghue K. Psychological and support interventions to reduce levels of stress, anxiety or depression on women's subsequent pregnancy with a history of miscarriage: an empty systematic review. BMJ Open. 2017;7(9):1–8.
3. Côté-Arsenault D, Mahangu N. Impact of perinatal loss on the subsequent pregnancy and self; women’s experiences. J Obstet Gynecol Neonatal Nurs. 1999;28:275–82.
4. Kingston D, Heaman M, Fell D, Dzakpasu S, Chalmers B. Factors associated with perceived stress and stressful life events in pregnant women: findings from the Canadian Maternity Experiences Survey. Matern Child Health J. 2012;16:158–68.
5. Toffoll E, Koponen P, Partonen T. Miscarriage and mental health: results of two population-based studies. Psychiatry Res. 2013;205(1-2):151–8.
6. Kersting A, Wagner B. Complicated grief after perinatal loss. Dialogues Clin Neurosci. 2012;14(2):187–94.
7. Barfield WD. Standard terminology for fetal, infant, and perinatal deaths. Pediatrics. 2011;128(1):177–81.
8. Meredith P, Wilson T, Banjerdjoporn G, Strong J, Desha L. “Not just a normal mom”: a qualitative investigation of a support services for women who are pregnant subsequent to perinatal loss. BMC Pregnancy Childbirth. 2017; 17:619–12.
9. Wang H, Liddel CA, Coates MM, Mooney MD, Levitz CE, Schumacher AE, et al. Global, regional, and national levels of neonatal, infant, and under-5 mortality during 1990-2013: a systematic analysis for the global burden of disease study. Lancet. 2013;384(9947):957–79.
10. Everett C. Incidence and outcome of bleeding before the 20th week of pregnancy: prospective study from general practice. BMJ. 1997;315:32–4.
11. Bennett SM, Erenreich-May J, Litz BT, Boisseau CL, Barlow DH. Development and preliminary evaluation of a cognitive-behavioral intervention for perinatal grief. Cogn Behav Pract. 2012;19:161–73.
12. Carter D, Misri S, Tomfohr L. Psychologic aspects of early pregnancy loss. Clin Obstet Gyn. 2007;50(1):154–65.
13. Geller PA, Piaros C, Kornfield SL. Satisfaction with pregnancy loss aftercare: are women getting what they want? Arch Womens Ment Health. 2010; 13(2):111–24.
14. Gold KL, Dalton VK, Schwenk TL. Hospital care for parents after perinatal death. Obstetrics & Gynecology. 2007;109(5):1156–66.
15. Kersting A, Kroker K, Schlicht S, Baust K, Wagner B. Efficacy of cognitive behavioral internet-based therapy in parents after the loss of a child during pregnancy: pilot data from a randomized controlled trial. Arch Womens Ment Health. 2011;14:465–77.
16. Kersting, et al. Brief internet-based intervention reduces posttraumatic stress and prolonged grief in parents after the loss of a child during pregnancy: a randomized controlled trial. Psychother Psychosom. 2013;2:372–81.
17. Khodakarami B, Mafakheri B, Shoheiri F, Soltanian A, Mohagheghi H. The effect of Fordyce Happiness cognitive behavioral counseling on the anxiety and depression of women with spontaneous abortion. JPSR. 2017(12): 2335–41.
18. Klein S, Cumming GP, Lee AJ, Alexander DA, Bolsover D. Evaluating the effectiveness of a web-based intervention to promote mental wellbeing in women and partners following miscarriage, using a modified patient preference trial design: an external pilot. BJOG. 2012;119:762–7.
19. Lee C, Slade P, Lygo V. The influence of psychological debriefing on emotional adaptation in women following early miscarriage: a preliminary study. Br J Med Psychol. 1996;69(1):47–58.
20. National Library of Medicine. Miscarriage. 2018. https://medlineplus.gov/miscarriage.html. Accessed 15 Oct 2019.
21. Robinson GE. Dilemmas related to pregnancy loss. J Nerv Ment Dis. 2011; 199:571–4.
22. Savitz DA, Hertz-Picciotto I, Poole C, Olshan AF. Epidemiologic measures of the course and outcome of pregnancy. Epidemiol Rev. 2002;249:1–101.
23. Sejoume N, Callahan S, Chaborl H. The utility of a psychological intervention for coping with spontaneous abortion. J Reprod Infant Psychol. 2010;28(3): 287–96.
24. Smith NC. Epidemiology of spontaneous abortion. Conterv Obstet Gyn. 1988; 143–8.
25. August E, Salihu H, Wiedelshasele H, Hioskas B, Mbab A, Akio A. Infant mortality and subsequent risk of still birth: a retrospective cohort study. Int J Obstet Gynaecol. 2011;118:1636–45.
26. Michels TC, Tiu AY. Second trimester pregnancy loss. Am Fam Physician. 2007;76(9):1341–6.
27. Boss P. Ambiguous loss: learning to live with unresolved grief. CambridgeA: Harvard University Press; 1990.
28. Frost J, Bradley H, Levitas R, Smith L, Garcia J. The loss of possibility: scintification of death and the special case of early miscarriage. Social Health Illn. 2007;20(7):1003–22.
29. Lang A, Fleischer A, Duhamel F, Sword W, Gilbert K, Corsini-Munt S. Perinatal loss and parental grief: the challenge of ambiguity and disenfranchised grief. OMEGA. 2011;63(2):183–96.
30. Mills TA, Ricklesford C, Cooke A, Heazell AEP, Whitworth M, Lavender T. Parent’s experiences and expectations of care in pregnancy after stillbirth or neonatal death: a meta-synthesis. BJOG. 2014;121:943–50.
31. Hughes P, Riches S. Psychological aspects of perinatal loss. Curr Opin Obstet Gynecol. 2003;15(2):107–11.
32. Hunter A, Tussi L, MacBeth A. The presence of anxiety, depression and stress in women and their partners during pregnancies following perinatal loss: a meta-analysis. J Affect Disord. 2017;223:153–64.
33. Murphy FA, Lipp A, Powles DL. Follow-up for improving psychological well being of women after a miscarriage (review). Cochrane Collaboration Cochrane Library. 2012;3:1–9.
34. Bier N. Grief following miscarriage: a comprehensive review of the literature. J Womens Studies. 2008;8:451–64.
35. Kuzmiczyk AV, Kuzmiczyk AR, Nicolelas KH. The influence of medical and psychological interventions on women’s distress after miscarriage. J Psychosom Res. 2007;63(3):283–90.
36. Chew-Graham C, Chamberlain E, Turner K, Folkes L, Caulfield L, Sharp D. GP’s and health visitors’ views on the diagnosis and management postnatal depression: a qualitative study. Br J Gen Pract. 2008;58:169–76.
37. Johnson, et al. Interpersonal psychotherapy (IPT) for major depression following perinatal loss: a pilot randomized controlled trial. Arch Wom Ment Health. 2016;19:845–59.

38. Simpson C, Lee P, Lionel J. The effect of bereavement counselling on women with psychological problems associated with late pregnancy loss. JAM. 2013;52(5):1–20.

39. Navidian A, Saravani Z, Shakiba M. Impact of psychological grief counseling on the severity of post-traumatic stress symptoms in mothers after stillbirths. Iss Ment Health Nurs. 2017;38(8):650–4.

40. Nakano Y, Akechi T, Furukawa TA, Sugiyura-Ogasawara M. Cognitive behavior therapy for psychological distress in patients with recurrent miscarriage. Psychiatr Res Behav Manag. 2013;6:37–43.

41. Neugebauer R, Kline J, Markowitz JC, Bleiberg KL, Baxi L, Rosing MA, Levin B, Keith J. Pilot randomized trial of interpersonal counselling for subsyndromal depression following miscarriage. J Clin Psychiatry. 2006;67:1299–304.

42. Neugebauer, et al. Preliminary open trial of interpersonal counselling for subsyndromal depression following miscarriage. Depression & Anxiety. 2007; 24(3):19–22.

43. Kong GW, Lok IH, Lam PN, Yip AS, Chung TK. Conflicting perceptions between health care professionals and patients on the psychological morbidity following miscarriage. Aust N Z J Obstet Gynaecol. 2010;50:562–7.

44. Trepal HC, Semivan SG, Caley-Bruce M. Miscarriage: a dream interrupted. J Creativ Ment Health. 2005;13(4):155–71.

45. Cardoso A, Nardi AE. Cognitive-behavioral therapy to miscarriage: results from the use of a grief therapy protocol. Revista de Psiquiatría Clínica. 2011; 38(3):122–4.

46. Navidian A, Saravani Z. Impact of cognitive behavioral-based counseling on grief symptoms severity in mothers after stillbirth. Iran J Psychiatry Behav Stud. 2012;36:795–818.

47. Cohen K, Leibovich L, Markin R, Zilcha-Mano S. The process of change in psychotherapy with a pregnant patient following perinatal losses: an analysis of a case study. J Clin Psychol. 2019;75(5):874–85.

48. Kong GWS, Chung TKH, Lok IH. The impact of supportive counselling on women’s psychological wellbeing after miscarriage: a randomized controlled trial. BJOG. 2014;121:1253–62.

49. Forrest GC, Standish E, Baum JD. Support after perinatal death: a study of support and counselling after perinatal bereavement. BMJ. 1982;285:1475–9.

50. Alves D, Mendes I, Goncalves MM, Neimeyer RA. Innovative moments in psychotherapy with a pregnant patient following perinatal losses: an analysis of a case study. J Clin Psychol. 2019;75(5):874–85.

51. Kong GWS, Chung TKH, Lok IH. The impact of supportive counselling on women’s psychological wellbeing after miscarriage: a randomized controlled trial. BJOG. 2014;121:1253–62.

52. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

53. Moher D, Liberati A, Tetzlaff J, Altman DG, The Prisma Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Med. 2009;6(7):e1000097.

54. Polt DF, Beck CT. Nursing research: generating and assessing evidence for nursing practice. 10th ed. Philadelphia: Wolters Kluwer Health; 2017.

55. Hogg WA, Byrnes AL, Lanasa MC, Surti U. The clinical use of karyotyping spontaneous abortions. Am J Obstet Gynecol. 2003;189:397–400.

56. Sterne JAC, Savović J, Page MJ, Elbers RG, Boutron I, et al. ROBINS-I: a tool for assessing risk of bias in non-randomized studies of interventions. BMJ. 2016;355:i4919.

57. Centre for Reviews and Dissemination. Systematic reviews: CRD’s guidance for undertaking reviews in health care. Laverthorpe: CRD University of York; 2008.

58. Popey J, Roberts H, Sowden AJ, Petticrew M, Araú L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews. A product from the ESRC methods programme. London: Institute for Health Research; 2010.

59. Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA, editors. Cochrane handbook for systematic reviews of interventions. 2nd ed. Chichester: Wiley; 2019.

60. Higgins JPT, Thompson SG, Deeks JJ, Altman DG. Measuring inconsistency in meta-analyses. BMJ. 2003;327(7454):1490.