Interventions for expectant and new parents who are at increased risk for perpetrating child abuse and neglect: protocol for a systematic review and meta-analysis

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ABSTRACT

Introduction The prevention of child abuse and neglect is an urgent matter given the serious effects persisting into adulthood, and the increased risk of the offspring of abused children being abusive themselves. Intervening as early as possible may prevent abuse that can begin in infancy. Although several systematic reviews have investigated the effects of interventions on populations who are at increased risk for perpetrating child abuse and neglect, few studies have focused on women or interventions that start during perinatal periods. This study aims to describe a systematic review to examine the effects of interventions to prevent child abuse and neglect that begin during pregnancy and immediately after childbirth (less than 1 year). The study will involve performing a systematic review and meta-analysis based on the latest research articles and a broader literature search.

Methods and analysis The protocol was prepared using the 2015 statement of Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols. The review will follow Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. The literature search will be performed using the MEDLINE, PsycINFO, Embase and CENTRAL, using a systematic search strategy. The study will be based on the latest articles, and the publication period will not be limited.

STRENGTHS AND LIMITATIONS OF THIS STUDY
⇒ This study will systematically review and analyse evidence on the effectiveness of interventions to prevent child abuse and neglect among pregnant and postpartum women.
⇒ This study will investigate a broader range of electronic bibliographic databases, including MEDLINE, PsycINFO, Embase and CENTRAL, using a systematic search strategy.
⇒ The study will be based on the latest articles, and the publication period will not be limited.
⇒ As we will only include peer-reviewed articles written in English, a publication bias may occur that excludes related research published in other languages and grey literature.
⇒ Despite the broad range of databases to be searched, there are others that we will not utilise, so it is possible that some studies may be missed.

INTRODUCTION

The prevention of child abuse and neglect has always been a critical issue in child health and welfare. Child abuse is usually divided into the following four categories: physical abuse, sexual abuse, neglect and emotional abuse. Studies examining the prevalence of child maltreatment have reported ranges from 12.7% to 36.3% for self-reported cases and from 0.3% to 0.4% for informant reports.1 Childhood abuse and neglect have serious consequences that may continue into adulthood.2 4 Several studies have reported an association between childhood abuse experiences and later depressive and anxiety symptoms,5 6 and another study reported adverse effects on later cognitive functioning.7 Therefore, the prevention of child abuse and neglect is an urgent matter.

Baldwin et al conducted a large cohort study and reported that younger maternal age, lower maternal education level, maternal mental illness, maternal smoking in pregnancy, single motherhood, larger family size, multiple deprivations, social housing, paternal...
unemployment and the receipt of means-tested welfare benefits are antenatal risk factors for child maltreatment. They also reported that a greater total number of risk factors during pregnancy increased the risk of subsequent maltreatment concerns. Parents’ abusive experiences have also been demonstrated to increase the risk of those abusing their own children.9–11 As almost half of child maltreatment deaths involves infants younger than 1 year of age,12 early preventive interventions, especially during pregnancy or postnatal periods, are particularly important for expectant and new parents who are at increased risk for perpetrating child abuse and neglect.

Home-visitation and parent-training programmes are widely implemented worldwide as child abuse prevention programmes to reduce the burden on parents, provide support and educate parents on evidence-based parenting methods, and they have been widely studied in previous systematic reviews and meta-analyses. Several researchers13–16 have reported the effects of home visitation on preventing child abuse and neglect; other researchers15–17–20 have reported the effects of parent-training programmes. These reports have included studies of the general population, and the age of the targeted children has varied in existing research. Systematic reviews in a mixed population reported no difference in effect by sample type.8–15 Meanwhile, Casillas et al6 reported that targeted programmes have a greater effect than universal programmes. Chen and Chan13 conducted a systematic review for diverse age groups and reported that early start intervention (beginning at or before pregnancy) exhibits better outcomes. However, Gubbels et al18 found no difference in the effect of child age; other studies did not consider differences in age.17–19

Pinquart and Teubert21 conducted a meta-analysis that searched for the effects of parenting education with expectant and new parents. They included 142 papers on interventions that began during pregnancy or in the first 6 months after birth and found that interventions had small to very small significant effects on parenting, parental stress and child abuse. Levey et al25 conducted a systematic review of randomised controlled trials of interventions in which the participants were pregnant women or new mothers identified as at increased risk for perpetrating child abuse and neglect. Of the eight studies they identified, only three found statistically significant reductions in abuse by any measure, and only two found reductions in incidents reported to child protective services (CPS). They found that only home visitation has a significant evidence base for reducing child abuse.

In considering interventions starting in the perinatal period that are effective at preventing child abuse and neglect, it is important to support fathers and other caregivers as well as mothers, as they may also be at risk of perpetrating abuse and neglect. However, as mentioned above, it is important to consider interventions targeting mothers who experience childbirth as single mothers or who are exposed to intimate partner violence. To consider a consistent population, we have only targeted women in this review.

The purpose of this study is (1) to update the systematic review conducted by Levey et al25 with the latest research, (2) to conduct a meta-analysis to examine the effects of intervention programmes initiated in the perinatal period for families who are at increased risk for perpetrating child abuse and neglect and (3) to conduct a subgroup analysis to examine which characteristics of the interventions are more effective to prevent child abuse and neglect.

METHODS AND ANALYSIS

Patient and public involvement

This study had no direct patient or public involvement.

Study design

We have registered this systematic review and meta-analysis protocol with the International Prospective Register of Systematic Reviews. This protocol was based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols 2015 statement22 (online supplemental table 1). The final review will be created according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement.23

Search strategy

We will perform literature searches with the following electronic databases from their inception onward: MEDLINE, PsycINFO, Embase and Cochrane Central Register of Controlled Trials (CENTRAL). A draft MEDLINE search strategy developed by one of the authors (KO) is described in online supplemental table 2. After the MEDLINE strategy is completed, it will be adapted to the subject headings and syntax of the other databases. Our search terms consist of “perinatal,” “intervention program,” “child abuse” and “randomized controlled trials” (RCTs). We will search for the latest research articles.

Study records

We will upload the studies collected through electronic and manual searches to Rayyan,24 an internet-based software programme facilitating collaboration among reviewers during the study-selection process. Citations, titles and abstracts will be uploaded to Rayyan. Duplicates will be removed. Then, full-text screening will be conducted using EndNote,25 a reference management software package.

Eligibility criteria

We will include original studies of RCTs; we will exclude articles that do not report original data (eg, review, meta-analyses and commentary papers). We will not impose limits on the publication date. The review will include only full-text, peer-reviewed articles published in the English language. The following participants, interventions, comparisons, outcomes and study criteria (PICOS) of the studies will be included:

- Patients: all pregnant women and new mothers identified as at increased risk for perpetrating child abuse and neglect.
- Interventions: programmes that began during pregnancy or in the first 6 months after birth.
- Comparisons: whereby the control group is a non-intervention group.
- Outcomes: all outcomes related to parenting, parental stress and child abuse.
- Study criteria (PICOS): study design, eligibility criteria, interventions, control group and outcomes.

Additional details about the study design, eligibility criteria, interventions, control group and outcomes will be included in online supplementary information. This protocol is published to comply with the International Prospective Register of Systematic Reviews. This systematic review and meta-analysis protocol is registered in the International Clinical Trials Registry Platform under the identifier CRD42021274277.
(P) Studies with participants who are women during pregnancy and less than 1 year after childbirth at increased risk for perpetrating child abuse and neglect (determined to be at increased risk for perpetrating child abuse and neglect for any reason, eg, mental illness, low income, social isolation, drug/alcohol use, smoking and domestic violence) will be included. No age restrictions will be imposed. We will exclude studies where the participants were foster families. We will also exclude studies involving participants who started interventions more than 1 year after childbirth. We will not specify the level of income in the countries where the studies were conducted.

(I) Psychological and educational interventions that aim to prevent child abuse and/or neglect will be considered. Psychological interventions are defined as ‘interventions aimed at reducing the mother’s emotional burden’. Educational interventions are defined as ‘interventions aimed at providing appropriate knowledge and coping strategies for pregnancy, childbirth, and child care’. We will not limit the type of intervention (eg, perinatal-specific programmes) as long as the intervention is conducted during the time period specified for the current study.

Child abuse and neglect are defined and identified by the study authors. We will exclude interventions that aim to prevent specific risks but do not measure the effects of preventing child abuse and neglect (eg, antenatal and postnatal depression, drug/alcohol use, HIV infection, smoking, intimate partner violence, family planning and breastfeeding).

(C) Routine care, another type of intervention, placebo groups and waiting list groups, or no intervention will be included in the comparison group.

(O) Any index of child maltreatment (reports of child abuse, CPS case records, injury reports, hospital admission and emergency room visits) will be included as a primary outcome. Additional outcomes will include measures of parenting stress (eg, Parenting Stress Index26) and inappropriate parenting behaviour (eg, Conflict Tactics Scales, Parent-Child Version27; Adult Adolescent Parenting Inventory—version 228; Child Abuse Potential Inventory29 and CARE-Index31). If the included study has more than two parts, we will compare each intervention with the usual care. The final evaluation period will be considered if more than one evaluation point is available.

(S) Peer-reviewed articles written in English will be included. We will only include RCTs. The publication period will not be limited.

Study selection
In stage 1, two authors (HT and MS) will independently screen the titles and abstracts of all candidate studies and exclude those not applicable. Then, disagreements will be resolved by the two authors, and a final list will be agreed on. If agreement is not obtained, a third senior author (KT or YT) will arbitrate. If the disagreement continues, the article will proceed to the second stage. In stage 2, two authors (HT and MS) will independently evaluate the eligibility of the full-text versions of articles that have passed stage 1. Two authors (HT and MS) will resolve discrepancies by consensus, and if necessary, a third senior author (KT or YT) will act as arbitrator.

Data extraction
HT and MS will independently retrieve the following related information from selected studies: author, year, publication language, location (country), intervention period (antenatal/postnatal/both), screening period for being at increased risk for perpetrating child abuse and neglect, type of risk, sample size (intervention and control), intervention programme, setting (home or centre), focus (support or packaged programme), delivery (individual or group), occupation type of person delivering the intervention, duration of follow-up, frequency of sessions, comparison programme, evaluation period, measurement tools, study results and funding sources. The senior reviewers (KT and YT) will reconcile any disagreements.

Quality assessment and risk of bias
Two review authors (HT and MS) will independently check the risk of bias in each included study; a third review author (KT or YT) will resolve discrepancies by negotiation. We will use the revised Cochrane risk-of-bias tool for randomised trials to check the risk of bias in each study.32 The tool includes the following domains: randomisation process, deviations from the intended interventions, missing outcome data, measurement of the outcome, selection of the reported result and overall risk of bias. The assessment process will involve extracting the appropriate information from each study (eg, a detailed description of the method used for the randomisation process) and evaluating the risk of bias in that area (eg, adequate randomisation process). We will determine risk of bias for each item as low, high or of some concern while including a supporting description from the study report along with the reasoning for our judgement in a risk-of-bias table.

Statistical analysis
We plan to provide a narrative synthesis of the characteristics and findings from the included studies using text and tables. The synthesis will be based on intervention type and will describe the characteristics of each of the included studies and supply information about the effective measures for relevant outcomes and study quality.

A meta-analysis can be conducted depending on the availability of data (eg, risks ratio, mean difference) and degree of heterogeneity of each study. If there are studies with the same types of intervention and outcome measurement, we will conduct a random-effect meta-analysis and present a forest plot generated using the Review Manager V.5.4 software.
Subgroup analyses will be considered based on the characteristics of the participants (e.g., age and socioeconomic status), type of intervention (e.g., duration, timing, frequency, setting (home or centre), focus (support or packaged programme) and delivery (individual or group)), timing of the intervention (during pregnancy and/or postpartum), occupation type of person delivering the intervention and assessment points. A sensitivity analysis will be conducted to assess the effect of studies with a high risk of bias.

**Reporting bias assessment**
If there are 10 or more studies in the meta-analysis, we will examine reporting biases with funnel plots and visually consider any funnel plot asymmetry.

**Certainty assessment**
We will evaluate the quality of the evidence across studies by using the Grading of Recommendations, Assessment, Development, and Evaluation approach. The quality of evidence of each result will be evaluated by using the study’s limitation, imprecision, indirectness, inconsistency and publication bias.33

**ETHICS AND DISSEMINATION**
This study does not require ethical approval. The findings will be presented at conferences, and the paper will be submitted to a peer-reviewed journal.

**DISCUSSION**
This study will systematically review and analyse evidence on the effectiveness of interventions to prevent child abuse and neglect among pregnant and postpartum women. The strength of this study is that it will investigate a broader range of electronic bibliographic databases, including MEDLINE, PsycINFO, Embase and CENTRAL, using a systematic search strategy. The study will be based on the latest articles, and the publication period will not be limited.

Since child abuse and neglect have severe outcomes, the findings of this study may be helpful for the prevention of child abuse and neglect among pregnant and postpartum women. The strength of this study is that it will investigate a broader range of electronic bibliographic databases, including MEDLINE, PsycINFO, Embase and CENTRAL, using a systematic search strategy. The study will be based on the latest articles, and the publication period will not be limited.

Although we plan to limit our target of intervention to mothers in this review, it goes without saying that the responsibility for parenting does not lie solely with the mother, but that comprehensive support for the entire family is essential.

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**Contributors**
HT, MS, KO, KT and YT designed the study. HT wrote the first draft of the manuscript and all other authors revised the manuscript critically. KO executed the search strategies. All authors approved the final version of the manuscript.

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**Competing interests**
None declared.

**Ethics approval**
This study does not require ethical approval. The findings will be presented at conferences, and the paper will be submitted to a peer-reviewed journal.

**Provenance and peer review**
Not commissioned; externally peer reviewed.

**Supplemental material**
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**REFERENCES**