



Managing pre and postpartum mental health issues of refugee women from fragile and conflict-affected countries: A systematic review

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ABSTRACT

Objective: Refugee or immigrant women residing in conflict prone countries portray elevated mental health related vulnerabilities during their peripartum periods and require effective interventions for improved maternal and child well-being. The objective of this systematic review is to generate evidence on effective interventions for managing peripartum mental health issues among refugee women from conflicted settings.

Study design: Systematic review.

Method: Three databases MEDLINE/PubMed, Scopus, and Web of Science (core collection) were searched and Rayyan was used to perform screening. RoBANS tool was used to assess the risk of bias and narrative synthesis was conducted to narrate the result.

Result: 5425 potential articles were identified and seven studies were included for data extraction after a rigorous screening process. Four (n = 4), out of seven studies discussed improved Edinburgh Postnatal Depression Scale (EPDS) scores, reduced perinatal distress and depression, increased self-esteem, and knowledge about pregnancy and child development, etc. due to home visits during the antepartum and postpartum period. Two studies asserted the importance of group sessions and social support and found social support was negatively correlated with postpartum depression ($r = -0.49$, $p < 0.0001$). Formal/informal, public, private, or volunteered supports were explored to be important for increasing knowledge about maternal well-being, stress management, and childcare processes for refugee women.

Conclusion: The absence of limited experimental studies opens the opportunity for conducting further research on this topic. Besides, development partners can focus on this review to prioritise the intervention components during designing programmes on this related issue.

What this study adds

- We conducted a systematic review with seven articles to generate evidence of available interventions that are working to manage antepartum and postpartum mental health issues among refugee women of Fragile and Conflict-Affected Countries (F&CACs) and found four distinct forms of antepartum and

postpartum mental health support interfaces: home visit, group sessions, social support, public, private, or volunteered supports.
- We concluded that experimental studies around this topic are scarce and interventions are available in developed countries with refugees and migrant women from F&CACs.

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- Inclusion of only seven studies in this review also indicates the importance of conducting more studies on this topic.

How this study might affect research, practice, or policy

- Programme implementers would be aware of implementing interventions for displaced and refugee women with antepartum and postpartum periods living in developed countries and World Bank-listed F&CACs.
- Researchers would be aware of conducting new research, especially experimental research to find out the effect of the antepartum or postpartum mental health interventions for a further implication of that intervention.

1. Introduction

Mental health complications during pregnancy result in poor cognitive and behavioural development in children, including exacerbated childbirth outcomes e.g. premature births, malnourishment, delayed intra-uterine growth, and cognitive impairment [1–3]. Dissatisfactory breastfeeding patterns and poor mother-child attachment are also among the consequences [4]. Globally, 10 % and 13 % of pregnant women and recent mothers, respectively, experience mental health problems, predominantly depressive disorders [5]. Developing countries witness an even higher rate, accounting for 15.6 % of women during the antepartum and 19.8 % during the postpartum periods [5]. Women, apart from Antepartum Depression (APD), can experience anxiety and panic disorders, bipolar mood swings, bulimia, Post-Traumatic Stress Disorder (PTSD), psychosis, and Obsessive-Compulsive Disorder (OCD) during all three trimesters [6].

A hospital-based study involving around 900,000 pregnant women showed, hospitalisation for antepartum mental disorders increased by 22.1 % between 2010 and 2014 in USA [7]. Studies also showed that untreated mental health conditions during pregnancy can lead to more adverse postpartum experiences e.g. insomnia, hormonal imbalances, increased chances of relapse, hopelessness, loss of appetite, and development of psychosis [1,8]. A study conducted in Iran demonstrated that 25.3 % and 49.3 % of pregnant women exhibited depressive and anxiety symptoms, respectively [9]. In low-and middle-income countries, the scenario is no better than the explained situation and they often go unreported. The World Health Organization states that the prevalence of APD ranges from 12 % to 42 %, and this rate stretches from 8.3 % to 26.6 % in Nigeria [1]. In Sub-Saharan Africa, the pooled prevalence of APD is estimated to be 26.3 % [1].

Having such destitute conditions of maternal mental health worldwide, fragile and conflict-affected countries (*hereafter, fragile and conflict-affected countries will be mentioned as F&CACs*) deliver more intensified exposure to mental disorders and stressors. Forcefully displaced populations experience higher degrees of distress, isolation, trauma, violence, and discrimination. The reported probability of PTSD among migrant women is 42 %, whereas postpartum depression is evident in only 10–15 % of native women [10]. In high-income countries, the prevalence of PTSD is 1–2% and in LIMIC it is 6–8% [10]. However, PTSD was significantly higher among refugee and asylum seeker women (33.8 % and 48.2 %) respectively [11].

Cognitive-behavioral therapy (CBT) significantly reduces antepartum depressive symptoms among African-American women [12]. Another study showed that 94 % of participants had antepartum depression, of which 81 % recovered after the completion of CBT [13].

Despite the impoverishment of antepartum and postpartum mental health conditions in F&CACs, there is a glaring lack of attention and targeted interventions from international agencies and humanitarian organisations to address this [14]. Empirical evidence of interventions to tackle antepartum and postpartum mental health conditions of women living in F&CACs is scant and scattered. Thus, a systematic

review is imperative to consolidate the limited available interventions working for better mental health outcomes of refugee women with antepartum and postpartum period from F&CACs. This review will also help identify the strengths and weaknesses of these interventions, providing valuable insights to guide policymakers and development organisations in implementing tailored initiatives. Therefore, the current systematic review aims to generate evidence of available interventions that are working to manage antepartum and postpartum mental health issues among refugee women of F&CACs.

2. Methods

This review employed the methodology of Cochrane Systematic Reviews [15] and uptake the requirements of preferred reporting items for systematic reviews and meta-analysis (PRISMA) 2020 guidelines [16]. This review is registered in the International Prospective Register of Systematic Reviews. The registration number is CRD42022306225.

2.1. Selection criteria

Relevant English-written studies published until August 21, 2024 since inception were included in this review. The initial search covered studies up to February 19, 2022, and an updated search extended the coverage from February 20, 2022 to August 21, 2024. Studies that assessed the impact of mental health interventions, such as group sessions, counselling, CBT, community engagement, etc. in F&CACs were included. Studies that included study participants currently living in any country, but from F&CACs, were included. F&CACs were selected according to the list of World Bank [17]. Descriptive (cross-sectional), interventional (randomised controlled trial, quasi-experimental studies, before-after intervention study), and analytical studies (case-control and cohort studies) were considered for this review.

Publications that did not focus on antepartum or postpartum mental health complications were excluded. Systematic reviews, unpublished reports, protocol papers, conference abstracts, etc. were also excluded.

2.2. Search strategy

A broader search strategy was constructed by the review team and a search expert, using the PICO format with the keywords such as “women with antepartum or postpartum period”, “antepartum or postpartum mental health condition”, “mental health intervention”, “refugee”, “fragile country”, etc. combined with Boolean Operators to search different databases including Medline/Pubmed, Scopus, and Web of Science (core collection). Additionally, a manual search for citations of relevant systematic reviews was performed to locate additional relevant studies. The search period was from inception to August 21, 2024.

2.3. Study selection

The search results were imported into the Rayyan QCRI software (online) [18]. After removing duplicates, two independent reviewers screened titles and abstracts. Then, the “full text” of the retrieved articles was screened conforming to the prioritisation and sequential exclusion method [19], followed by a third reviewer resolving any disagreements.

2.4. Data extraction

Data were extracted in a structured MS Excel format to record the information. Initially, pilot data extraction was conducted with an included study to check the suitability of the data extraction form. Two independent reviewers extracted data from the same study to check consistency and similar understanding of data extraction between each of them. Any disagreement between the reviewers was resolved through discussion with the senior reviewer.

2.5. Risk of bias assessment

We assessed the risk of bias using the Risk of Bias Assessment Tool for Non-randomised Studies (RoBANS) tool [20] based on six domains: selection of participants, confounding variables, measurement of exposure, blinding of outcome assessments, incomplete outcome data, and selective outcome reporting. Qualitative studies were assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tool [21]. Two reviewers independently assessed the risk of bias in the studies and the disagreements were resolved upon discussion with the senior author.

2.6. Data synthesis

Given the diversity of extracted data, non-uniformity in interventions, and variations in outcome measurements among the included studies, a meta-analysis could not be conducted in this review. Thus, we conducted a narrative synthesis of the studies by arranging them into relatively homogenous groups [22]. The findings of each study were extracted in several templates, including study identifier, study design, geographic region, period of motherhood, intervention components and outcomes, etc.

3. Results

3.1. Selection of studies

Fig. 1 summarised the findings of the study selection process in a PRISMA flow chart [16]. A comprehensive search retrieved 5425 potential articles. After rejecting duplicate articles, the titles and abstracts of 3596 articles were reviewed to identify relevant articles. After applying the inclusion and exclusion criteria, we selected 64 articles for full-text review. In the final phase of selection, 57 additional studies were excluded. Finally, seven studies were included in the synthesis.

3.2. Characteristics of included studies

Table 1 shows the characteristics of the 7 included studies. These studies were from six different countries around the globe. Two studies were conducted in the USA [23,24], one in Canada [25], one in Bangladesh [26] one in Thailand [27] one in Australia [28] and one in Israel [29].

Except for two studies [25,26], the rest of the study participants were aged >18 years. The design of the included studies was cross-sectional [23,29], before-after study [24,26], qualitative [25,28], and longitudinal [27].

3.3. Study participants

1441 participants involved in seven studies represented different origins and mental health conditions. Three studies conducted in the USA, Canada, and Israel focused on postpartum depression (PPD) and the origin of women was from Ethiopia, Arabic, and Syrian descent [23, 25,29]. Two studies investigated antepartum depression among Rohingya women in Bangladesh and Thailand [26,27]. Two studies explored antepartum- and postpartum conditions among Somali and Afghan women in the USA and Australia [24,28].

3.4. Risk of bias assessment in included studies

While using the RoBANS tool, out of five studies [23,24,26,27,29], one was assessed as having a high risk of bias in the selection of participants domain owing to the small sample size [23]. All studies were assessed low risk of bias regarding confounding variables [23,24,26,27, 29]. One study was assessed as unclear risk of bias in the domain of measurement of exposure and incomplete outcome data [26]. Rest of the studies had low risk of bias in the aforementioned domains [23,24,27, 29]. Considering selective outcome reporting and blinding of outcome assessment, five studies were assessed as low and unclear risk of bias

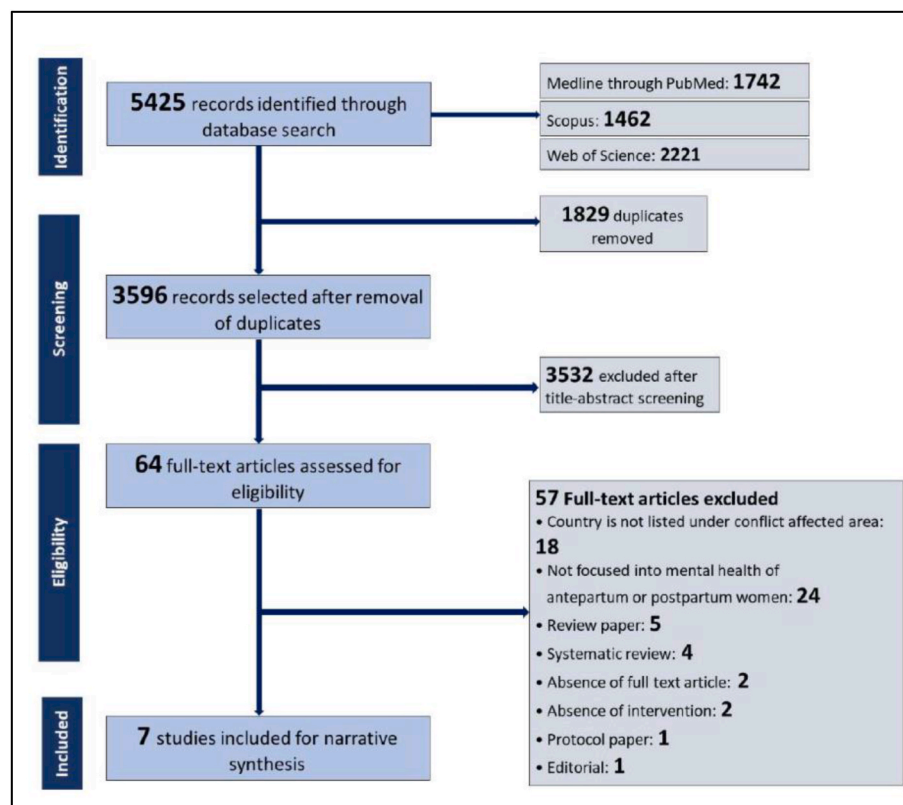


Fig. 1. PRISMA flow diagram of the detailed selection process of the studies.

Table 1

Characteristics of included studies.

Study identifier/Author, year of publication & citations	Study Population's origin	Sample size	Study design	Age group	Period of motherhood (Antepartum/ Postpartum)	Study site	Geographic Region	Study period
Khalil et al., 2018 [23]	Yemen, Lebanon, Iraq	115	Cross-Sectional Study	19–40 Years	Postpartum	USA	Region of the Americas	2016
Cameron et al., 2022 [25]	Syria	11	Qualitative study	Not mentioned	Postpartum	Canada	Region of the Americas	2020
Madeira et al., 2019 [24]	Somalia	17	Before-and-after study	23–35 Years	Antepartum & Postpartum	USA	Region of the Americas	2017
Corna et al., 2022 [26]	Rohingya refugees & Migrant from Myanmar	260	Before-and-after study	Not mentioned	Antepartum	Bangladesh	Southeast Asia Region	2012
Fellmeth et al., 2021 [27]	Rohingya refugees & Migrant from Myanmar	568	Cohort Study	>18 Years	Antepartum	Thailand	Southeast Asia Region	2015–2018
Yelland et al., 2014 [28]	Afghanistan	30	Qualitative study	>18 Years	Antepartum & Postpartum	Australia	Western Pacific Region	2012–2013
Cwikel et al., 2017 [29]	Ethiopia	440	Cross-sectional study	> (20–50) Years	Postpartum	Israel	European Region	2004–2015

[23,24,26,27,29] (Fig. 2).

The JBI tool was used to assess two qualitative studies [25,28]. Cameron et al. (2022) observed congruity in research objectives, methodology, data collection, and interpretation of results [25], whereas, Yelland et al. (2014) did not observe congruity between philosophical perspective and methodology [28]. According to the objectives and title, this article's knowledge could be generated through a constructivist paradigm, typically following purely qualitative methods. While the author presented qualitative-heavy findings with alignment between objectives, design, and outcomes, the use of a quantitative questionnaire suggests a pragmatic paradigm, where congruity was lacking. Additionally, sample size calculations for both methods and findings related to questionnaire topics—such as psychosocial issues and support during and after pregnancy—were not reported in the article [28].

Participants' voice representation, ethical approval, and relationship of conclusions to analysis or data interpretation were observed in both studies. However, the review authors could not identify the influence of researchers on their research [25,28].

3.5. Description of the interventions and outcomes

Study participants were from Afghanistan, Myanmar, Somalia, Ethiopia, Yemen, Lebanon, Iraq, and Syria. Four major types of interventions were identified from these studies: a) home visits conducted by trained volunteer mothers, local doulas, maternal and child health nurses; b) group sessions moderated by certified nurses and psychosocial workers; c) public, private, and volunteer services; and d) social

support. Above mentioned interventions showed a proven impact on increasing knowledge of maternal and child well-being and development, better navigation of local health systems and facilities, stress management, and childcare processes for refugee women. Descriptions of the included studies and interventions are portrayed through a table (Table 2) and an infographic (Fig. 3a–d).

3.6. Outcome of home visits

Home visits up to one year postpartum positively impacted refugee mothers to reduce PPD. Following up through telephone after one year of the home visit found that 79.2 % of 53 mothers with positive Edinburgh Postnatal Depression Scale (EPDS) scores were well-functioning at home and work. Additionally, participants felt more positive, less lonely and isolated, more confident as mothers, had comfort feelings, self-worth, better problem-solving skills, less anxiety, better understanding with partners, older children, more responsive and sensitive to baby and improved access to community resources. Although women with PPD symptoms appeared well-functioning during follow-up, it is worth mentioning that the EPDS was not re-administered to avoid stigmatisation among women [29].

Home visits and psychosocial support intervention in Kutupalong and Nayapara camps helped to ease chronic and acute stressors, reduce perinatal distress, and reinforce maternal and childcare resources among pregnant Rohingya women. The intervention showed positive changes in eight outcome measures. Mini-mental State Examination increased from 32.4 to 53.8 ($p < 0.001$) in Kutupalong and 31.0 to 54.1 ($p < 0.001$) in Nayapara. Similarly, self-esteem (23.2–26; $p < 0.001$ and 25.7 to 27.2; $p < 0.001$), knowledge of self-care of women during pregnancy (6.3–12.4; $p < 0.001$ and 8.2 to 11.1; $p < 0.001$), knowledge of pregnancy and delivery care (16.0–24.4; $p < 0.001$ and 17.5 to 22.9; $p < 0.001$), knowledge of feeding practices and newborn care (15.3–17.3; $p < 0.001$ and 15.8 to 18.3; $p < 0.001$), and knowledge about child development and psychosocial stimulation (20.0–28.4; $p < 0.001$ and 29.4 to 40.1; $p < 0.001$) increased in Kutupalong and Nayapara respectively. Depression among pregnant mothers was also reduced in Kutupalong ($p < 0.001$) owing to this intervention but in Nayapara the result was not significant. Though, most of the result of the intervention found significant in the study area but a longer follow-up period could offer more substantive results [26].

3.7. Outcome of group session

Madeira et al. (2019) showed that 93 % of intervention participants preferred group prenatal care (GPC) over individualised care. By

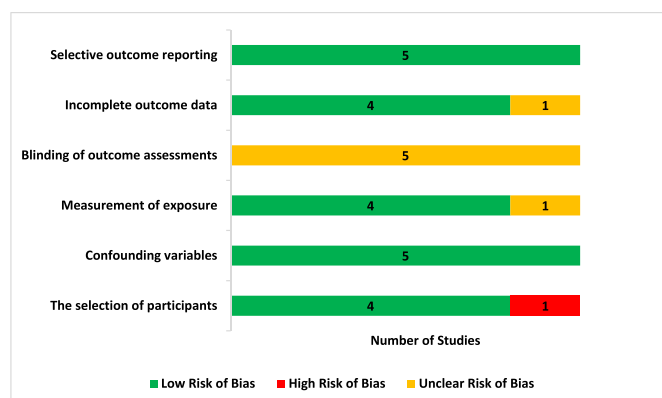
**Fig. 2.** Risk of bias assessment graph.

Table 2
Description of included studies.

Author, year of publication & citations	Type of mental health issue	Intervention duration	Intervention description	Outcome measurements	Findings
Khalil et al., 2018 [23]	Depression	4 Months (Jul–Dec 2016)	<ul style="list-style-type: none"> • Population: U.S. immigrant women of Arabic descent • Tools Used: <ol style="list-style-type: none"> I. Multi-Dimensional Acculturative Stress Inventory for Acculturative Stress II. Multidimensional Scale of Perceived Social Support for Arab Women (MSPSS-AW) with three subscales - Family, Friends, Significant Other III. For PPD, the Edinburgh Postnatal Depression Scale (EPDS) <p>Socio-Demography and Medicine History: feelings of depression or anxiety during the pregnancy by two questions: “Have you felt depressed during your pregnancy?”; and “Have you been feeling anxious during your pregnancy?”</p>	<ul style="list-style-type: none"> - Acculturative stress - Social support - PPD symptoms 	<p>Acculturative stress was negatively correlated with social support ($r = -0.34$, $p < 0.01$) and positively correlated with PPD symptoms ($r = 0.27$, $p < 0.01$). Social support was negatively correlated with PPD symptoms ($r = -0.49$, $p < 0.0001$)</p> <p>Multiple regression analyses: The findings indicated that social support had a significant impact on PPD symptoms ($\beta = -0.32$, $t = -2.51$, $p = 0.014$). The impact of acculturative stress and the interaction term between acculturative stress and social support on PPD symptoms were not statistically significant.</p> <p>In U.S. immigrant women of Arabic heritage, higher levels of acculturative stress and a lack of social support predicted higher levels of PPD symptoms.</p>
Cameron et al., 2022 [25]	Informal Mental Health Support	2 Months (Aug–Sep 2020)	<ul style="list-style-type: none"> • Refugee-specific health clinics provided <ol style="list-style-type: none"> I. Interpreter services II. culturally appropriate health care services without long waiting times. • Private sponsorship programme (PSP) provided financial, educational, and social support. • PSPs were small volunteer organisations, so they supported specific families by cooking meals, providing childcare and transportation, and donating clothes and essentials for babies. • Friends and neighbors from similar cultural backgrounds volunteered in Informal services like cooking, cleaning, and babysitting 	<ul style="list-style-type: none"> - The importance of social support - Provider paternalism and women's decision-making autonomy - Access and quality of healthcare influenced by structural barriers - Valued and missing services and supports 	<ul style="list-style-type: none"> - Postpartum social support was critical, but often lacking - Structural barriers (e.g., irregular interpreter services, limited childcare options) impeded women's access to healthcare - <i>“I met the doula one month before I delivered ... She didn't leave me when I delivered my daughter. She stayed with me in the hospital. I was happy to have the doula.....”</i>
Madeira et al., 2019 [24]	Stress & depression	5 months (Mar–Aug 2017)	<ul style="list-style-type: none"> • Population: 20 weeks pregnant women • 2-h group sessions every two weeks. Target attendance: 4–8 women per session before delivery. • Encouraged to attend the sessions in their individual prenatal appointments place; however, they could restart their prenatal appointments anytime. • The first hour of the appointment: one-on-one consultations with the CNM, they measured <ol style="list-style-type: none"> I. the fundal height, II. checked the baby's heartbeat, III. and discussed frequent pregnancy discomforts and complications. • The care coordinator handled any additional needs including referrals, giving brief education tailored to each woman's stage of pregnancy. • Women also participated in integrative therapies such as yoga, massage, and aromatherapy under the supervision of a knowledgeable volunteer. <p>The second hour: a group discussion on various women's health themes, led by the Hooyo team or a community partner.</p>	<ul style="list-style-type: none"> - Maternal anxiety/stress - Knowledge of pregnancy and birth-related topics - Care satisfaction and care engagement 	<ul style="list-style-type: none"> - A median of two sessions were attended by seventeen Somali women (range: 1–7). - Following GPC involvement, awareness of stress management (p 14.03), exclusive breastfeeding (p 14.04), what happens in the hospital (p 14.02), and safe activity during pregnancy (p 14.02) increased. - Women preferred GPC over individualised care by 93 %.
Corna et al., 2022 [26]	Depression	4 Months (Mar–Jun 2012)	<ul style="list-style-type: none"> • Psychosocial support intervention (PSI) consists of women's support groups and home visits. • Support group twice per month, 40–90 min: 7–8 women with four to six months of pregnancy • In groups, women shared their feelings, fears, and thoughts about being pregnant 	<ul style="list-style-type: none"> - Impact of PSI on maternal knowledge gain and practice - Mental health status - Maternal Depression level - Maternal self- esteem - Caregivers' 	<ul style="list-style-type: none"> - In Kutupalong camp pregnant mother showed significant improvement - between the two time points. - Mean differences are as follows - Mini mental state examination 21.5, $p < 0.001$ - Self esteem 2.8, $p < 0.001$

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Table 2 (continued)

Author, year of publication & citations	Type of mental health issue	Intervention duration	Intervention description	Outcome measurements	Findings
			<ul style="list-style-type: none"> • Encouraged women to bring out culturally and socially appropriate solutions to identified problems. • The session topics included <ol style="list-style-type: none"> I. Care for women, II. Breastfeeding and feeding practices, III. Child development and psychosocial care, IV. Food preparation and food hygiene, V. Hygiene practices, VI. Home health practices VII. Family and community-level care resources. • Privacy and confidentiality rules maintained upon agreement and organised in private and closed spaces (family houses). • Regularly trained and supervised by a clinical psychologist, Psychosocial workers provided support group sessions and monthly home visits once or more if needed. <ul style="list-style-type: none"> • The aim of home visits was to promote support during pregnancy by the rest of the family members - The PSI also provided specific educational activities for husbands, mothers-in-law, traditional birth attendants, and community leaders to reinforce their competencies and resources to provide adequate support in the delicate perinatal period. 	- skills	<ul style="list-style-type: none"> - CAP of selfcare of women during pregnancy 6.1, $p < 0.001$ - KAP pregnancy and delivery care 8.4; $P < 0.001$ - KAP feeding practices and newborn care 2.0, $P < 0.001$ - KAP child development and psychosocial stimulation 8.4, $p < 0.001$ - In Nayapara camp, the mean difference of pregnant mothers was: - Mini mental state examination 23.1, $p < 0.001$ - Self esteem 1.5, $p < 0.001$ - CAP of selfcare of women during pregnancy 2.8, $p < 0.001$ - KAP pregnancy and delivery care 5.4; $P < 0.001$ - KAP Resource for care 0.45, $p < 0.01$ - KAP feeding practices and newborn care 2.5, $P < 0.001$ - KAP child development and psychosocial stimulation 10.7, $p < 0.001$
Fellmeth et al., 2021 [27]	Antepartum Depression	2 years & 3 months (Oct 2015–Jan 18)	<ul style="list-style-type: none"> - Population: Migrant and refugee women on the Thai–Myanmar border - The association between social support and perinatal depression was measured. <p>Three types of social support <i>e.g. received social support, perceived sufficiency of support, and partner support</i> were considered</p>	<ul style="list-style-type: none"> - Perinatal depression - Social support (Received social support, Perceived Sufficiency of Support, Partner support) 	<ul style="list-style-type: none"> - Perinatal depression was present in 38.6 % of migrants and 47.3 % of refugees. - Trauma and past depression were highly linked to perinatal depression in both groups. <p>In comparison to refugees, migrants had higher levels of received, perceived, and partner support. Higher levels of receiving assistance were substantially related to a lower risk of prenatal depression in migrants even after accounting for all other factors (adjusted OR 0.82; 95 % CI 0.68–0.99).</p>
Yelland et al., 2014 [28]	Trauma & Stress associated with settlement	1 Year (2012–2013)	<ul style="list-style-type: none"> • Public hospitals offer antenatal care through: <ol style="list-style-type: none"> I. different midwives and/or doctors at each pregnancy visit. II. General practitioner's services and hospital antenatal clinic's services through shared care arrangements. <p>Women can access labor, birth care, and postnatal services from hospitals irrespective of their care model</p>	<ul style="list-style-type: none"> - Social and economic determinants of health - Identification of refugee background as a first step in providing health care - Identifying and responding to the settlement experience 	<ul style="list-style-type: none"> - Afghan women and men reported substantial socioeconomic hardship both before and after having a baby in Australia. <p>Positive statement about the available public services: <i>"The midwives and nurses were the best emotional supports for me during the entire time because I was going through the toughest phase of my life. The maternal and child health nurse calls me at home to check that everything is OK ... she has not only been a verbal support for me but has linked me with support services"</i></p>
Cwikel et al., 2017 [29]	Postpartum depression (PPD)	2004–2015; a total of 11 years	<ul style="list-style-type: none"> • Population: new immigrant mothers came from the Former Soviet Union (FSU) and Ethiopia in Negev, Israel. • Mom to Mom (M2M) is a home visiting programme for support in the first year of parenting. • Tailored with components like <ol style="list-style-type: none"> I. emotional information, II. role modeling support provided by trained volunteer mothers. • Volunteers were assigned to the participant mothers as per language, culture, age, and temperament. • Every week through home visits up to one year postpartum. 	<ul style="list-style-type: none"> - Self-regulation/stress reduction - Infant-child care skills - Problem solving skills 	<ul style="list-style-type: none"> - Out of 53 mothers with positive EPDS scores revealed that 79.2 % ($n = 42$) were well and functioning at home and at work while following up through telephone after one year. - Participants feel more positive, Feel less lonely & isolated, increased personal confidence as a mother, have comfort feelings, self-worth, gained problem solving skills, reduced anxiety, trust others, have better understanding with partners and older children and baby, can meet baby's needs, can be more

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Table 2 (continued)

Author, year of publication & citations	Type of mental health issue	Intervention duration	Intervention description	Outcome measurements	Findings
			<ul style="list-style-type: none"> • Later on, mothers were measured with the Edinburgh Postnatal Depression Scale (EPDS) and referred to psychiatrists if they had positive EPDS scores and self-harm tendencies. • Positive EPDS scored mothers were telephone interviewed again after one year to evaluate: <ol style="list-style-type: none"> I. Rejoining in work II. Functionality as parents in home. 		responsive and sensitive to baby and can access to community resources

participating in GPC programme, participants' overall self-reported knowledge ($p < 0.001$) increased which included knowledge about healthy foods ($p = 0.59$) and safe exercise during pregnancy ($p = 0.02$), labour pain management ($p = 0.18$), stress management ($p = 0.03$), exclusive breastfeeding ($p = 0.04$), etc. One of the respondents expressed about her reduced stress and happiness about joining GPC by saying "Always I'm more relaxed and happier when I leave here ... it's very healthy. It's real happiness". Though the author showed overall positive outcomes resulting from group session with a short evaluation period but longer evaluation period could give more concrete results [24].

3.8. Public, private and volunteered services

One of the respondents gave a positive statement about the public services by saying, "The midwives and nurses were the best emotional supports for me during the entire time because I was going through the toughest phase of my life. The maternal and child health nurse calls me at home to check that everything is OK ... she has not only been verbal support for me but has linked me with support services" [28]. However, refugee women preferred interpreter-mediated appointments in public facilities, but limited interpreter availability resulted less satisfaction in service provision [28].

The importance of formal refugee-specific health services and informal volunteered support from friends and neighbours during the postpartum period in Nova Scotia, Canada, was explored qualitatively. These supports helped women to get rid of postpartum blues/PPD. One of the mothers told, "I met the doula one month before I delivered ... She did not leave me when I delivered my daughter. She stayed with me in the hospital. I was happy to have the doula....". Informal support greatly helped the refugee women during their pregnancy and postpartum but close family member's absence made their life challenging [25].

3.9. Outcome of social support

A cohort study found that the prevalence of perinatal depression was 38.6 % and 47.3 % in migrants and refugees, respectively. Migrants had higher levels of received, perceived, and partner support than refugees did. After controlling for all other variables, higher levels of received support remained significantly associated with a lower likelihood of perinatal depression in migrants (adjusted OR 0.82; 95 % CI 0.68–0.99). Perceived support showed a significant association with perinatal depression in refugees (adjusted OR 1.89; 95 % CI 1.10–3.24) [27].

Khalil et al. (2018) showed that social support played an important role in reducing PPD symptoms. In the USA, among immigrant women of Arabic heritage, higher levels of acculturative stress and lack of social support predicted higher levels of PPD symptoms. It was found women with less social support were more likely to have stronger PPD symptoms ($\beta = -0.47$, $t = -6.62$, $p < 0.0001$). Khalil et al. (2018) demonstrated the co-relation of social support and reduce PPD through a cross sectional study which requires a further validation study through an RCT [23].

4. Discussion

4.1. Summary of findings

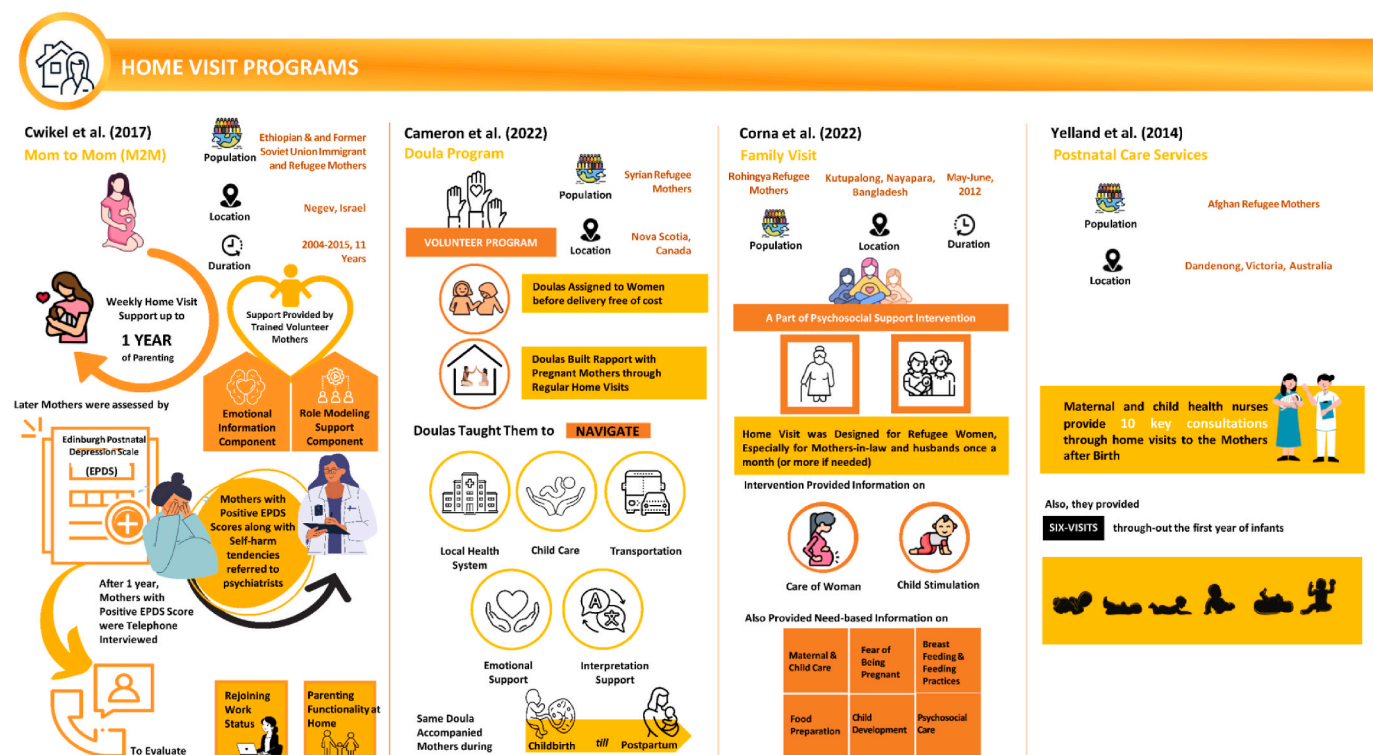
This review identified seven studies for synthesis, but none were conducted in World Bank-listed F&CACs. However, women were either migrants or refugees who had been sheltered in different developed countries from the F&CACs. Studies have provided substantial evidence of the causal relationship between conflict or migration-driven stress or trauma, antepartum, and postpartum depression, and other mental health problems of refugee mothers. We found four distinct forms of antepartum and postpartum mental health support interfaces for refugee and migrant women: home visits; group sessions; public, private, and volunteer services; and social support; where home visits were the most commonly discussed intervention followed by group sessions and social support. Each of the studies had its premises and objectives for understanding these programmes and evaluating anxiety or depressive disorders in mothers. The most common measurement instruments found in this review were the Multi-Dimensional Acculturative Stress Inventory [23], Perceived Stress Scale (PSS) to assess maternal anxiety [24], EPDS and Centre for Epidemiologic Studies of Depression Scale (CES-D) to assess PPD and maternal depression [26,29] etc. Meanwhile, patient outcomes were reported through scales on pregnancy-related knowledge, received and perceived social support, satisfaction with the services, etc. Home visit services showed improved parenting skills among mothers in the first year of parenting, positive self-esteem and confidence, reduction of depression and anxiety, etc. [25,26,28,29]. Due to continuous home visits of doulas, mothers can be out of baby blues and regain trust in others [25]. Social support had an important role to reduce antepartum and postpartum depression [23,27]. Public, refugee-focused, and volunteer initiatives also have a positive effect on reducing antepartum and postpartum depression among refugees and immigrants from F&CACs [25,28]. Three studies discussed about combined intervention approach where home visit was integrated [25,26,28]. The support and interventions discussed in this review mostly offered improved and relaxed mental health status among pregnant and with recent delivery refugee women from F&CACs, but longer follow-up period in the interventions could provide more accurate results [24,26].

4.2. Agreement and disagreement with contemporary research

Conflict and fragile context-induced stress reduction were primary concerns in the included studies. Overall improvement in postpartum depression and anxiety, self-confidence, and pregnancy-related empowerment in mothers were also priority areas. Among the seven included studies, four showed a positive mother-child relationship and improved maternal mental well-being.

Home visit services can be more effective for mothers as it can offer tailored suggestions and can ensure accessible support for mothers with limited mobility. It also builds trust among the mothers, family members and service providers. An RCT conducted in Australia showed statistical

a



b

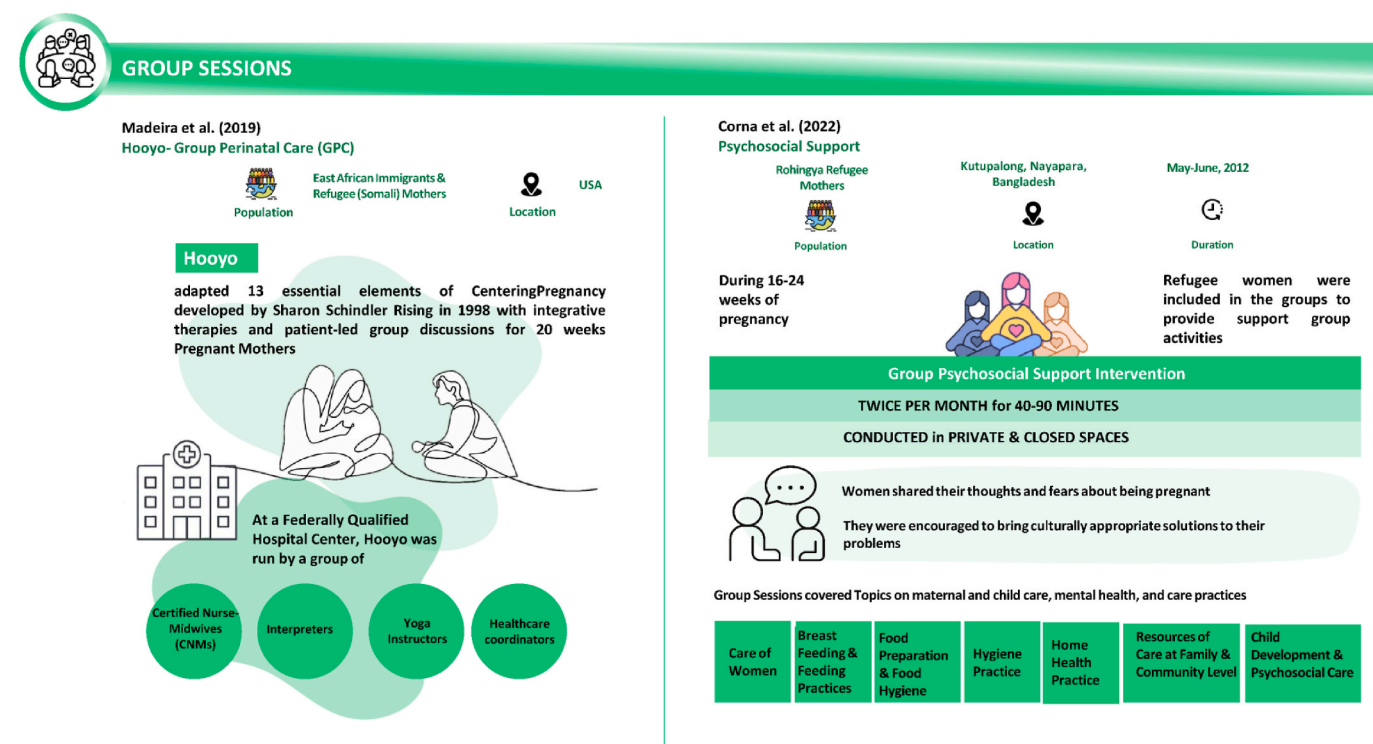


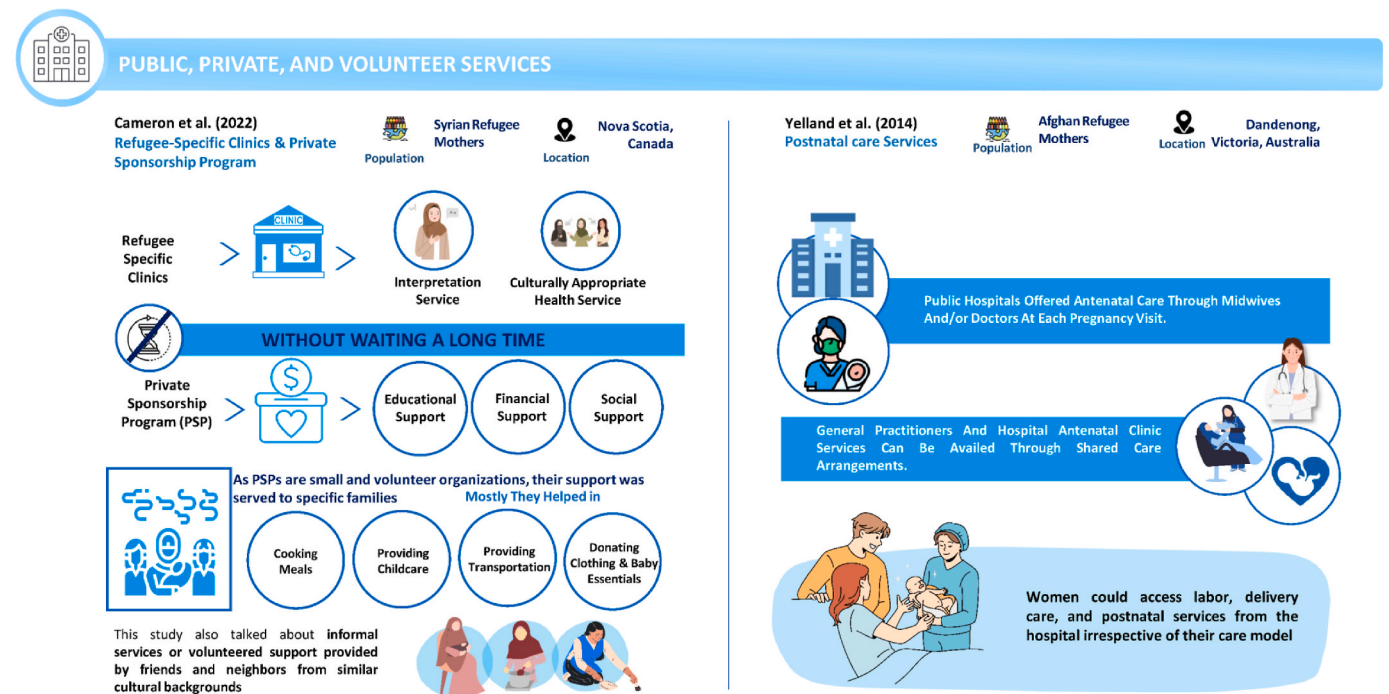
Fig. 3. Description of the interventions. a. Home Visits. b. Group Session. c. Public, private and volunteered services. d. Social support.

significance of benefit of nurse-led home visiting across the positive parenting and mental well-being of parents and children [30]. Home visits by professionals or paraprofessionals have also proven to be

effective for PPD [31,32].

Regarding refugee populations, social support proved to be important. Khalil et al. (2018) showed that social support from family, friends,

c



d

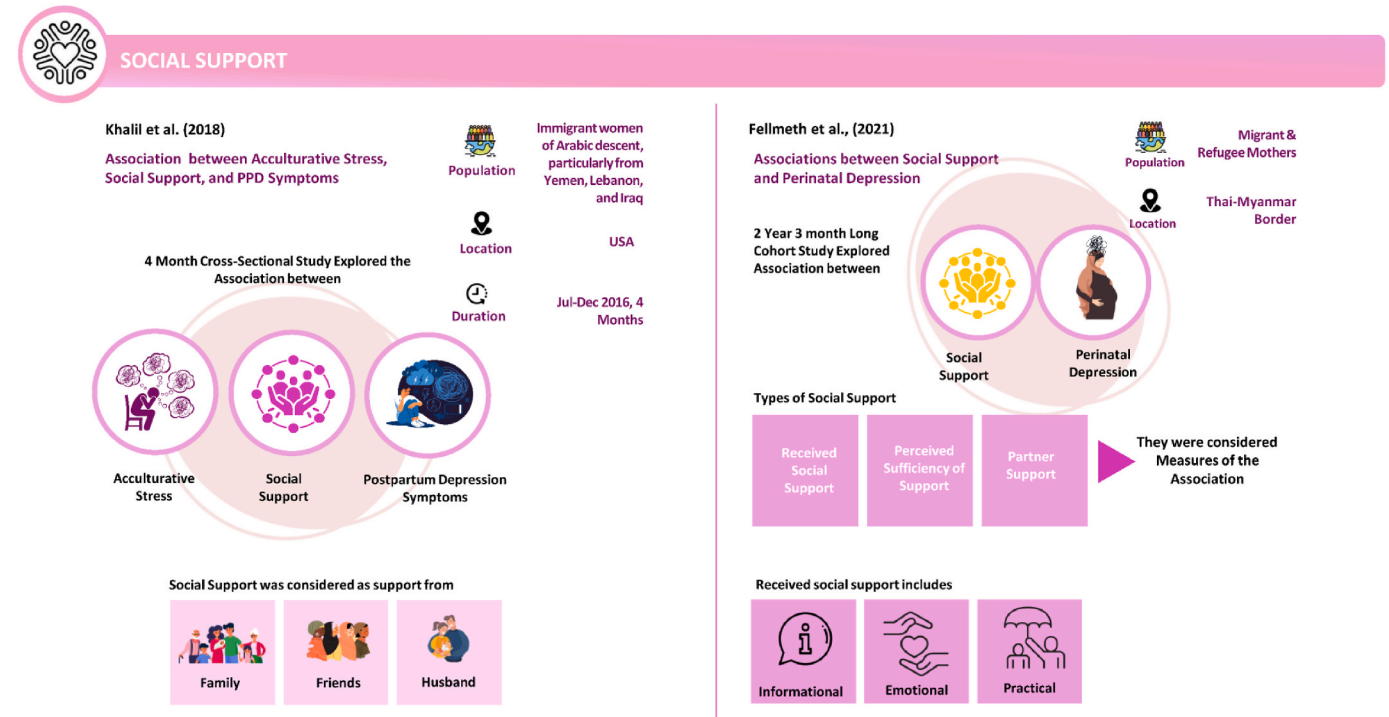


Fig. 3. (continued).

and spouses was able to reduce postpartum depression in mothers, yet failed to mediate the direct positive relationship between acculturative stress and PPD among Arab women [23]. Meanwhile, Fellmeth et al. (2021) also showed that among three domains of social support (received support, perceived sufficiency of support, and partner support) only “received support” remained statistically significantly associated with perinatal depression for migrants and refugees. The argument here

suggests that these support domains are moderately correlated and aligned with each other but there are some other, influencing factors, such as different perceptions of support and wider support networks beyond spouses. This study encourages refugees and migrant mothers to build a community support network [27]. According to Spry et al. (2021), interventions promoting social support can reduce perinatal depression. Local organisations can play a vital role in supporting

vulnerable women. This study also reinforced peer support groups where trained volunteers provided emotional and practical assistance to increase self-esteem and self-efficacy among at-risk women in LMIC [33].

Interventions like group and yoga sessions also reported positive outcomes in the case of improving patient satisfaction and reducing stress, depression, and social isolation in the antepartum and postpartum periods [24,26]. A systematic review also showed that yoga interventions help to reduce anxiety and depression among pregnant women [34]. The pitfall of this programme can be the late arrival or absence of mothers for several reasons, such as reluctance to attend mental health care, especially due to the fear of being stigmatised [35, 36].

Included studies explored massive structural barriers including language, cultural gaps in accessing healthcare, insufficient social support for immigrants, financial hardship, and lack of understanding of migration context according to the lived experiences of Afghan and Syrian women residing in Canada and Australia [25,28]. The above-mentioned challenges are predictors of PPD in refugee women [23]. A multifaceted comprehensive intervention integrating all the available frameworks may be effective in this setting. Group sessions that were designed with essential antepartum and postpartum physical and mental health care, and psychosocial therapies combined with occasional home visitation by trained volunteers may not only reduce the number of dropouts from the interventions but also increase community support and build strong social rapport breaking the isolation. Furthermore, public initiatives need to be increased beside private initiatives so that the interventions can be sustained.

4.3. Implications of research and practice

The studies included in this review assert the importance of interventions during the antepartum and postpartum periods of mothers and their children for better mental health conditions and well-being. War, turmoil, and deprivation experienced in Palestine and Ukraine have millions of refugees and internally displaced women for whom pregnancies and childbirths are not put on hold. Mental health and psychosocial support are significant public health needs during antepartum and postpartum periods. While designing interventions for Ukrainian and Palestinian refugees and displaced women, development partners and policymakers can integrate the abovementioned interventions into the health system to improve maternal and child health outcome.

This review uncovered the need for experimental research to detect the effects of antepartum or postpartum mental health interventions. Interventions are required not only for refugees relocated to developed or other countries but also for the women residing in war-affected countries. Donor communities who are working toward generating evidence can also increase their investment to generate robust evidence on these issues.

4.4. Strength and limitations

This systematic review has several strengths and limitations. We conducted this review following standard methods and ensured methodological robustness at each step. F&CACs were defined according to World Bank guidelines. To ensure robustness of the search, citation tracking was also conducted from a related systematic review to include additional articles. This review also had several limitations. No randomised controlled trials have explored the effectiveness of the interventions. However, few pre-post studies have demonstrated the effects of these interventions. We could not find any articles that have been conducted in F&CACs which limits the option to test the feasibility of similar interventions for better mental health outcomes of women during their antepartum and postpartum periods. Due to the unavailability of the translator, we included studies only published in English

language, however, no studies were excluded due to language. Additionally, this review included only seven studies, indicating the importance of conducting more primary research on similar topics and areas.

5. Conclusion

Many social and psychosocial determinants accentuate perinatal and postnatal mental health problems in refugee women. Exiled mothers need special attention, as they tend to live in persistent fear, anxiety, and other induced vulnerabilities. The topic of the current systematic review is such a challenging concept, that the researchers established a protruding need for specialised support tailored to home visits, group sessions, and social support along with a responsive public health system for migrant and refugee women to manage antepartum and postpartum mental health condition. As this systematic review was conducted to identify, assess, and synthesise key pieces of evidence on programme effectiveness around the topic, it will help policy and programme implementers to develop future interventions.

Authors' contributions

SE and KMSUR conceptualised the systematic review. SE drafted the manuscript with potential inputs from KMSUR. SR, ATC, and SE conducted the screening. SE, SA and NNH conducted the data extraction. AA, AS, and FA reviewed the final draft. KMSUR critically reviewed the manuscript. All authors revised and approved the final manuscript.

Ethical approval

As this is a systematic review and included only published articles and did not recruit any human/living participants for data collection, ethical approval was not required.

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Competing interests

None declared.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhip.2024.100573>.

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