

Research Approaches to Explore Postpartum Emotional Distress (PPED) During the COVID-19 Pandemic in the UK: A Scoping Review

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Abstract

The COVID-19 pandemic affected maternal mental health in the UK, increasing postpartum emotional distress. This scoping review identified forms of postpartum emotional distress (PPED) examined during the pandemic, the methodologies and assessment tools used, analytical approaches, reported limitations, future research directions, and overall findings. This review followed Arksey and O'Malley's framework and the Joanna Briggs Institute scoping review guidelines. A comprehensive, keyword-based search strategy was applied across electronic databases, initially on 28 January 2023, and updated on 20 July 2023, and 3 September 2025. Strict inclusion criteria were used, and data from eligible studies were charted and synthesised. This review of 35 UK studies on postpartum emotional distress (PPED) during COVID-19 found a dominant focus on depression and anxiety, with other PPED forms largely neglected. Quantitative designs overwhelmingly outnumbered qualitative and mixed-method approaches. Common limitations included low sample diversity, reliance on online self-report surveys, cross-sectional designs, convenience sampling, and social-media-based recruitment. This review is the first to map research approaches used to explore postpartum emotional distress (PPED) during COVID-19 in the UK. The limitations and future research directions identified in this review highlight an urgent need for more diverse sampling, longitudinal study designs, qualitative research exploring women's lived experience narratives of different forms of postpartum emotional distress, greater consideration of biopsychosocial factors, and evidence-based interventions.

Keywords: postpartum; perinatal; emotional distress; COVID-19; pandemic; research approach

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1. Introduction

Postpartum emotional distress (PPED) (which is a broad-ranging concept as it includes diverse emotional states such as depression, anxiety, stress, etc.) compromises the mental health status of women following childbirth [1]. Consequently, this adversely affects quality of life and the ability to perform and manage personal and social relationships [2]. The COVID-19 pandemic has resulted in a global health emergency, and women in the postpartum period may experience its impact profoundly [3]. Taking this into ac-

count, various studies [4–7] (e.g., Ceulemans et al., 2020; Davenport et al., 2020; Dib et al., 2020; Fallon et al., 2021) have attempted to explore PPED in the context of the COVID-19 pandemic (see subheading 2.3 for the operational definition of PPED). This is important to understand the potential long-term impacts of COVID-19 experiences for women and to inform how we best manage future pandemics. Yet, there have been no reviews that have summarised how PPED has been studied in the UK during COVID-19, which is important because the kind of research conducted will determine the conclusions that can be drawn. Moreover, it would also be beneficial to review which forms of PPED were explored, the acknowledged limitations of these studies and the future direction they provide for further research. This scoping review aimed to investigate the research approaches that have been used to investigate PPED in the UK during the COVID-19 pandemic.

2. Materials and Methods

2.1. Methodological Framework

The methodological framework developed by Arksey and O'Malley [8] for scoping reviews was used. It was ensured that all the actions involved at each stage were in congruence with the Joanna Briggs Institute's (JBI) guidelines [9] for evidence synthesis and reporting the findings of scoping reviews.

This review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses PRISMA-ScR guidelines [10] (see Appendix E for the PRISMA-ScR checklist). No review protocol was registered.

Ethical approval for this study was obtained from the Faculty of Health and Medicine Research Ethics Committee, Lancaster University, on 4 June 2021 (Reference No. FHMREC20150). Although ethical approval is not generally required for reviews of the published literature, this scoping review formed part of a wider doctoral research project that also included a primary empirical study involving human participants; therefore, ethical approval was obtained for the overall project. All study procedures were conducted in accordance with the approved protocol.

2.2. Framework for Scope of Review

The PCC framework (population, concept, context) is recommended for developing scoping review questions [11], but not all elements need to be applied [12]. Following common practice, this review uses concept and context, while replacing population with the phenomenon of interest to align with the review question (see Table 1).

Table 1. Framework for the scope of review.

Phenomena of Interest	Concept	Context
Study approaches	PPED	COVID-19 Pandemic

2.3. Operational Definition of the Concept PPED

Research highlights the need to consider the wide range of emotional responses experienced by postpartum women [13]. This review treats PPED as a broad concept encompassing diverse postpartum emotional states. Existing definitions focusing on one or two emotions were insufficient, so the first author attempted to define PPED more broadly as follows:

“an unpleasant emotional state which is more intense than it is usual for the new mother and lasts most of the day nearly every day for at least a couple of weeks and starts within the first few months after childbirth”.

This inclusive definition encompasses all forms of postpartum emotional distress (e.g., depression, anxiety, stress, sleep disturbances, and eating-related difficulties). PPED is used as an umbrella term to capture the broad range of symptoms associated with emotional distress during the perinatal period, including depression, anxiety, and stress experienced by women within the first year following childbirth. PPED is not intended to represent a formal diagnostic category but rather serves as a descriptive umbrella term to facilitate the mapping and synthesis of the diverse emotional outcomes examined across the included studies. To avoid excluding relevant studies, the operational definition adopted in this review was loosely informed by existing definitions of PPED and broadened to encompass any form of emotional distress experienced following childbirth.

2.4. Review Question

An exploratory review question was developed for this scoping review, aiming to investigate the occurrence of a phenomenon and generate hypotheses [14]. It guided the scope, inclusion criteria, and strategy for search, data extraction, and synthesis, defining the direction of the review [15,16].

Core question: What are the research approaches that have been used in studies to explore PPED during the COVID-19 pandemic in the UK?

Scoping review questions benefit from sub-questions addressing specific aspects of the population (or phenomenon), context, and concept [11]. Accordingly, the sub-questions (see Table 2) were formulated to guide evidence mapping.

Table 2. Sub-questions of the review.

Number	Question
Sub-Question 1	Which forms (emotional states) of PPED were researched in studies conducted during the COVID-19 pandemic?
Sub-Question 2	What were the methodologies employed by the studies to explore PPED during the COVID-19 pandemic in the UK?
Sub-Question 3	What were the methods (tools/questionnaires) that have been used to assess PPED and gather data in these studies?
Sub-Question 4	What were the methods utilised to analyse the data?
Sub-Question 5	What were the limitations of the study approach as acknowledged by the researchers who conducted these studies?
Sub-Question 6	What future direction do these studies provide for future studies?
Sub-Question 7	What are the findings of the included studies?

2.5. Inclusion Criteria

Inclusion and exclusion criteria (see Table 3) were based on the PCC framework [11] to clarify the review's focus and limitations. Justifications for each criterion were provided, and the inclusion criteria were piloted prior to the search to minimise bias and error.

Table 3. Inclusion and exclusion criteria for study selection.

	Inclusion Criteria	Exclusion Criteria	Justification
Phenomena of Interest: Study Approaches	Primary research articles that explored and/or reported any form of PPED during the COVID-19 pandemic in the UK.	All the secondary sources, such as opinion/commentary/point of view articles, news briefs, systematic reviews, literature reviews, systematic literature reviews, document reviews, rapid evidence reviews, integrative reviews, meta-analysis, the protocols for meta-analysis, and evidence synthesis.	The requirement to answer the review question is to include the primary studies conducted in the UK on the PPED, so the secondary sources, protocol for studies, and conference abstracts without full text published are excluded.

	Multinational research studies exploring PPED, which included the UK.	- Research articles focused on developing questionnaires/scales, frameworks, models, internet-based or offline applications, clinical trials, and evaluation of interventions and therapies related to perinatal mental health, etc. - Protocols for prospective studies on perinatal mental health. - Multinational studies on PPED in which the UK specifically is not mentioned. - Perinatal mental health research was conducted in the UK, which only focused on various forms of emotional distress during the pregnancy period and did not explore and/or report postpartum emotional distress. - Conference abstracts for which the full text is not published. - Research articles which generically mention perinatal mental health, but the assessment of any perinatal mental health disorder is not reported. - Studies mentioning a record of inpatient or outpatient attendance of mental health services in the perinatal period, considered as the presence of a perinatal mental health issue, will not be included.	
Concept: PPED	Studies on any form/type of PPED, as explained in the operational definition, will be included. Moreover, studies that explore the postpartum experiences of women and report postnatal mental health issues will also be included.	Studies on topics solely related to physical health and illness conditions during pregnancy or in the postpartum period.	The review's focus is on mental health, so studies related to physical illnesses are excluded.
Context	Time: Studies investigating any form of PPED during the COVID-19 pandemic and identified through searches conducted up to and including 3 September 2025. Language: Studies conducted in the English language.	Studies investigating PPED outside the COVID-19 pandemic context or published after 3 September 2025, the date of the final search update. Studies published in languages other than English.	Studies published after 3 September 2025 were excluded, as this date represented the final search update undertaken to ensure the review reflected the most current evidence available at the time of manuscript preparation. Keeping in view the practical issues with translation and the reviewer's limited language ability, the research evidence reported only in the English language will be included.

2.6. Search Strategy

Scoping reviews aim to be as inclusive as possible within time and resource limits [11]. To ensure comprehensiveness, the search strategy was developed following Booth's [12] recommended steps for systematic identification of relevant studies.

Step 1: Scoping Search

The initial search explored available systematic reviews to assess the quantity, quality, and distribution of research evidence. Core electronic databases (MEDLINE Complete, CINAHL, PsychINFO) and multidisciplinary databases (Web of Science, Scopus) were searched using key terms such as 'postpartum', 'psycholog*', 'pandemic', and 'COVID-19'. Google Scholar was used to identify the grey literature, including theses, reports, and unpublished studies.

A relevant article by Jackson and colleagues [17] served as a "pearl" to develop the search strategy using the Pearl-Growing Technique [12], where its references and citation index guided identification of further relevant studies (e.g., [7,18]). Citation mining via the Pearl-Growing Technique is valuable for locating research and cross-checking references that may be missed in database searches. For example, a study by Rougeaux and colleagues [18] was missed by all databases but identified via the Pearl article's citations (see Figure 1), ensuring comprehensive retrieval of dispersed evidence. The final search strategy was sufficiently sensitive to retrieve all relevant articles across the chosen databases.

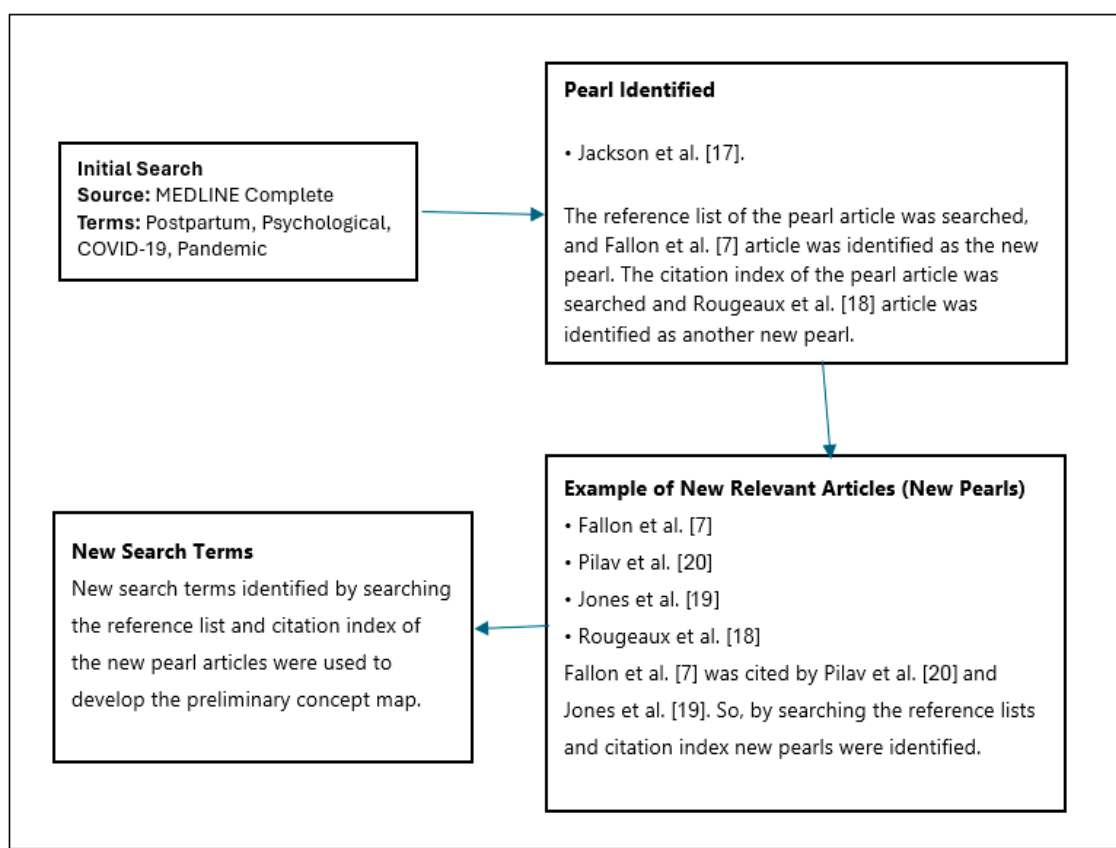


Figure 1. Pearl-Growing Technique [7,17–20].

Step 2: Conducting the Search

The key search terms from the scoping search were structured into a database-specific search strategy. Thesauri (e.g., MeSH, CINAHL Subject Headings, APA Thesaurus)

and free-text terms were used, combined with Boolean operators and truncation, to capture synonyms and root words. The syntax was piloted in MEDLINE Complete (see Table 4) and adapted for CINAHL, PsychINFO, Scopus, and Web of Science to ensure feasibility and comprehensive retrieval (see Appendix A for the search strategies, number of hits, and screenshots for all five databases).

Table 4. Preliminary concept map created in MEDLINE.

Concept Map	
Concept 1	(postpartum OR post-partum OR “post partum” OR postnatal OR post-natal “post natal” OR Perinatal OR Post-delivery OR Child-birth OR Child-birth OR Post-birth OR birth OR Puerperal) N5 (“emotional distress*” OR Stress OR depress* OR anxiety OR “sleep disorder*” OR “eating disorder*” OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief)
Concept 2	(coronavirus OR “corona virus” OR coronavirinae OR coronaviridae OR betacoronavirus OR COVID19 OR “COVID 19” OR “COVID-19 Pandemic” OR nCoV OR “CoV 2” OR CoV2 OR sarscov2 OR 2019nCoV OR “novel CoV” OR “wuhan virus” OR COVID*)

The database search was conducted on 28 January 2023, yielding 2752 articles, which were exported to EndNote X9 and de-duplicated, resulting in 1220 unique articles for screening. Considering the recommendation that to increase the currency of a review, an update is necessary before submitting it for publication, the search was updated on 20 July 2023 and 3 September 2025 using date limits, with duplicates removed each time, yielding 2271 articles for screening (see Figure 2, PRISMA-ScR diagram; Appendix B for search and de-duplication records).

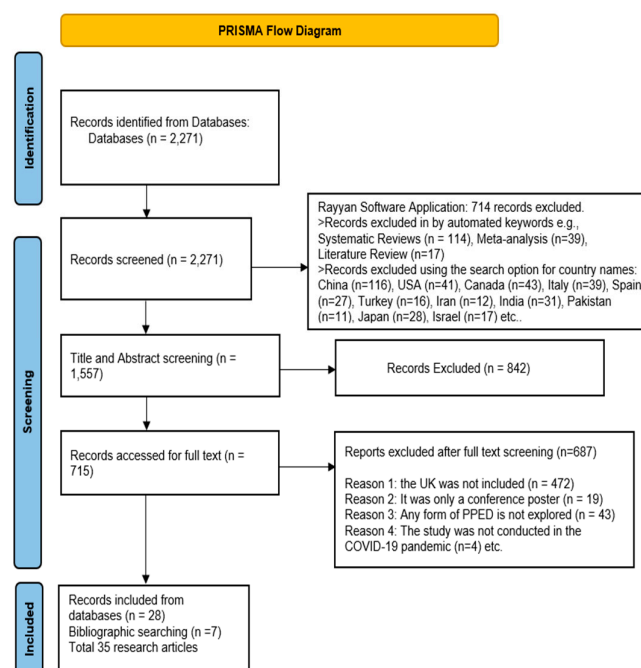


Figure 2. Prisma-SCR flow diagram of the review process.

The initial database search was conducted prior to the commencement of the primary study component of the doctoral research on 28 January 2023, yielding 2752 records. These records were exported to EndNote X9 and de-duplicated, resulting in 1220 unique articles for screening. To ensure that the review remained current throughout the doctoral research process, the search was rerun on 20 July 2023 upon completion of the dissertation, yielding 286 additional unique articles. The search was updated again on 3 September 2025, following the successful defence of the research and during manuscript preparation for publication, yielding a further 932 unique articles. Consistent with recommendations that reviews should be updated before publication to maintain the currency of the evidence base, both updated searches were conducted using appropriate date limits, and duplicates were removed at each stage. Across all searches, a total of 2271 articles were screened, of which 28 studies met the inclusion criteria (see Figure 2, PRISMA-ScR diagram; Appendix B for search and de-duplication records). In addition, seven studies were identified through bibliographic searching, resulting in a final total of 35 research articles included in the review. Only the most frequently occurring reasons for exclusion are presented in the PRISMA-ScR flow diagram for illustrative purposes. Consequently, the listed exclusion categories do not represent all exclusion reasons and are not intended to sum to the total number of excluded records.

Step 3: Bibliographic Searching

Electronic searches can miss relevant studies due to database limitations or concept definitions [21]. To address this, bibliographies of retrieved articles were checked. For example, an article by Alcindor [22] led to the identification of Sanders and Blaylock's article [23]. Overall, seven articles missed by databases were found through this method.

Step 4: Verification

To ensure comprehensive identification of relevant research, experts in perinatal mental health were consulted via email, sharing the inclusion criteria and final article. Follow-up emails were sent when needed. Responses confirmed that no relevant studies were overlooked.

Step 5: Documenting Search

A record of all search steps, strategies, and information sources was maintained and reported, ensuring transparency and reproducibility, which is a key criterion of a systematic search.

2.7. Selection of Relevant Articles

After identifying all research articles, each was assessed for inclusion or exclusion based on the defined criteria.

2.7.1. Screening for Meeting Inclusion Criteria (Relevance)

In the first stage of study selection, articles were exported from EndNote X9 to Rayyan, where automated exclusion terms were used to identify and remove non-primary studies. Country-specific search terms (e.g., "China") were also used to identify studies that did not involve UK populations. Titles and abstracts were screened against the inclusion and exclusion criteria by the first reviewer (H.M.), while a second reviewer (H.L.) independently screened a random 20% sample to ensure consistency in the application of the eligibility criteria. Reviewer agreement was high, with only one discrepancy identified, which was resolved through discussion. Full-text articles were retrieved and assessed when eligibility could not be determined from the title and abstract alone. A random 20% sample of full-text articles was independently screened by the second reviewer, with no disagreements identified. A screening tool (Appendix C), based on the inclusion and exclusion criteria, was developed and piloted on six CINAHL studies to ensure the reliability and consistency of the screening process.

2.7.2. Quality Appraisal of the Research Evidence

Quality appraisal helps reviewers familiarise themselves with studies and reduce bias. However, scoping reviews aim to map existing evidence rather than assess its quality; therefore, methodological appraisal is not required [8,24]. Following common practice in scoping reviews, quality appraisal was not conducted.

2.7.3. Data Charting

The data charting table is based on the core and sub-questions and was developed during the protocol phase and piloted to capture key study details (e.g., title, author, design, findings, limitations, and future directions).

Evidence was analysed according to the review's purpose. As it is useful for scoping reviews to present the data against an a priori identified framework [25], data are organised using a framework based on the review's sub-questions to align findings under relevant themes and address the core question. As thematic synthesis was beyond the review's scope, findings are presented in tables.

3. Results

A total of 2271 records were identified across databases. Rayyan's automated screening excluded 714 records. Of the remaining 1557, 842 were excluded after title and abstract screening. Full-text screening of 715 records led to 28 studies meeting the inclusion criteria. An additional seven studies identified through bibliographic searching were also included for review.

Data from 35 studies are charted in Table 5, which outlines all information relevant to the review question, with each column corresponding to a sub-question. Tables 6–12 present further categorised data. As a scoping review, synthesising findings was not within its primary scope; however, data pertaining to sub-question 7 are presented separately in Table 12.

Table 5. Data charting.

#	Citation	The Form of PPD Explored	Study Methodology	Data Collection Method	Data Analysis Method	Limitations of the Study Approach as Acknowledged by the Researchers	The Future Direction for Research That the Study Provides
1	Anderson et al. [26]	Prenatal and Postnatal Anxiety	Mixed-Method Approach Longitudinal Study Design	1. Quantitative arm: Generalised anxiety disorder-7 (GAD-7) screening tool 2. Qualitative arm: semi-structured interviews	Quantitative: 1. Pearson's correlation 2. Repeated measures <i>t</i> -test 3. Binary logistic regression Qualitative: Content thematic analysis.	1. The sample size was small. 2. Participants were only screened for anxiety at one-time point during the pregnancy. 3. If high anxiety scores persisted or settled down for women as the pregnancy continued could not be established 4. Gestational age was not considered while assessing the birth outcome at the time of recruitment.	1. To increase the reliability of results, the GAD-7 should be repeated at every antenatal contact in a larger sample size. 2. A case-control study with age-matched samples from non-pregnant populations can help to elucidate whether anxiety increased more in pregnant populations as compared to the non-pregnant population. 3. It is recommended to understand the COVID-19 vaccine-induced anxiety during pregnancy, as it poses another difficulty for pregnant women. 4. The negative impact of persistent high anxiety on birth outcomes, which contributes to the development of mental illness in the first year postpartum, needs to be further explored.

2	Ayers et al. [27]	Prepartum and Postpartum Anxiety	Quantitative Study Longitudinal Study design	Online: 1. Anxiety was assessed using the Stirling antenatal anxiety scale (SAAS). 2. Sociodemographic characteristics were measured using standard classifications for England or Scotland. 3. Medical history and obstetric information were measured by self-report and included a previous history of mental health. 4. General health was measured using the visual analogue scale of the EuroQoL EQ-5D-5L.	1. Frequencies for demographic variables were presented as number and percentage in each category. 2. Descriptive numbers and percentages are given for each time point. Analysis of the relationship between the perinatal stages (early, mid, late or postnatal). 3. The odds of ever having COVID was conducted using mixed effects logistic regression model. 4. Difference between perinatal stages in the perceived severity of illness from COVID infection was examined using a mixed effects ordinal regression model.	1. The findings are not generalisable as the sample was more educated than the general population. 2. The impact of the pandemic on mental health was only explored using one item, although the advantages and disadvantages of using single-item measures are debatable. 3. The measurement was based on self-reports. 4. The inclusion of COVID-related questions in the MAP study was opportunistic.	Directions for future research are not mentioned.
3	Aydin et al.[28]	Feelings of Distress and Postpartum Anxiety	Mixed-Method Approach Cross-Sectional Study Design	Online survey via social media and research groups 2 Sections: 1. quantitative: Structured Questions 2. Qualitative: semi-structured questions	Quantitative: 1. Descriptive data in the form of frequencies. 2. Sentiment analysis. Qualitative: thematic analysis	1. The sample sizes were not equal at each time point due to changing governmental restrictions and lockdown measures. 2. The study was conducted as a voluntary online survey, so it is not possible to confirm that the received responses were from expectant parents or exclude participants' bias regarding positive or negative experiences of giving birth. 3. Even though the study was advertised nationally, the majority of participants are white, so the results lack generalizability. 4. As the qualitative data was collected utilising a survey, further probing was not possible.	Further research is necessary to study the impact of differences in birth experiences, both on maternal mental health in the postpartum period and on maternal-infant bonding, and how it impacts maternal health and child development.
4	Basu et al. [29]	Posttraumatic Stress Anxiety, and	Quantitative Study (Multinational)	Survey via social media 1. Depression and	1. Descriptive statistics for socio-demographic characteristics were not possible due to the cross-	1. Causal attributions between the factors under examination were not possible due to the cross-	The large sample size data and the survey available in multiple languages provided by the study can be used as initial information

	Depression in Postpartum Women	Cross-Sectional Study Design	anxiety was assessed using Patient Health Questionnaire-4 (PHQ-4) 2. Posttraumatic stress symptoms were assessed using a modified version of the Impact of Events Scale—6 (IES-6)	2. Multivariable logistic regressions were then run to test the study hypotheses.	sectional nature of the study. 2. Convenience sampling was used to select participants; therefore, the sample is not representative of any region or country. 3. As recruitment was done via social media, potential participants not active on social media were automatically excluded. 4. The study excluded women under the age of 18. 5. The study did not represent a complete range of mental health concerns and needs of postpartum women. 6. U.S.-centric race/ethnic categories, which may not relate to categories in other regions or countries in the world, were used, which limits the ability to investigate such categories cross-nationally.	for conducting future research to deal with the paucity of data regarding perinatal mental health during the COVID-19 pandemic.
5	Ceulemans et al. [4] Postpartum Depression, Anxiety and Perceived stress	Quantitative Study (Multinational) Cross-Sectional Study Design	Web-based Survey 1. The Edinburgh depression scale (EDS), 2. The generalised anxiety disorder scale (GAD-7) 3. Perceived stress scale (PSS).	Regression model analysis was conducted to identify factors linked with poor mental health status.	1. The survey was advertised through social media, so the sampling technique has the inherent risk of sampling selection bias. 2. The cross-sectional study design and absence of a nonpregnant comparison group inhibited drawing conclusions regarding the pandemic's long-term impact and the nature of mental distress as being transient or persistent. 3. Participant's self-reported symptoms were not specific to COVID-19 infection, and thus not included in the analyses to prevent groundless conclusions. 4. As only 232 participants were UK residents, this demands a cautious interpretation of the UK findings. 5. In the absence of validated and clinically relevant cut-off values, the anxiety and stress scale scores were measured as continuous variables in the analysis.	Other relevant variables such as the impact of ongoing/severe COVID-19 on women's mental health should be investigated.

					6. The regression models only investigated links between mental health status and sociodemographic, health, and reproductive characteristics.	
6	Chang et al. [30]	Postnatal Depression	Quantitative Study (Multinational) Cross-Sectional Study Design	Online Survey The Edinburgh postnatal depression scale (EPDS) was used to measure the outcome variable.	Descriptive statistics (frequencies, percentages, mean and standard deviation) Bivariate associations were assessed using a chi-square test and simple logistic regression. 1. Convenience sampling limits the generalisability, and it may not be appropriate for all postpartum women in the participating countries and other countries. 2. Retrospective data were collected via self-report assessments to assess postnatal depression, which, in addition to recall bias, may increase the risk of producing social desirability bias. 3. The EPDS with a cut-off point of 13 was used to screen postpartum depression may be inadequate to identify women in need of support. 4. Previous history of antenatal depression or a mental illness was not inquired.	Qualitative research methods can be carried out to explore the specific aspects of COVID-19 that impacted women's breastfeeding plans and mental health, especially in a scenario where surviving the COVID-19 pandemic becomes a norm.
7	Coca et al. [31]	Postpartum Depression	Quantitative Study (Multinational) Cross-Sectional Study Design	Online survey 1. Edinburgh postnatal depression scale (EPDS). 2. Maternal social support scale	1. Descriptive statistics, chi-square tests, and <i>t</i>-tests were used to identify associations with postpartum depression. 2. A binary logistic regression model was employed to identify explanatory factors linked with postpartum depression. 3. Adjusted odds ratio and confidence interval (95%) were calculated. 1. Participants themselves completed EPDS via an online survey, which has a chance of impacting postpartum depression symptom score. 2. Women who had access to the internet took part in the study, which might not be representative of various social classes. 3. The non-probability samples may not be representative of all the countries, and for the same reason cannot be generalised to other countries' settings. 4. Due to the cross-sectional study design of the study, causation cannot be established.	The study highlighted the need for professionals to be trained to identify potential postpartum women with PPD and provide support during a pandemic; however, direction/recommendations for future research are not mentioned.
8	Costa et al. [32]	Depression and Anxiety	Quantitative Study (Multinational) Cross-Sectional Study Design	1. Depression is assessed using the Edinburgh postnatal depression scale [EPDS] 2. Anxiety is assessed using the generalised anxiety dis-	1. Descriptive statistics: frequencies and percentages. 2. Inferential statistics: Odds Ratio (OR). 1. There as underrepresentation of women fromsocio-disadvantaged groups. 2. Symptoms of mental health issues other than those of depression and anxiety were not consid-	The present mental health screening focused mainly on depression and anxiety, and less common disorders are largely disregarded. Studies beyond the COVID-19 pandemic and covering the whole range of mental health problems in the perinatal

				order assessment [GAD-7].	ered in the analysis of the proportion of women receiving mental healthcare.	period are warranted to overcome the scarcity of data and understand the gaps in perinatal mental healthcare.
9	Cross et al. [33]	Anxiety	Quantitative Study Cross-Sectional Study Design	Online Survey 1. Measures of postnatal mental health: generalised anxiety disorder assessment scale (GAD-7) 2. Experience of childbirth: childbirth experience questionnaire (CEQ) 3. Obstetric complications and procedures scale (OCPS). 4. Antenatal preparation scale (APS)	Following checks to ensure parametric analysis was appropriate, bivariate associations were examined. Mental health assessments were not conducted antenatally due to the study being cross-sectional; pre-existing mental health difficulties could not be controlled for in the analysis, and the direction of causality of results cannot be ascertained.	Future research should assess psychological mediating factors, such as women's appraisal of the perceived harm, threat or challenge during childbirth by employing path analysis of the antenatal to postnatal journey, measured at different time points, with sampling aiming to reflect the diversity of the population. This would facilitate further longitudinal exploration of the relationship between antenatal preparation, OC&P, and postnatal mental health.
10	Davenport et al. [5]	Prenatal and Postnatal Depression and Anxiety	Quantitative Study (Multinational Study) Cross-Sectional Study Design	Online Survey 1. Edinburgh postnatal depression survey (EPDS). 2. Anxiety (state-trait anxiety inventory; STAI-State).	1. Pre-pandemic versus current mental health and physical activity metrics were compared using paired <i>t</i> -tests or Kruskal–Wallis-H tests. 2. Effect size was determined using Cohen's <i>d</i> . 3. Women were stratified based on physical activity patterns during the pandemic to assess their influence on mental health using ANOVA. 4. Post hoc comparisons were assessed using the Dunns method.	The participant population lacked diversity. Therefore, there is a probability that these data underestimate the true mental health issues for pregnant and postpartum women as a result of the COVID19 pandemic. The need for increased assessment and treatment of maternal mental health is highlighted.
11	Dib et al. [6]	Low Mood, Anxiety, and Changes to Appetite and Sleep	Quantitative Study Cross-Sectional Study Design	Online Survey No validated tool was used for screening depression or anxiety	1. A descriptive analysis of maternal mental health was conducted. 2. Linear regression was used to find predictors of maternal mental health and coping	1. Surveying social media might have resulted in sampling bias. 2. As depression and anxiety were not formally assessed during lockdown, comparison with the rates of depression and anxiety reported by the pre-pandemic data was not possible. Maternal mental health should be assessed to create prevention strategies for women giving birth during the different stages of lockdown during the COVID-19 pandemic.
12	Fallon et al. [7]	Postpartum Depression and Anxiety.	Quantitative Study Cross-Sectional Study Design	Online Survey 1. Edinburgh postnatal depression scale (EPDS). 2. State-trait anxiety inventory—state scale (STAI-S) 3. Postpartum specific anxiety scale—research short	1. Descriptive analyses were done to identify prevalence rates of depression and anxiety. 2. Independent two-sample <i>t</i> -tests were carried out to investigate the	1. The cross-sectional design precludes comparisons based on the pre-pandemic data. 2. Online convenience sampling lacks sampling control. 3. The data lacks comparability of prevalence with the pre-pandemic Longitudinal research should be conducted to examine the acute and long-lasting consequences of the pandemic on perinatal mental health.

				Form—for global Crises (PSAS-RSF-C)	presence of a statistically significant difference between the current and pre-pandemic rates of depression and anxiety. 3. Bivariate correlations were conducted to find the relationships between variables to inform inferential analyses. 4. Binomial hierarchical logistic regression models were developed to identify whether a change (yes/no) in psychosocial experiences occurred as a result of the introduction of lockdown measures.	meta-analytic reviews chosen to draw comparisons. 4. A considerable percentage of data was obtained shortly after birth. As a result, the data may be influenced by factors, e.g., temporary “baby blues”, negative birth experiences, or challenges of being a new mother
13	Fiske et al. [34]	Maternal Depressive Symptoms (MDS) and Maternal Stress Related to the COVID-19 Pandemic	Quantitative Study Longitudinal Study Design	Online survey 1. Beck Depression Inventory, second edition (BDI-II) 2. Infant behaviour questionnaire-revised, very short form (IBQ-R-VSF)	1. Pearson’s correlational analyses were conducted to examine the longitudinal stability of individual differences, and also, to examine associations between MDS and temperament variables 2. Confidence intervals (95%) were calculated using bootstrapping (1000 samples). 3. Fully factorial linear mixed models were conducted to determine whether ratings of MDS and temperament significantly differed across time points.	1. As the data was based on parent reports, rater bias is expected, which can affect both the pandemic and pre-pandemic data to the same extent. 2. Pre-pandemic data regarding infant temperament were collected by the IBQ-R-VSF (infants under 18 months) scale, whereas the current study used the ECBQ-VSF (children over 18 months), so due to the change in the measurement scale, it would not be possible to conclude that observed longitudinal effects in the current study were pandemic-specific or a result of usual development at this stage in early childhood. Future research that assesses the continuity of temperament should employ a consistent questionnaire or scale across development, which would facilitate longitudinal design studies that aim at exploring temperament trajectories across infancy and early childhood, without limiting the ability of the study to draw comparisons based on age ranges where a specific measure is age-appropriate.
14	Harrison et al. [35]	Postpartum Depression	Quantitative Study Cross-Sectional Study Design	Survey 1. Edinburgh postnatal depression scale (EPDS)	1. Weighted prevalence estimates for postpartum depression were compared across surveys. 2. Modified Poisson regression was calculated to estimate adjusted risk ratios (aRR) for the association between pregnancy and birth-	1. There were differences in the timing of the measurement in the surveys conducted at three different points. The 2014 survey recruited participants three months post-delivery, whereas the 2018 and 2020 surveys recruited participants six months post-delivery. 2. The seasons in which the three surveys were 1. Future investigation should focus on identifying effective strategies for early identification, intervention, and follow-up of women at risk of developing and experiencing postpartum mental illnesses.

					related factors, biopsychosocial factors, sociodemographic variables, and postpartum depression.	conducted were also different, and it is possible that season factors can affect postpartum depression. 3. It is difficult to establish causality due to the cross-sectional design of the surveys. Moreover, as the cross-sectional design demands participants to recall their mental health and prior perinatal experiences, the possibility of recall bias cannot be ruled out.	
15	Jackson et al. [36]	Anxiety, Stress, and Low Mood, Longitudinal Study Design	Qualitative Study Design	In-depth Interviews using a topic guide to develop the questions were derived from recent literature on the topic and informed by a large-scale mixed-methods study that highlighted the issues to be explored.	Inductive Analysis The framework analysis method was used to analyse the data.	1. The Index of Multiple Deprivation was used, which is of limited value in Bradford, where various families choose to live within the same locality regardless of their employment or socioeconomic status. Therefore, there is a chance that the opportunity to include participants from lower socioeconomic status was missed. 2. Access to and use of maternity services among Urdu and other non-English language-speaking participants may be different from the experiences reported here.	Researchers should prioritise longer-term follow-up of children born during the COVID-19 pandemic.
16	Jackson et al. [17]	Emotional Distress, Anxiety.	Qualitative Study Recurrent Cross-Sectional Study Design	Semi-structured interviews	Inductive Analysis The thematic analysis method developed by Braun and Clarke [37] was used to analyse the qualitative data.	1. A few participants from the whole sample had heterogeneous characteristics, which may have confounded findings. 2. Some participants' under-anticipated self-disclosure regarding possible protective factors against emotional distress may have affected the transferability of the findings.	Future research with more nuanced investigations focused on population groups that were under-represented in the current research (e.g., minority ethnic backgrounds) can be designed and conducted.
17	Jones et al. [19]	Maternal Perinatal Distress	Qualitative Study Cross-Sectional Study Design Realist Approach	Secondary data: An online survey was conducted by Harrison et al. [38] in which participants answered an open-ended question regarding their recent experience of distress. This data was used for the current study.	Inductive Analysis Initially, content analysis was conducted following the methodology developed by, and then it was followed by the thematic analysis method developed by Braun and Clarke [37].	1. The self-selected convenience sample lacked diversity, which may not be representative of the UK population. 2. Social desirability bias can be expected as the responses were self-reported by the participants. Moreover, biases towards disclosure regarding mental health problems may have existed in the sample, as	1. Future studies should benefit from including in-depth interviews to produce a well-rounded understanding of women's perinatal experiences of distress. 2. The experiences and concerns expressed by the participants, which were not related to COVID-19 may be useful to set up a hypothesis for future research and increase the understanding of perinatal distress.

						there is a high chance that women specifically affected by mental health issues may have taken part in the study. Therefore, the generalisability or representativeness of the study findings is unclear.
						3. Access to the experiences of participants may have been limited as there was only a single open-ended survey question.
						4. The open-ended question was not framed to gather information specific to distress.
						5. The possibility of researcher bias could not be ruled out in a qualitative study such as the present one.
18	Ladd and De Decker [39]	Postpartum Anxiety	Qualitative Study Cross-Sectional Study Design	Interviews	van Manen's hermeneutic phenomenological research method.	PPA evaluation was based on self-assessment of PPA by participants rather than official clinical diagnoses. Future research should include subjective human experiences as pivotal components in creating support practices and a deeper understanding of PPA in the context of unprecedented life events.
19	Larotonda and Mason [40]	Perinatal Mental Distress, i.e., Depression and Anxiety.	Qualitative Study Cross-Sectional Study Design	Journals written by the participants regarding their perinatal psychological issues experienced during the COVID-19 pandemic.	The grounded theory approach was used to analyse the data.	Limitations of the study are not mentioned. Directions for future research are not mentioned.
20	Lewis [41]	Anxiety, Postnatal Depression, and Sleep Disturbance	Mixed-Method Approach Cross-Sectional Study Design	A sample of 203 calls made to the Pre and Post-Natal Depression Advice and Support (PANDAS) helpline by pregnant women to ask for mental health support was analysed to gain insight into how the COVID-19 lockdown was affecting their mental health. The initial review of data generated both qualitative and quantitative data.	Quantitative: Quantitative data was collated and presented in the form of numbers, i.e., the number of calls per day. Qualitative: The thematic analysis method developed by Braun and Clarke [37] was used to analyse the qualitative data.	1. The call logs of the PANDAS helpline have never been reviewed before the current study, so there were no benchmarks to compare the standard of calls. 2. A lack of consistency has been highlighted between helpline call recordings done by the volunteers. Directions for future research are not mentioned.
21	Lo et al. [42]	Peripartum Depression and Anxiety.	Quantitative Study Retrospective Cohort Study	The medical notes based on clinical data gathered during the clinical care of women who gave birth from 23 to 29 November 2019 (pre-pandemic) or 23 to 29 November 2020 (pandemic)	1. The medical notes were retrospectively analysed to identify information regarding diagnosis, complications, and consequences. 2. The quantitative analysis was con-	1. The documentation record of participants was inadequate and incomplete, which was due to the study design, so it could not be avoided. 2. The screening of the mental health of the Directions for future research are not mentioned.

				at tertiary hospitals in the UK were collected.	ducted utilising a two-tailed test with a 0.05 significance level. The analyses Were conducted in OpenEpi and R (Version 4.0.5).	women in the medical facility was based on the Whooley questions [43], however, a few other unique questions were also asked, which limits the generalisability of specificity and sensitivity to other mental health screening tools. 3. The study was conducted in a single health facility, which inhibits the generalisability of the study findings.
22	Mamrath et al. [44]	Postpartum Anxiety	Mixed- Method Study Cross-Sectional Study Design	Online Survey Quantitative: Postpartum specific anxiety scale—research short form—for use in global Crises [PSAS-RSF-C] psychometric tool Qualitative: Open-ended questions in relation to changes in birth plans and feelings about those changes, and giving birth in a pandemic.	1. Quantitative: Differences in measured scores were analysed for the participant's ethnicity, sexual orientation and disability using independent Student's <i>t</i> -tests, and for age, the analysis was completed using Pearson's correlation. 2. Qualitative: Data from open-ended questions were analysed using a template analysis	1. This study was conducted during the first wave of the COVID-19 pandemic, which imposed certain limitations on this research, namely that participation was only possible for those with internet access, as the recruitment and research were conducted entirely online. 2. The number of disabled participants was very low. 3. Participants were grouped in binary ways for analysis, such as heterosexual versus lesbian, gay, bisexual, pansexual and Queer; and white participants' data versus participants who were Asian, Black, and of multiple ethnicities. Such grouping is problematic, as it may obscure differences between groups. Such grouping leads to data being not statistically significant. In the main survey, there were participants who were trans men and non-binary people, but as none completed the PSAS-RSF-C, we can offer no perspective on their postnatal anxiety levels. Repeating the research with a more ethnically diverse sample, while documenting the socioeconomic power of and educational levels of the postpartum mothers, in addition to the demographic variables we studied, would allow for a more rigorous analysis.
23	Mateus et al. [45]	Postpartum Depression and Anxiety	Quantitative De-Study (Multinational) Longitudinal Cohort Study	Online Survey 1. The Edinburgh postnatal depression scale (EPDS) 2. The generalised anxiety disorder Screener (GAD-7)	1. Descriptive statistics were calculated for categorical variables and were presented in the form of frequencies and percentages, and the 2. Mean and standard deviation	1. The EPDS was not validated in pregnant women, whereas the evidence for the validation of GAD-7 in the perinatal women was nonexistent in many countries included in the study. 2. The survey was conducted, which may have limited the participation 1. Researchers should focus on ascertaining the validity and reliability of EPDS and GAD-7 in pregnant as well as postpartum women across various populations/cultures. 2. Perinatal women from socioeconomically vulnerable and diverse groups should be included in future studies.

					tion were reported of vulnerable women for continuous variables. 3. Chi-square tests were conducted to explore differences in levels of depression and anxiety and comorbid symptoms across the participating countries.	of vulnerable women who had no internet access, lower education, or immigrants experiencing a language barrier. 3. Women younger than 18 years of age, even though a vulnerable group, were excluded. 4. Lack of pre-pandemic data regarding mental health consequences is scarce, and although pre-pandemic studies that were included to draw data in this study were heterogeneous in terms of recruitment setting, sample size, and perinatal period examined, it may have impacted the methodological quality of the study.	3. High-quality studies should be conducted on depression and anxiety in the prenatal period and the first year postpartum, especially in countries where perinatal mental health issues are less explored.
24	McLeish et al. [46]	Distress, Anxiety, and Sleep Deprivation	Qualitative Study Cross-Sectional Study Design Descriptive Study	Secondary data: Open text responses given by new mothers to the National Maternity Survey 2020, which was an online cross-sectional survey, were used as the data.	The thematic analysis method developed by Braun and Clarke [37] was used to conduct an inductive analysis of the data.	1. Only one of the open-text questions inquired about impact, and there is a high chance that participants who limited themselves to actual descriptions of their postpartum experiences might have had limited very positive or very negative responses to their experience. 2. Qualitative analysis of open-text responses is not a replacement for an in-depth interview.	Directions for future research are not mentioned.
25	Moltrecht et al. [47]	Parents' Psychological Distress, Anxiety and Depression	Qualitative Study Cross-Sectional Study Design Exploratory Study	Semi-structured interviews were conducted to collect the data. The interview questions were based on an interview guide that was informed by the literature, the study's aims, and the research team's expertise.	Data were analysed using the Reflexive thematic analysis method developed by Braun and Clarke [48]	The results of the study may be subject to a sampling bias because the sample was drawn following a convenience sampling approach.	Future research should focus on including parents from diverse racial and ethnic backgrounds so that their experiences and needs can be elucidated.
26	Myers and Emmott [49]	Postnatal Depressive Symptoms	Concurrent Design Mixed-Methods Study Approach Cross-Sectional Study Design	Online survey 1. The Edinburgh postnatal depression scale (EPDS) was used to screen postpartum depressive symptoms 2. Three open-text questions to explore the postpartum psychological experiences of participants during the COVID-19 pandemic.	Quantitative: Quasi-Poisson regression modelling was used to analyse the quantitative data. Qualitative: The thematic analysis method developed by Braun and Clarke [37] was used to conduct an inductive	1. Convenience sampling leads to sampling bias, which adversely affects the study findings. 2. Due to the homogeneity of the sample, the findings' generalisability is unknown. 3. There is a possibility of underestimation of rates of depressive symptoms. 4. The sample size was small, which may have	Future research should focus on exploring the role of social networks in shaping depressive experiences during the pandemic across diverse groups, to identify those at risk and devise feasible intervention strategies.

					analysis of the qualitative data.	affected the statistical power of the results. 5. Participants were not asked about their history or current receipt of medical attention. 6. Due to the cross-sectional study design, inferences regarding the direction of causation between depressive symptoms and communication are untestable. 7. The brief nature of open-text responses may have limited the expression of diverse and nuanced postpartum experiences during the lockdown.
27	Perez et al. [50]	Decreased Mood	Mixed-Method Approach Cross-Sectional Study Design	Online Survey The questionnaire has a combination of forced-choice and open-ended questions about mood, perceived social support, media use, online interactions and parenting expectations.	Quantitative data were analysed with multiple linear regression and was not explored. proportional odds models; an inductive thematic analysis was used for qualitative data. Quantitative and qualitative data were qualitatively synthesised.	1. The role of ethnicity was not explored. 2. The sample was drawn using a convenience sampling method, which limits the findings to the current sample and potentially underrepresents hard-to-access populations. Directions for future research are not mentioned.
28	Pilav et al. [20]	Anxiety and Depression	Qualitative Study Cross-Sectional Study Design	An interview schedule was developed to conduct semi-structured interviews with the participants.	The thematic analysis method developed by Braun and Clarke [37] was used to conduct the inductive analysis of the data.	1. The interviews were carried out remotely, which may have been challenging in terms of establishing rapport, and this may have limited the depth of data. 2. The findings of the study are not representative of all women's experiences and may not be broadly generalizable or demonstrate the experiences of women in other situations during the COVID-19 pandemic. Future research should consider exploring how mental health care services can be established according to the needs and circumstances of the women.
29	Rhodes et al. [51]	Anxiety, Stress, and Depression	Mixed-Methods Study Design Cross-Sectional Study Design	A web-based survey had 12 questions, and 8 of them were with a free-text box so that participants could record their experiences in their own words. Moreover, a topic guide was used to conduct the interviews.	Quantitative: Pearson chi-square tests were used. Qualitative: The thematic analysis method developed by Braun and Clarke [37] was used.	1. The focus of the survey was Baby Buddy App users, so the findings cannot be generalised to all perinatal women in the UK. 2. As participants of the study had the choice to respond to the survey and participate in the interview, the chances of self-selection cannot be ruled out. 3. The level of anxiety, depression, and stress The longer-term psychological impact of the COVID-19 pandemic is visible in the research studies; further study is essential to make additions and upgradation of the content of the Baby Buddy app.

						was not measured using a validated scale; it was based on self-reports. 4. Age and language were the only demographics explored via the survey.
30	Rougeaux et al. [18]	Psycho-social Stress, Anxiety, and Low Mood	Mixed-Methods Approach Cross-Sectional Study Design	Online Survey 1. Explored demographic information and socio-economic status-related variables of the participants and their households, and their perception of the impacts of the COVID-19 pandemic. 2. A scale to measure maternal psychosocial well-being was developed using Principal Component Analysis.	Quantitative Section: Statistically significant associations were explored among variables using Pearson's correlation, logistic (odds ratios), multivariate and linear regression, and associated <i>p</i> -values. Qualitative Section: The qualitative analysis method is not written but resembles a simple form of thematic analysis.	1. There is a possibility that the socioeconomic impact of COVID-19 is underestimated due to the lack of representation in various parts of the UK. 2. As very few participants responded to the survey from September 2020 onwards which limited our ability to examine change over time. 3. The survey is conducted online, requires self-report and is only available in English, which might have affected the representativeness of the sample, which might have adversely affected the study findings. 4. The cross-sectional study design limits the ability to establish causality between the variables. The future direction for research is not mentioned.
31	Sanders and Blaylock [23]	Anxiety, Distress, and Emotional Trauma	Mixed-Methods Approach Cross-Sectional Study Design	Online survey	Qualitative: Data gathered from free-text responses were analysed using the framework method. Quantitative: Descriptive statistics are calculated.	Participation in this online survey was self-selecting. Various positive childbirth and postnatal experiences can be seen on social media, and there is a possibility that the experiences of those who participated in the study survey were not typical. The priority should be an evidence-based approach to providing care for women during any pandemic, e.g., COVID-19.
32	Schweizer et al. [52]	Maternal Postpartum Distress, Depression, and Anxiety	Quantitative Study (Multinational) Longitudinal Study Design	Secondary data: Data gathered for the COVID-19 Risks Across the Lifespan (CORAL) study was used.	1. Descriptive statistics, i.e., mean and standard deviation, are calculated. 2. Linear mixed-effects models were calculated to present the scores of participants by country. 3. Maximum likelihood estimation was conducted to handle missing values. 4. Sensitivity analysis was conducted.	1. The possibility of pre-existing mental health issues among participants may have decreased their ability to cope with environmental stressors, as found by using the pandemic anxiety scale. 2. All measures used to collect data in the CORAL study involved maternal self-report, so bias cannot be ruled out. 3. The study sample lacked diversity. Future research should consider including diverse samples and widening the recruitment to pregnant women from the Global South.

					5. The conducted statistical tests were 2-sided. Furthermore, a Bonferroni-corrected significance was used to correct for 6 outcomes. 6. The interactive effect is calculated for infant age and antenatal COVID-19 pandemic-related stress.
33	Tauqeer et al. [53]	Depression and Anxiety.	Quantitative Study (Multinational) Cross-Sectional Study Design	Online survey 1. The Edinburgh depression scale (EDS). 2. Generalised anxiety disorder (GAD-7)	Univariate and multivariate generalised models were calculated to study the factors linked with mental health issues. As the study employed an online survey, it has inherent limitations which all online survey-based studies face. Additionally, the over-representation of participants with high education levels is a noteworthy issue that might affect the generalisability of the study findings. Future studies should focus on socio-economic, clinical, reproductive, and environmental cause factors of mental health issues among perinatal populations, especially pandemics.
34	Vazquez-Vazquez et al. [54]	Psychological Distress, Anxiety, Depression.	Quantitative Study Cross-Sectional Study Design	Online survey	Descriptive statistics such as mean, standard deviation, and median were calculated. Data for women who gave birth before (BL) or during the lockdown (DL) are presented separately, and comparisons are drawn between groups using Student's <i>t</i>-test, Mann-Whitney, or chi-squared test. 1. The women who participated in the study are not true representatives of all the postpartum women in the UK. Based on the study limitations and considering how important it is to represent the experiences of diverse groups in the survey, the researchers of the present study have self-assigned a task to focus their efforts on increasing the representativeness of their survey sample in future studies. Therefore, future analyses of the survey data will examine the effect of restriction on their experiences in a greater and more diverse sample. Analyses will also incorporate more data regarding participants' living conditions as well as the impact of the lockdown on daily routine, economic status, and mood, and how these variables are linked with infant feeding support and decisions.
35	Wilson et al. [55]	Depression and Anxiety.	Quantitative Study (Multinational) Cross-Sectional Study Design	Secondary data: Data were extracted from an online survey conducted on pregnant and 6-month postpartum participants across 10 countries.	1. Sample characteristics are presented in the form of mean and standard deviation. 2. Analysis of missing data was conducted. 3. Correlation between the independent and outcome variables is calculated. 4. Sensitivity analysis is also conducted. 1. The effect sizes of various variables were small. 2. The correlation between gestational diabetes mellitus (GDM) and elevated levels of symptoms suggests cross-sectional associations; however, previous research indicates complex and bi-directional associations. 3. There was no measure to gauge pre-pandemic mental health, so the extent to which the pandemic elevated depression and anxiety levels in Future research should focus on examining further the experiences of women with GDM during the pandemic.

women with GDM is unclear.

RQ1. Which forms (emotional states) of PPED were researched in the studies that have been conducted during the COVID-19 pandemic?

Table 6. Forms of PPED explored.

Forms (Emotional States) of PPED	Number of Studies	Example Studies/Notes
Postpartum Anxiety	28 (80%)	Most frequently investigated condition
Postpartum/Postnatal Depression	20 (57.14%)	Second most studied topic
Both Anxiety and Depression (as separate constructs)	24 (68.57%)	Explored as mutually exclusive concepts
Perinatal Mental Distress (varied definitions such as distress, emotional/psychological/maternal distress)	8 (22.86%)	Varied terminology; includes Laroitonda & Mason [40], combining anxiety and depression
Depressive Symptoms	2 (5.71%)	Fiske et al. [34], Myers & Emmott [49]
Low/Decreased Mood (symptom of PPED)	4 (11.43%)	Dib et al. [6], Jackson et al. [36], Perez et al. [50], Rougeaux et al. [18]
Posttraumatic Stress	1 (2.86%)	Basu et al. [29]
Emotional Trauma	1 (2.86%)	Sanders & Blaylock [23]
Stress (perceived/psychosocial)	4 (11.43%)	Jackson et al. [36], Rhodes et al. [51], Ceulemans et al. [4], Moltrecht et al. [47]
Maternal Stress (COVID-19 specific)	1 (2.86%)	Fiske et al. [34]
Sleep Disturbance	3 (8.57%)	Dib et al. [6], Lewis [41], McLeish et al. [46]
Appetite Changes	1 (2.86%)	Dib et al. [6]

RQ2. What were the methodologies employed by the studies to explore PPED during the COVID-19 pandemic in the UK?

Table 7. Methodologies (research approach/design).

Research Approach/Design	Number of Studies	Key Details/Examples
1. Quantitative Approach	18 (51.43%)	Most common approach to study PPED
- Cross-Sectional Design	13 (37.14%)	Majority of quantitative studies used a typical survey-based approach
- Longitudinal Design	5 (14.29%)	Followed participants over time
- Retrospective Cohort	1 (2.86%)	Lo et al. [42]
- Multinational Studies	10 (28.57%)	All used a quantitative approach; data collected from various countries, including the UK
2. Qualitative Approach	8 (22.86%)	Second most common approach
- Cross-sectional Design	7 (20.00%)	Most qualitative studies were cross-sectional
- Longitudinal Design	1 (2.86%)	Jackson et al. [36]
- Descriptive Study	1 (2.86%)	McLeish et al. [46]
- Exploratory Study	1 (2.86%)	Moltrecht et al. [47]
- Paradigm Mentioned	1 (2.86%)	Realist paradigm mentioned by Jones et al. [19]
3. Mixed-Method Approach	9 (25.71%)	Combined quantitative and qualitative data

-	Cross-Sectional Design	8 (22.86)	Aydin et al. [28], Lewis [41], Mamrath et al. [44], Myers & Emmott [49], Perez et al. [50], Rhodes et al. [51], Rougeaux et al. [18], Sanders & Blaylock [23]
-	Longitudinal Design	1 (2.86%)	Anderson et al. [26]
-	Quantitative → Qualitative Sequence	3 (8.57%)	Anderson et al. [26], Rhodes et al. [51]
-	Simultaneous (online survey)	6 (17.14%)	Aydin et al. [26], Mamrath et al. [44], Myers & Emmott [49], Perez et al. [50], Rougeaux et al. [18], Sanders & Blaylock [23]

RQ3. *What were the methods (tools/questionnaires) that have been used to assess PPED and gather data in these studies?*

Table 8. Data collection methods.

Study Type	Data Collection Tool/Method	Number of Studies	Example Studies/Notes
Quantitative	Edinburgh Depression Scale (EDS)/Postpartum version (EPDS)	9 (25.71%)	Ceulemans et al. [4], Chang et al. [30], Coca et al. [31], Costa et al. [32], Davenport et al. [5], Fallon et al. [7], Harrison et al. [35], Mateus et al. [45], Tauqeer et al. [53]
	Beck Depression Inventory-II (BDI-II)	1 (2.86%)	Fiske et al. [34]
	Generalised Anxiety Disorder-7 (GAD-7)	5 (14.29%)	Ceulemans et al. [4], Costa et al. [32], Cross et al. [33], Mateus et al. [45], Tauqeer et al. [53]
	State-Trait Anxiety Inventory—State Scale (STAI-S)	2 (5.71%)	Davenport et al. [5], Fallon et al. [7]
	Postpartum Specific Anxiety Scale (PSAS-RSF-C)	2 (5.71%)	Fallon et al. [7], Mamrath et al. [44]
	Patient Health Questionnaire-4 (PHQ-4) and Impact of Events Scale-6 (IES-6)	1 (2.86%)	Basu et al. [29]
	Perceived Stress Scale (PSS)	1 (2.86%)	Ceulemans et al. [4]
	No Validated Tool	1 (2.86%)	Dib et al. [6]
	Secondary Data (medical notes, CORAL, online survey)	3 (8.57%)	Lo et al. [42], Schweizer et al. [52], Wilson et al. [55]
	Semi-Structured Interviews	5 (14.29%)	Jackson et al. [36], Jackson et al. [17], Ladd & De Decker [39], Moltrecht et al. [47], Pilav et al. [20]
Qualitative	Participant Journals	1 (2.86%)	Larotonda & Mason [40]
	Secondary Data	2 (5.71%)	Jones et al. [19], McLeish et al. [46]
	Quantitative Validated Tools (GAD-7, EPDS) + Semi-Structured Interviews	2 (5.71%)	Anderson et al. [26], Myers & Emmott [49]
Mixed Method	Survey with Quantitative + Qualitative Parts Simultaneously	4 (11.43%)	Aydin et al. [28], Mamrath et al. [44], Perez et al. [50], Rhodes et al. [51], Rougeaux et al. [18], Sanders & Blaylock, [23]
	Secondary Data (helpline calls)	1 (2.86%)	Lewis [41]
	Online/Web-based Surveys	13 (37.14%)	Used web-based tools for survey collection
Online/Web-based Surveys	Mixed-Method	7 (20.00%)	Used web-based tools for survey collection
	Qualitative	0 (0%)	None of the studies used web-based tools.

RQ4. *What were the methods utilised to analyse the data?***Table 9.** Data analysis method.

Study Type	Data Analysis Method	Example Studies/Notes
Quantitative Studies	Descriptive Statistics	Most quantitative studies (socio-demographic characteristics)
	- Frequencies, percentages, mean, standard deviation	
	Inferential Statistics	Ayers et al. [27], Basu et al. [29], Ceulemans et al. [4], Chang et al. [30], Dib et al. [6], Fallon et al. [7], Harrison et al. [35]
	- Regression models	
	- Pearson's Correlation or Chi-Square	Chang et al. [30], Coca et al. [31], Fallon et al. [7], Fiske et al. [34], Mateus et al. [45], Vazquez-Vazquez et al. [54], Wilson et al. [55]
	- Analysis of Missing Data	Schweizer et al. [52], Wilson et al. [55]
	- Odds Ratio	Costa et al. [32]
	- T-tests	Coca et al. [31], Davenport et al. [5], Fallon et al. [7], Lo et al. [42], Schweizer et al. [52], Vazquez-Vazquez et al. [54]
	- Bivariate Associations	Cross et al. [33]
	- ANOVA	Davenport et al. [5]
Qualitative Studies	- Linear Mixed-Effects Models, Univariate/Multivariate Generalised Models	Tauqeer et al. [53]
	Thematic Analysis [37]	Jackson et al. [17], Jones et al. [19], McLeish et al. [46], Pilav et al. [20]
	Content Analysis Followed by Thematic Analysis by Braun & Clarke [37]	Jones et al. [19]
	Reflexive Thematic Analysis by Braun & Clarke [48]	Moltrecht et al. [47]
	Framework Analysis (inductive)	Jackson et al. [36]
	Grounded Theory Approach	Larotonda & Mason [40]
Mixed-Method Studies	Van Manen's Hermeneutic Phenomenological Analysis	Ladd & De Decker [39]
	Quantitative Analysis—Descriptive Statistics (frequencies, percentages)	Aydin et al. [28], Lewis [41], Sanders & Blaylock [23]
	- Inferential Statistics: Pearson's Correlation	Anderson et al. [26], Rhodes et al. [51], Rougeaux et al. [18]
	- T-tests	Anderson et al. [26], Mamrath et al. [44]
	- Regression Models	Anderson et al. [26], Myers & Emmott [49], Perez et al. [50], Rougeaux et al. [18]
	- Sentiment Analyses	Aydin et al. [28]
	Qualitative Analysis—Thematic Analysis by Braun & Clarke [37]	Aydin et al. [28], Lewis, [41], Myers & Emmott, [49], Perez et al. [50], Rhodes et al. 2020 [51]
	- Content Thematic Analysis	Anderson et al. [26]
	- Template Analysis	Mamrath et al. [44]
	- Framework Method	Sanders & Blaylock [23]
	- Unspecified (resembles simple thematic analysis)	Rougeaux et al. [18]

RQ5. *What were the limitations of the study approach as acknowledged by the researchers who conducted these studies?*

Table 10 details the limitations of the included studies, which were acknowledged and mentioned by the researchers as the shortcomings of these studies.

Table 10. Limitations of the included studies acknowledged by the researchers of the included studies.

Limitation	Number of Studies	Qualitative Studies	Quantitative Studies	Mixed-Method Studies
1 Causal attributions between the factors under examination were not possible due to the cross-sectional nature of most studies	8		Basu et al. [29], Ceulemans et al. [4], Coca et al. [31], Fallon et al. [7], Harrison et al. [35], Cross et al. [33]	Myers & Emmott [49], Rougeaux et al. [18]
2 Different measurement scales were used in the pre-pandemic period than those used to collect data during the COVID-19 pandemic period, so despite the longitudinal design, it was not possible to explore causal effects.	1		Fiske et al. [34]	
3 As depression and anxiety were not formally assessed during the lockdown, comparison with the rates of depression and anxiety reported by the pre-pandemic data was not possible [6], so the data lacks comparability of prevalence with the pre-pandemic data [7].	2		Dib et al. [6], Fallon et al. [7]	
4 Lack of pre-pandemic data regarding mental health consequences is scarce, and although pre-pandemic studies that were included to draw data in this study were heterogeneous in terms of recruitment setting, sample size, and perinatal period examined, it may have impacted the methodological quality of the study.	1		Mateus et al. [45]	
5 The study did not represent a complete range of mental health concerns and needs of postpartum women.	1		Basu et al. [29]	
6 There was no measure to gauge pre-pandemic mental health, so the extent to which the pandemic elevated depression and anxiety levels in women with GDM is unclear.	1		Wilson et al. [55]	
7 A considerable percentage of data was obtained shortly after birth. As a result, the data may be influenced by factors, e.g., temporary “baby blues”, negative birth experiences, or challenges of being a new mother.	1		Fallon et al. [7]	
8 There is a possibility of underestimation of rates of depressive symptoms in the study.	1			Myers & Emmott, [49]
9 The sample size was small, which may have affected the reliability of the results.	1			Anderson et al. [26]
10 The varying governmental restrictions and lockdown measures also affected the sample sizes, as they were not equal at each time point of data collection.	1			Aydin et al. [28]
11 The effect sizes of various findings were small, which may have affected the reliability of the results.	1		Wilson et al. [55]	
12 Underrepresentation of women from disadvantaged sociodemographic groups [32] and low number of disabled participants [44] as well as over-representation of women with white ethnic backgrounds [28] as well as being highly educated was mentioned as a threat to generalizability [27]. Four other studies mentioned in general that the lack of diversity in the sample was considered a limitation [5,18,36,52]	8	Jackson et al. [36]	Ayers et al. [27], Costa et al. [32], Schweizer et al. [52]; Davenport et al. [5]	Aydin et al. [28], Rougeaux et al. [18] Mamrath, et al. [44]
13 Excluding women younger than 18 years of age, even though they are a vulnerable group, was mentioned as a limitation	1		Mateus et al. [45]	
14 A preponderance of participants with high education levels was declared a noteworthy issue that might affect the generalisability of the study findings.	1		Tauqeer et al. [53]	
15 The lack of diversity in the sample was considered as a limitation.	3	Jackson et al. [36]	Schweizer et al. [52]	Rougeaux et al. [18]
16 Due to the homogeneity of the sample, the findings’ generalisability was reported to be unknown.	1			Myers and Emmott [49]
17 Using a self-report online survey was mentioned as a limitation [27], and it was considered responsible for increasing the chances of following biases. (a) Participant’s bias [28]. (b) Rater-bias [34]	7	Jones et al. [19]	Fiske et al. [34], Chang et al. [30], Harrison et al. [35], Schweizer et al. [52]; Ayers et al. [27].	Aydin et al. [28]

	(c) Social desirability bias [19,30]			
	(d) Recall bias [30,35]			
	(e) Self-selection bias [52].			
	Another set of drawbacks of using self-report surveys pertinent to gathering in-depth data is mentioned below.			
18	(a) When data is collected by using surveys, further probing is not possible [28].	4	Jones et al. [19], McLeish et al. [46]	Aydin et al. [28], Myers and Emmott [49]
	(b) Access to the experiences of participants may have been restricted due to limited open-ended questions [19,46].			
	The brief nature of open-text responses limited the expression of diverse and nuanced postpartum experiences during the lockdown [49].			
19	Postpartum Anxiety evaluation was based on self-assessment of PPA by participants rather than an official clinical diagnosis.	1	Ladd & De Decker [39]	
	Two studies reported that online surveys may have inherent limitations in affecting the representativeness of the sample.			
20	(a) It is accepted that the online surveys may have limited the participation of vulnerable women who had no internet access, lower education, or immigrants experiencing a language barrier [45].	2	Mateus et al. [45]	Rougeaux et al. [18]
	The online survey, only available in English, might have affected the representativeness of the sample, which might have adversely affected the study findings [18].			
	Various studies acknowledged that selecting participants through convenience sampling has shortcomings, which are mentioned below.			
21	(a) It lacks diversity [19] and representativeness [4,20,29,31,54] due to which the generalisability of findings is difficult [20,30]	9	Moltrecht et al. [47], Jones et al. [19], Pilav et al. [20]	Basu et al. [29], Chang et al. [30], Vazquez-Vazquez et al. [54], Coca et al. [31], Ceulemans et al. [4].
	(b) It leads to sampling bias, which adversely affects the study findings [47,49].			Myers & Emmott [49], Perez et al. [50]
	(c) It limits the findings to the current sample and can potentially underrepresent hard-to-access populations [50].			
	Limitations of the recruitment of participants via social media are stated below.			
22	(a) Potential participants who did not have internet access were excluded [31,44].	6	Coca et al. [31], Basu et al. [29], Ceulemans et al. [4], Dib et al. [6], Fallon et al. [7].	Mamrath et al. [44]
	(b) Potential participants who were not active on social media were automatically excluded [29].			
	(c) The inherent risk of selection/sampling bias cannot be ruled out [4,6].			
	It lacks sampling control [7].			
23	There is a possibility that the experiences of those who participated in the study survey were not typical, hence the findings lack generalisability.	1		Sanders and Blaylock [23]
	Limitations of the study involving participants' self-disclosure were mentioned as follows.			
24	(a) Unanticipated self-disclosure regarding possible protective factors against emotional distress may have affected the transferability of the findings [38].	2	Jackson et al. [17], Jones et al. [19]	
	Biases towards disclosure of mental health problems may have existed in the sample, as there are high chances that women specifically affected by the mental health issues may have taken part in the study. Therefore, the generalisability or representativeness of the study findings is unclear [19].			
25	Two studies acknowledged that the specific context of the research, i.e., focus on Baby Buddy App users [51] and a study conducted in a single health facility [42], may have affected the generalisability of the findings.	2	Lo et al. [42]	Rhodes et al. [51]
	The following issues with the screening tools/assessment methods for evaluation of various forms of PPED were considered as a limitation.			
26	(a) The screening tool was not validated [4,45,51].	5	Jones et al. [19]	Ceulemans et al. [4]; Mateus et al. [45]; Chang et al. [30]
	(b) Absence of validated and clinically relevant cut-off values [4,30].			Rhodes et al. [51]
	The open-ended question was not framed to gather information specific to distress [19].			
27	Previous history or diagnosis of the form of PPED under study was not inquired.	2	Chang et al. [30]	Myers and Emmott [49]
28	The possibility of researcher bias could not be ruled out	1	Jones et al. [19]	

29	The qualitative analysis of open-text responses is not a replacement for an in-depth interview.	1	McLeish et al. [46]
30	The interviews that are carried out remotely may have been challenging in terms of establishing rapport, and this may have limited the depth of data.	1	Pilav et al. [20]
31	No Limitations are mentioned	1	Larotonda and Mason [40]

RQ6. What future direction do these studies provide for future studies?

Table 11 presents the directions for future studies that the researchers of the included studies mentioned in their research.

Table 11. Future directions for research suggested by the researchers of the included studies.

	Future Directions for Research	Number of Studies	Qualitative Studies	Quantitative Studies	Mixed-Method Studies
1	To increase the reliability of results, the GAD-7 should be repeated at every antenatal contact in a larger sample size, and a case-control study with age-matched samples from non-pregnant populations can be used to elucidate if anxiety increased more so in pregnancy as compared to the non-pregnant population. Additionally, it is recommended to explore COVID-19 vaccine-induced anxiety during pregnancy and the negative impact of persistent high anxiety on birth outcomes, which contribute to the development of mental illness in the first year postpartum.	1			Anderson et al. [26]
2	Longitudinal research to examine the acute and long-lasting consequences of the pandemic on perinatal mental health [7], to assess the continuity of temperament trajectories across infancy and early childhood [34] and to conduct longer-term follow-up of children born during the COVID-19 pandemic [36] was recommended. Along similar lines, Cross et al. [33] suggested that future research should assess psychological mediating factors, such as women's appraisal of the perceived harm, threat or challenge during childbirth by employing path analysis of the antenatal to postnatal journey, measured at different time points, with sampling aiming to reflect the diversity of the population. This would facilitate further longitudinal exploration of the relationship between antenatal preparation, OC&P, and postnatal mental health.		Jackson et al. [36]	Fallon et al. [7], Fiske et al. [34], Cross et al. [33]	
3	Representation of participants from diverse groups [44,54] and socio-economically vulnerable and diverse groups of perinatal women [45] was recommended. Similarly, Jackson et al. [17] advocated future investigations to focus on population groups that were under-represented in their research (e.g., minority ethnic backgrounds). Moltrecht et al. [47] also recommended that future research focus on including parents from diverse racial and ethnic backgrounds so that their experiences and needs can be elucidated.	5	Jackson et al. [17], Moltrecht et al. [47]	Vazquez-Vazquez et al. [54], Mateus et al. [45]	Mamrath et al. [44]
4	Exploring the role of social factors, such as social networks, in shaping distressing experiences during the pandemic across diverse groups, to identify those at risk and devise feasible intervention strategies, was recommended.	1			Myers and Emmott [49]
5	There is a need to focus on widening the recruitment of pregnant women from the Global South.	1		Schweizer et al. [52]	
6	A large sample size and the survey available in multiple languages are recommendations for future research to deal with the paucity of data regarding perinatal mental health during the COVID-19 pandemic.	1		Basu et al. [29]	
7	Studies recommended prospective research to focus on establishing evidence by exploring socioeconomic, clinical, reproductive, and environmental cause factors of mental health issues among perinatal populations especially pandemics [53] and consider exploring how mental health care services can be established according to the needs and circumstances of the women [20] and focus on identify-	4	Pilav et al. [20]	Harrison et al. [35], Tauqeer et al. [53]	Sanders and Blaylock [23]

	ing effective strategies for early identification, intervention, and follow-up of women at risk of developing and experiencing postpartum mental illnesses [35] and employ evidence-based approaches to providing care for women during any pandemic, e.g., COVID-19 [23].			
8	Exploring the relevant variables, such as the impact of ongoing/severe COVID-19 on women's mental health, was recommended.	1		Ceulemans et al. [4]
9	Chang et al. [30], considering the limitations of their study, propose that future studies use qualitative research methods to explore the specific aspects of COVID-19 which impacted women's breastfeeding plans and mental health, especially in a scenario where surviving the COVID-19 pandemic becomes a norm.	1		Chang et al. [30]
10	A qualitative study that used secondary data suggests using in-depth interviews to produce a well-rounded understanding of women's perinatal experiences of distress.	1	Jones et al. [19]	
11	Considering the longer-term psychological impact of the COVID-19 pandemic, which is visible in the research studies, Rhodes et al. [51] suggested that further study is essential to make additions and upgrades to the content of the Baby Buddy app which perinatal women used during the COVID-19 pandemic.	1		Rhodes et al. [51]
12	Wilson et al. [55] investigated the mental health of women experiencing gestational diabetes mellitus (GDM) during the COVID-19 pandemic, and directed future studies to focus on examining further the experiences of women with GDM during the pandemic.	1		Wilson et al. [55]
13	Davenport et al. [5] highlighted the need for increased assessment and treatment of maternal mental health. Dib et al. [6] suggested that prospective studies assessing maternal mental health would help in creating prevention strategies for women giving birth during the different stages of lockdown during the COVID-19 pandemic.	2		Dib et al. [6], Davenport et al. [5]
14	High-quality studies should be conducted on depression and anxiety in the prenatal period and the first year postpartum, especially in countries where perinatal mental health issues are less explored.	1		Mateus et al. [45]
15	Further research is necessary to study the impact of differences in birth experiences, both on maternal mental health in the postpartum period and on maternal–infant bonding, and how it impacts maternal health and child development.	1		Aydin et al. [28]
	Mental health screening is focused mainly on depression and anxiety, and less common disorders are largely disregarded, so studies beyond the COVID-19 pandemic and covering the whole range of mental health problems in the perinatal period are needed to overcome the scarcity of data and understand the gaps in perinatal mental illness.	1		Costa et al. [32]
	Future research should include subjective human experiences as pivotal components in creating support practices and a deeper understanding of postpartum anxiety in the context of unprecedented life events.	1	Ladd and De Decker [39]	
16	Directions for future research are not mentioned.	6	McLeish et al. [46], Larotonda & Mason al. [42], [40]	Coca et al. [31], Lo et Rougeaux et al. [42], Ayers et al. [18], Lewis [41], [27] Perez et al. [50]

RQ7. What are the findings of the included studies?

Table 12 presents the findings of the included studies in a tabular form. Only findings that are pertinent to the PPED are collated in this table.

Table 12. Findings of the included studies.

#	Citation	Study Methodology	Findings
1	Anderson et al. [26]	Mixed-Method Longitudinal Study Design	An increase in prenatal anxiety is reported from July 2020 to April 2021, during the COVID-19 pandemic. Moreover, women were found to be more anxious during the prenatal period compared to the postnatal period.
2	Ayers et al. [27]	Quantitative Study Longitudinal Study Design	Pandemic-related restrictions caused anxiety for more women than COVID per se. Adherence to guidelines was variable, yet the prevalence of COVID infections was low compared to the general population.
3	Aydin et al. [28]	Mixed-Methods Approach Cross-Sectional Study Design	Uncertainties related to the birth and poor communication during the COVID-19 pandemic led to increased feelings of anxiety and elevated levels of negative emotions.
4	Basu et al. [29]	Quantitative Study (Multinational) Cross-Sectional Study Design	The majority of the women scored at or above the cut-offs for elevated posttraumatic stress and anxiety/depression. Seeking information from any source (e.g., news, social media, talking to others) five or more times per day was associated with more than twice the odds of elevated posttraumatic stress and anxiety/depression, in adjusted models. The majority of women reported being somewhat or very worried about COVID-19, which was associated with significantly higher odds of posttraumatic stress and anxiety/depression. Increased posttraumatic stress and anxiety/depression were highly prevalent in pregnant and postpartum women across 64 countries during the COVID-19 pandemic.
5	Ceulemans et al. [4]	Quantitative Study (Multinational) Cross-Sectional Study Design	High levels of depressive symptoms and generalised anxiety among pregnant and breastfeeding mothers were found during the COVID-19 pandemic outbreak.
6	Chang et al. [30]	Quantitative Study (Multinational) Cross-Sectional Study Design	The results suggest that women who intended to breastfeed during the prenatal period and breastfed in the postpartum period had lower odds of having postnatal depression as compared to women who had no intention to breastfeed but breastfed during the postpartum period.
7	Coca et al. [31]	Quantitative Study (Multinational) Cross-Sectional Study Design	Postpartum depression symptoms were high in young women during the pandemic. Furthermore, a low level of social support also impacted the symptoms of postpartum depression.
8	Costa et al. [32]	Quantitative Study (Multinational) Cross-Sectional Study Design	Clinically significant symptoms of depression, anxiety or comorbid symptoms of depression and anxiety were reported. There are high unmet needs in mental healthcare for women with clinically significant symptoms of perinatal depression and/or anxiety across countries during the COVID-19 pandemic.
9	Cross et al. [33]	Quantitative Study Cross-Sectional Study Design	Antenatal preparation, including both normality- and broader-focused information, is positively related to women's birth experience. While normality-focused preparation seems most beneficial if fewer complications/procedures are experienced, broader-focused preparation may be most beneficial in the context of a greater number of complications/procedures.
10	Davenport et al. [5]	Quantitative Study (Multinational Study) Cross-Sectional Study Design	This rapid response survey identified a substantial increase in the likelihood of maternal depression and anxiety during the COVID-19 pandemic.
11	Dib et al. [6]	Quantitative Study Cross-Sectional Study Design	The majority of the women reported feeling down, lonely, irritable, and worried to some extent since lockdown began; however, a large number of these women also reported that they felt able to cope with it. Support in terms of health needs, contacting support groups for mothers of infants and higher gestational age of the infant predicted better mental health, whereas travelling for work, the impact of lockdown on the ability to afford food, and having an income <£30,000 predicted poorer mental health. Support to meet health needs in the postpartum period and a more equal division of household chores were linked with better coping for new mothers.
12	Fallon et al. [7]	Quantitative Study Cross-Sectional Study Design	Prevalence rates of clinically relevant maternal anxiety and depression were extremely high when compared to both pre-pandemic prevalence studies and self-reported current diagnoses of anxiety and depression. Perceived psychological changes experienced as a consequence of the introduction of social distancing measures predicted unique variance in the risk for maternal anxiety and depression.

13	Fiske et al. [34]	Quantitative Study Longitudinal Study Design	Maternal stress related to the COVID-19 pandemic decreased over the first six months of the pandemic. An increase in pandemic-specific depression is reported by mothers. However, no increase in the severity of global maternal depressive symptoms was observed.
14	Harrison et al. [35]	Quantitative Study Cross-Section Study Design	The prevalence of postpartum depression increased from 2014 to 2018. Experiencing a long-term mental health issue, prenatal anxiety, and prenatal depression were associated with an increased risk of postpartum depression, whereas satisfaction with birth and social support were associated with reduced risk before and during the COVID-19 pandemic.
15	Jackson et al. [36]	Qualitative Study Longitudinal Study Design	The findings highlighted that (1) women expressed fear of being alone at critical points in their pregnancy and postpartum journey, (2) the COVID-19 pandemic established new standards for maternity services and care for women during their pregnancy and postpartum period, and (3) exploring ways to navigate the COVID-19 pandemic in pregnancy and postpartum with a baby.
16	Jackson et al. [17]	Qualitative Study Recurrent Cross-Sectional Study Design	Two main themes were identified for T1 (Timepoint 1): initial social distancing restrictions, 'Motherhood is Much Like Lockdown' and 'A Self-Contained Family Unit'. Two main themes were also identified for T2 (Timepoint 2): initial changes to those social distancing restrictions T2, 'Incongruously Held Views of COVID-19' and 'Mothering Amidst the Pandemic'. Comparisons between data gathered at T1 and T2 identified increased emotional distress over time. Social distancing restrictions linked with the COVID-19 pandemic have had a cumulative, negative effect on mental health in the postpartum period.
17	Jones et al. [19]	Qualitative Study Cross-Sectional Study Design Realist Approach	Even though the rates of probable depression in the sample were high, the participants' descriptions were more indicative of general distress and anxiety than of symptoms traditionally related to depression. Unsurprisingly, given the context, isolation was a common challenge. Additionally, the data highlighted various common sources of distress, including several COVID-19 pandemic-specific factors. Nonetheless, many factors were related to more general perinatal/maternal experiences.
18	Ladd and De Decker [39]	Qualitative Study Cross-Sectional Study Design	Five themes emerged which described the lived experience of PPA during COVID-19: wired, trapped, lost in time, no safety net, and doubting myself. The lived experience of postpartum anxiety (PPA) was both mirrored and masked by the lived experience of a global pandemic, exacerbating PPA due to the unknown and constricting nature of the pandemic.
19	Larotonda and Mason [40]	Qualitative Study Cross-Sectional Study Design	The participants associated life as a new mother during the COVID-19 pandemic with the feelings of loss of apparently irretrievable moments and opportunities, which they recognised as essential for establishing themselves in their new role as mothers and integrating a newborn into their families through a process of "kinning" [56]. Feelings of loss linked with disruptions to kinning may be to some extent responsible for increasing perinatal mental distress during the COVID-19 pandemic.
20	Lewis [41]	Mixed-Method Study Cross-Sectional Study Design	The participants experienced postnatal depression and anxiety, and the most commonly reported symptoms were low mood, sleep disturbance, feeling very tearful, angry, and exhaustion.
21	Lo et al. [42]	Quantitative Study Retrospective Cohort Study	The pandemic did not significantly increase the crude incidence of diagnosed perinatal anxiety, depression, or other pregnancy outcomes. However, multivariate analysis models suggested that the pandemic reduced Apgar scores and was a responsible factor in interaction effects for postnatal mental issues and birth-weight. Psychiatric screening carried out at the booking appointment indicated lower sensitivity in predicting prenatal mental illness (pre-pandemic = 85.71%, pandemic = 25.00%; $p = 0.035$).
22	Mamrath et al. [44]	Mixed- Method Study Cross-Sectional Study Design	The findings suggest that the rates of reported postpartum anxiety vary by the age of the birthing parent. Moreover, LGBTQ+ parents might experience higher levels of perinatal mental health difficulties such as anxiety and depression. It suggests that sexual minority women accessing NHS services are concerned about or experience stigma, discrimination, and lack of support, both covert and overt.

23	Mateus et al. [45]	Quantitative Study (Multinational) Longitudinal Cohort Study	Higher levels of clinically significant depression, anxiety, and co-morbid mental illnesses were observed during (versus before) the pandemic, especially among postpartum women.
24	McLeish et al. [46]	Qualitative Study Cross-Sectional Study Design Descriptive Study	Three themes were identified: 'Chaos: impact of uncertainty', 'Abandoned: impact of the reduction in care', and 'Alone: impact of the loss of social support'. Women in the perinatal period valued maternity care and many experienced additional distress from abrupt changes and decline in care during the COVID-19 pandemic; from healthcare professionals' own uncertainty and anxiety; and from restraints on essential social support during prenatal, labour and delivery. However, some participants also reported that healthcare professionals had communicated well and cared for them despite the changes and restrictions, and these participants felt psychologically safe.
25	Moltrecht et al. [47]	Qualitative Study Cross-Sectional Study Design Exploratory Study	Participants reported anxieties and stressors specific to the COVID-19 pandemic, including worries about contracting the virus and increased feelings of distress due to uncertainty created by the consequences of the COVID-19 pandemic.
26	Myers and Emmott [49]	Concurrent Design Mixed-Methods Study Approach Cross-Section Study Design	Levels of depressive symptoms were high, 47.5% of the participants meeting a 11 cut-off (Edinburgh postnatal scale = depression scale) for postnatal depression. The findings pointed out that the number of social network members seen in person and through remote communication, with a higher proportion of those not seen, was negatively associated with depressive symptoms, whereas contact with a higher proportion of relatives was positively associated with symptoms, which highlighted that the kin risked seeing new mothers in need. The findings from the qualitative arm of the study suggest that mothers experienced sadness and worries about lost opportunities for social contact, the burden of continual mothering, and an insufficiency of virtual contact. Support from partners was reported to be a conducive factor for family bonding.
27	Perez et al. [50]	Mixed-Method Approach Cross-Sectional Study Design	Since COVID-19, expectant parents and parents of newborns reported a decrease in mood and parenting confidence. Barriers included practical difficulties, social difficulties and uncertainty during pregnancy. Facilitators included support from others and, for first-time parents, loss of child care resulting in greater parenting confidence. Although online resources and communication were not preferable to face-to-face interactions, technology was a helpful tool for communicating, getting support, and finding essentials and information during lockdown.
28	Pilav et al. [20]	Qualitative Study Cross-Sectional Study Design	Women from ethnic minority backgrounds reported that they experienced disrupted prenatal and postnatal mental health care, and COVID-19 restrictions intensified their mental health problems.
29	Rhodes et al. [51]	Mixed-Methods Study Design Cross-Sectional Study Design	A higher number of participants (88.5%) reported increased levels of anxiety around pregnancy, birth, and being a new mother, and almost more than half of them (58.0%) were concerned about their emotional and mental health. Although a minority of the participants identified a few positive outcomes of the lockdown, such as family bonding, a good number of participants felt isolated, overwhelmed, and disregarded. So, the findings suggest that the COVID-19 pandemic has created increased anxiety and stress among expectant parents and those with newborns, and for the majority of them, the lockdown has had an adverse impact on their physical and mental well-being.
30	Rougeaux et al. [18]	Mixed-Methods Approach Cross-Sectional Study Design	A higher financial expense impact was associated with a higher (unhealthy) maternal psychosocial well-being score. The COVID-19 pandemic increased financial insecurity and associated poorer psychosocial wellbeing in new mothers.
31	Sanders and Blaylock [23]	Mixed-Methods Approach Cross-Sectional Study Design	The survey findings showed that the extensive changes to health care services caused unintended negative consequences for participants, which included required clinical care being missed, misunderstanding of advice, and distress and emotional trauma for women. As a result of the COVID-19 restrictions, participants felt that their prenatal and postnatal care was inadequate, and this has also created adverse emotional consequences for them. Participants also reported feeling sad and isolated in the postpartum period, but also frustrated and upset by a lack of healthcare staff to facilitate care for their newborn.

32	Schweizer et al. [52]	Quantitative Study (Multinational) Longitudinal Study Design	Prenatal COVID-19-related stress was significantly associated with maternal postnatal distress, depression, and generalised anxiety as well as infant negative affectivity. The findings remained constant across a range of sensitivity analyses.
33	Tauqeer et al. [53]	Quantitative Study (Multinational) Cross-Sectional Study Design	The prevalence of major depressive symptoms was 16.1% in the prenatal group and 17.0% in the postnatal group. Moderate to severe generalised anxiety symptoms were found among 17.3% of the pregnant and 17.7% of the postpartum women. So, approximately one in six pregnant or postpartum women reported major depression or anxiety symptoms during the third wave of the COVID-19 pandemic. Risk factors linked with mental health issues included having a pre-existing mental illness, a chronic somatic illness, having had the COVID-19 infection or its symptoms, smoking, unplanned pregnancy, and country of residence. Among the COVID-19 lockdown measures defined for perinatal care, women in the prenatal and postnatal period were most anxious about the absence of their partner at the time of delivery, their partner leaving the hospital early, and being separated from their baby post-delivery.
34	Vazquez-Vazquez et al. [54]	Quantitative Study Cross-Sectional Study Design	The findings are based on the data collected during week 1 of the survey, which described and compared the delivery and post-natal experiences of women who delivered before the COVID-19 lockdown (BL) versus during the lockdown. It shows that the lockdown has impacted maternal experiences, which resulted in distress for many women.
35	Wilson et al. [55]	Quantitative Study (Multinational) Cross-Sectional Study Design	Gestational diabetes was found to be associated with increased levels of depression symptoms. In postpartum women, it only had an association with anxiety. The findings also point out that the women with gestational diabetes, particularly those in the postpartum period, experienced increased levels of pandemic-related distress, even if they did not experience higher levels of COVID-19 infection in this sample.

Approximately one in six pregnant or postpartum women experienced anxiety or major depression during the third wave of COVID-19 [53]. Pandemic-related restrictions, rather than infection itself, contributed more to anxiety [27], with clinically significant depression, anxiety, and co-morbid symptoms also reported [32].

Most quantitative and mixed-method studies report high levels of clinically significant anxiety [4,5,7,26,29,45,51,52]. Postpartum anxiety varies by parental age, with LGBTQ+ parents particularly vulnerable, often facing stigma, discrimination, and inadequate support in NHS services [44].

During the pandemic, postpartum women experienced increased depression or depressive symptoms [4–7,29,31,35,45,49,52] as well as other mental health issues like post-traumatic stress and distress [29,54] alongside reduced parenting confidence [50].

During the COVID-19 pandemic, women, especially those with gestational diabetes or in the postnatal period, experienced increased distress, depression, sleep disturbances, irritability, and exhaustion [34,41,55]. Prepartum anxiety and depression were often higher than postpartum levels [4,26], with prenatal and postnatal anxiety, depression, and posttraumatic stress commonly reported [29]. However, some studies found no significant rise in diagnosed perinatal mental health conditions during the pandemic [42].

Qualitative studies indicate that COVID-19 restrictions exacerbated emotional distress in pre- and postpartum women, with fears of being alone, anxiety, and pandemic-related stressors such as uncertainty and infection worries [19,38,39,47]. While some reported probable depression, experiences were often more reflective of general anxiety and distress [19]. Women from ethnic minority backgrounds faced disrupted perinatal care, further intensifying mental health challenges [20].

Isolation and COVID-19-specific disruptions were major sources of perinatal distress, including loss of social contact, reduced care, partner absence during delivery, and financial insecurity [6,18,19,40,46,53]. Uncertainty around birth, poor communication, and frequent exposure to information heightened anxiety, posttraumatic stress, and depression

[28,29]. Social distancing, reduced prenatal/postnatal support, and pre-existing mental health issues further increased maternal mental health risks [7,23,31,35,49].

During the COVID-19 pandemic, gaps in perinatal mental healthcare were widespread [32]. Protective factors for postpartum mental health included social support, health-related assistance, support groups, higher infant gestational age, equitable household chores, and satisfaction with birth [6,35]. Independent of the pandemic, postpartum depression risk was higher in women who breastfed despite not intending to do so [30].

Some women reported positive outcomes of lockdown, with maternal stress decreasing over the first six months of the pandemic [34,51]. Postpartum women developed coping strategies and many felt successful in managing pandemic-related challenges [6,36].

4. Discussion

Most studies examined postpartum anxiety and depression or depressive symptoms [32,34,49] or low mood [6,18,38]. Many treated anxiety and depression as comorbid yet distinct, consistent with previous research [57]. Some, however, combined them under broader terms such as perinatal mental distress [40] or psychological distress in previous studies [58]. Moreover, trauma [23,29] and stress [4,34,36,47,51] were also studied, which is comparable to studies which explored perinatal postpartum trauma and stress during the COVID-19 pandemic [58–60]. Similar to preexisting examples [61], sleep disturbance was researched in two studies [41,46]. One study explored the comorbidity of sleep disturbance and appetite changes [6], which corresponds with research by Beck and Indman [62], in which sleeping and eating disturbance were explored as dimensions of postpartum distress.

The findings show that most studies (18 of 35) used a quantitative approach to examine emotional distress during COVID-19, while fewer employed qualitative (8) or mixed methods (9). Most also adopted a cross-sectional design, consistent with prior reviews of postpartum mental health research during the pandemic [63–65]. Only one qualitative study identified its guiding paradigm [19] while the remaining 34 omitted this detail, which is a common oversight in research reporting [66]. As paradigms shape research processes, explicitly stating them helps clarify the alignment between methodological choices and underlying assumptions [67].

Beyond mapping study characteristics, several methodological patterns warrant consideration when interpreting the evidence. The predominance of cross-sectional designs limits the ability to establish temporal relationships or causal pathways between pandemic-related factors and postpartum emotional distress. Additionally, the widespread reliance on self-report measures may have increased the risk of reporting bias and may not fully capture the complexity of women's experiences. Considerable variation was also observed in how emotional distress was conceptualised and measured, with studies focusing on different constructs such as depression, anxiety, stress, trauma, or broader psychological distress using diverse assessment tools and threshold scores. This heterogeneity complicates comparisons across studies and may contribute to inconsistencies in reported prevalence estimates. Furthermore, the limited use of longitudinal and theory-informed research designs highlights an important gap in understanding how postpartum emotional distress develops and changes over time.

Most quantitative and mixed-method studies used validated tools to assess PPED. About half of the quantitative studies and one mixed-method study [49] employed the Edinburgh depression scale (EDS) or its postpartum version (EPDS) [4,7,30,31,35,45,53]. This mirrors previous reviews highlighting the dominant use of EPDS [63,64]. However, variability in the cut-off scores for diagnosing and grading depression persisted across studies.

Five studies used the generalised anxiety disorder scale (GAD-7) to assess anxiety [4,32,33,45,53], consistent with its use in other postpartum studies during COVID-19 [68,69]. The state-trait anxiety inventory—state scale (STAI-S) [5,7] and the postpartum specific anxiety scale—research short form—for global crises (PSAS-RSF-C) [7,44] were less commonly used but have appeared in some prior research [70,71].

Five qualitative studies used in-depth semi-structured interviews [20,36,38,39,47] consistent with prior research exploring postpartum experiences during COVID-19 [72,73]. Three qualitative studies [19,40,46] and one mixed-method study [41] used secondary data to maximise data utility [74], a practice encouraged across fields [75]. While secondary data use aids research amid access challenges like pandemic restrictions [74], it demands caution to avoid methodological and ethical issues [75].

Over half of the studies used online or web-based surveys for data collection. Given COVID-19 restrictions and the need to accommodate participants with young children [76], online methods were appropriate and facilitated participation [77]. Thus, online data collection was well-suited for postpartum women during the pandemic, though reliance on this method alone presents limitations affecting data quality.

As expected, nearly all quantitative and mixed-method studies analysed data using descriptive statistics (frequencies, percentages, means, standard deviations) for demographics and inferential tests (regression, Pearson's correlation, chi-square) to examine hypotheses.

One qualitative [36] and one mixed-method study [23] used the framework analysis method to conduct an inductive analysis of the data, while most qualitative and mixed-method studies employed thematic analysis by Braun and Clarke [37]. One study [47] used the reflexive thematic analysis by Braun and Clarke [48], and Rougeaux et al. [18] appeared to use a similar approach. Given the dominance of Braun and Clarke's methods in UK perinatal mental health research, future studies should adhere to their principles to ensure clarity and rigour [48].

Except for one, [40] reported limitations. Across 35 studies, 30 distinct limitations were identified, with the most common being the inability to infer causality due to cross-sectional designs. Other frequent limitations included reliance on self-report online surveys, convenience sampling, recruitment via social media, limited sample diversity, issues with screening tools, and lack of information on participants' prior PPED history or diagnosis. Some studies also noted that pre-pandemic comparisons were not possible due to the absence of formal assessments during lockdown [6,7]. Study limitations are not necessarily flaws but reflect methodological constraints, unforeseen issues, or factors beyond researchers' control, affecting the interpretation, generalizability, and application of findings [78,79]. Identifying these limitations helps perinatal mental health researchers recognise how methodological choices shape study outcomes.

Collectively, these recurring methodological limitations suggest that the current evidence base should be interpreted with caution. The frequent use of convenience sampling, online recruitment, and limited demographic diversity may reduce the representativeness of findings, while inconsistent reporting of participants' mental health histories makes it difficult to determine the extent to which observed distress was attributable to pandemic-related experiences rather than pre-existing vulnerabilities.

Most studies suggested future research directions, primarily emphasising inclusion of diverse participants, including socio-economically vulnerable, minority ethnic, and racially varied perinatal women [38,44,45,47,54]. Another key direction was investigating socioeconomic, clinical, reproductive, and environmental factors affecting perinatal mental health, especially during pandemics, and developing evidence-based care strategies for early identification, intervention, and follow-up [20,23,35,53]. A few studies recommended longitudinal research to examine long-term pandemic effects on maternal

and child outcomes [7,34,36]. Overall, these directions highlight critical, understudied areas in perinatal mental health.

During the COVID-19 pandemic in the UK, about one in six pregnant or postpartum women (16.6%) experienced major depression or anxiety [53], higher than pre-pandemic rates of 10% [80]. Other studies also reported elevated levels of clinically significant anxiety [4,7,26,29,32,45,51,52], depression [4,7,29,31,32,35,45,49,52] or depressive symptoms, such as a decrease in mood, i.e., [6,50], and other mental health issues, such as post-traumatic stress [29] or distress [54], were observed during versus before the pandemic, especially among postpartum women [26,45]. These increases were linked to pandemic-related factors such as isolation and social distancing [7,19,38], worries about infection and uncertainty [34,47], disruptions in healthcare services [28,46], and frequent pandemic-related information seeking [29].

The demands of continual mothering, limited virtual contact, and lost social opportunities negatively affected new mothers' mental health [49], causing feelings of missing irreplaceable moments [40]. This aligns with prior research showing that unmet desires to celebrate and "show off" their newborn, a process called "kinning" [56], leads to emotional distress [81].

Low social support [31], restrictions during prepartum, labour, and delivery [46], absence or early departure of partners, and post-delivery separation from the baby [53] contributed to emotional distress. Prior studies confirm that both partners' sense of "missing out" and women's loss of partner support during childbirth increased psychological distress [82–84].

Commuting, reduced food affordability, income below £30,000 [6], increased financial insecurity [18], and reduced prenatal and postnatal care due to COVID-19 restrictions [23] were linked to poorer maternal mental health [35].

Social support [35], assistance with health needs, contact with mother support groups, equitable household chores [6], and satisfaction with birth and social support were associated with better mental health in the postpartum period [35]. These align with prior research showing instrumental and emotional support as protective against PPED [85,86]. Higher infant gestational age also served as a protective factor [6].

Regardless of the pandemic, postpartum depression risk increased in women who breastfed despite not intending to [30], highlighting the need for supportive, mother-centred guidance from health professionals to address breastfeeding challenges [87].

New mothers with physical health issues (e.g., gestational diabetes [55]), long-term mental health conditions [35], or from ethnic minority backgrounds facing disrupted perinatal care [20] experienced higher mental health problems during COVID-19. Postpartum anxiety also varied by parental age [44], indicating that disadvantaged women were more vulnerable to perinatal mental health issues during the pandemic.

Some positive outcomes of the pandemic included family bonding during lockdown [51] and reduced maternal distress over the first six months [34]. Postpartum women found ways to navigate the pandemic [38], with many reporting successful coping [6], consistent with post-traumatic growth theory, where positive change follows struggle with extreme challenges [88].

5. Conclusions

This scoping review of 35 studies is the first to synthesise research approaches used to explore postpartum emotional distress (PPED) during COVID-19 in the UK. Most studies focused on depression and anxiety, overlooking other forms of PPED [29]. Quantitative methods dominated, nearly doubling the number of qualitative or mixed-method studies, with common use of the Edinburgh postnatal depression scale and GAD-7, and analysis via descriptive and inferential statistics. Qualitative studies typically employed semi-

structured interviews and Braun and Clarke’s thematic analysis [48], with some using secondary data. Reported limitations included low sample diversity, reliance on online self-report surveys, cross-sectional design, convenience sampling, and social media recruitment, reflecting methodological constraints and pandemic-related challenges. Future research directions emphasised diverse sampling, longitudinal designs, examination of biopsychosocial factors, and evidence-based interventions, highlighting key considerations for advancing perinatal mental health research during and beyond the pandemic.

6. Limitations and Future Directions

This review only included studies examining maternal postpartum emotional distress during the COVID-19 pandemic in the UK. Therefore, studies on emotional distress during pregnancy (prepartum period), paternal emotional distress, or research conducted pre-pandemic or outside the UK were excluded. Given these limitations, future reviews should consider including studies on emotional distress during pregnancy, paternal emotional distress during both pandemic and pre-pandemic periods, and research conducted beyond the UK. It is important to note that this review was a scoping review, aimed at mapping research approaches used to study PPED; while findings were reported, synthesising them was beyond its scope. Future researchers interested in combining study results should consider a systematic review or meta-analysis approach.

Author Contributions: H.M. led the study and was responsible for the conceptualisation, methodology, literature searching, study screening, data extraction, data charting, data analysis, interpretation of findings, and writing of the original manuscript draft. S.J. and F.L. provided academic supervision throughout the project, contributed to the study design and methodology, and supported the interpretation of findings. H.J.L.-P. served as the second reviewer during the study screening process, contributing to the rigour of study selection. All authors contributed to manuscript revision. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement: The study was approved by the Faculty of Health and Medicine Research Ethics Committee, Lancaster University (ref: FHMREC 20150, on 4 June 2021).

Informed Consent Statement: Not applicable for the scoping review.

Data Availability Statement: No primary datasets were generated or analysed in this study. This article is a scoping review based on data extracted from previously published studies, all of which are cited within the manuscript. Therefore, no new data are available.

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

PPED	Postpartum Emotional Distress
JBI	Joanna Briggs Institute
PRISMA-ScR	Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews

Appendix A. Search Strategy

	PsychINFO Syntax	Number of Hits
S1	DE “Postpartum Depression”	17,836 on 28 January 2023
	OR TI	420 from 1 January 2023 to 20 July 2023
		2142 from 1 July 2023 to 3 September 2025

	(postpartum OR post-partum OR "post partum" OR postnatal OR post-natal "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) N5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief) OR AB	
	(postpartum OR post-partum OR "post partum" OR postnatal OR post-natal "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) N5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief)	
S2	DE "COVID-19" OR TI (coronavirus OR "corona virus" OR coronavirinae OR coronaviridae OR betacoronavirus OR covid19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*) OR AB	27,604 on 28 January 2023 4939 from 1 January 2023 to 20 July 2023 19,365 from 1 July 2023 to 3 September 2025
S3	S1 AND S2	146 on 28 January 2023 at 12:05 PM 35 from 1 January 2023 to 20 July 2023 at 3:05 PM 161 from 1 July 2023 to 3 September 2025
CINAHL Syntax		Number of Hits
S1	(MH "Depression, Postpartum") OR (MH "Postpartum Psychosis") OR (MH "Postnatal Period") OR TI (postpartum OR post-partum OR "post partum" OR postnatal OR post-natal "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) N5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief) OR AB (postpartum OR post-partum OR "post partum" OR postnatal OR post-natal "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) N5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief)	26,215 on 28 January 2023 853 from 1 January 2023 to 20 July 2023 4221 from 1 July 2023 to 3 September 2025
S2	(MH "COVID-19") OR (MH "COVID-19 Pandemic") OR (MH "SARS-CoV-2") OR TI (coronavirus OR "corona virus" OR coronavirinae OR coronaviridae OR betacoronavirus OR covid19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*) OR AB (coronavirus OR "corona virus" OR coronavirinae OR coronaviridae OR betacoronavirus OR covid19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*)	128, 280 on 28 January 2023 15,312 from 1 January 2023 to 20 July 2023 39,358 from 1 July 2023 to 3 September 2025
S3	S1 AND S2	399 on 28 January 2023 at 12:25 PM PST

	70 from 1 January 2023 to 20 July 2023 at 3:33 PM
	251 from 1 July 2023 to 3 September 2025

	MEDLINE Complete Syntax	Number of Hits
S1	(MH "Postpartum Period") OR (MH "Depression, Postpartum") OR TI (postpartum OR post-partum OR "post partum" OR postnatal OR post-natal "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) N5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief) OR AB	56,131 on 28 January 2023 2217 from 1 January 2023 to 20 July 2023 8651 from 1 July 2023 to 3 September 2025
S2	(MH "COVID-19") OR TI (coronavirus OR "corona virus" OR coronavirinae OR coronaviridae OR betacoronavirus OR covid19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*) OR AB (coronavirus OR "corona virus" OR coronavirinae OR coronaviridae OR betacoronavirus OR COVID19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*)	340,797 on 28 January 2023 54,150 from 1 January 2023 to 20 July 2023 116,538 from 1 July 2023 to 3 September 2025
S3	S1 AND S2	746 on 28 January 2023 at 12:47 PM 188 from 1 January 2023 to 20 July 2023 at 4:13 PM 498 from 1 July 2023 to 3 September 2025

	Web of Science Syntax	Number of Hits
1 Topic 1	(postpartum OR post-partum OR "post partum" OR postnatal OR post-natal OR "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) NEAR/5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief)	34,109 on 28 January 2023 1351 from 1 January 2023 to 20 July 2023 7925 from 1 July 2023 to 3 September 2025
2 Topic 2	(coronavirus OR "corona virus" OR coronavirinae OR coronaviridae OR betacoronavirus OR covid19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*)	419,811 on 28 January 2023 48,825 from 1 January 2023 to 20 July 2023 193,716 from 1 July 2023 to 3 September 2025
3 Topic 1 and Topic 2	Topic: (postpartum OR post-partum OR "post partum" OR postnatal OR post-natal OR "post natal" OR Perinatal OR Post-delivery OR Childbirth OR Child-birth OR Post-birth OR birth OR Puerperal) NEAR/5 ("emotional distress*" OR Stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR	683 on 28 January 2023 at 1:04 PM 120 from 1 January 2023 to 20 July 2023 5:04 PM 480 from 1 July 2023 to 3 September 2025

OCD OR obsess* OR compuls* OR mental OR psych* OR disorder* OR Illness OR Dysphoria OR Grief) AND Topic): (coronavirus OR "corona virus" OR coro- navirinae OR coronaviridae OR betacoronavirus OR covid19 OR "COVID 19" OR "COVID-19 Pandemic" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus" OR COVID*)	
Scopus Syntax	Number of Hits
1 TITLE- ABS-KEY ((postpartum OR post-partum OR "post partum" OR postna- tal OR post-natal OR "post natal" OR perinatal OR post-delivery OR childbirth OR child-birth OR post-birth OR birth OR puerperal) W/5 ("emotional distress*" OR stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR ocd OR obsess* OR compuls* OR mental OR psych* OR disorder* OR illness OR dysphoria OR grief))	50,249 on 28 January 2023 52,339 from 1 January 2023 to 20 July 2023 11,132 from 1 July 2023 to 3 September 2025
2 TITLE- ABS-KEY ((coronavirus OR "corona virus" OR coronavirinae OR coro- naviridae OR betacoronavirus OR COVID19 OR "COVID 19" OR "COVID-19 Pandemic" OR ncov OR "CoV 2" OR cov2 OR sarscov2 OR 2019ncov OR "novel CoV" OR "wuhan vi- rus" OR COVID*))	492,414 on 28 January 2023 576,593 from 1 January 2023 to 20 July 2023 317,810 from 1 July 2023 to 3 September 2025
3 TITLE- ABS-KEY ((postpartum OR post-partum OR "post partum" OR postna- tal OR post-natal OR "post natal" OR perinatal OR post-delivery OR childbirth OR child-birth OR post-birth OR birth OR puerperal) W/5 ("emotional distress*" OR stress OR depress* OR anxiety OR "sleep disorder*" OR "eating disorder*" OR ocd OR obsess* OR compuls* OR mental OR psych* OR disorder* OR illness OR dysphoria OR grief)) 1 AND TITLE- ABS-KEY AND 2 ((coronavirus OR "corona virus" OR coronavirinae OR coro- naviridae OR betacoronavirus OR COVID19 OR "COVID 19" OR "COVID-19 Pandemic" OR ncov OR "CoV 2" OR cov2 OR sarscov2 OR 2019ncov OR "novel CoV" OR "wuhan vi- rus" OR COVID*))	778 on 28 January 2023 at 1:04 PM 198 from 1 January 2023 to 20 July 2023 5:04 PM 810 from 1 July 2023 to 3 September 2025

Appendix B. Search and De-Duplication Record

Databases	Search Strategy Was Run on 28 January 2023	Search Strategy Was Re-Run Before Submission of the Final Draft of the PhD Thesis on 20 July 2023, with Date Proximeter 1 January 2023 to 20 July 2023	Search Strategy Was Re-Run Before Submission for Publication on 3 September 2025 with Date Proximeter 1 July 2023 to 3 September 2025
1 PsychINFO	146	35	161
2 CINAHL	399	70	251
3 MEDLINE Complete	746	188	498
4 Scopus	778	198	810
5 Web of Science	683	120	480
Total	2752	611	2200
After de-duplication	1220	286	932

The de-duplication process was carried out to identify duplicates between the search results from 28 January 2023 (1220 research articles) and search results of Re-Run (287 research articles) conducted on 20 July 2023 with date proximeter 1 January 2023 to 20 July 2023, de-duplication process was carried out. $1220 + 286 = 1506$ The de-duplication process conducted on 1506 identified 36 duplicates. $1506 - 36 = 1470$ A total of 1470 articles were exported to the Rayyan software(web version) for screening, and 21 articles met the inclusion criteria. Additionally, 7 articles were identified through bibliographic searching. In total, $21 + 7 = 28$ Articles were identified.	The de-duplication process was carried out again to identify duplicates between the 1470 articles previously finalised and 932, which are the search results of Re-Run (research articles) 3 September 2025, with date proximeter 1 July 2023 to 3 September 2025. $1470 + 932 = 2402$ The de-duplication process conducted on 2402 identified 1601 duplicates. $2402 - 1601 = 801$ A total of 801 articles were exported to the Rayyan software for screening, and seven articles met the inclusion criteria.
In total, out of $1470 + 801 = 2271$, 35 ($28 + 7$) articles met the inclusion criteria.	

Appendix C. Screening Tool for Relevance (Meeting Inclusion and Exclusion Criteria)

Note: For inclusion and exclusion criteria, tick on the relevant one. If there is even one tick in the exclusion criteria box, the article will be excluded.

Inclusion Criteria	Exclusion Criteria	Research Article #
- Primary research articles which explored and/or reported any form of PPED during the COVID-19 pandemic in the UK. ☐ - A Multinational research study exploring PPED, which included the UK. ☐	- A secondary source such as opinion/commentary/point of view articles, news briefs, systematic reviews, literature reviews, systematic literature reviews, document review, rapid evidence review, integrative reviews, meta analysis, protocol for meta-analysis and evidence synthesis. ☐ - Research article focused on developing questionnaires/scales, frameworks, models and internet-based or offline applications, clinical trials and evaluation of therapies related to perinatal mental health, etc. ☐ - A protocol for prospective studies on perinatal mental health ☐ - A multinational study on PPED in which the UK is not specifically mentioned. ☐ - Perinatal mental health research carried out in the UK, which only focused on various forms of emotional distress during pregnancy, and did not explore and/or report postpartum emotional distress ☐ - A conference abstract for which the full text is not published. ☐	
The study is on a form/type of PPED as explained in the operational definition and explored postpartum experiences of women and reported postnatal mental health. ☐	The study is on a topic related to physical health and illness conditions during pregnancy or in the postpartum period. ☐	
Time: The study explored a form/type of PPED during the COVID-19 pandemic. ☐	Study explored a form/type of PPED before the COVID-19 pandemic and were published after 20 July 2023 were excluded. ☐	
Language: The study is conducted in the English language. ☐	The study is published in a language other than English. ☐	
Decision	Included ☐	Excluded ☐

Appendix D. Data Charting Form (Adapted from Aromataris [9])

Scoping Review Details

Title: Research approaches to explore postpartum emotional distress (PPED) during COVID-19 in the UK: A Scoping Review.

Review Aim: The aim of this scoping review is to investigate the research approaches that have been used to investigate PPED during the COVID-19 pandemic in the UK.

Review question: What are the research approaches that have been used in studies to explore PPED during the COVID-19 pandemic in the UK?

Note: For inclusion and exclusion criteria, put a tick on the relevant one.

Inclusion Criteria	Exclusion Criteria
- Primary research articles which explored and/or reported any form of PPED during the COVID-19 pandemic in the UK. ☐ - Multinational research exploring PPED, which included the UK. ☐	- A secondary source such as opinion/commentary/point of view articles, news briefs, systematic reviews, literature reviews, systematic literature reviews, document review, rapid evidence reviews, integrative reviews, meta-analysis, protocol for meta-analysis and evidence synthesis. ☐ - The research article focused on developing questionnaires/scales, frameworks, models and internet-based or offline applications, clinical trials and evaluation of therapies related to perinatal mental health, etc. ☐ - A protocol for prospective studies on perinatal mental health ☐ - A multinational study on PPED in which the UK is not specifically mentioned. ☐ - Perinatal mental health research carried out in the UK, which only focused on various forms of emotional distress during pregnancy and did not explore and/or report postpartum emotional distress ☐
	A conference abstract for which the full text is not published. ☐
The study is on a form/type of PPED as explained in the operational definition and explored postpartum experiences of women and reported postnatal mental health. ☐	The study is on a topic related to physical health and illness conditions during pregnancy or in the postpartum period. ☐
Time: The study explored a form/type of PPED during the COVID-19 pandemic. ☐	Study explored a form/type of PPED before the COVID-19 pandemic and were published after 20 July 2023 were excluded. ☐
Language: The study is conducted in the English language. ☐	The study is published in a language other than English. ☐
Evidence Source Details and Characteristics	
Citation details (e.g., author/s, date, title, journal, volume, issue, pages):	
Only the UK ☐	or Multinational Study including the UK ☐
Context:	
Details/Results extracted from the source of evidence (corresponding to the concept of the scoping review)	
1. Form of PPED studied	
2. Study Methodology	
3. Data Collection methods	
4. Data analysis method	
5. Limitations of the study approach as acknowledged by the researchers	
6. Future direction for research that the study provides	
7. Findings of the study	

Appendix E. PRISMA-ScR Checklist

Preferred Reporting Items for Systematic reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) Checklist

Section	Item	PRISMA-ScR Checklist Item	Reported on Page #
Title			
Title	1	Identify the report as a scoping review.	Page#1 Title
Abstract			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Page#1 Abstract
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Page#2 Introduction
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualise the review questions and/or objectives.	Page#3 Review Question and Sub-Questions
Methods			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	Not applicable

Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Page#3 and 4 Inclusion Criteria
Information sources *	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Page#4 Scoping Search
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Page#5 and 6 Concept Map
Selection of sources of evidence †	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Page#7 and 8 Screening for Inclusion Criteria
Data charting process ‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Page#8 to 22 Data Charting
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Not Applicable
Critical appraisal of individual sources of evidence §	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	Not Applicable
Synthesis of results	13	Describe the methods of handling and summarising the data that were charted.	Page#8 to 33 Results
Results			
Selection of sources of evidence	14	Give the number of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Page#7 Prisma Flow chart
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Page#8 to 22 Data Charting
Critical appraisal of sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Page# 8 Quality appraisal of the research evidence
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Page#8 to 33 Data Charting
Synthesis of results	18	Summarise and/or present the charting results as they relate to the review questions and objectives.	Page# 8 to 33
Discussion			
Summary of evidence	19	Summarise the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Heading#4 Discussion page# 33 to 36
Limitations	20	Discuss the limitations of the scoping review process.	Heading#6 Limitations and Future Directions Page#37
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Heading#5 Conclusion Page#37
Funding			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	Not Applicable as no funding was received to conduct the present scoping review.

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews. * where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and websites. † a more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with information sources (see first footnote). ‡ the frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting. § the process of systematically examining research evidence to assess its validity, results,

and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of “risk of bias” (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

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