



Breastfeeding and Depression: A Systematic Review of the Literature

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Abstract

This review examines the association between postpartum depression and breastfeeding in the context of studies published between 2015 and 2022. The goal of those studies was to determine the impact of depression on breastfeeding and vice versa. After conducting in-depth research on 15 studies that varied in location, population, and method of evaluation, a high degree of agreement was observed in their findings. Postpartum depression has a significant impact on breastfeeding percentages, whereas breastfeeding appears to improve the mother's psychological status and significantly reduce anxiety and depression symptoms. These findings emphasize the complex relationship between postpartum depression and breastfeeding and validate the need for additional research.

Keywords: *postpartum depression, postnatal depression, breastfeeding, maternal psychology, clinical trial*

Introduction

Postpartum depression (PPD) has become a major public health issue around the world due to its high prevalence and negative effects on the well-being of women and newborns ^[1].

Breastfeeding has undeniable benefits ^[2] and the World Health Organization ^[3] recommends exclusive breastfeeding for the first 6 months, followed by the addition of solid foods until the second year of life or beyond. Nonetheless, it appeared that only 44 percent of mothers worldwide were exclusively breastfeeding during the period 2015-2022, which, combined with the WHO announcement that approximately 820,000 children under the age of 5 would not have died if breastfeeding rates had been increased, demonstrates the need for more information about women ^[3].

Depressive symptomatology is associated with decreased breastfeeding self-efficacy, and consequently with lower rates of breastfeeding ^[4]. The goal of this systematic review is to determine the impact of breastfeeding on postpartum depression and vice versa.

Materials and Methods

Data Sources and Research Methodology

This study adhered to the PRISMA statement's guidelines. From January 2015 to January 2022, original articles published on the online databases Pubmed (Medline) and Google Scholar were screened. To find eligible studies, the following keywords and MeSH descriptor terms "postpartum depression", "postnatal depression", "breastfeeding", "maternal psychology" and "clinical trial" were used individually and in various combinations. In order to reduce bias further, the screening was carried out by two independent reviewers. A total of 1600 relevant reports were found. Inclusion criteria included: the year of publication (2015–2022), English language, being a primary research and full-text availability. The duplicate references, as well as the majority of the articles concerning various pathological conditions of puerperium, were

removed, leaving 50 articles. According to the publication date, 25 of them were published before 2015, so they were removed from the process. The remaining 25 articles were then examined, and it was discovered that 10 of them did not meet the systematic review criteria. In the end, 15 surveys were used. Figure 1 depicts a flow chart of the survey search option, and the procedures are described below.

Screening

For the purposes of this study, only original studies were used to correlate postpartum depression with breastfeeding. A range of parameters were taken into account, such as the variety of the population, the duration of breastfeeding and the occurrence of disorders in the mother's mood. Surveys were included regardless of the study method, sample number or type of measurement.

Data Acquisition (Eligibility and Inclusion)

Eligibility

The titles and summaries of the surveys (n = 50) were evaluated in the first stage to identify common content. Abstracts that did not mention postpartum depression or breastfeeding were automatically disqualified. The articles that were deemed relevant were thoroughly evaluated in the second stage.

Inclusion

Data were extracted from the selected studies (n = 15) during this phase. The information for each article included the authors, the year of publication, the purpose of the study, the sample size, the country where the research was conducted, as well as the procedures and results. The selected studies were classified based on the review's objectives and structure.

Data analysis

The findings of each study that linked breastfeeding to postpartum depression or maternal stress in general were retrieved and thoroughly examined.

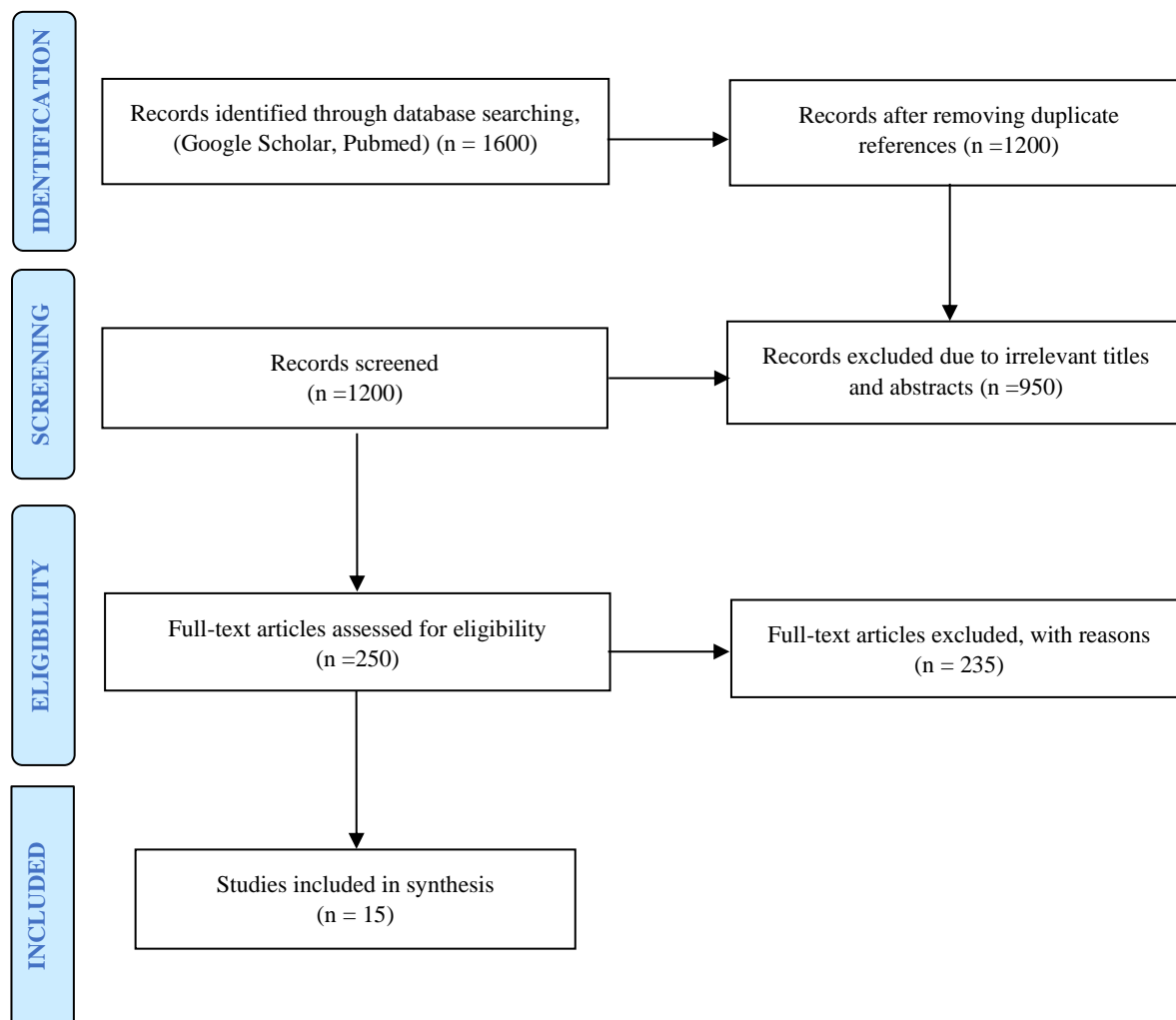


Figure 1: Flow Diagram

Results

Study characteristics

The studies included in this systematic review were published in major scientific journals between 2015 and 2022 and evaluated approximately 86,239 participants.

There is a wide range of research origins, including both developed and developing countries. With a few exceptions, the majority of them (n = 4) are from the United States, while the others were conducted in Greece, Korea, Kenya, Bangladesh, Australia, Saudi Arabia, Croatia, Vietnam, Sao Paulo, Spain, Chile, Mexico, and Argentina. Postpartum mood disorders and postpartum depression levels were mainly assessed with the Edinburgh Postpartum Depression Scale (EPDS) (n = 11). Other questionnaires used to identify stress and psychological transitions include the Spielberger State Trait Anxiety Inventory (STAI), the Perceived Stress Scale (PSS), the Revised Prenatal Distress Questionnaire (NUPPQ), the Beck's Depression Inventory (BDI), and the Beck's Anxiety Inventory (BAI) (BAI). In addition, the Multidimensional Scale of Perceived Social Support (MSPSS), which estimates social support (family, friends), and the Life Orientation Scale, which is an indicator of optimism, were used in some surveys. BF was primarily assessed using researcher questionnaires (n = 5), WHO criteria (n = 3), the Breastfeeding Self-Efficacy Scale (BSES) (n = 3), and the Breastfeeding Adherence Score (BAS) (n = 1). One study extracted data from its country's National Health System, which contains

important patient data that allows similar studies in this range to be performed. The measurements were performed mainly in the postpartum period, with emphasis on the 4th and 8th week after childbirth till 6 months later.

Does postpartum depression affect breastfeeding?

Seven studies (Table 1) presented the impact of depression on breastfeeding [6-12]. Two studies reported that mothers with depressive symptoms are more prone to premature cessation of breastfeeding [6,10], while two other studies suggested that they will more easily cease exclusive breastfeeding [7-9]. Findings of Ngo (2019) [11] and Iliadou (2020) [12] revealed that self-efficacy of breastfeeding is clearly lower in depressed mothers.

What is the role of Breastfeeding in Postpartum Depression?

The eight studies (Table 2) found, identified the relation between breastfeeding and maternal mood [13-20]. Breastfeeding mothers had reduced stress levels and were less likely to stop it [19]. One study found that problems with breastfeeding as well as general health during the postpartum period affect bad mood and increase rates of depressive symptoms [17]. Also, women who did not breastfeed were more likely to experience depression compared to breastfeeding women, and were more likely to stop breastfeeding early [15,18]. Finally, a study in Heraklion, Crete, associated the reduced duration of breastfeeding (<2 months) with a 77% increase in the likelihood of postpartum depression [14].

Table 1: Does Postpartum Depression Affect Breastfeeding?

AUTHORS/YEAR	OBJECTIVES	PARTICIPANTS/COUNTRY	TOOLS	RESULTS
Bascom E., Napolitano M. A./2016	The study of differences in breastfeeding between women with and without depressive symptoms.	1271 postpartum mothers (U.S.A)	Questionnaire on social criteria, EPDS in the 2 nd month of postpartum and questions about the termination of BF only once at the month where it stopped completely.	Direct correlation of depressive symptoms with premature cessation of breastfeeding.
Madeghe B. A., Kimani V. N., Vander Stoep A., Nicodimos S., Kumar M./2016	Examining the effects of postpartum depression on infant feeding practices in low-income families.	200 postpartum mothers (Kenya)	EPDS, WHO's guidelines for infant feeding and demographics. TIME: 6th-14th week after delivery.	26 mothers experienced postpartum depression with the socio-economic level burden the already increased risk of developing depression. These women were more prone to non-exclusive MS and their infants were more underweight.
Islam M. J., Baird K., Mazerolle P., Broidy L./2017	Investigation of the effect of psychosocial factors including companion violence at BF.	426 postpartum mothers (Bangladesh)	Demographics, EPDS, WHO's Demographic Health Survey Questionnaire, Family Needs Screener, 'life-long or since birth' measurements for feeding practices.	Women with increased symptoms of postpartum depression are more likely to discontinue exclusive BF, which intensifies in combination with physical violence
Lara-Cinisomo S., McKenney K., Di Florio A., Meltzer-Brody S./2017	Association of postpartum depression with stress, breastfeeding and oxytocin plasma.	28 postpartum mothers (U.S.A- Latina mothers)	Demographic information, EPDS, STAI, blood test for oxytocin levels. TIME: 3rd trimester of pregnancy, 4th and 8th week of postpartum	29% were on the verge of high stress, 18% experienced depression in the 4th and 21% in the 8th week. Direct connection with low oxytocin levels and premature cessation of breastfeeding.
Ngo L. T. H., Chou H. F., Gau M. L., Liu C. Y./2019	Investigation of the self-efficacy of BF and the factors that predict it.	164 postpartum mothers (Vietnam)	Demographics and emphasis on breastfeeding questions and skin-to-skin contact in the hospital, BSES, EPDS, MSPSS. TIME: 2nd-3rd day after labor.	The self-efficacy of BF is significantly lower in women suffering from postpartum depression.
Vieira E., Caldeira N. T., Eugênio D. S., Di Lucca M. M., Silva I. A./2018	Relationship between BF self-efficacy and postpartum depression in exclusive breastfeeding.	83 postpartum mothers (São Paulo)	Questionnaire on social criteria, obstetric history, impressions about breastfeeding and psychological characteristics, EPDS and BSES. TIME: 1st-210th day after delivery and every 30 days evaluation.	It appeared that mothers with depressive symptoms would stop breastfeeding 10 days earlier.
Iliadou, M., Lykeridou, K., Prezerakos, P., Zyga, S., Sakellari, E., Vivilaki, V., Tziaferi, S./2020	Relationship between BF self-efficacy and postpartum depression	173 pregnant women (Athens)	Baseline questionnaire that included sociodemographic questions, BSES, EPDS, determination of the infant feeding method TIME: >32 week of pregnancy, 3rd day after labor, 6 months after labor	BSES-SF was significantly negatively correlated with EPDS before birth and 3 days after the birth, indicating that higher levels of depression are associated with lower levels of self-efficacy.

Table 2: Does Breastfeeding Affect Postpartum Depression?

AUTHORS/YEAR	OBJECTIVES	PARTICIPANTS/COUNTRY	TOOLS	RESULTS
Ahn S., Corwin E. J./2015	Study of patterns of response to stress and depression in breastfeeding or breastfeeding mothers.	119 mothers (U.S.A)	EPDS, PSS, saliva sample and blood sampling for oxytocin and cortisol levels. TIME: 32 nd -36 th week of pregnancy, 1 st and 2 nd week after childbirth, 1 st -2 nd -3 rd -6 th month after delivery.	No association was found between breastfeeding and postpartum depression, except for a small but no significant increase in stress during the 6th month after delivery in women who gave foreign milk compared to breastfeeding women.
Koutra K., Vassilaki M., Georgiou V., Koutis A., Bitsios P., Kogevas M., Chatzi L./2016	Investigation of complications during pregnancy, childbirth and puerperium that affect the onset of postpartum depression 8 weeks after childbirth.	1037 mothers (Greece)	Questionnaire with demographic data, symptoms, complications and habits during pregnancy, tests for metabolic syndrome, Epworth Sleepiness Scale for sleep adequacy, type of delivery, EPDS, questionnaire for BF.	141 mothers showed increased levels of postpartum depression in the 8th week as well as reduced duration of BF. BF lasting less than 2 months seemed to increase by 77% the possibility of postpartum depression as well as the difficulties-negative

			TIME: at the arrival during the 15 th week of pregnancy, the 30 th week, the birth and the 8th week after delivery.	experiences at the beginning cause an increase in the symptoms in the 8th week after delivery.
Nam J. Y., Choi Y., Kim J., Cho K. H., Park E. C./2017	Investigation of cessation of breastfeeding in combination with cesarean section and the presence of postpartum depression in the first 6 months after delivery.	81.447 mothers (Korea)	Use of NHIS-NSC for women's medical history, evaluation 266 days before delivery and 1 year before the first day of pregnancy for symptoms of depression. Information about their birth and the medications recommended during the first 6 months were recorded.	0.82% of mothers experienced postpartum depression with obvious predisposition those who stopped breastfeeding prematurely or gave birth by caesarean section.
Al-Muhaish W. S., Al-Ghamdi B. A., Al-Azman B. A., Al-Qahtani A. H., Al-Qahtani N. H./2018	Finding the relationship between breastfeeding and postpartum depression as well as the prevalence of depression after childbirth in Saudi Arabian women.	300 mothers (Saudi Arabia)	Demographic data, EPDS, SPSS.	14% of women who participated experienced postpartum depression, while mothers who wanted to breastfeed had lower EPDS scores. The duration of breastfeeding was not associated with depression.
Cooklin A. R., Amir L. H., Nguyen C. D., Buck M. L., Cullinane M., Fisher J. R.W., Donath S. M./2018	Investigating the contribution of maternal health and / or breastfeeding problems to maternal mood 8 weeks after delivery.	223 mothers (Australia)	Demographic characteristics, PoMS, questionnaire about pregnancy in the 36 th week and visits from the 1st to the 4 th week after delivery. In the 8 th week there was telephone communication.	Breastfeeding problems seemed to be an independent factor in poor maternal mood, while in combination with other physical difficulties they cause the maximum mood disorder.
Ritchie-Ewing G., Mitchell A. M., Christian L. M./2019	The correlation of prenatal perceptions about breastfeeding with its onset and cessation rates as well as how they are affected by perinatal stress and depression.	70 mothers (U.S.A)	Monitoring throughout pregnancy and up to the 10 th day after labour, BBS, STAI, CES-D, PSS, NUPDQ and self-assessment Breastfeeding.	Mothers who never breastfed or stopped prematurely had higher rates of anxiety and depressive symptoms.
Gila-Díaz A., Carrillo G. H., de Pablo, Á. L. L., Arribas S. M., Ramiro-Cortijo D./2020	Finding a relationship between maternal psychology and breastfeeding.	711 mothers (Spain, Mexico, Chile, Argentina)	Social Demographic questionnaire, EPDS, PSS, LOT, BAS.	Breastfeeding mothers had significantly lower rates of stress, postpartum depression, and the likelihood of stopping breastfeeding than women who combined breastfeeding with artificial feeding.
Mikšić Š., Uglešić B., Jakab J., Holik D., Milostić Srb A., Degmečić D./2020	Finding the effect of breastfeeding on postpartum depression, stress and infant development.	209 pregnant-194 postpartum women and 160 mothers 3 months after delivery (Croatia)	Demographic characteristics, clinical maternity questionnaire, EPDS, BAI, BDI. TIME: 3 rd trimester of pregnancy, first home visit after childbirth (approximately 7 th day) and at the end of the 3 rd trimester after delivery (90 th day).	Mothers at low risk of developing postpartum depression were more likely to breastfeed than women at moderate or increased risk. Also, non-breastfeeding women in the 3 rd month had increased rates of depression and anxiety compared to mothers who continued breastfeeding.

Discussion

This systematic review provides an overview of current knowledge regarding the interaction of postpartum depression and breastfeeding. It includes surveys from various countries that were published over a six-year period. Despite differences in methodology, structure, goals, and timing, all studies agree on the link between psychological transitions and breastfeeding, as well as their bilateral relationship. Does postpartum depression affect the effectiveness of breastfeeding, and, as a result, does breastfeeding affect the new mother's psychology? The responses to these questions appeared to be unanimous.

Postpartum depression and poor maternal psychology in general have a negative impact not only on efficacy but also on breastfeeding duration. Two studies resulted in premature cessation of breastfeeding as a consequence of depression [6,10] and a third indicated that women with an emotional disorder were to discontinue breastfeeding 10 days earlier than non-breastfeeding mothers who had similar symptoms [8]. Moreover, non-exclusive breastfeeding was more frequently employed by these women [7,9], and lower self-efficacy was noted [11-12].

It seems that the maternal psychological aspects are associated with breastfeeding pattern [19]. Breastfeeding problems increase the rates of bad mood [17], while mothers who have never

breastfed or stopped prematurely presented significantly higher rates of anxiety and depression [18]. According to one study, the majority of women who experienced postpartum depression did not breastfeed [15], while in another study breastfeeding duration of less than two months was associated with a 77% increase of depression [14].

Exogenous factors that influence the onset of depression should be given special attention. The studies conducted in Kenya [7], Bangladesh [9], and Latin American mothers [10] highlight low levels of social support, low income, and, most importantly, increased rates of violence, which tortures many households even today.

Cláudia Castro Dias and Bárbara Figueiredo's (2015) systematic review included 48 studies published between 1980 and 2013 that aimed to correlate breastfeeding with depression during pregnancy and the postpartum period. Their study's findings are similar to those presented above, with the only difference being the presentation of the criteria for depression in pregnancy. Although there are different views on this, they do affect the duration of breastfeeding and the development of postpartum depression [21].

Maternity is a vulnerable time in a mother's life, when new balances are established and new needs for herself and her family emerge. Ambivalence is considered a normal phenomenon in the early stages, but it raises concerns when it persists for an extended period of time and develops into a pathological behavior based on depression. Breastfeeding is directly impacted by this, as the woman abandons any effort, resulting in either a premature termination or avoidance from the start. Nonetheless, breastfeeding appears to have a positive effect on anxiety and depressive symptoms, emphasizing the need for additional research.

Conclusion

Breastfeeding remains the most valuable supply for both the newborn and the mother due to the variety of supplies it provides. Postpartum depression, like any other emotional disorder affecting mothers, necessitates immediate treatment due to the significant impact it has on the mother, the newborn, and the entire family. This systematic review suggests that future mothers be educated about the benefits of breastfeeding, as well as the importance of identifying and treating the risks of developing postpartum depression as soon as possible.

Healthcare providers, particularly midwives on the front lines, must be adequately trained to support and address mothers' concerns, promote breastfeeding respectfully, and identify potential pathologies that may occur.

Ethics approval and consent to participate

“Not applicable”

Conflicts of Interest

“The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.”

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