West African Journal of Allied Health Sciences (2025), 1,31–37

ORIGINAL ARTICLE

Prevalence of Postpartum Depression and Breastfeeding practices in Southwestern Nigeria

Beatrice Olubukola Ogunba, Oluwaseun Ayoola Ajayi, Eunice Olasumbo Oladiran, and Oluwabusayo Aanuoluwapo Idowu

Department of Human Nutrition and Dietetics, Faculty of Basic Medical Sciences, College of Health Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria
Author for correspondence: Beatrice Olubukola Ogunba, Email: bogunba@oauife.edu.ng.

(Received: May 12, 2025 Revised: June 5, 2025 Accepted: June 9, 2025)

Abstract

Background: Postpartum depression (PPD) is a pervasive psychological issue that can disrupt the breastfeeding journey. This study assessed the prevalence of postpartum depression (PPD) among breastfeeding mothers in Southwest, Nigeria.
Methods: Three hundred and sixty mothers with infants aged 0-12 weeks were chosen using a multistage sampling technique. Data collection was carried out using structured questionnaires and the Edinburgh Postnatal Depression Scale (EPDS). A score above 13 on the 30-point Edinburgh Postnatal Depression Scale indicated PPD. IBM SPSS version 26.0 was used for analysis.
Results: The mean age of mothers was 28.9 ± 5.5 years. Most mothers (90.3%) were married, and 56.9% had infants younger than six weeks. The majority (99.4%) were still breastfeeding, with 45.8% intending to stop between 13 to 18 months. A majority (72.5%) earned less than ₦40,000 monthly, 34.7% reported challenges in caring for their child, and 83.3% received support. Only 18.6% were classified as having postpartum depression (PPD). Chi-square analysis showed significant associations between PPD and maternal age, marital status, income, caregiving challenges, and support ($p < 0.05$). Logistic regression analysis revealed that mothers aged ≤ 20 years were more likely to experience PPD than older mothers (AOR = 3.9, 95% CI: 1.171–13.401, $p = 0.027$), while supported mothers were less likely to experience PPD than unsupported mothers (AOR = 0.39, 95% CI: 0.170–0.888, $p = 0.025$).
Conclusion: Nearly one in five mothers experienced postpartum depression. Strengthening psychosocial and family support systems for postpartum mothers (especially younger, unmarried, or of low income) is recommended.

Keywords: Postpartum Depression, Breastfeeding, Family Support

 DOI: 10.5281/zenodo.15884924

Introduction

The postpartum period, often celebrated as a time of joy and bonding between mother and child, can also bring about a range of emotional challenges for many women. Adjusting to the motherhood phase is stressful because of the total and fast changes women need to adjust to Asadi, Noroozi, and Alavi 2022. During this period, most women anticipate a positive and joyful transition to a new stage of life Olza et al. 2020 however, emotional disturbances, such as postpartum depression, can make this period unpleasant and challenging Ria, Budihastuti, and Sudiyanto 2018. Postpartum depression(PPD) is defined as a form of clinical depression that develops after childbirth Gauld et al. 2023. It often presents with persistent sadness, anxious thoughts, and extreme tiredness that can affect a mother's ability to take care of herself and her infant Lund et al. 2020; Guo et al. 2013. Postpartum depression (PPD) can affect the bonding and affection between the baby and mother, which is important for the mental, social, and physical development of the child Richards et al. 2024. It interferes with the development of a healthy bond between mother and child, which in turn may affect feeding practices Agrawal, Mehendale, and Malhotra 2022; Sanni et al. 2024. It is one of the most common consequences of childbirth and is linked to several negative outcomes for both mother and child, including maternal mortality and morbidity, as well as an increased chance of infanticide Guintivano, Manuck, and Meltzer-Brody 2018. Fundamentally, postpartum depression can negatively impact both the health of the mother and child Lund et al. 2020. Postpartum depression affects how a mother functions in her social environment and her overall well-being Saharoy et al. 2023. It also causes short and long-term psychological disruptions that influence the love relationship between mother and child, and maternal attention in caring for, nurtur-

ing, and raising children Saharoy et al. 2023. A relationship between maternal depression and low infant growth has been discovered in several studies Surkan et al. 2011; Wemakor and Mensah 2016. Long-term cognitive, behavioural, and interpersonal deficits in children of postpartum depressive mothers are the subject of a growing body of research Gold 2017; Stamou, García-Palacios, and Botella 2018. Despite its serious consequences, postpartum depression is typically difficult to diagnose because mothers are hesitant to report depressive symptoms to healthcare providers Carlson et al. 2024. Late diagnosis of postpartum depression often results in inadequate therapy Ladores and Corcoran 2019. Alarmingly, the combined symptoms of postpartum depression can be associated with maternal suicides, which account for 10% of all maternal deaths Ladores and Corcoran 2019. Despite the growing body of research, there remains a gap in understanding how postpartum depression manifests in different sociocultural settings, particularly in developing countries, where mental health resources are often limited. As researchers explore factors that may influence postpartum depression, breastfeeding appears to be a widely studied area Figueiredo, Canário, and Field 2014; Dias and Figueiredo 2015; Dessì et al. 2024. While breastfeeding is often promoted for its benefits to infant health, its relationship with maternal mental health or postpartum depression remains complex and multifaceted. A bidirectional relationship exists between breastfeeding and maternal mental health—breastfeeding cessation has been linked to the onset of postpartum depression, while postpartum depression itself increases the likelihood of stopping breastfeeding Dias and Figueiredo 2015; Figueiredo, Canário, and Field 2014. From a biological perspective, breastfeeding may help lower the chances of developing postpartum depression through the regulation of the hypothalamic-pituitary-adrenal (HPA) axis and the release of prolactin, both of which are associated with reduced stress and improved emotional well-being Dessì et al. 2024. Moreover, breastfeeding improves maternal self-efficacy, emotional involvement, and sleep regulation, all of which are inversely correlated with postpartum depression Dessì et al. 2024. However, challenges associated with breastfeeding, such as lactation difficulties and societal pressures, may exacerbate postpartum depression symptoms Dias and Figueiredo 2015. Most studies on postpartum depression and breastfeeding focus on high-income settings, where sociocultural and healthcare factors differ from those in Nigeria. As a result, Western findings may not fully reflect the challenges Nigerian mothers face. However, research on postpartum depression and breastfeeding in Nigeria, particularly in Oyo State, remains limited. This region's diverse cultural practices, varying breastfeeding support, and maternal healthcare access make it a unique setting for study. This study aims to determine the prevalence of postpartum depression among mothers in Oyo State, explore breastfeeding practices among those with postpartum depression, and compare these practices with those of mothers who do not have postpartum depression.

Methods

Study setting This study was conducted in Ibadan North and Egbeda Local Government Areas (LGAs) of Oyo State, Nigeria. These areas were selected to reflect both urban and semi-urban populations within the state. Ibadan North is predominantly urban, while Egbeda represents a semi-urban area with a blend of rural and peri-urban communities. Within each LGA, primary health centres were purposively selected based on their popularity and high volume of maternal and child health service users, especially those attending antenatal, postnatal, and immunisation clinics. Study design, study population and sample size A cross-sectional approach was adopted to assess the prevalence of postpartum depression (PPD) and its association with breastfeeding practices among lactating mothers. The study was conducted in selected primary healthcare centres offering Maternal and Child Health immunisation and postnatal services. The study population consisted of 360 lactating mothers with infants aged 0 – 12 weeks who attended the immunisation clinic during the study period. Mothers who were currently breastfeeding and gave informed consent were eligible to participate. Mothers who were seriously ill or unable to respond to the questionnaire were excluded. A multistage sampling technique was employed to select participants. First, healthcare facilities were purposively selected based on their popularity and high patient turnout, ensuring inclusion of centres frequently attended by mothers across the selected local government areas. Within the selected facilities, systematic random sampling was used to recruit eligible mothers who met the inclusion criteria. Data collection and tools Data collection took place between March and April 2023. A structured questionnaire was employed to gather data on the socioeconomic characteristics of mothers and their children, as well as their breastfeeding practices. Additionally, the Edinburgh Postpartum Depression Scale (EPDS) was included in the questionnaire to assess the prevalence of postpartum depression (PPD) among the mothers. The EPDS consists of 10 short statements, with responses scored 0, 1, 2 and 3 based on the seriousness of the symptom. The maximum score is 30, and mothers with a score of 13 or higher were classified as experiencing postpartum depression. Data was analysed using SPSS version 26.0. Ethical approval was obtained from the Oyo State Ministry of Health Research Ethics Committee (HREC) with approval number NHREC/OYOSHRIEC/10/11/12.

Results

Postpartum depression

The Table 1 presents the distribution of mothers' responses to the Edinburgh Postnatal Depression Scale (EPDS) items.

While many mothers maintained positive emotional well-being, some reported varying levels of distress, including feelings of sadness, difficulty sleeping, and self-blame. A small proportion expressed thoughts of self-harm. These findings highlight the range of postpartum emotional experiences within the study population.

Prevalence of postpartum depression

Figure 1 shows that 18.6% of mothers were classified as having postpartum depression according to the Edinburgh Postnatal Depression Scale cutoff score.

Maternal Characteristics and Support Factors Associated with Postpartum Depression

As shown in Table ??, a greater proportion of mothers with postpartum depression were aged 21–30 years (73.1%) compared to those without depression (61.4%). Similarly, higher percentages of depressed mothers were single (17.9% compared to 5.8%), divorced (1.5% compared to 0.7%), or widowed (3.0% compared to 0.3%). A higher proportion of depressed mothers earned less than ₦20,000 (47.8%) than their counterparts without depression (26.6%) and reported more difficulty with childcare (50.7% compared to 31.1%).

Support indicators were notably lower among those with postpartum depression, including having a good relationship with their spouse (76.1% compared to 91.5%), receiving care during breastfeeding (59.7% compared to 82.3%), general support (61.2% compared to 88.4%), and household support for chores (46.3% compared to 71.0%).

Mothers aged $\leq$ 20 years were 3.9 times more likely to experience postpartum depression compared to those over 30 (AOR = 3.962, 95% CI: 1.171–13.401, $p = 0.027$), while those aged 21–30 were 2 times more likely (AOR = 2.157, 95% CI: 1.117–4.163, $p = 0.022$). Mothers who reported receiving any form of support were 0.3 times less likely to experience postpartum depression compared to those who did not (AOR = 0.388, 95% CI: 0.170–0.888, $p = 0.025$).

Although variables such as marital status, income, facing challenges in childcare, having a good relationship with the spouse, spousal care during breastfeeding, and help with household chores were significantly associated with postpartum depression in the chi-square analysis, none of them showed statistically significant odds in the logistic regression analysis.

Association Between Postpartum Depression and Breastfeeding Practices

As shown in Table 3, breastfeeding rates were high among all mothers regardless of postpartum depression status. However, variations were observed in specific breastfeeding behaviours. Among mothers with postpartum depression, a smaller proportion initiated breastfeeding immediately after birth (34.3%) compared to those without depression (39.6%).

Table 1. Distribution of Mothers' Responses to the Edinburgh Postnatal Depression Scale (EPDS) Items

EPDS Item Response	Freq.	%
Anxious or worried for no good reason		
No, not at all	166	46.1
Hardly ever	51	14.2
Yes, sometimes	105	29.2
Yes, very often	38	10.6
Scared or panicky for no good reason		
Yes, quite a lot	40	11.1
Yes, sometimes	81	22.5
No, not much	76	21.1
No, not at all	163	45.3
Things getting to me		
Not coping at all	43	11.9
Not coping as usual	131	36.4
Coping quite well	75	20.8
Coping as ever	111	30.8
Unhappy with sleep		
Most of the time	35	9.7
Sometimes	99	27.5
Not very often	52	14.4
Not at all	174	48.3
Sad or miserable		
Most of the time	16	4.4
Quite often	30	8.3
Not very often	74	20.6
Not at all	240	66.7
So unhappy I cried		
Most of the time	24	6.7
Quite often	30	8.3
Occasionally	61	16.9
Never	245	68.1
Thought of self-harm		
Quite often	9	2.5
Sometimes	35	9.7
Hardly ever	15	4.2
Never	301	83.6

Table 2. Maternal characteristics and support factors associated with postpartum depression

Characteristics	Postpartum Depression		X^2 (df), p-value	Bivariate OR (95% CI)	p-value
	Yes (n = 67)	No (n = 293)			
Age (years)			7.518 (2), p = 0.023*		
≤20	5 (7.5)	10 (3.4)		3.962 (1.171–13.401)	0.027*
21–30	49 (73.1)	180 (61.4)		2.157 (1.117–4.163)	0.022*
>30	13 (19.4)	103 (35.2)		Ref	
Marital status			16.391 (3), p = 0.001*		
Single	12 (17.9)	17 (5.8)		0.353 (0.029–4.350)	0.416
Married	52 (77.6)	273 (93.2)		0.095 (0.008–1.070)	0.057
Divorced	1 (1.5)	2 (0.7)		0.250 (0.008–7.452)	0.423
Widowed	2 (3.0)	1 (0.3)		Ref	
Income (₦)			14.642 (4), p = 0.006*		
<20,000	32 (47.8)	78 (26.6)		1.846 (0.579–5.883)	0.300
20,000–40,000	19 (28.4)	132 (45.1)		0.648 (0.198–2.119)	0.473
40,000–60,000	5 (7.5)	44 (15.0)		0.511 (0.123–2.125)	0.356
60,000–80,000	7 (10.4)	21 (7.2)		1.500 (0.377–5.965)	0.565
>80,000	4 (6.0)	18 (6.1)		Ref	
Challenges in child care	34 (50.7)	91 (31.1)	9.326 (1), p = 0.002*	1.677 (0.927–3.032)	0.087
Good spouse relationship	51 (76.1)	268 (91.5)	12.729 (1), p = 0.000*	0.927 (0.324–2.654)	0.888
Spouse care during breastfeeding	40 (59.7)	241 (82.3)	16.190 (1), p = 0.000*	0.612 (0.276–1.358)	0.227
Getting any support	41 (61.2)	259 (88.4)	29.052 (1), p = 0.000*	0.388 (0.170–0.888)	0.025*
Household support chores	31 (46.3)	208 (71.0)	14.935 (1), p = 0.000*	0.657 (0.339–1.270)	0.211

*Statistical significance ($p < 0.05$); Ref = Reference category

On-demand breastfeeding was reported less frequently by mothers with postpartum depression (59.7% vs. 69.3%), while feeding in response to infant crying was slightly more common (29.9% vs. 25.3%). There were no notable differences in expressed milk feeding. A greater proportion of mothers with postpartum depression planned to stop breastfeeding before 19 months (71.6%) compared to their counterparts without depression (57.7%).

Only the duration of the current breastfeeding episode showed a significant association with postpartum depression ($\chi^2(2) = 9.771$, $p = 0.008$). All other breastfeeding practices, including initiation time, pattern, expressed milk use, and intended duration, were not significantly associated.

Discussion

This study discovered that 18.6% is the proportion of nursing mothers experiencing postpartum depression (PPD). This figure aligns with findings from a comprehensive synthesis of existing studies on the epidemiology of postpartum depression in Africa, which estimated that approximately one in five women in Africa experiences postpartum depression Dadi et al. 2020. However, the prevalence differs from rates reported in some other regions of Nigeria: 8.8% in southwest Nigeria Okunola et al. 2022, 22.9% in southeast Nigeria Chinawa et al. 2016, and 21.8% in the north Tungchama et al. 2018. The variation may result from differences in research methodology, including the timing of data collection relative to childbirth, variations in the measurement tools used, and the distinct socio-cultural contexts of the study populations. comprehensive synthesis of existing studies on the epidemiology of postpartum depression in Africa also highlighted that low-income countries tend to report a higher prevalence compared to middle-income countries Okunola et al. 2022, reinforcing the role of socio-economic context in maternal mental health outcomes.

Table 3. Maternal characteristics and support factors associated with postpartum depression

Breastfeeding Practices	Postpartum Depression		X^2 (df)	p-value
	Yes (n = 67)	No (n = 293)		
Breastfeeding				
Yes	66 (98.5)	292 (99.7)	1.308 (1)	0.253
No	1 (1.5)	1 (0.3)		
Initiation of breastfeeding				
Immediately after birth	23 (34.3)	116 (39.6)	2.040 (3)	0.564
Less than an hour	23 (34.3)	92 (31.4)		
Less than 24 hours	15 (22.4)	49 (16.7)		
Others	6 (9.0)	36 (12.3)		
First breastfeeding episode (minutes)				
≤10	27 (40.3)	94 (32.1)	1.650 (2)	0.438
11–20	28 (41.8)	139 (47.4)		
>20	12 (17.9)	60 (20.5)		
Current breastfeeding episode (minutes)				
≤10	23 (34.3)	147 (50.2)	9.771 (2)	0.008*
11–20	31 (46.3)	79 (27.0)		
>20	13 (19.4)	66 (22.5)		
Pattern of breastfeeding				
Scheduled	4 (6.0)	12 (4.1)	4.330 (3)	0.228
On demand	40 (59.7)	203 (69.3)		
When baby is crying	20 (29.9)	74 (25.3)		
Others	3 (4.5)	4 (1.4)		
Fed expressed milk				
Yes	9 (13.4)	40 (13.7)	0.002 (1)	0.962
No	58 (86.6)	253 (86.3)		
Intention to terminate breastfeeding (months)				
≤12	14 (20.9)	38 (13.0)	5.599 (3)	0.133
13–18	34 (50.7)	131 (44.7)		
19–24	19 (28.4)	123 (42.0)		
>24	0	1 (0.3)		

*Statistical significance ($p < 0.05$); Ref = Reference category

This study also revealed that younger maternal age was significantly associated with an increased likelihood of postpartum depression. Specifically, mothers aged ≤ 20 years were nearly four times more likely, and those aged 21–30 were two times more likely to experience postpartum depression when compared to those aged above 30. This observation is consistent with findings in South-East Nigeria, which reported that younger maternal age was associated with elevated depressive and anxiety symptoms in the postpartum period Agbaje et al. 2019. These

findings underscore the need for targeted psychosocial interventions and mental health screening for younger mothers, particularly those aged ≤ 30 years, to mitigate the risk of postpartum depression. the risk of postpartum depression. Strengthening early maternal support systems and integrating age-specific counselling into postnatal care could improve maternal mental health outcomes in similar communities. In this study, mothers who reported receiving support were significantly less likely to experience postpartum depression compared to those who did not. This is in line with previous studies that highlights the protective role of social support in reducing the risk of postpartum depression Odinka et al. 2019; Racine et al. 2020; Cahyaningtyas 2021. In the early postpartum period, mothers often depend on the support of partners, family, and friends to navigate the challenges of new motherhood Aston et al. 2018. In this study, most respondents indicated that they are receiving support, which may partly explain the moderate prevalence of PPD observed. In contrast to some prior studies that suggested mode of delivery as a potential risk factor for PPD—with higher rates reported among women who had cesarean sections compared to vaginal deliveries Ilska et al. 2020; Meky et al. 2020 — this study did not find a statistically significant association between method of delivery and postpartum depression. This is consistent with a study in Sweden, which argued that the mode of delivery alone may not independently predict the risk of postpartum depression Eckerdal et al. 2018.

Conclusion

The research concluded that postpartum depression affected nearly one in five mothers. The analysis revealed a statistically significant association between postpartum depression and the mother's age, marital status, and income level. The study also found a significant association between postpartum depression and facing challenges in taking care of the child. In addition, a significant association was found between postpartum depression and different forms of support, such as having a good relationship with a spouse, receiving help without asking, getting support during breastfeeding, general support, and help with household chores.

Given these significant associations, it is crucial to strengthen psychosocial and family support systems for mothers after childbirth, especially those who are younger, unmarried, or have low income. Ensuring that mothers have access to both emotional and practical support can help reduce the risk of postpartum depression and promote maternal well-being.

Future research should explore the effectiveness of specific support interventions and examine postpartum depression in diverse cultural contexts to inform tailored mental health care strategies.

What is Known About This Topic

- Postpartum depression (PPD) is a common mental health issue globally, particularly affecting mothers in the early weeks after childbirth.
- Postpartum depression (PPD) can significantly interfere with a mother's ability to initiate and maintain breastfeeding.
- In Nigeria, while breastfeeding is widely practised and encouraged, mental health—especially maternal mental health—remains under-researched and often overlooked in postnatal care.

Authors' Contribution

Beatrice Olubukola Ogunba conceived the study, designed the methodology, revised the manuscript critically, provided intellectual input and supervised the research process. Oluwaseun Ayoola Ajayi and Eunice Olasumbo Oladiran supervised data collection and contributed to the literature review. Oluwabusayo Aanuoluwapo Idowu performed the data analysis, interpreted the results, and drafted the manuscript. All authors reviewed the manuscript and gave their approval for the final version.

Funding Disclosure

This research did not receive any specific grant or financial support from the government, commercial, or nonprofit organisations.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

Agbaje, OS, JI Anyanwu, PI Umoke, TE Iwuagwu, CN Iweama, EL Ozoemena, and IR Nnaji. 2019. Depressive and anxiety symptoms and associated factors among postnatal women in enugu-north senatorial district, south-east nigeria: a cross-sectional study. Archives of Public Health 77:1–16.

Agrawal, I, AM Mehendale, and R Malhotra. 2022. Risk factors of postpartum depression. Cureus 14 (10).

Asadi, M, M Noroozi, and M Alavi. 2022. Identifying women's needs to adjust to postpartum changes: a qualitative study in iran. BMC Pregnancy and Childbirth 22 (1): 115.

Aston, M, S Price, J Monaghan, M Sim, A Hunter, and V Little. 2018. Navigating and negotiating information and support: experiences of first-time mothers. Journal of Clinical Nursing 27 (3-4): 640–649.

Cahyaningtyas, AY. 2021. Determinants of postpartum depression in rural area, central java, indonesia. Journal of Health Science and Prevention 5 (1): 49–57.

Carlson, K, S Mughal, Y Azhar, and W Siddiqui. 2024. Postpartum depression. In Statpearls [internet]. StatPearls Publishing.

Chinawa, JM, OI Odetunde, IK Ndu, EC Ezugwu, EC Aniwada, AT Chinawa, and U Ezenyirioha. 2016. Postpartum depression among mothers as seen in hospitals in enugu, south-east nigeria: an undocumented issue. Pan African Medical Journal 23 (1).

Dadi, AF, TY Akalu, AG Baraki, and HF Wolde. 2020. Epidemiology of postnatal depression and its associated factors in africa: a systematic review and meta-analysis. PLoS ONE 15 (4): e0231940.

Dessì, A, G Pianese, P Mureddu, V Fanos, and A Bosco. 2024. From breastfeeding to support in mothers' feeding choices: a key role in the prevention of postpartum depression? Nutrients 16 (14): 2285.

Dias, CC, and B Figueiredo. 2015. Breastfeeding and depression: a systematic review of the literature. Journal of Affective Disorders 171:142–154.

Eckerdal, P, MK Georgakis, N Kollia, AK Wikström, U Högberg, and A Skalkidou. 2018. Delineating the association between mode of delivery and postpartum depression symptoms: a longitudinal study. Acta Obstetricia et Gynecologica Scandinavica 97 (3): 301–311.

Figueiredo, B, C Canário, and T Field. 2014. Breastfeeding is negatively affected by prenatal depression and reduces postpartum depression. Psychological Medicine 44 (5): 927–936.

Gauld, C, B Pignon, P Fourneret, C Dubertret, and S Tebeka. 2023. Comparison of relative areas of interest between major depression disorder and postpartum depression. Progress in Neuro-Psychopharmacology and Biological Psychiatry 121:110671.

Gold, CM. 2017. The developmental science of early childhood: clinical applications of infant mental health concepts from infancy through adolescence. WW Norton & Company.

Guintivano, J, T Manuck, and S Meltzer-Brody. 2018. Predictors of postpartum depression: a comprehensive review of the last decade of evidence. Clinical Obstetrics and Gynecology 61 (3): 591–603.

Guo, N, C Bindt, M Te Bonle, J Appiah-Poku, R Hinz, D Barthel, and E Tannich. 2013. Association of antepartum and postpartum depression in ghanaian and ivorian women with febrile illness in their offspring: a prospective birth cohort study. American Journal of Epidemiology 178 (9): 1394–1402.

Ilska, M, E Banaś, K Gregor, A Brandt-Salmeri, A Ilski, and W Cnota. 2020. Vaginal delivery or caesarean section–severity of early symptoms of postpartum depression and assessment of pain in polish women in the early puerperium. Midwifery 87:102731.

Ladores, S, and J Corcoran. 2019. Investigating postpartum depression in the adolescent mother using 3 potential qualitative approaches. Clinical Medicine Insights: Pediatrics 13:1179556519884042.

Lund, C, M Schneider, EC Garman, T Davies, M Munodawafa, S Honikman, and E Susser. 2020. Task-sharing of psychological treatment for antenatal depression in khayelitsha, south africa: effects on antenatal and postnatal outcomes in an individual randomised controlled trial. Behaviour Research and Therapy 130:103466.

Meky, HK, MM Shaaban, MR Ahmed, and TY Mohammed. 2020. Prevalence of postpartum depression regarding mode of delivery: a cross-sectional study. The Journal of Maternal-Fetal & Neonatal Medicine 33 (19): 3300–3307.

Odinka, Paul, Jude Odinka, Martha Ezeme, Alexander Ndukuba, Kingsley Amadi, Rose Muomah, and Uche Nduanya. 2019. Socio-demographic correlates of postpartum psychological distress among apparently healthy mothers in two tertiary hospitals in enugu, south-east nigeria. African Health Sciences 19 (3): 2515–2525. https://doi.org/10.4314/ahs.v19i3.30.

Okunola, Temitope O., Joel O. Awoleke, Busayo Olofinbiyi, Bolanle Rosiji, Ayobami O. Olubiyi, and Segun Omoya. 2022. Predictors of postpartum depression among an obstetric population in south-western nigeria. Journal of Reproductive and Infant Psychology 40 (4): 420–432. https://doi.org/10.1080/02646838.2021.1980249.

Olza, Ibone, Kerstin Uvnäs-Moberg, Anette Ekström-Bergström, Patricia Leahy-Warren, Sigfridur Inga Karlsdottir, Marianne Nieuwenhuijze, ..., and Sarah Buckley. 2020. Birth as a neuro-psycho-social event: an integrative model of maternal experiences and their relation to neurohormonal events during childbirth. PLOS ONE 15 (7): e0230992.

Racine, Nicole, Karen Zumwalt, Sarah McDonald, Suzanne Tough, and Sheri Madigan. 2020. Perinatal depression: the role of maternal adverse childhood experiences and social support. Journal of Affective Disorders 263:576–581. https://doi.org/10.1016/j.jad.2019.11.030.

Ria, Maria Budi, Umi Rukmini Budihastuti, and Agus Sudiyanto. 2018. Risk factors of postpartum depression at dr. moewardi hospital, surakarta. Journal of Maternal and Child Health 3 (1): 81–90.

Richards, M. C., C. A. Ferrario, Y. Yan, and N. M. McDonald. 2024. The impact of postpartum depression on the early mother-infant relationship during the covid-19 pandemic: perception versus reality. International Journal of Environmental Research and Public Health 21 (2): 164. https://doi.org/10.3390/ijerph21020164.

Saharoy, R., A. Potdukhe, M. Wanjari, and A. B. Taksande. 2023. Postpartum depression and maternal care: exploring the complex effects on mothers and infants. Cureus 15 (7). https://doi.org/10.7759/cureus.41824.

Sanni, S. O., I. A. Adeoye, T. T. Bella-Awusah, and O. O. Bello. 2024. Influence of postpartum depression on maternal-infant bonding and breastfeeding practices among mothers in abeokuta, ogun state. Discover Mental Health 4 (1): 46. https://doi.org/10.1007/s44192-024-00097-9.

Stamou, Georgia, Anabel García-Palacios, and Cristina Botella. 2018. Cognitive-behavioural therapy and interpersonal psychotherapy for the treatment of post-natal depression: a narrative review. BMC Psychology 6:1–25. https://doi.org/10.1186/s40359-018-0250-3.

Surkan, Pamela J., Caitlin E. Kennedy, Kristen M. Hurley, and Maureen M. Black. 2011. Maternal depression and early childhood growth in developing countries: systematic review and meta-analysis. Bulletin of the World Health Organization 89 (8): 607–615. https://doi.org/10.2471/BLT.10.083428.

Tungchama, Francis P., James T. Obindo, Abdulmalik Y. U. Armiya'u, Yakubu T. Maigari, Felicia J. Davou, Sati G. Goar, and Richard Uwakwe. 2018. Prevalence and sociodemographic correlates of postpartum depression among women attending postnatal and/or children's welfare clinics in a tertiary hospital, jos, nigeria. Sahel Medical Journal 21 (1): 23–30. https://doi.org/10.4103/smj.smj_35_17.

Wemakor, Anthony, and Kwaku Asumang Mensah. 2016. Association between maternal depression and child stunting in northern ghana: a cross-sectional study. BMC Public Health 16:1–7. https://doi.org/10.1186/s12889-016-3273-1.