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Prevalence and Social Factors associated with Postpartum Depression in Urban areas of Pakistan: Cross-sectional Study

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Abstract

Objective: A type of mental sickness known as postpartum depression (PPD), which affects some women after giving birth, is characterized by feelings of melancholy, anxiety, and weariness that can interfere with day-to-day activities and the ability to form attachments with the infant. The social and cognitive development of the infant is said to suffer from PPD. In multiethnic urban areas in Pakistan, this study sought to determine the prevalence and risk factors for postpartum depression.

Methods: A cross-sectional study was carried out in various parts of Pakistan, and information from 126 women who lived in urban areas, was gathered. To gauge postpartum depression, the Edinburgh Postnatal Depression Scale was utilized, and a cut-off score of 13 was chosen to separate depressed from non-depressed women.

Results: PPD was shown to be 41.27% prevalent among urban women. Lack of social support from the husband, lack of social support from in-laws, lack of knowledge, difficulty in handling the baby, social conflicts, and lack of postpartum support were some of the causes of PPD.

Conclusion: In Pakistan, where postpartum depression is a severe public health concern and frequently goes unreported due to cultural stigmas, this study emphasizes the value of early detection and care for Pakistani urban women at risk of developing the condition. During postpartum visits, healthcare providers should frequently screen new mothers for depression and utilize instruments like the Edinburgh Postnatal Depression Scale to identify those experiencing symptoms. A complete approach to addressing this issue must include strengthening social support, expanding access to mental health services, and teaching medical staff how to identify and treat postpartum depression.

Keywords: Postpartum Depression, Edinburgh Postnatal Depression Scale, Urban Population, Mental Health, Social Support, Public Health.

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1. Introduction

Postpartum Depression (PPD) is characterized as a brief emotional disorder that occurs during the first 12 months after childbirth based primarily on depression, with symptoms ranging from temporary depression to severe depression with a feeling of hopelessness, anxiety, and fear, unjustified guilt and shame, indifference, and hostility to one's baby and husband, sleep disorder, and so on.[1] It is linked to negative impacts on the infant's social and cognitive development.[2] Half to two-thirds of women experience mood disorders during the postpartum period, but the majority of these symptoms are temporary and minor, known as postpartum blues, and they usually go away on their own after four weeks.[3] Therefore, postpartum depression (PPD) is commonly diagnosed if symptoms persist after 4-12 weeks of childbirth.[2] Since there is a key window for the onset of affective disorders from birth to the first postpartum year, depression that begins inside this window can be classified as PPD.[1]

According to estimates, depression affects 20% to 40% of pregnant and postpartum women in low-income and developing nations.[4] The prevalence of PPD shows wide variations between 8%-50%.[3] The justification for the variation in the prevalence of PPD has been credited to the distinctions in well-being and trans-social varieties in deciphering the side effects.[2,5] From as low as 11% to as high as 42%, different nations have reported varying prevalence rates for PPD.[6-8] Studies conducted in Pakistan's urban tertiary care settings found percentages ranging from 24% to 42%.[9-11] As opposed to community-based research from rural Pakistan, which indicated a prevalence between 28% and 36%.[12] A Cross Sectional research conducted in Pakistan indicated that 67.96% of participants had persistent PPD which means

depression was present at all three time periods in the first postnatal year.[12]

Antenatal depression, pregnancy anxiety, and going through stressful life events during pregnancy or puerperium are only a few of the established risk factors for postpartum depression.[13-16] Besides these many specific social factors have also been related to PPD,[17] including support from a spouse, dissatisfaction with a spouse, low-income single mothers, illiteracy, low socioeconomic status, social conflicts, having a female infant, the health of the infant, difficult infant, and expectations of a pregnant woman for postpartum support and that inability to get expected help might prompt unfortunate results.[15] The majority of these risk factors have also been proven in industrialized nations.[16]

Many new mothers experience postpartum depression, a common mental health condition that can have a serious detrimental impact on their well-being and that of their families. However, despite its prevalence, postpartum depression is often underreported, particularly in countries with cultural or social stigmas around mental health issues. In Pakistan, a developing nation, psychiatric issues are sometimes viewed as shameful and stigmatized, which could prevent postpartum depression from being reported and treated. Therefore, the purpose of this study is to investigate the incidence of postpartum depression in Pakistan's urban population and how social factors like socioeconomic status, level of education, and social support relate to it. The Edinburgh Postnatal Depression Scale, a widely used questionnaire for evaluating postpartum depression, will be used by the researchers to estimate the prevalence of the disease in the study population to accomplish this goal. The study can shed light on the actual issues faced by new mothers in Pakistan by investigating the prevalence of postpartum depression there and how it relates to social factors. The results of this study can influence policies and initiatives in Pakistan and other nations with comparable cultural and social barriers to treating mental health concerns to improve the mental health of young mothers. Since anxiety is a more noticeable characteristic of PPD than depression that develops at other periods in life, we have used the terms postpartum anxiety and depression here.[18-20]

2. Materials & Methods

This multicentered cross-sectional survey was conducted at HIT Hospital Taxila from Jan to July 2022. Data was collected from conveniently selected EPI centres located at D.G Khan, Rawalpindi, Lahore, Faisalabad, and Sargodha. The sample size calculated by using the WHO sample size calculator with a 90% confidence interval, 10% margin of error, and 12% prevalence of postpartum depression among the urban population was 115. Married females with ages ranging from 18 to 45 years having infants aged 2 weeks to 1 year, irrespective of the number of children and not suffering from any known medical condition were included in this study. Female doctors, those having intrauterine fetal death and diagnosed female patients of bipolar I or bipolar II disorder were excluded from the study. After ethical approval, three hundred and fifty females fulfilling the inclusion criteria presenting at EPI (Extensive Program of Immunization) centres were purposively invited to voluntarily participate in the study. Two hundred and eighty-seven females provided the complete data (82% response rate), and among these women, one hundred and twenty-six women from urban areas were included in the analysis. Sociodemographic data were recorded on structured proforma and the Edinburgh postnatal depression scale was used to estimate the postpartum depression. A cut-off score of 13 is used to distinguish depressed from non-depressed women. SPSS version 28 was used to analyze the data. Frequencies were calculated for descriptive variables. Cross-tabulation was done between causes of postpartum depression and educational status and place of residence.

3. Results

To study the prevalence of postpartum depression in urban areas of Pakistan 200 performers were distributed in different urban regions of Pakistan. 126 women participated in the research with a response rate of 63% (n+=126). The number of responses from each division was different. 34.1% (n=43) were from D.G Khan, 26.2% (n=33) from Rawalpindi, 15.9% (n=20) from

Lahore, 12.7 (n=16) from Faisalabad, 11.1% (n=14) from Sargodha. (Figure 1)

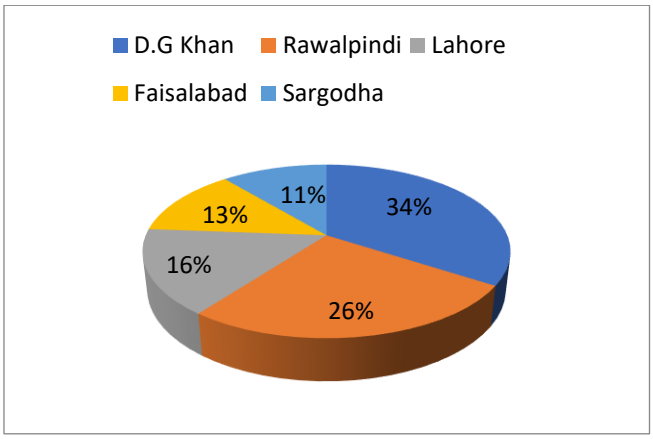

Figure 1: Response Rate

The mean age of mothers was 25.4±8.64 years, and the mean income was 35.6±15.55 thousand. The mean period passed after delivery was 2.45±1.201 months. (Figure 2)

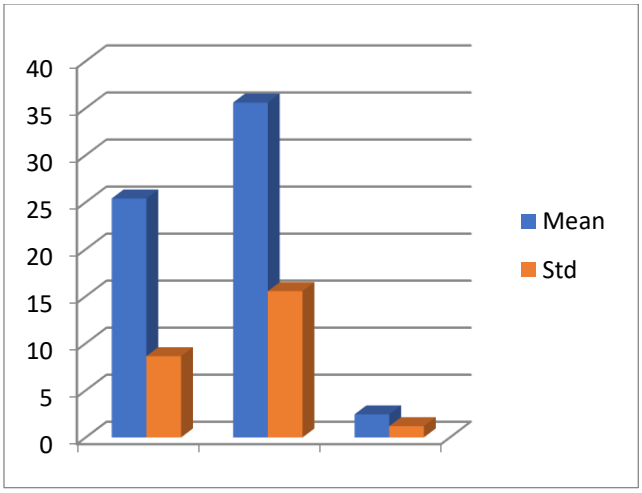

Figure 2: Sociodemographic Data

Among a total of 126 responses, 41.27% (n=52) were found to be depressed and 33.34% (n=42) had suicidal thoughts. Out of 52 depressed women; 34 have suicidal thoughts.

Among these total cases of depressed women, 21.15% (n=11) were from D.G Khan, 34.62% (n=18) were from Rawalpindi, 11.5% (n=6) were from Lahore, 12.30% (n=9) from Faisalabad, and 15.38 (n=8) from Sargodha. 33.34% (n=14) from D.G Khan, 19.04% (n=8) from Rawalpindi, 9.52% (n=4) from Lahore, 19.04% (n=8) from Faisalabad, 19.04% (n=8) from Sargodha have suicidal thoughts. (Figure 3)

Table 1: Association between depression and suicidal thoughts

		Depressed		Not Depressed		Total	
		n	%	n	%	n	%
Suicidal thoughts	Yes	34	65.3	8	10.8	42	33.33
	No	18	34.6	66	89.1	84	66.67
Total		52	41.2	74	58.7	126	100

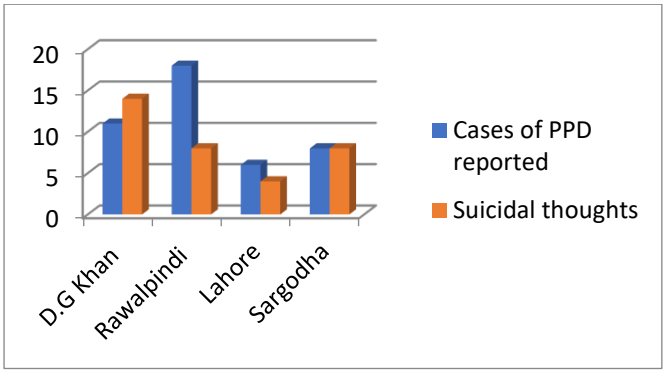

Figure 3: Rate of postpartum depression and suicidal thoughts

More than that, according to the statistics, 55.26% (n=21) of undergraduates were found to be more depressed than other women. (Figure 4)

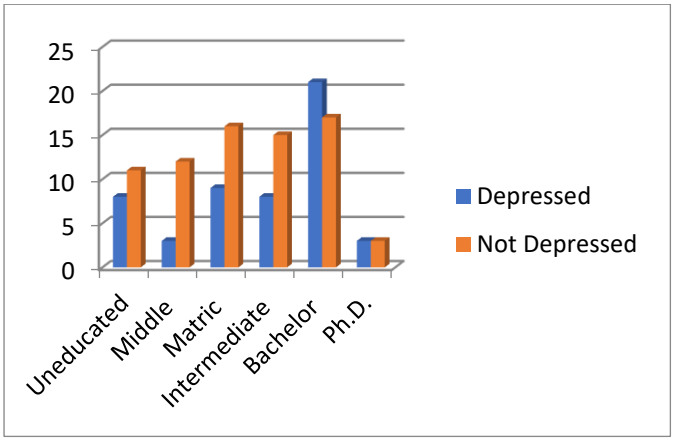

Figure 4: Association Of Post Partum Depression With Education

Few opinions were collected to know the cause of depression among these 41.27% (n=126) urban mothers (patients of PPD), two causes were lack of social support from the husband (p=0.038), lack of social support from in-laws (p=0.021) were found to be the significant cause of PPD among the overall urban population.

However, according to the statistics of PPD cases, reporting the cause of depression in each division was found, like "lack of social support from the husband"

was found to be a cause of PPD in Faisalabad and Sargodha. "lack of social support from in-laws" was found to be a cause of PPD in Rawalpindi and Sargodha. "Economic problems" were found to be a cause of PPD in Sargodha. "Lack of education" was found to be a cause of PPD in Faisalabad. "Fear of maternity (childbirth) and C-section" was found to be a cause of depression in D.G. Khan. "Difficult to handle the baby" was found to be a cause of depression in Lahore.
Social causes of PPD reported by the diagnosed patient of PPD are described in the table.

Table 2: Social Causes Of Postpartum Depression

Social causes of PPD	D.G Khan		Rawalpindi		Lahore		Faisalabad		Sargodha		Chi-square value
	n	%	n	%	n	%	n	%	n	%	
Bad relationship with husband	2	18	8	44	3	50	6	66	7	87	0.038
Bad relationships with in-laws	4	36	14	66	3	50	4	44	8	100	0.021
Women do not have the power to decide	0	00	8	44	3	50	4	44	3	37	0.106
The birth of a daughter	1	09	2	11	0	00	0	00	1	12	0.766
Joint family system	1	09	6	33	4	66	3	33	2	25	0.180
Social conflicts	0	00	1	5	0	00	1	11	1	12	0.702
Economic problems	2	18	4	22	1	16	2	22	5	62	0.185
Lack of education	2	18	1	05	0	00	5	55	4	50	0.008
Fear of Maternity (childbirth) and C-section	7	63	7	38	1	16	2	22	4	50	0.246
Difficult to handle the baby	0	00	4	22	5	83	4	22	3	37	0.007

4. Discussion

A type of depression characterized as postpartum depression (PPD) affects women after giving birth. It is a severe mental illness that can manifest at any point in the first year following childbirth. Feelings of melancholy, anxiety, and hopelessness, along with physical signs like exhaustion, sleeplessness, and changes in appetite, are all characteristics of PPD. Low self-esteem, trouble bonding with their child, and thoughts of killing themselves or their child are other symptoms of PPD in women. PPD's exact origins are unknown, although conditions like hormone shifts, sleep loss, and social and psychological stressors can raise one's risk of getting them. PPD may be more likely to affect women who have a history of depression, anxiety, or other mental health problems.[21]
Globally postpartum depression can influence up to 8-25% of mothers yearly and is most common in underdeveloped countries compared to developed countries.[22,23] The pervasiveness of postpartum depression in Pakistan goes from 28-63%.[19] In this study, the prevalence of postpartum depression and anxiety in the urban community was reported to be 41.27%, with suicidal ideation occurring in 33% of cases. Whereas a meta-analysis carried out by Atif M et al. found prevalence of PPD between 30-37% in Pakistan.[10] Another study conducted by Yadav T et al. reported 19.3% of women with persistent postpartum depression in Pakistan.[9] The fact that this was an urban community-based study could be the cause of the differences in prevalences and increased suicidal thoughts among the women in our study, a small sample size as compared to other studies, and a different sampling methodology. In different studies, specific social causes have been related to postpartum depression, including a background marked by mental ailment,[17] support from a spouse, mental satisfaction, low-income single mothers, dissatisfaction with a spouse, adverse life events, social conflicts, health of the infant, difficult infant and pregnant woman has expectations for postpartum support and that inability to get expected help might prompt unfortunate results.[16] In our study, it was discovered that postpartum depression and anxiety were linked to poor relationships with the husband and in-laws. These results were similar to the studies conducted by Islam M et al. in Aligarh, India and Pebryatie E et al.in West Java, Indonesia.[15,17] In a study Low levels of education in mothers were found to be a major predictor in one study done in Japan.[24] These parameters were also discovered to be significant in our study's multivariate analysis. Our study also reported

some unusual findings, among the undergraduate mothers who participated in the study, 55.26% were depressed which is a sign of a lack of awareness of PPD in mothers. There may be several causes for Pakistani undergraduate mothers' high postpartum depression (PPD) prevalence. Lack of understanding and awareness of PPD among this demographic may be one contributing factor. Many new mothers may not comprehend the psychological and physical changes that accompany pregnancy and childbirth, making them more susceptible to PPD symptoms. Additionally, the Pakistani educational system may have an impact. Lack of access to high-quality education, especially for girls and women, can result in ignorance about health issues, including mental health. Women who don't know about PPD may be more likely to experience the symptoms alone and not seek treatment. Regarding the causes of PPD, according to certain research from South Asia, having a girl child is also linked to PPD,[15,16,19] particularly in moms who have more than two female children.[25,26] In South Asian society, mothers are typically criticized for having a female child because there is a preference for male children,[15,16]but in our study birth of a female child was not a significant predicting factor for postnatal depression. According to different studies on postpartum depression in Asian cultures, PPD is also linked to poverty, unintended pregnancies, and preference for a child's gender.[27] Financial troubles and PPD have been linked in numerous studies,[28,29] however, no such link was discovered in our investigation, which is similar to the outcomes reported by Edwards LM et al.[30] Because of the stigma attached to the illness, medical assistance is infrequently sought, and even when it is, depression is poorly diagnosed and euphemisms are employed by clinicians. Because depression is either seen as a shameful mental weakness or as having supernatural roots. Although point prevalences in our study were similar to those of studies done by Aslam M et al. in Aligarh, India and Agrawal I et al. it appears that difficulty handling the newborn is directly associated with postpartum anxiety and depression.[15,19] Many factors like joint family system, social conflicts, fear of C-sections, and suppression the women which may be the factors predicting postpartum depression in women were found insignificant in our study.

Taking care of oneself while also taking care of the baby might be difficult for mothers who suffer from postpartum depression. Sometimes, a mother's needs are put before her own, which can be detrimental to her health and exacerbate the signs of postpartum depression.[11,12] It affects marriage and the mother's health and promotes hindrance in child and mother bonding, which can have adverse consequences on the babies' psychological and social turn of events. Extreme results incorporate child murder and suicide.[6,11,12]

5. Conclusion

Due to social and cultural stigmas associated with mental health conditions, postpartum depression may go unreported hence is more prevalent than typically reported in Pakistan.Healthcare professionals should therefore routinely check young mothers for depression during postpartum visits to address this problem. Improving social support by motivating family members and friends and community-based activities, lowering the stigma associated with mental, educating healthcare professionals to recognize and treat and community awareness programs can help mothers to cope with the new challenges.

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M.M.A.B, M.S.A, H.B, M.J, K.M, Z.I - Analysis/Interpretation/Discussion
M.M.A.B, M.S.A, H.B, M.J, K.M, Z.I - Manuscript Writing
M.M.A.B, M.S.A, H.B, M.J, K.M, Z.I - Critical Review
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References

1. Fukuzawa RK, Park CG. Role of Intrapartum Social Support in Preventing Postpartum Depression. The Journal of Perinatal Education. 2023 May 5;32(2):104.https://doi.org/10.1891/JPE-2022-0003
2. Kim S, Kim DJ, Lee MS, Lee H. Association of Social Support and Postpartum Depression According to the Time After Childbirth in South Korea. Psychiatry Investigation. 2023 Aug;20(8):750.
3. Obstetric and gynaecological conditions associated with psychiatric disorder | New Oxford Textbook of Psychiatry | Oxford Academic.
4. Gebregziabher NK, Netsereab TB, Fessaha YG, Alaza FA, Ghebrehiwet NK, Sium AH. Prevalence and associated factors of postpartum depression among postpartum mothers in central region, Eritrea: a health facility based survey. BMC public health. 2020 Dec;20:1-0. https://doi.org/10.1186/s12889-020-09676-4
5. Kjeldsen MM, Bricca A, Liu X, Frokjaer VG, Madsen KB, Munk-Olsen T. Family history of psychiatric disorders as a risk factor for maternal postpartum depression: a systematic review protocol. Systematic Reviews. 2022 Apr 15;11(1):68. https://doi.org/10.1186/s13643-022-01952-1
6. Hanach N, Radwan H, Fakhry R, Dennis CL, issa WB, Faris MAIE, et al. Prevalence and risk factors of postpartum depression among women living in the United Arab Emirates. Soc Psychiatry PsychiatrEpidemiol. 2023 Mar 1;58(3):395–407.https://doi.org/10.1007/s00127-022-02372-1
7. Alshikh Ahmad H, Alkhatib A, Luo J. Prevalence and risk factors of postpartum depression in the Middle East: a systematic review and meta–analysis. BMC pregnancy and childbirth. 2021 Dec;21:1-2. https://doi.org/10.1186/s12884-021-04016-9
8. Liu X, Wang S, Wang G. Prevalence and risk factors of postpartum depression in women: A systematic review and meta-analysis. Journal of clinical nursing. 2022 Oct 31;19(20):2665-77. https://doi.org//10.1186/s12884-021-04016-9
9. Yadav T, Shams R, Khan AF, Azam H, Anwar M, Anwar T, Siddiqui C, Abbas K, Mahnoor Sukaina II, Ghazanfar S. Postpartum depression: prevalence and associated risk factors among women in Sindh, Pakistan. Cureus. 2020 Dec;12(12).
10. Atif M, Halaki M, Raynes-Greenow C, Chow CM. Perinatal depression in Pakistan: A systematic review and meta-analysis. Birth. 2021 Jun;48(2):149-63. https://doi/abs/10.1111/birt.12535
11. Afsheen A, Khan KA, Nosheen J, Mehreen S, Anwar R, Iftikhaar B. Postpartum depression and its accomplices in Peshawar; a metropolitan city of Pakistan. The Professional Medical Journal. 2021 Aug 10;28(08):1147-55.
12. Zulfiqar S, Tariq Z, Adnan H, Anjum I. A Cross-Sectional Study Elucidating Associated Predictors in Postpartum Depression among Pakistani Women: Postpartum Depression among Pakistani Women. Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences. 2023 Mar 3;60(1):91-100.
13. Jamshaid S, Malik NI, Ullah I, Saboor S, Arain F, De Berardis D. Postpartum depression and health: role of perceived social support among Pakistani women. Diseases. 2023 Mar 31;11(2):53
14. Qiu X, Zhang S, Sun X, Li H, Wang D. Unintended pregnancy and postpartum depression: a meta-analysis of cohort and case-control studies. Journal of Psychosomatic Research. 2020 Nov 1;138:110259. https://doi.org/10.1016/j.jpsychores.2020.
15. Aslam M, Nawab T, Ahmad A, Abedi AJ, Azmi SA. Postpartum depression and its clinico-social correlates–A community-based study in aligarh. Indian Journal of Public Health. 2022 Oct 1;66(4):473-9. https://doi.org/10.4103/ijph.ijph_1694_21
16. Ye Z, Wang L, Yang T, Chen LZ, Wang T, Chen L, Zhao L, Zhang S, Luo L, Qin J. Gender of infant and risk of postpartum depression: a meta-analysis based on cohort and case-control studies. The Journal of Maternal-Fetal & Neonatal Medicine. 2022 Jul 3;35(13):2581-90. https://doi.org/10.1080/14767058.2020.1786809
17. Pebryatie E, Paek SC, Sherer P, Meemon N. Associations between spousal relationship, husband involvement, and postpartum depression among postpartum mothers in West Java, Indonesia. Journal of Primary Care & Community Health. 2022 Mar;13:21501319221088355. https://doi.org/10.1177/21501319221088355
18. Panolan S. Prevalence and associated risk factors of postpartum depression in India: A comprehensive review. Journal of Neurosciences in Rural Practice. 2024 Jan;15(1):1.https://doi.org/10.25259/JNRP_584_2023
19. Agrawal I, Mehendale AM, Malhotra R. Risk Factors of Postpartum Depression. Cureus. 2022 Oct 31. https://doi.org/10.7759/cureus.30898
20. Federal Directorate of Immunization, Pakistan – Federal Directorate of Immunization (FDI). Accessed December 13, 2022.
21. Yang X, Qiu M, Yang Y, Yan J, Tang K. Maternal postnatal confinement practices and postpartum depression in Chinese populations: A systematic review. PLoS One.2024 May 5;18(10):e0293667.https://doi.org/10.1371/journal.pone.0293667
22. Wang Z, Liu J, Shuai H, Cai Z, Fu X, Liu Y, Xiao X, Zhang W, Krabbendam E, Liu S, Liu Z. Mapping global prevalence of depression among postpartum women. Translational psychiatry. 2021 Oct 20;11(1):543.
23. Asare H, Rosi A, Scazzina F, Faber M, Smuts CM, Ricci C. Maternal postpartum depression in relation to child undernutrition in low-and middle-income countries: a systematic review and meta-analysis. European Journal of Pediatrics. 2022 Mar 1:1-1.https://doi.org/ 10.1007/s00431-021-04289-4
24. Matsumura K, Hamazaki K, Tsuchida A, Kasamatsu H, Inadera H, Kamijima M, et al. Education level and risk of postpartum depression: Results from the Japan Environment and Children's Study (JECS). BMC Psychiatry [Internet]. 2019 Dec 27 [cited 2024 May 5];19(1):1–11. https://doi.org//10.1186/s12888-019-2401-3.
25. Rahmadhani W, Laohasiriwong W. Gender of baby and postpartum depression among adolescent mothers in central Java, Indonesia. International Journal of Child & Adolescent Health. 2020 Jan 1;13(1).
26. Zejnullahu VA, Ukella-Lleshi D, Zejnullahu VA, Miftari E, Govori V. Prevalence of postpartum depression at the clinic for obstetrics and gynecology in Kosovo teaching hospital:

Demographic, obstetric and psychosocial risk factors. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2021 Jan 1;256:215-20. https://doi.org/10.1016/j.ejogrb.2020.11.025

27. Li Q, Yang S, Xie M, Wu X, Huang L, Ruan W, Liu Y. Impact of some social and clinical factors on the development of postpartum depression in Chinese women. BMC pregnancy and childbirth. 2020 Dec;20:1-8. https://doi.org/10.1186/s12884-020-02906-y.
28. Wang D, Li YL, Qiu D, Xiao SY. Factors influencing paternal postpartum depression: a systematic review and meta-analysis. Journal of Affective Disorders. 2021 Oct 1;293:51-63. https://doi.org/10.1016/j.jad.2021.05.088
29. Qi W, Zhao F, Liu Y, Li Q, Hu J. Psychosocial risk factors for postpartum depression in Chinese women: a meta-analysis. BMC Pregnancy and Childbirth. 2021 Dec;21:1-5. https://doi.org/10.1186/s12884-021-03657-0
30. Edwards LM, Le HN, Garnier-Villarreal M. A systematic review and meta-analysis of risk factors for postpartum depression among Latinas.Maternal and child health journal. 2021 Apr;25:554-64.https://doi.org/ 10.1007/s10995-020-03104-0.pdf
31. Edinburgh Postnatal Depression Scale 1 (EPDS). www.depressionafterdelivery.com.
32. Barassi F, Grealish A. Validity of the Edinburgh Postnatal Depression Scale for screening pregnant and postpartum adolescents: a systematic review. TheAustralian Journal of Advanced Nursing. 2022 Mar 1;39(2):65-75.